

Arroyo Colorado Watershed Protection Plan Implementation
FY 07 CWA 319(h)
TCEQ Agreement No. 582-7-77045

Quarter no. 4 From 12/01/07 Through 02/29/08

I. Abstract

It has been a busy quarter! Despite the holiday break, the ACWP team still submitted 4 project proposals and drafted 2 more in preparation for future submission. There are too many ongoing outreach and education, wastewater planning, habitat restoration and agricultural monitoring activities to list here. However, one noteworthy item is the success the Partnership has had with the physical watershed model. In just this quarter, the model was demonstrated at several events that had a combined total attendance of 7,640 – what great exposure!

II. Overall Progress and Results by Task

TASK 1: Project Administration

Subtask 1.1: Project Oversight – TWRI will provide technical and fiscal oversight to ensure Tasks and Deliverables are acceptable and completed as scheduled and within budget.

The following actions have been completed during this reporting period:

- a. TWRI has provided guidance and assistance to Watershed Coordinator in developing meeting agendas, summaries, an agency resolution, and facilitation of various meetings.
- b. TWRI provided TCEQ with a schedule of deliverables to track project activities and contract status. The schedule is included in Appendix A.

44% Complete

Subtask 1.2: Quarterly Progress Reports (QPRs) – TWRI, with the assistance of the Arroyo Colorado Watershed Coordinator (ACWC) and Arroyo Colorado Grant Writer/Water Quality Analyst (ACGC), will submit QPRs to TCEQ by the 15th of the month following each state fiscal quarter for incorporation into the Grant Reporting and Tracking System (GRTS). The Reports will include:

- *status of deliverables for each Objective and Task*
- *narrative description of activities for each task outlined in this Scope of Work in Progress Report format*

The following actions have been completed during this reporting period:

- a. Submitted Year 1, Quarter 4 Report on March 14, 2008.

44% Complete

Subtask 1.3: Quarterly TTVN or Teleconference – To facilitate good communication between project participants, a quarterly TTVN (Trans-Texas Videoconference Network) or teleconference will be scheduled and hosted by TWRI.

The following actions have been completed during this reporting period:

- a. TWRI and Watershed Coordinator and Grant Writer(s) maintain regular communication on a weekly basis.
- b. In addition, TWRI conducted a site visit in January to the watershed.

44% Complete

Subtask 1.4: Arroyo Colorado Website – TWRI will maintain and improve the Arroyo Colorado website.

The following actions have been completed during this reporting period:

- a. The Web site continues to receive updates. Total unique hits for this quarter include the following: December (230); January (292); and February (299). More indicative of site value is the percentage of viewers who add the site as a bookmark (favorite). Of the 821 total visitors, 268 or 32% of the viewers added the project site.
- b. TWRI is still working on creating a database link on the Web site per task 5 of this project. More information on the development of the database is listed under task 5.

50% Complete

Subtask 1.5: Reimbursement Forms – Texas Cooperative Extension will submit reimbursement forms by the last day of the month following each state fiscal quarter

The following actions have been completed during this reporting period:

- a. An invoice was submitted to TCEQ for \$30,501.91 covering all expenses from September 1 through November 30, 2007.
- b. Total invoiced expenditures to date: \$54,662.24 or 18% of total project budget.

44% Complete

Subtask 1.6: Final Report – TWRI, with assistance of the ACGC and ACWC, will provide TCEQ and EPA with a comprehensive report on the activities and success of the WPP conducted during the course of this project. An assessment of data collection and analysis efforts conducted under Task 5 of this scope of work will also be included in the final report.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

TASK 2: Steering Committee and Work Group Facilitation

Subtask 2.1: Facilitate and Coordinate Meetings – The ACWC will facilitate the Arroyo Colorado Watershed Steering Committee and Work Group meetings by working with the chairman and work group leaders. Specifically, the ACWC will be responsible for:

- *Developing agendas, arranging meeting facilities and sending E-mail notices for Quarterly Steering Committee meetings*
- *Assisting all individual work groups with facility arrangements, developing and distributing agendas, and developing meeting summaries as requested by the Work Group Leaders; Work Group meetings will be held as needed, but, at least, semi-annually*
- *Providing information requested by work group leaders prior to and following work group meetings*
- *Attending all individual work group meetings*
- *Compiling and submitting all individual work group meeting agendas and meeting summaries to the TWRI project manager (these will be attached to QPRs and submitted to the TCEQ contract manager and posted on the webpage)*
- *Coordinating efforts of the individual work groups and the Watershed Steering Committee to facilitate the integration of the different components of the Watershed Protection Plan implemented by each workgroup*
- *Updating all Steering Committee meeting participants on the progress of individual workgroups (and/or arranging for individual workgroup leaders to provide these updates) and of the overall implementation of the Watershed Protection Plan*
- *Facilitating a forum for open discussion among Steering Committee meeting participants and interested parties attending the meetings*
- *Arranging presentations by guest speakers offering useful information to Steering Committee participants*
- *Preparing and disseminating summaries of Watershed Steering Committee meetings to all participants*

The following actions have been completed during this reporting period:

- a. Developed agenda, arranged meeting facilities and sent E-mail notices for a quarterly SC meeting held on January 24, 2008.
- b. Updated Partnership on overall implementation of the ACWPP at SC meeting.
- c. Arranged for 2 guest speaker to present information about the SWAT model development (Narayanan Kannan) and the graduate studies work on the Arroyo Colorado (Annette Hernandez and Dr. Uddameri).
- d. Assisted in arranging and facilitating four work group meetings:
 - O&E meetings held January 15, 2008.
 - Agricultural Issues meeting held January 24, 2008.
 - Habitat meeting held January 24, 2008
 - Wastewater Infrastructure meeting held December 17, 2007
- e. All meeting summaries for SC and workgroup meetings are included in Appendix B. All summaries were posted to the Project website.
- f. Attended all workgroup meetings, provided information requested by work group leaders and conducted follow-up activities as noted in the meeting summaries.
- g. Met with Steering Committee member Andy Garza to tour the North Main Drain (The Big Ditch). Noted that there is substantial year round flow in that drain and that it is another main source of “freshwater” to the LLM. Quality and flow is unknown.
- h. Communicated with Steering Committee member Alan Johnson on the Harlingen Wier/Aeration Project. Conveyed to City of Harlingen and project engineers that

there has been a hold-up on license due to discrepancies in a weir location and on some of the elevation data.

- i. Worked with Rocky Freund on AC water quality monitoring issues.
- j. On January 11, 2008, met with Ken Jones, Director LRGVDC, steering committee member, Jim Tabak, and TWRI to discuss long term sustainability of the ACWP.
- k. Met with SC chairman Jude Benavidez to discuss long-term sustainability of the ACWP.

44% Complete

Subtask 2.2: Provide Bi-Monthly Updates – The ACWC will provide e-mail updates to TWRI, TCEQ and the Arroyo Colorado Watershed Partnership on progress made in implementation of the ACWPP at least twice monthly.

The following actions have been completed during this reporting period:

- a. Bi-monthly updates were distributed to the Arroyo Colorado Watershed Partnership members via the Arroyo Colorado listserv on December 14, 2007; January 2 and 22, 2008; and February 7 and 27, 2008. Copies of updates are provided in Appendix C.

44% Complete

Subtask 2.3: Provide Membership Lists – The ACWC will provide TWRI updated lists of the Steering Committee and their contact information for posting on the project website.

The following actions have been completed during this reporting period:

- a. The Steering Committee Membership list posted on the Web site was updated to reflect the new member, Jim Tabak, from the Valley Land Fund.
- b. The work group member has been updated to better reflect participation and interest. The new lists will be distributed to the work groups for finalization. Lists currently listed on Project Web site will be corrected.
- c. Approximately 190 new members were added to the Arroyo Partnership list and will receive a newsletter this spring.

85% Complete

Subtask 2.4: Engage Stakeholders – The ACWC will encourage participation and involvement of key stakeholders in the implementation of the WPP.

The ACWC conducted the following actions during this reporting period:

- a. Attended a Sustainable Ag meeting on January 8, 2008, to keep stakeholder group informed of plan implementation and to assist in planning the 7th Anniversary Sustainable Ag Conference.
- b. Attended the Lower Rio Grande Water Committee (LRGWC) meeting on December 5, 2008, as a new member. Presented the mission and goals of the ACWP. Participants (influentials) included: Dr. Joe Coulter, Chuck Browning, Rick Reyes, JoJo White, Sonny Hinojosa, Glenn Jarvis, Ken Jones, Bill Summers, Kika de la Garza, Charlie Rankin, Joe Tucker, and Elizabeth Walker.

- c. On December 10, 2008, met with Rosie Ramirez, Director of the Harlingen/San Benito MPO to discuss the implementation of the ACWPP.
- d. On December 18, 2008, attended the Cameron County CIAP meeting. Discussed last year's Arroyo submittal with representatives of the GLO and was invited to meet with them in Austin.
- e. Met with Brian Wenton (new USFWS Refuge Manager replacing Ken Merritt) and Ernesto Reyes, USFWS, on January 9, 2008, to discuss partnership potential and wetlands. Introduce Amy Rangel as the new grant writer.
- f. Participated in the LRGWC meeting on January 16, 2008. Special presentation by Carlos Marin, USIBWC and Godfrey Garza, Hidalgo County Drainage District.
- g. Participated in the USIBWC Citizen Forum meeting on January 16, 2008.
- h. On January 24, 2008, attended the Region M Planning meeting. The LRGWC asked to assist in organizing a regional flood study; asked to provide list of suggested participants including representatives from all the cities, drainage districts, and counties.

44% Complete

TASK 3: Facilitate Watershed Protection Plan Implementation

Subtask 3.1: Facilitate and Coordinate Implementation of Education and Outreach Measures as Outlined in ACWPP

The ACWC conducted the following actions during this reporting period:

- a. Arranged and facilitated one O&E work group meetings on January 15, 2008.
- b. Met with Nancy Millar of the McAllen Chamber of Commerce to discuss sponsoring and Eco-Vendor Event. She recommended that the ACWP participate in the green building showcase organized by Gayle King, a local green developer.
- c. The physical watershed model was demonstrated at the following events:
 - The TCE Elected Official Training on December 13, 2007 (approximately 40 people viewed model).
 - The McAllen Green Building Showcase on January 12, 2008 (approximately 100 individuals attended the full day event).
 - Winter Outdoor Wildlife Expo on February 2, 2008 (approximately 3,700 people attended).
 - Harlingen Ocelot Festival (approximately 3,800 people attended the USFWS sponsored event).
- d. Made a presentation on the implementation of the ACWPP with a focus on agricultural BMPs as part of the TCE CEU Workshop on January 17, 2008. Had the physical model onsite for viewing.
- e. Met with Ouina Rutledge, Recycling Manager with the City of McAllen, to discuss partnering on O&E activities.
- f. Set up an Arroyo Colorado booth at the Sustainable Ag Conference on January 18 and 19 in Edinburg. Booth included brochures, bookmarks, and the physical model. Over 150 people attended conference.

- g. Made a general presentation titled “Arroyo Colorado Watershed Protection” as part of the 2008 Natural History Series sponsored by the Valley Nature Center and Weslaco Area Chamber of Commerce on January 26, 2008. Approximately 52 attended.
- h. On February 4, 2008, met with science educators with the International Museum of Arts and Science to train them as spokesmen for the protection of the Arroyo Colorado Watershed.
- i. Finalized the script of demonstration of the physical model. Script to be posted on the Web site.
- j. Met with Ms. Escalon, 6th grade science teacher at Vela Middle School in Harlingen to discuss an Arroyo Curriculum. Plan to do formal demonstration to class on Mar 25.
- k. Contacted vendors/companies and TxDOT regarding the design and posting of watershed boundary signs. More work will be dedicated to this effort in the next quarter.

44% Complete

Subtask 3.2: Facilitate and Coordinate Implementation of Agricultural Pollution Control Measures as Outlined in ACWPP

The following actions have been completed during this reporting period:

- a. An Ag Work Group meeting was held on January 24, 2008.
- b. Agricultural education events occur on a regular basis in the watershed as part of the TSSWCB funded project, Education of Agricultural BMPs. As of the last quarter reported (October through December 2007), 393 agricultural producers, youths, and residents from Cameron, Hidalgo, Willacy and Starr Counties were educated. The Soil Testing Campaign was also held and approximately 662 soil samples have been received to date. The total number of participants who have benefited from the Arroyo Colorado Education Program is now 4,548.
- c. In the TSSWCB funded project Arroyo Colorado Agricultural Assessment, the Land Use/Land Cover map was updated and will be finalized this quarter. Further, researchers will begin sampling irrigation runoff, groundwater and drainage ditches to monitor effectiveness of BMPs and potential mitigation effects in the ditches.
- d. In regards to the SWAT Model Simulation Project, researchers have finished a draft update of the model and are currently conducting test runs to calibrate the model.
- e. Assisted in the setup of the 7th Anniversary Sustainable Ag and Natural/Organic Gardening Conference held on January 18 and 19. Set up the Arroyo physical model for viewing.
- f. Met with Monty Dozier (new Regional Program Director – Ag and Natural Resources South Region) and local ag agents to discuss implementation of the ag component of the ACWPP on February 22, 2008.

44% Complete

Subtask 3.3: Facilitate and Coordinate Implementation of Recommended Measures Described in the Habitat Component of the ACWPP

The following actions have been completed during this reporting period:

- a. Held a joint Habitat and Wastewater Work Group meeting focused on the four (4) cities wetland project on December 17, 2007.
- b. Met with the new refuge manager for USFWS, Brian Wenton to discuss the ACWPP and the potential to partner with USFWS in the establishment of wetlands.
- c. On February 7, 2008, conducted a field trip to the La Feria Sandpit (80 A site within the AC floodplain). Met with Jamie Vasques (landowner), Darla Jones (La Feria), and Jim Tabak (Valley Land Fund). TWRI participated for a portion of the meeting via a conference call. Landowner expressed interest in participating in a wetland project.
- d. Met with representatives of the GLO to discuss a CIAP proposal for a regional wetland on February 15, 2008.
- e. Worked with TAMUK in the development of a study to improve the water quality treatment function of regional storm water detention facilities in McAllen.

44% Complete

Subtask 3.4: Facilitate and Coordinate Implementation of Wastewater Infrastructure Pollution Control Measures as outlined in the ACWPP.

The following actions have been completed during this reporting period:

- a. Held a joint Habitat and Wastewater Work Group meeting focused on the four (4) cities wetland project on December 17, 2007.
- b. Work Group leaders met with representatives of the city of Alamo and Military Highway WSC to discuss improving water quality discharge from Alamo's WWTF.
- c. Tracked progress of the four cities wetland project.
- d. Began discussions to better track colonia hook-up as part of the PRP.
- e. Met with Firoj Vahora (TCEQ Team Leader, Municipal Permitting Team WW Permitting Section) to discuss the ACWPP with a focus on the PRP component. Informed of potential upcoming permit modifications within the AC watershed.

44% Complete

Subtask 3.5: Semi-annual Newsletter Publication.

The following actions have been completed during this reporting period:

- a. A list of stories for the spring 2008 issue was developed and is currently being drafted. TWRI will compile and distribute the Arroyo Colorado Newsletter as early as April 2008. Distribution list grew from just over 600 to more than 700 individuals.

25% Complete

TASK 4: Resource Identification and Grant Writing

Subtask 4.1: *Track Grants and Assist Partners in Grant Applications – In coordination with TWRI, the Arroyo Colorado Grant Coordinator/Water Quality Analyst (ACGC), with assistance from the ACWC, will: 1) actively seek and pursue funding opportunities for watershed protection and restoration projects, 2) track appropriate grants that fund activities outlined in the WPP and assist Arroyo Partners in the grant application process and 3) link appropriate partners and projects.*

The following actions have been completed during this reporting period:

- a. Worked with Texas A&M Agricultural Communications in the development of a proposal to create and distribute public service announcements regarding the state of the Arroyo Colorado Watershed and more specifically, how citizens can actively participate in improving water quality in the river. Developed potential draft scripts for PSAs.
- b. Worked with the International Museum of Arts and Sciences and City of McAllen public utilities to develop a proposal to revise the Arroyo Watershed Curriculum and provide workshops to local educators on incorporating the curriculum into their classrooms.
- a. Worked with Cameron County Parks Department in the development of a proposal submitted to General Land Organization (GLO) requesting funding from Coastal Impact Assistance Program (CIAP) for construction of a pavilion that would house a waterproof educational gallery at Adolfe Thoma Park.
- b. Worked with County Extension Agents in Cameron, Hidalgo and Willacy Counties on development of a proposal for an education program for agricultural producers focusing on whole farm management.
- c. Submitted a proposal to EPA Region VI (Strategic Ag Initiative Program) titled, *Integrated Farm Management Education Program..* Total funds requested: \$92,611
- d. Worked with The Lower Rio Grande Development Council-Council of Governments (LRGVDC-COG) in the development of a proposal for a wetland of approximately 900-acres to reduce pollution flowing into the Lower Laguna Madre from Cameron and Willacy Counties to be submitted to GLO for CIAP funding. Proposal will be submitted upon release of the CIAP RFP.
- e. Assisted Military Highway Water Supply Corporation and the City of Alamo in the development of a proposal for submittal to Texas Water Development Board for regional wastewater facility planning program.
- f. Maintained and updated information on potential funding opportunities for distribution to work group and steering committee members. Status of current funding opportunities included in Appendix D.

45% Complete

Subtask 4.2: Lead proposal development to request/acquire funding for Implementation of Measures as Outlined in ACWPP. A minimum of 10 grant proposals will be developed during the project period by the ACGC, in cooperation with the ACWC, TWRI, and project partners. Upon completion, the grant proposals will be submitted by either project partners or TWRI/TCE, whichever is most appropriate. Potential proposals may include, but not limited to funding requests to:

- *Implement recommendations of the Outreach and Education Work Group.*
- *Produce an educational video.*
- *Increase wastewater and surface water infrastructure development within cities and public utility systems for colonias.*
- *Design and construct individual and/or regional enhanced biological treatment projects.*
- *Conduct feasibility studies and final engineering designs for development of individual and regional constructed wetland demonstration projects throughout the watershed.*

- *Establish individual and regional constructed wetland projects.*
- *Conduct feasibility studies for modifying the drainage channels to maintain moist soils to sustain wetland plants for treatment of nonpoint source pollution.*

The following actions have been completed during this reporting period:

- a. Submitted 2 proposals to US EPA for the Environmental Education Program:
 - *Developing a PSA in the Arroyo Colorado Watershed. \$55,632.*
 - *A Curriculum for the Arroyo Colorado Watershed. \$35,500.*
- b. Submitted a proposal in collaboration with Cameron County Parks Department to GLO Coastal Impact Assessment Program:
 - *Arroyo Colorado Watershed Wetlands Education and Outreach Pavilion and Interpretive Center. \$99,609.*
- c. Submitted a proposal to EPA Region VI Strategic Ag Initiative Program:
 - *Integrated Farm Management Education Program \$92,611*
- d. Proposal workplans for these 4 submitted proposals are included in Appendix E.

45% Complete

TASK 5: Data Gathering and Analysis to Assess Effects of Water Quality Protection Plan

The ACGC will assemble and maintain a data clearinghouse for all data collected in the Arroyo and from that data, evaluate changes in BOD, TSS, fecal bacteria, and nutrient loading to Segments 2201 and 2202 of the Arroyo Colorado. Data collection will include:

- *Pollutant removal effectiveness of enhanced treatment projects through effectiveness monitoring conducted by participating cities.*
- *Wastewater permit holders self reporting data to better characterize loading of nutrients from WWTPs to the Arroyo Colorado*
- *Data collected through the Arroyo Colorado Agricultural Nonpoint Source Assessment Project'*
- *Texas Clean Rivers Program.*

The following actions have been completed during this reporting period:

- a. Developed static graphs of data created from TCEQ database. The graphs will include the following key parameters with their respective screening levels:
 - a. Biological Oxygen Demand
 - b. Dissolved Oxygen
 - c. Nitrate + nitrite
 - d. Total P
 - e. Bacteria
 - f. Chlorophyll a
 - g. Total suspended solids
 - h. Total kjeldahl nitrogen
 - i. Nitrogen
 - j. Ammonia-nitrogen
- b. Graphs created using data from four major sites on the Arroyo Colorado
 - a. Station ID: 13072

- b. Station ID: 13073
- c. Station ID: 13074
- d. Station ID: 13081
- c. The site will also include a map with links to monitoring stations.
- d. The database site, when completed, will be housed on the project website and will include links to the other databases. TWRI will maintain the database site.
- e. Discussions with TWRI web tech will occur during the next quarter to begin further development of the database.

25% Complete

III. Related Issues/Current Problems and Favorable or Unusual Developments

- The administrative arm of the Texas Water Resources Institute has a new name. Texas Agricultural Experiment Station and Texas Cooperative Extension are now the Texas AgriLife Research and the Texas AgriLife Extension Service, respectively.

IV. Projected Work for Next Quarter

Task 1

- Continue improving Web site including development of database per task 5.
- Assist watershed coordinator with steering committee and workgroup meetings as well as communication and outreach activities.
- Assist grant writers in development of proposals, budgets and coordinating efforts.
- Maintain regular weekly communication with project personnel. Also travel to valley for AC field tour.
- Submit quarter 5 report on June 15, 2008.

Task 2

- Schedule and facilitate a Steering Committee meeting and two work group meetings (Habitat and Outreach and Education). Draft and distribute agendas and meeting summaries.
- Attend all work group meetings.
- Coordinate work group efforts.
- Arrange for guest speakers at Steering Committee meeting.
- Production and distribution of bi-monthly updates.
- Continue to engage key stakeholders.

Task 3

- Complete bi-annual newsletter and mail out in April.
- Arrange and facilitate Wetland Field Tour/Wastewater Work Group Meeting. Currently scheduled for the last week in April. Entire Partnership will be invited; priorities will be given to WWI and Habitat work group members.
- Conduct ACW demonstration to Vela Middle School in Harlingen (Ms. Escalon – grade 6) on Mar 25.
- Display the physical Arroyo watershed model at the IMAS for the entire month of April.
- Present and participate in the IMAS Earth Day on April 20, 2008.

- Meet with the Storm Water Task Force on April 11, 2008 to plan a Valley wide storm drain stenciling/marking campaign.
- Develop Partnership agreements for Arroyo message distribution.
- Follow-up with representatives from the four cities in regards to the enhanced water treatment systems.
- Conduct at least 3 presentations on the implementation of the ACWPP.
- Demonstrate the physical Arroyo watershed model in at least three different locations.
- Produce at least two press releases.
- Finalize the development of an O&E evaluation instrument.
- Develop an evaluation instrument for distribution to the Arroyo Colorado SC.
- Participate in the CRP Steering Committee Meeting March 27, 2008
- Participate in the LRGV TPDES Storm Water Task Force Meetings.
- Organize and facilitate an Arroyo Water Quality Work Group Meeting; tentatively planned for April 9, 2008.
- Continue participation in the USIBWC Citizen Forum, Region M planning, Rio Grande Regional Water Authority, and the Lower Rio Grande Water Committee meetings.
- Continue work with the MPOs and USFWS in the development of an open areas map that includes sensitive environmental features for natural resource protection in transportation planning.
- Follow-up with at least three (3) cities in regards to commitments in the Pollution Reduction Plan.
- Continue facilitation of work for the development of a regional wetland system.
- Post the watershed model demonstration script on the Web site
- Continue work on designing and posting of watershed boundary signs.

Task 4

- Complete and prepare for submission the CIAP Proposal.
- Assist the Military Highway Watery Supply Corporation to finalize and submit the proposal to TWDB to fund regional wastewater planning activities.
- Seek alternative funding opportunities to pursue under the TWDB Wastewater Planning program.
- Identify additional funding opportunities to pursue.

Task 5

- Begin discussing possible set up and needs for an Arroyo Colorado database using the existing databases. TWRI web technician will be contacted to draft a site for public to access database.
- Finalize who TWRI needs to contact to obtain wastewater treatment permit holders self reporting data and begin gathering data.

Appendix A**Schedule of Deliverables**

Deliverable	Due Date	Date Submitted	Comments
TASK 1			
Quarterly Progress Reports	7/15/2007	7/16/2007	Submitted via email & posted on Site
	9/15/2007	9/14/2007	Submitted via email & posted on Site
	12/15/2007	12/13/2007	Submitted via email & posted on Site
	3/15/2008	3/13/2008	Submitted via email & posted on Site
	6/15/2008		
	9/15/2008		
	12/15/2008		
	3/15/2009		
Special release (supplement) to WPP - status of Implementation			Not in contract
Draft Final Report	2/28/2009		
Final Report	3/31/2009		
Quarterly Meetings	Jul-07	7/9/2007	in CS
	Oct-07	9/25/2007	in CS
	Jan-08	1/24/2008	in AC
	Apr-08		
	Jul-08		
	Oct-08		
	Jan-09		
	Mar-09		
Reimbursement Forms	7/30/2007	6/30/2007	(4/1/07 thru 6/30/07) \$7,734.28
	9/30/2007	8/31/2007	(7/1/07 thru 8/31/07) \$16,426.77
	12/30/2007	11/30/2007	(9/1/07 thru 11/30/07) \$30,501.91
	3/31/2008		
	6/30/2008		
	9/30/2008		
	12/30/2008		
	3/31/2009		

Website Updates	7/15/2007	--	Files were transferred from Sea Grant to TWRI
	9/15/2007	9/1/2007	Web site went online at http://www.arroyocolorado.org
	12/15/2007	12/15/2007	Added projects in the watershed and related information
	3/15/2008	3/15/2008	Added 'About the Watershed' section
	6/15/2008		
	9/15/2008		
	12/15/2008		
	3/31/2009		
TASK 2			
Quarterly Steering Committee Meetings	7/24/2007	7/24/2007	Minutes submitted in QPR/posted on Web site
	10/25/2007	10/25/2007	Minutes submitted in QPR/posted on Web site
	1/24/2008	1/24/2008	Minutes submitted in QPR/posted on Web site
	4/24/2008		
	7/24/2008		
	10/23/2008		
	1/22/2009		
Habitat Restoration Workgroup Meeting	7/24/2007	7/24/2007	Minutes submitted in QPR/posted on Web site
	1/24/2008	1/24/2008	Minutes submitted in QPR/posted on Web site
	7/24/2008		
	1/22/2009		
Ag Workgroup Meeting	7/24/2007	7/24/2007	Minutes submitted in QPR/posted on Web site
	1/24/2008	1/24/2008	Minutes submitted in QPR/posted on Web site
	7/24/2008		
	1/22/2009		
Wastewater Infrastructure Workgroup Meeting	9/20/2007	9/20/2007	Minutes submitted in QPR/posted on Web site
	12/17/2007	12/17/2007	Minutes submitted in QPR/posted on Web site
	7/24/2008		
	1/22/2009		
Outreach & Education Workgroup Meeting	7/16/2007	7/16/2007	Minutes submitted in QPR/posted on Web site
	9/11/2007	9/11/2007	Minutes submitted in QPR/posted on Web site; 2 nd meeting 10-16-07
	1/15/2008	1/15/2008	Minutes submitted in QPR/posted on Web site
	4/15/2008		
	7/15/2008		
	10/14/2008		

	1/13/2009		
Agendas & Summaries submitted with QPRs			Also posted on Web site
Update workgroup & steering committee membership list	Aug-07	9/15/2007	Provided SC opportunities to review information for posting
	Aug-08		
Post workgroup & steering committee membership list on Website	Oct-07	10/8/2007	SC list has email contact info; workgroup lists - no contact info
Bi-monthly email updates			Posted on the Website
TASK 3			
Conduct at least one presentation per month to different targeted audiences	QPRs		
Meet face-to-face with at least 4 community leaders per month to deliver basic facts on the Arroyo Colorado and discuss progress in implementing the ACWPP.	QPRs		
Contingent upon approval by TXDOT, install roadway signage by the end of the two year contract	QPRs		
Have storm drains stenciled in at least six cities and communities within the Arroyo Colorado watershed.	QPRs		
Implementation status of education and outreach measures, agricultural pollution control measures, habitat restoration measures, and wastewater infrastructure pollution control measures.	QPRs		
Media press releases	7/15/2007		
	9/15/2007		
	12/15/2007		
	3/15/2008		
	6/15/2008		
	9/15/2008		
	12/15/2008		
	3/15/2009		
Evaluation instrument (survey) for targeted audiences at select events	9/15/2007		
Evaluation instrument (survey) for SC and Partnership	12/15/2007		
Summary of evaluation instrument (survey) results	QPRs		
Semi-Annual Newsletter	Oct-07	10/20/2007	Distributed to over 600 ind (596 direct + 54 hand distribution)
	Apr-08		

	Oct-08		
	Mar-09		
TASK 4			
10 Grant Proposals	QPRs		
Summary table of grant application status	7/15/2007	--	
	9/15/2007	9/15/2007	Submitted with QPR & distributed at SC meeting
	12/15/2007	12/15/2007	Submitted with QPR & distributed at SC meeting
	3/15/2008	3/15/2008	Submitted with QPR & distributed at SC meeting
	6/15/2008		
	9/15/2008		
	12/15/2008		
	3/15/2009		
TASK 5			
Data summary report	11/30/2007		
	11/30/2008		
Data clearinghouse including monitoring update	7/15/2007		
	9/15/2007		
	12/15/2007		
	3/15/2008		
	6/15/2008		
	9/15/2008		
	12/15/2008		
	3/15/2009		

Appendix B

**Steering Committee and Workgroup (WWI, O&E, Ag and Habitat)
Meeting Summaries**

Arroyo Colorado Steering Committee/Partnership Meeting

Texas A&M Kingsville, Citrus Center
Rio Red Classroom
312 N. International Blvd, Weslaco, Texas 78596

January 24, 2008

4:30 p.m. - 7:00 p.m.

MEETING SUMMARY

ATTENDEES

Andy Garza, TSSWCB
Richard Eyster, TDA
Venki Uddemeri, TAMUK
Cory Horan, TCEQ
Amado Salinas, MHWSC
Alex Nunez, TPWD
Jim Tabak, VLF
Clare Lee, USFWS
Rocky Freund, Nueces RA
Amy Rangel, TWRI
John Wallace, USFWS

Aaron Wendt, TSSWCB
Pamela Casebolt, TSSWCB
Laura De La Garza, TWRI
Cecilia Wagner, TWRI
Tony Reisinger, Tx Sea Grant
Kim Jones, TAMUK
Narayana Kannan, TAMUK
Jude Benavides, UTB
Megan Meier, TWRI
Xavier Peries, AgriLife Extension

5:00 Welcome and Introductions Dr. Jude Benavides, Chairman

5:10 Long-Term Sustainability of Partnership (Action Item) Dr. Jude Benavides, Chairman

- Special task group formed at last meeting investigated options for long-term sustainability of Partnership
- Task group proposed to take further action including looking at budget details, the needs of the Partnership and financial sustainability options
- There were no objections to taking further action;
- Jim Tabak asked what the relationship with the LRGVDC would be; would the Partnership still file as a 501(c)3? Agreed this is something that would be investigated. Jim also stated the Partnership should consider expanding area of focus.
- Cecilia and Cory stressed importance of focusing on the Arroyo Colorado watershed rather than jump to a larger scale basin focus because current funding is specific to Arroyo. Suggested once Partnership stands alone, focus can then be expanded.
- No objections to umbrella under the LRGVDC; it was agreed that their reputation and involvement in the community can benefit the ACWP
- The group was asked if there were objections to Ken Jones presenting concept of LRGVDC being the umbrella organization for ACWP to his board on Feb 28, 2008.
- No objections; Ken Jones will be notified to take concept to his board.
- Group will be contacted via e-mail if any new info comes before next meeting

5:30 Work Group Updates:

Agricultural Issues.....Andy Garza, TSSWCB
--WQMP Implementation Assistance in the Arroyo Colorado:

- In third year of project; Certified 96 WQMPs covering 4700 acres; \$556,000 obligated and \$447,000 paid out to producers for the following practices: 49 % for land leveling, 24% irrigation pipeline, 17% pasture planning and 10% other (cross fencing, etc.).
- Total funds expended per county is 70% Cameron and 30% Hidalgo
- Project terminates August 2008, but asking to extend to February 2009

--SWAT Model Simulation of the Arroyo.....Narayanan Kannan, TAES-Blackland

- Need for project: Low DO and high bacteria; Goal: Identify BMPs
- Model is physically based, continuous simulation, daily time step
- Components include flow, soil erosion, transport of sediment, nutrient, pesticides, and bacteria; and processes include crop growth, evaporation, infiltration, and soil types.
- Model reflects slight change in watershed boundaries, divided the Arroyo Colorado watershed into 17 sub-basins.
- Soil map greatly improved; using more detailed classification of soils
- 475 hydrologic response units used in entire watershed; average of 28 HRU per sub-watershed
- Weather data from stations in McAllen and Harlingen; flow data at water monitoring stations in Mercedes and Harlingen
- Cory recommended that model include Rio Hondo continuous monitoring site
- Jude asked if additional rainfall data would be of assistance; Kannan said yes and he needs to do that.
- Future model needs include flow calibration, calibrate sediment and nutrients loading values, water temperature and dissolved oxygen.
- Data requirements: fertilizer and irrigation application rates, tentative application dates and frequency for different crops.
- Need to continue research to resolve inaccuracies
- For more info contact: Narayanan Kannan at nkannan@brc.tamus.edu
- Current draft land use data available on TAMU Spatial Science Lab website.
- Aaron said that the SWAT modeling is part of a bigger picture and information gained will be fed into the TMDL tidal study the TCEQ will be conducting.

Habitat IssuesDr. Kim Jones, TAMUK and Tony Reisinger, Texas Sea Grant

- Habitat work group met earlier today.
- Laura, Dr. Heise and Cecilia will be traveling to Austin to get more information on improving CIAP proposal application.
- Future funding will also be sought from TPWD through their Kills and Spills program
- Group will begin looking into mitigation bank possibility as potential way to fund regional wetland.
- Regional Wetland Study ongoing. Dr. Kim Jones and students working site assessment. 6 total sites but narrowed down to 3 primary sites (San Benito, La Feria sandpit, and bank north of Port of Harlingen). Additional funding needed for study.
- Cory met with the LRGV TPDES Storm Water Task Force representative in regards to CWA 319 funding of a Regional Detention Facility Study
- TPWD is withdrawing grant application to fund drainage ditch study due to lack of matching funds, and the potential for the study to be interrupted/disturbed pending a flood event.
- Eric Ellman with Los Caminos del Rio would like to work with group on vegetated hike/bike trails.

Monitoring Work Group.....Rocky Freund, Nueces River Authority

- 2008 Water Quality Assessment keeps the Arroyo Colorado Non-tidal segment on the 303(d) list for high bacteria; Data (fecal-high and E.coli-low) shows that should come off 303(d) list, but it was left on based on assessor's judgment.
- Nueces River Authority proposes to submit a TSSWCB 319 grant application; proposing to pick 6 sites in non-tidal portion to study fecal bacteria, enterococcus, and E.coli data to determine appropriate indicator organism for segment. Data will be collected once per month. (Background: In water with greater than 1,000 conductivity, it has been shown E coli does not survive. Therefore the question remains if the low levels of E. coli is due to low survival rates or an actual drop in bacteria contamination. Study will determine if enterococcus or E coli should be the indicator.

- A Monitoring work group meeting will be called sometime in March/April to discuss overall monitoring in the AC and Texas Watch volunteers monitors will be invited to get them more involved.

Education and Outreach Laura De La Garza, TWRI

- Group met January 15, 2008
- McAllen recycling manager, Ouina Rutledge, presented McAllen’s green program, recycling, composting, and O&E efforts. Becoming important partner to group.
- Birdie, O&E coordinator for McAllen Recycling, has coordinated a review of the curriculum by UTPA professors and students.
- Arroyo physical model script almost finalized. Model being used at various events and has received good feedback. Will be demoed Feb. 2 at SPI and Feb. 9 in Harlingen at Ocelot Festival
- Working with TAMU on drafting evaluation form to use at O&E events.
- Texas Watch continues to support volunteer monitors. They will host volunteer monitor training Feb. 2. Half of their monitors are sampling on a regular basis.
- Two grants submitted to EPA; Improving Arroyo Watershed Curriculum and the Developing PSAs. If approved, project(s) will begin in July.
- Coordination for the storm drain marking could begin in March in coordination with the Storm Water Task Force. Looking to have all the cities work together and have a Valley-wide event.

Wastewater Infrastructure..... Laura De La Garza, TWRI

- TWDB Planning grant: working with City of Alamo and MHWSC. Will evaluate potential for MHWSC to better treat Alamo’s wastewater.
- Amado Salinas said that he had nothing to report on issue.
- Four Cities Wetland project: San Juan hopes to begin construction mid-spring; La Feria and San Benito working of preliminary designs; Mercedes waiting on permit amendment for facility expansion.
- Laura and Heather Harris are planning for a field trip to a wetland in Victoria. There has not been a date scheduled, but looking to do it in the spring.

6:20 PresentationDr. Venki Uddemeri, TAMUK

“Risk Based Methodologies for Evaluating Point and Non-Point Sources of Loading into the Arroyo Colorado”
– Annette Hernandez

- PowerPoint presentation will be posted on Arroyo website.

6:35 Discuss/Prioritize Future Funding Needs and SourcesCecilia Wagner, TWRI

- Two proposals submitted to EPA (Arroyo Curriculum updates and PSA)
- All 3 CMP proposals were rejected
- NOAA grant not applicable at this time due to various reasons. (Has to apply gulf wide education K-12). Enrique Perez has interest and will follow up with him.
- CARE grant not eligible at this time because the ACWP does not cover all media (air, water, wastes)
- Private grants will now be sought after.
- Cecilia said that TWRI would be happy for other Partners to take the lead in grants.
- The available grants list will be posted on the Arroyo website.

6:45 Other BusinessDr. Jude Benavides, UTB

- It was decided by the group to invite Aqua Streamer Technology, LLC to the next meeting to discuss possibility to demo their system in Arroyo Colorado. Need to look further into environmental implications from them demonstrating in the Arroyo and ensure there will be no financial responsibilities on the Partnership.

7:00 AdjournDr. Jude Benavides, UTB

- Next meeting scheduled for April 24, 2008.

**Arroyo Colorado Wastewater Infrastructure Work Group
December 17, 2007, 2:00 pm to 4:30 pm
Meeting Summary**

Participants

Neil Haman, HWWS	Meg Jorn, Megamorphosis
John Pearcy, La Feria/Megamorphosis	Joe Winston, LaFeria/Sigler Winston
Chris Hathcock, TPWD	Mike Heep, Heep's Nursery
Jim Tabak, Valley Land Fund	Darala A. Jones, La Feria
Sunny K. Philip, La Feria	Michelle Leftwich, Mercedes
Harvey Rodriguez, San Juan EDC	Miki McCarthy, San Juan EDC
Robert Diaz deLeon, Alamo	Roger Miranda, TCEQ
Arthur Talley, TCEQ	Kim Jones, TAMUK
Tony Reisinger, Texas Sea Grant Extension	Julie Morris, UTB
Adan R. Gonzales, San Benito	Romeo Garza, Jr., San Benito
Jaime Rosas, San Benito	Martha McClain, San Benito
Alex Nunez, TPWD	John Day, LSU/Comite Resources, Inc
Orlando Cruz, San Benito	David Day, San Benito/Casa Engineering
Amy Rangel, ACWP/TWRI	Laura De La Garza, ACWP/TWRI

2:00 pm Welcome and Introductions Laura De La Garza, TWRI

2:10 pm Four Cities Wetland Project

Project Overview Roger Mirand and Arthur Talley, TCEQ

- Brief Overview
 - From TMDL to WPP
 - Environmental benefits of plan and wetlands
- Measures of Progress
 - Permit issue, permit amendment not a barrier
 - Not much money spent nor anything built
 - Permitting amendments creating cost and time issues
 - Each city making progress on permits
 - City of LaFeria submitted preliminary design to TCEQ
 - City of San Benito in discussions with TCEQ
 - City of San Juan submitted preliminary design report to TCEQ
 - Wetland project value, twice green – potential for economic & environmental benefits
 - Reminder to cities to review TCEQ contract, keep up with reporting requirements
 - 1% of project funds sent to date

City of San Juan Mikki McCarthy, San Juan EDC

- Delays due to permit amendments and realization of need to use more than 5 acres
- Cells originally to be in stormwater detention facility
- Preliminary design uses 7.75 acres
- Dealing with other issues with cells being so far from plant
- Eventually use project for education
- Taken a year to get 2nd outfall permitted
- Submitted preliminary design report to TCEQ in November
- TCEQ currently reviewing application
- February- expect permit for new outfall
- Wetland construction to begin mid-spring
- Won't be online until 2010
- Will be a hike and bike trail component
- PSJA working on outdoor classroom for school district
- Project paid for by 319 grant funds and EDC open space and park development funds
- City of San Juan donated land for project

- Permitting through the City of San Juan

City of Mercedes Mitchell Leftwich, City of Mercedes

- Currently running out of treatment capacity at wastewater treatment facility
- In process of getting permit amendment for facility expansion
- Have not begun the process to permit a new outfall for discharge to wetland
- Timing issue due to wastewater treatment expansion.
- Must deal with this amendment before focusing on any others

City of La Feria Darla Jones, City of La Feria

- City commission has approved contract amendments
- Project located close to Arroyo
- Construct wetlands project due to past wastewater permit violations
- Nature park will have green buildings, local long-life materials to be used
- Budget has been biggest challenge
- Life cycle cost considered in green building
- Flexibility designed in

City of San Benito Martha McClain, City of San Benito

- Project site located near the Arroyo Colorado at the site of the recently decommissioned lagoon-style water treatment plant. Two of the six ponds will be utilized.
- The City Commission approved contract amendments, economic benefits recognized
- General goal – to implement Phase IA of the wastewater pollutant reduction component of the ACWPP and to produce a 20-acre model wetland system using treated effluent from San Benito’s new wastewater treatment facility
- Project is part of a Supplemental Environmental Program (SEP) as required by EPA due to past permit violations
- 20-acre wetland planned, room for expansion
- New 2.5 MGD plant to be expanded to handle 3.75 MGD
- Objective to construction wetlands for environmental and ecological benefit
- Educational and recreational components to be incorporated
- December 4, 2007 - Wastewater permit filed, awaiting response
- December 11, 2007 - City Commission approved contract amendment
- April 30, 2009 - Wetland construction complete
- August 31, 2009-Vegetation installed and controlled through-flow achieved
- Thanks to the Arroyo Colorado Watershed Protection Plan for guidance
- Thanks to the TCEQ and EPA for financial assistance

Questions and Answers Laura De La Garza, TWRI

- Timelines? TCEQ extended timelines due to permitting.
- All cities have negotiated different timelines.
- All cities expressed desire to create a wetland curriculum for their wetlands. Laura to coordinate effort with cities.

3:20 pm Wetlands, Plants and Availability:

Project Experience..... Dr. John Day, LSU

- Extensive wetland work in Louisiana
- Wastewater as a fresh water resource
- Use of effluent from two cities to re-grow/restore deteriorating wetlands
- Savings to communities by using wetlands to treat wastewater
- Increase carbon and nutrient sequestration through the creation of a Cypress forest
- Importance of a diversity of plant community
- Important to consider flood pulse concept

- Ecological engineering allows for self design

Project Experience..... Dr. Kim Jones, TAMUK

- Discussed what has worked and what has not
- Problems with salinity hikes
- Don't believe everything you read in books. Books have said that certain plants would not work however experience has shown different.
- All cattails die one year possibly due to increased salinity
- Advantage to deep and shallow ponds in association with wetlands
- Value in putting in top-soil
- Over-planted one site on hindsight
- Plants will establish themselves naturally
- Success with black mangroves however freeze risk
- Give hydro-periods flexibility

Local Wetland Plants and AvailabilityChris Hathcock, TPWD

- Good wetlands in the LRGV are few and far between
- Supply water, and plants will establish themselves. Birds bring in a variety of plants.
- Example of a wetland birds like - a shallow wetland established in a ressaca. Diverse plants. Fluctuating water levels.
- Sedges and water hyssop will come to site on own.
- Reviewed a number of local native plants found in different zones associated with wetlands including: water hyacinths, germander, creeping love grass, pennywort, pink smartweed, soft-stem bulrush, water lily, arrowhead, water star grass, musk grass, and alkali bulrush.
- TPWD has a local wetland nursery.
- Wetland plant available at Heep's Nursery.
- Not sure how some native plant will handle high nutrient water.
- Chris available to cities for any wetland plant questions.

4:20 pm Final Question and Answer Session Laura De La Garza, TWRI

- Do plants have to be harvested? Yes, in some cases.
- Final reminder that treatment and optimum removal of nutrients are the goals.
- Built-in option to divert water away from wetland if deemed necessary.

**Arroyo Colorado Outreach and Education Workgroup
January 15, 2008
Meeting Summary**

Participants

Don Hockaday
 Bertie Salinas (McAllen)
 Ouina Rutledge
 Briana Carlson
 Tony Reisinger
 Elizabeth Heise
 Cory Horan

Kris Shipman
 Sky Lewey
 Cecilia Wagner
 Megan Meier
 Jason Pinchback
 Laura de la Garza

Welcome and Introductions..... Laura De La Garza, TWRI

Arroyo Colorado Watershed Protection Plan:

Project Highlights Laura De La Garza, TWRI

- Ag/Habitat/Wastewater workgroup projects
- Current focus is becoming a sustainable group
- Upcoming workgroups and Steering Committee meetings on January 24, 2008

O&E Project Updates:

City of McAllen O&E Projects Ouina Rutledge, City of McAllen

- New O&E environmental coordinator for brush, compost and recycling divisions
- Programs include save the greens program (compost greens from grocery stores and nurseries), pay as you throw (pay for garbage and recycling free), McAllen Goes Green
- City is currently using trade shows, media, schools and other forums to get word out
- Methods of outreach: appeal to parents through kid-friendly products and freebies
- Working with LRGVDC on O&E grants mainly addressing stormwater
- Cecilia suggested putting link on AC website under the “Projects” link

Texas Watch Activity Jason Pinchback, Texas Watch

- Volunteer training on Feb 2nd at UTB and continue to have active monitors sampling throughout watershed. Training will also provide supplemental information/data at the UTB monitoring sites for the Clean Rivers Program

EPA Education Grant Submittals Megan Meier, TWRI

- 2 proposals submitted on December 20th including:
 - AC PSA involves developing and broadcasting radio/TV PSAs about AC (in English/Spanish)
 - Arroyo Colorado Curriculum involves polishing existing curriculum created by IMAS and McAllen and hosting workshops to “teach” teachers how to incorporate lessons into their classroom
 - Dr. Edwards (UTPA) offered to trial IMAS existing equipment in biology lab
 - Laura will check on equipment use with IMAS as the equipment was purchased by TCEQ and they would like us to assist in “better utilizing” it

Project Discussion:

Draft Script for Physical Model Demo Laura De La Garza, TWRI

- Julie Tauson (TXWatch) assisted with developing the demonstration script. It includes different activities for different age levels
- Laura developing kit to demo model - Sky suggested including wool, felt cloth or sponge in the kit to be used as a wetland area that shows how wetlands absorb water
- Laura is tracking approximate number of those participating in demo at various events – need to include this in the directions for using the model (or script). This is important for documenting benefit of model developed and impact generated by model
- Need people to demo model and events to demo model at:
 - Sky suggested going to retired teachers association to find skilled people to demo the model (maybe pay them)
 - Laura will also send invite and announcement to County Extension Agents letting them know about the availability of the model and script.
 - Ocelot Festival – Feb 9 (Harlingen)
 - Coastal Expo – March 13-14 (Edinburg)
 - Hummingbird Days - April 19 (McAllen Birding Center)
 - Wild Walk - October (McAllen Birding Center)
 - Wildlife expo – Feb 2 (South Padre Island)

Draft O&E Evaluation Form Cecilia Wagner, TWRI

- We have a draft survey. Request group to include/suggest questions:
 - Jason suggested adding questions about attitude about Arroyo/environment
 - Cory suggested keeping questions simple for now and maybe asking more complex questions later on in implementation effort
 - Ouina made suggestions on making questions more specific

- Need comments ASAP to get ready by early spring
- Once all comments are received, we will polish survey to remove any bias

Discuss/Prioritize Future Funding Sources and Needs Amy Rangel, TWRI
..... Laura De La Garza, TWRI

- CARE EPA grant - move partnership into sustainable entity; maybe submit with LRGVDC
- NOAA environmental literacy discussed, but group determined it was not applicable

Other Business Laura De La Garza, TWRI

- Adding Arroyo Colorado to Wikipedia; Amy will work on with Laura and Don
- Outreach in the form of watershed signage is needed. Megan will contact TXDOT about watershed signs as this is a deliverable of the partnership in the TCEQ grant
- Other outreach is storm drain stenciling. Ouina offered to work with us in getting various city contacts for the stenciling effort.

Next Meeting Date/Adjourn..... Laura De La Garza, TWRI

- Next quarterly meeting data is April 15th

Arroyo Colorado Agricultural Issues Workgroup
January 24, 2008
Meeting Summary

Participants

Richard Eyster, TDA	Cory Horan, TCEQ
Aaron Wendt, TSSWCB	Juan Enciso, AgriLife Research
Pamela Casebolt, TSSWCB	Alex Nunez, TPWD
Cecilia Wagner, TWRI	Arturo Ibarra, NRCS
Narayanan Kannan, AgriLife Research	Laura De La Garza, TWRI
Enrique Perez, AgriLife Extension	Ray Prewett, Texas Citrus Mutual
Geraldo Tapia, AgriLife Extension	Sonny Vela, NRCS
Martin Ramirez, TCEQ Border Affairs	Os Longoria, NRCS
Xavier Peries, AgriLife Extension	

Welcome and Introductions..... Andy Garza, TSSWCB

Arroyo Colorado Watershed Protection Plan

Review of Components Addressing Agricultural NPS Pollution Aaron Wendt, TSSWCB

- Currently on track in terms of land (acreage) under WQMPs & cost share implemented

Targeted efforts to address Ag NPS:

- Ray Prewett brought up the discussion of do we have maps generated of where we need to target, do we have a targeted outreach plan for specific producers in the AC? Do boundaries matter?
- Aaron said yes, boundaries matter.
- Most education activities are at county level rather than broad watershed scale. TSSWCB initially targeted producers through letters notifying them of the Arroyo Ag project.
- Is there additional targeting that we can do besides money for cost sharing? (e.g. results of loadings from practices.) Ray stated he does not believe BMPs are in the minds of the producers the way it should be or like it is in other areas where there are impaired waters. Perhaps instead of providing education to all groups – do a targeted effort.
- What can we do to reach growers?
 - Emphasize AC boundaries on web site or in education activities

- Post AC maps with impacted acreage in local offices (FSA office, SWCD office, Cotton Gins, Irrigation districts, etc.)
- Rather than posting a large map – a poster would be better as you are limited in size of what you can post.
- Simple outreach to producers that frequent these offices could be a 11x14 map that can handed out (e.g. brochure with map on one side and info on the other)
- You have to get specific for these growers.
- Do we have the number of growers? Or list of the growers? Do we contact them about the AC? Growers can be identified through USDA records
- Use a newsletter (Maybe yearly or bi-yearly to target growers). Work with Rod Santa Ana to get into local media
- Use the FSA newsletter;
- Commodity Newsletters: Ray Prewett has a newsletter (Texas Citrus & Vegetable E-Weekly). IPM Newsletter for Lower Rio Grande Valley (Manda Cattaneo); citrus newsletter.

Watershed Protection Plan Implementation Status..... Laura De La Garza, TWRI

Physical model of AC watershed Demo locations:

- Mercedes Stock Show in March
- Citrus Meeting for last Thursday in March

The North Main Drainage Ditch “The Big Ditch”

- Was brought up as a possible issue or something the ACWP should address. Specifically, it conveys a high volume of water from McAllen, Edinburg, and drainages from a number of other upper Valley cities north of US 83. Flow volume and quality is unknown. It contributes significant freshwater to the Lower Laguna Madre.
- Cory said he’d bring this up at the CRP meeting.
- Fish & Wildlife also have an interest in the “Big Ditch” and TPWD have fish kill data as this has occurred in the past (often in winter).

4 City Wetland Project

- La Feria (9 AC) & San Benito (20 Ac) are in design phase; San Juan (10 AC) is to begin construction this spring, Mercedes (10 AC) is sitting back and waiting on permit updates for current plant expansion.
- Cory will check with Permit people at TCEQ regarding status of permitting

WWI

- Per WPP, a top priority is to convert all 30/90 plant to 10/15.
- The city of Alamo is the final city to begin taking action. The Military Highway Water Supply Corp is currently working with Alamo on a planning grant with TWDB to handle this

Project Updates/Discussion:

Best Management Practice ImplementationAndy Garza, TSSWCB

- In third year of project; Certified 96 WQMPs covering 4700 acres; \$556,000 obligated and \$445,000 paid out to producers for the following practices: 49 % for land leveling, 24% irrigation pipeline, 17% pasture planning and 10% other (cross fencing, etc.).
- Total funds expended per county is 70% Cameron and 30% Hidalgo
- Current trend is a lot of crop land is being converted to pasture or hayland on multiple small tracts (10 to 20 AC) of land that is being sold to non-farmers. This has potential to reduce erosion, improve infiltration. Trend is happening quickly (NRCS suggested 3,000 to 4,000 ac annually) that is being sold. Yet, production acre-wise has gone up due to the movement of farming operations away from the developing areas; producers now farming less productive land (once abandoned fields) in northern Hidalgo and Cameron Counties

Best Management Practice EducationGeraldo Tapia, TCE

- Introduced Geraldo Tapia (new Extension Education Technician)
- Soil testing campaign was just conducted (NRCS, TSSWCB contributed). It was kicked off Oct 9 at a nutrient management program.
- They publicized the campaign through Irrigation Districts, gins, and media of the benefits of soil testing. The FSA office in Cameron County also publicized it in the FSA newsletter.

- o Total participation was down from last year. Total number of soil testing campaign (not including samples that go to NRCS – these are just the ones that came through the Extension office): Cameron County – 44 participants - 201 samples received through the office ; Hidalgo County – 289 samples received; Willacy County – 18 participants – 172 samples received;

Agricultural Nonpoint Source Assessment.....Juan Enciso, TCE

- Presentation by Xavier Peries
- Currently obtaining irrigation numbers for Valley – what percent is drip; what percent is furrow; Of the surface, what percent is polypipe, gated, etc.?
- Once obtained, these numbers need to be posted to Web site.
- All 6 growers that are going to be monitored have a WQMP.
- Sampling will begin in February.

SWAT Model Simulation of the ArroyoNarayanan Kannan, TAES-Blackland

- Presentation by Kannan
- Needs data on Fertilizer application (Rates and tentative dates for different crops)
- Needs irrigation data (timing, number of irrigations, water applied)

Discuss/Prioritize Future Funding Needs and SourcesCecilia Wagner, TWRI

- Sustainable Ag Society – Laura said they are managing a demonstration site and are seeking funds to support site.
- FQPA Grant – Group decided to at least discuss submitted a proposed work plan to the project. Could continue funding for Geraldo; ACWP to work with Enrique & Brad to develop a work plan

Other BusinessAndy Garza, TSSWCB

- Wes Rosenthal retired and is no longer working on the project
- AgriLife Extension Nutrient Mangement Program won Superior Service Award
- Aaron brought up the bacteria issue of AC:
 - o Do we want to try to address the bacteria issue?
 - o NRCS stated that cattle not an issue on the AC. Rather, colonias or septic systems are probably the primary contributor as there are no large CAFOs or wastewater applied to fields.

Next Meeting DateIn conjunction with next Partnership Meeting

- July 24, 2008
- Pam suggested a field tour in conjunction with next meeting.

Nomination of Pamela Casebolt as Co-Work Group Leader.....Andy Garza, TSSWCB

- Nomination supported by group

Meeting adjourned

Arroyo Colorado Habitat Work Group

January 24, 2008

MEETING SUMMARY

Participants

Heather Harris, CH2M Hill
Brunilda Fuentes-Capozello, USFWS
Cory Horan, TCEQ
Amado Salinas, MHWSC
Alex Nunez, TPWD

Jim Tabak, VLF
Amy Rangel, TWRI
Laura De La Garza, TWRI
Cecilia Wagner, TWRI
Tony Reisinger, Tx Sea Grant

Kim Jones, TAMUK
Ouina Rutledge, City of McAllen

Venki Uddameri, TAMUK

Welcome and Introductions..... Tony Reisinger, Texas Sea Grant

Arroyo Colorado Watershed Protection Plan

Watershed Protection Plan Implementation Status..... Laura De La Garza, TWRI

- Have been discussing long-term sustainability of the Partnership

O&E:

- Demonstrating physical watershed model; finalizing a “script” for demonstration
- Working with TAMU in the development of an O&E evaluation form to gage effectiveness of O&E activities,
- Texas Watch continues to support volunteer monitors. Will have a training next Saturday, February 2nd if anyone interested. Half of monitors are collecting data,
- Will be working with Valley “storm water” cities in a storm drain marking campaign,
- Laura introduced Ouina Rutledge; she talked about her background and some of McAllen’s “green” programs including “Save the Greens”, brush collection and their compost project. The O&E group have been partnering with the city of McAllen on projects, compost on home lawns, curriculum improvement. Also, City of McAllen working to require compost socks or berms (to replace silt fences) for erosion and stormwater control on construction sites.

Ag:

- Begin collecting water quality samples for the Ag NPS assessment program; Ag BMP education continues; begun work on SWAT model; 77 water quality management plans (WQMPs) in place since start of project.

WWI:

- Working with the city of Alamo and MHWSC on a TWDB grant proposal.

Project Updates:

Four Cities Wetland Project Laura De La Garza, TCEQ

- Good turn-out for December 17, 2007 meeting
- Permitting amendments created cost and time issues
- Each city making progress on permits; City of San Juan hopes to begin construction mid-spring; La Feria and San Benito working of preliminary designs; Mercedes waiting on permit amendment for facility expansion.
- Good information provided by Dr. Kim Jones, Dr. John Day, and Chris Hathcock; ecological engineering allows for self-design; importance of plant diversity; important to consider/design in flood pulse; advantages of deep and shallow ponds within one wetland.
- Planning a field this spring to the EnVista facility in Victoria to see wetland designed and installed by CH2M Hill. Working with Heather Harris to arrange trip in Spring.

Regional Wetland Study..... Kim Jones, TAMUK

- Did not get CMP funding for site suitability analysis or Rio Hondo wetland study
- Again, work group is looking at potential locations for regional wetland systems for habitat and water quality improvement
- Site selection process is complex; TAMUK looking at plug channel-flow treatment
- In general, need to look at areas where wetland can be used to clean-water and enhance habitat. Tony suggested looking at smaller drains; move away from channel and handle trouble sites
- Updated land use data will be helpful (Ground-truthing required; hydrologically, how to prioritize sites?) Group suggested study and obtain more data
- Kim said that agricultural non-point source runoff needs to be targeted
- Kim said Martin (TAMUK graduate student) will continue to work on wetland issues
- Potential sites:
 - Oxbow near Rio Hondo is not a bad site
 - Cory asked about the volume of water that could be treated at that site

- Kim said that was a good question and suggested that we include such calculations in a work plan; that maybe we should stop saying feasibility study
 - Llano Grande site not looking promising due to land acquisition issue
 - La Feria Sandpit. Laura needs to contact land owner
 - Shrimp farm/Laguna Atascosa has many issues
 - Elizabeth said, FYI, a pond from one of the shrimp farms was donated to UTB; Its currently in the hands of the lawyers; plans for the site is unknown, but deed restrictions on property say it must be used for farming;
 - Shrimp farms operate as many individually owned inactive ponds
 - Goat Island is not promising as TPWD does not want to mess with something already wet and already has habitat value.
 - Port of Harlingen area. Upstream of the Port is an approximate 50 acre site. Kim said that this is his favorite site.
- The group discussed and narrowed the potential sites to the following:
 - La Feria Sand Pit
 - Port of Harlingen (on N bank Southwest of Port)
 - San Benito (expansion of existing site)

319 Regional Detention Facility Study Proposal..... Dr. Kim Jones, TAMUK

- TCEQ provided positive feedback and likely to fund project; additional information is needed
- Funds will go to enhancement of RDFs with additional wetland plants and study water quality into and out-of facility

Project Discussion:

Drainage Ditch Study/319 Proposal Kay Jenkins, TPWD

- TPWD has withdrawn proposal due to several issues:
 - Drainage district could not guarantee that the study would not be interrupted given a pending flood event; the potential to remove vegetation
 - TPWD could not come up with the matching funds
- Alex Nunez said that TPWD has restitution money and that a plan could be submitted to the spills and kills program; Alex to email grant application

Natural Area Inventory (NAI) Laura De La Garza, TWRI

- First step in achieving preservation is to conduct a natural inventory map.
- By creating a NAI, can then map where green space connections can be made and work with Partners to preserve and connect open space.
- We have a start; map of wildlife refuges and other land in conservation. Not complete, need to include lands in conservation easements.
- Laura has met with HCMPO, and Harlingen/San Benito MPO. Their focus is on transportation planning; required to map sensitive/critical environmental features. MPOs are interested in working with us and USFWS on the wildlife corridor.
- This is the first step in SmartGrowth; next step is to prioritize natural areas in which should be preserved first.
- Finally, there must be a plan for actual acquisition or setting aside of properties.
- Anyone interested in forming a sub-task group to push this forward?

Introduction to Wetland Mitigation Bank Laura De La Garza, TWRI

- See attached slide from EPA webcast powerpoint presentation consolidated by Laura.

Discuss/Prioritize Future Funding Needs and Sources Tony Reisinger, TX Sea Grant

Amy Rangel, TWRI
Cecilia Wager, TWRI

- See attached grants table

- Laura said she met with GLO CIAP representatives and that they are interested in our watershed protection project. She has been invited to Austin to meet with them to discuss what is need in order to submit a strong application
- Will review EPA Region 6 Wetland Program Development Grants and the NFWF Five Star Restoration Grant
- Jim Tabak said that Google Map Pro Plus had available grants; the Valley Land Fund has a Google planning grant for their 8 county areas. They will have the capability to monitor land with conservation easements by satellite.
- Elizabeth said that UTB is cleaning up county LIDAR data.

Next Meeting Date/Adjorn..... Tony Reisinger, TX Sea Grant

- Next meeting on April 24, 2008.
-

Appendix C**Bi-Monthly Updates December 2007 through February 2008**

December 14, January 2, January 22, February 7, February 27

December 14, 2007

Seasons Greetings Arroyo Partners,

First of all, a correction to the previous update must be made. The regional detention facility (RDF) in McAllen located at Daffodil and 29th Street is part of McAuliffe Elementary School, named after Challenger's civilian astronaut Christa McAuliffe. And I failed to mention another impressive RDF in McAllen located at Col. Rowe (2nd St.) and Harvey at Jackson Elementary School. These facilities are multi-functional and beautiful and a model on how storm water runoff can be managed. Larry Pressler, McAllen Parks Director, the McAllen ISD, and others need to be recognized for the innovation and cooperation that went into the development of these facilities. The grant proposal to study these facilities was submitted the end of last month.

The Arroyo grant writing team has been busy developing three additional grant proposals. Two of the proposals are for EPA Educational grants. One proposal is to develop public service announcements (PSAs) in both English and Spanish. This need is based on the social market survey conducted during the development of the Arroyo Colorado WPP that revealed gross lack of awareness and understanding of Arroyo Colorado and its water quality issues. We hope to develop the PSA to raise awareness and bring more individuals to action. The second proposal will revise an existing environmental curriculum on the Arroyo Colorado and train area teachers about our watershed and what we can all do to improve its quality.

Next Monday, December 17, 2007, from 2 pm to 4:30 pm is an Arroyo Wetland Meeting. All Partners are invited and I especially encourage all Habitat and Wastewater Infrastructure Work Group members to attend. The creation of individual and regional wetlands is top priority of the ACWPP and this work crosses over both work groups. Attached is the agenda for this meeting. Note that representatives from the Texas Commission on Environmental Quality will be there to provide a project overview and to answer any questions. Representatives from the cities of San Juan, Mercedes, La Feria and San Benito will also be there to share project experiences and present preliminary designs on their individual wetlands projects. Additionally, wetland experts, Dr. John Day and Dr. Kim Jones, will present their experiences with constructed wetlands. This should prove to be a very informative meeting and an excellent forum for the exchange of experience and information regarding the many aspects of developing a constructed wetland.

Have a great weekend and hope to see you on Monday,

Laura

January 2, 2008

Dear Arroyo Partners,

HAPPY NEW YEAR! May 2008 be a great year for one and all!!

Our Arroyo Colorado Watershed Partnership ended 2007 with the submittal of two EPA Environmental Educational grant proposals. One proposal is for the development of public service announcements (PSAs) to raise awareness of the water quality issues associated with the Arroyo Colorado and inform the general public on how they can help, and the other proposal is for the distribution and revision of the existing Arroyo Watershed curriculum.

On December 17, 2007, we had a very good wetland meeting. Attached are the meeting notes. The meeting included updates from the Valley cities involved in this project and presentations from wetland experts. Thanks and acknowledgement goes out to Dr. John Day, Dr. Kim Jones, and Chris Hathcock for their informative presentations. Again, the cities of San Juan, La Feria, and San Benito must be recognized for their work in taking the first steps of permitting and design in this process to construction wetlands for water quality improvement.

Mark your calendars for the next Partnership and Steering Committee meeting scheduled for January 24, 2008. It will be held at the same time (4:30 – 7:00 pm) and the same place (Rio Red Classroom of the Citrus Center). You will receive the agenda in the next update. Also note that there will be a series of work group meetings this month:

- *January 15, 2008 – Education and Outreach Work Group Meeting, 4-6 pm*
- *January 24, 2008 – Agricultural Issues Work Group Meeting, 10 am to noon*
- *January 24, 2008 – Habitat Work Group Meeting, 2:30 – 4:30 pm*

Another upcoming event is the 7th Anniversary Sustainable Agriculture and Natural Gardening Conference on January 18th and 19th. See the attached flyer for more information.

Looking forward to the New Year,

Laura

January 22, 2008

Hola Arroyo Partners,

First of all, this is a reminder that there will be a series of Arroyo Colorado meetings this upcoming Thursday, January 24, 2008. The Agricultural Issues work group will meet from 10:00 a.m. to noon; the Habitat Restoration work group meets from 2:30 p.m. to 4:30 p.m.; and the Steering Committee/Partnership meeting is from 5:00 p.m. to 7:00 p.m. All meetings are open to the public and will be held in the Rio Red Classroom of the Citrus Center in Weslaco. Attached are the meeting agendas.

Much going on in regards to the implementation of the Arroyo Colorado Watershed Protection Plan. On top of general outreach and education, our agricultural work group continues agricultural best management practice education in the watershed; water quality monitoring is about to begin in the Ag Assessment project; and work has begun on the SWAT (Soil and Water Assessment Tool) model. The four cities wetland project is progressing and we continue to apply for grants and develop partnerships. Detailed updates on these projects and more will be presented at the meetings.

One issue that we have been discussing for the past year is long-term sustainability of the Arroyo Partnership. Do we form our own 501(c)3 or umbrella under an existing local organization? Currently, we are investigating the possibility of working with the Lower Rio Grande Valley Development Council (LRGVDC) to transition into a stand alone organization. Our Steering Committee will be discussing this issue at Thursday's meeting.

Mark you calendars for a couple of upcoming events. Tomorrow the Horticulture Society is sponsoring a free evening program, which includes talks by Barbara Storz on organic vegetable gardening, antique roses by Jennifer Wilson, and a presentation from Dr. Boris Castro on new insect pests. The program will be held at the Texas A&M – Citrus Center starting at 6:00 p.m. And on February 9, 2008, is the 9th Annual Ocelot Festival. See attached flier for more information.

Hope you can make to at least one of our Thursday's meetings.

*Cheers,
Laura*

February 7, 2008

Dear Arroyo Partners,

Since the last update, three Arroyo Colorado Watershed meetings were held. All the meetings were very productive and provided a good exchange of information. Attached are the meeting summary notes, including the notes from the January 15th education and outreach workgroup meeting. These notes will be made available on our website; along with the PowerPoint presentations presented at these meetings.

Meeting highlights include:

- The Steering Committee took action to pursue the option of the Lower Rio Grande Development Council as being the umbrella organization for the Partnership
- The Habitat Work Group narrowed down the potential sites for the development of a regional wetland
- The Ag Work Group meeting identified additional means to better reach growers to inform them about the water quality issues associated with the Arroyo and best management practices for water quality improvement

In regards to recent grant submittals, we did not get funded for any of the projects submitted to the General Land Office (GLO) under the Coastal Management Program (CMP) grant program. As stated before, grant acquisition is somewhat a numbers game; grants are very competitive and we improve with each submittal. Case in point, we did not qualify for a particular grant last year, however we are in a better position this next funding round. What is also driven home is the need for other sources of funding. As the Arroyo Partnership investigates long-term sustainability of this organization we are forced to develop a business plan; in this we are identifying other funding options to support us.

Reminder, the Ocelot Festival is happening this Saturday at the Marine Military Academy, Memorial Center in Harlingen, from 10:00 am to 5:00 pm. If you have not seen the big Arroyo watershed model, this is another opportunity. See the attached flyer for more details. Also, February is Valley Arbor Month. As you may know trees improve quality of life, increase property value, reduce air pollution, save energy, reduce soil and wind erosion, and more! Go to www.valleyproud.org for more information.

Happy tree planting,

Laura

February 27, 2008

Dear Arroyo Partners!

The Texas Department of State Health Services (TDSHS) has issued a new advisory against eating longnose gar caught in the above tidal segment of the Arroyo Colorado due to elevated levels of DDE, PCBs, and mercury. DDE is a chemical that comes from the breakdown of the pesticide DDT and PCBs are industrial chemicals; both chemicals have been banned from use. Mercury is a naturally occurring element that gets into air and water from the weathering of the earth's crust, from the burning of fossil fuels and from some industrial discharges and emissions.

The longnose gar now joins the ranks of the smallmouth buffalo, a fish with an existing consumption warning. See www.arroyocolordo.org for the full report characterizing the potential adverse effects associated with the consumption of these fish caught from the Arroyo Colorado. Attached are pictures of the listed fish. Note that the longnose gar is not the same as an alligator gar – called catan in Spanish. The next Arroyo newsletter will provide more information regarding this fish consumption advisory and warning.

Work continues on grant applications. We are in the process of finalizing a grant proposal for an U.S. EPA Region 6 –Strategic Agricultural Initiative Program grant. Texas AgriLife Extension Service (formally Texas Cooperative Extension) proposes to work with several partners to implement an integrated farm management education program focused on pesticide, water (irrigation), nutrient, and production management practices. Their proposed education program will address how the use of pesticides and fertilizers affect water quality and demonstration activities will present best management practices that producers can adopt to transition away from high risk pesticides to lower risk pesticides and sustainable practices in food production.

TAMU Kingsville is working to finalize a CWA 319 proposal to study the storm water detention facilities in McAllen in order to make recommendations on how these designs can be improved for water quality improvements. And a special task group has started work on a proposal to fund regional wetlands.

I need some assistance. We will be setting up an Arroyo Colorado booth at the Mercedes Live Stock Show March 7th through March 10th and I need some help in manning the booth. Please let me know if you can lend at least four hours of your time. You would be provided with an entrance pass and parking. Contact me at lauradlg@tamu.edu, or (956) 969-5607.

Hope you are enjoying this marvelous weather,

Laura

Appendix D

Status of Funding Opportunities for the Arroyo Colorado

Grant Title	Due Date	Purpose	Funding Agency	Amount	Partnership Status	Grant Status
Coastal Management Program	10/10/07	Habitat restoration, protection, and enhancement; land acquisition; water quality improvement; research; education	Texas GLO	\$200,000 small scale; \$800,000 large scale; \$60,000 average	Submitted: 1) Rio Hondo E&O Center 2) Pesticide Education 3) Regional Wetland feasibility (TAMUK)	53 total proposals 17 funded: 1) #24 - Not funded 2) #20 - Not funded 3) #29 - Not funded
OneStar Foundation-AmeriCorps Grant	10/10/07	Engage citizens/students to serve/volunteer to meet community needs	OneStar Foundation	\$12,600/member service year	Will apply once funds are acquired through grants or collaboration with local entity to fund volunteers	
319(h) funds	10/31/07	Assessment of NPS, education and outreach, developing and implementing WPPs, and implementing the NPS portion of TMDL Implementation plans	TCEQ	Unspecified	Submitted: 1) Regional Detention Facility Study (TAMUK)	
ConocoPhillips SPIRIT of Conservation Migratory Bird Program	11/1/07	Habitat restoration; bird habitat management	NFWF	\$25,000 minimum	Will apply November 2008 after funding received to perform regional wetland site suitability analysis	
More Fish Partnership Fund	11/21/07	Habitat restoration; education and outreach; project design and development; water quality improvement		\$10K-\$30K small; \$100K max for leadership grants	Will apply November 2008 after funding received to perform regional wetland site suitability analysis	
NAWCA Small Grants	11/30/07	Restoring or establishing wetlands, on-the-ground projects, land acquisition, and enhancement projects on private lands	USFWS	Unspecified	Will apply November 2008 after funding received to perform regional wetland site suitability analysis	
Regional Water and Wastewater Facility Planning	12/20/07	Evaluation and determination of feasible alternatives to meet water supply and/or wastewater facility needs; estimate costs; identify institutional arrangements	TWDB	Typically between \$100,000 to \$250,000	Currently developing proposal in collaboration with the Military Highway Water Supply Corporation	
Environmental Education Grant	12/20/07	Education and outreach	EPA	Up to \$50,000; \$15,000 average	Submitted: 1. PSAs 2. AC curriculum revision and delivery	

Great Texas Birding Classic Conservation grants	1/22/08	Coastal habitat conservation, restoration or enhancement project in the area of the Great Texas Coastal Birding Trail	TPWD	\$3000, \$10,000, or \$20,000	Will apply in January 2009 after funding received to perform regional wetland site suitability analysis	
319(h) funds	2/1/08	Agriculture NPS activities such as implementation or development of WPPs, demonstrations, technical assistance, public outreach/education, and monitoring	TSSWCB	\$100,000 to \$400,0000		
Clean Water State Revolving Fund	2/1/08	Wastewater treatment facilities, nonpoint source pollution control, and estuary management projects	TWDB	Low interest loans		
Environmental Literacy Grants for Formal K-12 Education	6/25/08	Development of new programs and materials; revision of existing programs and materials; and/or supporting transformative methods that expand or lead to the expansion of the use of Earth System Science in K-12	NOAA	\$200,000 min \$750,000 max	Not applicable at this time	
Conservation Innovation Grants	2/20/08	Development and adoption of innovative conservation approaches and technologies for environmental enhancement and protection in conjunction with agricultural production	NRCS	\$1,000,000 max		
US EPA Strategic Agricultural Initiative	2/29/08	Supports grants for education, extension and demonstration projects for FQPA transition and reduced risk practices for pest management in agriculture	EPA	max of \$100,000	Submitted: Integrative Farm Management Education Program	
Region 6 Wetland Program Development Grants	3/1/08	Restore, protect and increase wetlands	EPA	\$250,000 max \$25,000 min	Will apply February 2009 after funding received to perform regional wetland site suitability analysis	
State Wildlife Grant Program	3/1/08	Must be tied to Texas Wildlife Action Plan	TPWD	Unspecified	Not applicable	
Five Star Restoration Grant	3/1/08	Habitat restoration	NFWF	\$5,000-20,000; \$13,000 average	Will apply February 2009 after funding received to perform regional wetland site suitability analysis	
Gulf of Mexico Alliance Regional Partnership	3/15/2008	To improve health of Gulf of Mexico by addressing: improved water quality and public health, priority coastal habitat protection/recovery, more effective coastal envt. education, strategic nutrient reductions	EPA	\$13,000-\$330,000		
Pollution Prevention Information Network (PPIN)	3/17/08	1) Make specific technical assistance available to businesses seeking information about source reduction opportunities;(2) Target assistance to businesses for whom lack of information is an impediment to source reduction. (3) Provide training in source reduction techniques.	EPA	up to \$300,000 per year		
Migratory Bird Joint Ventures - Gulf Coast Joint Venture	4/13/08	Conservation of bird habitats through biological planning, implementation of habitat conservation actions, focused monitoring and evaluation of planning/implementation processes , and communication/outreach	USFWS	Unknown		

Integrated Research, Education, and Extension Competitive Grants	4/29/08	Environmental restoration; nutrient and pesticide management; pollution assessment and prevention; watershed management; MUST address water quality issues in agricultural, rural, and urbanizing watersheds	USDA-CSREES	\$60k to \$220k		
Pass Through Grant Program	Spring 2008	Liter and illegal dumping cleanup; technical studies; education and training; solid waste management	TCEQ	Unspecified		
National Coastal Wetlands Conservation Grant Program	6/29/08	Acquire, restore, and enhance wetlands in coastal states	USFWS	\$1,000,000 max		
Coastal Impact Assistance Program	7/1/08	Habitat restoration; planning and administrative costs; conservation management plans		Unspecified	Submitted: (1) Arroyo Colorado Watershed: Wetlands - Education and Outreach Pavilion and Interpretive Center (TWRI) Developing: (2) Lower Rio Grande Valley Regional Treatment Wetland (LRGVDC)	
Town of South Padre Island	Re-curring	Water quality and pollution prevention awareness	Town of South Padre Island	\$20,000 max; \$5,000 min		
Water Environment Research Foundation	7/2008	Advance science and technology addressing water quality issues: wastewater treatment, watershed management, and water quality	WERF	Unknown		
NAWCA US Standard Grants	7/2008	Acquisition, establishment, enhancement and restoration of wetlands and wetland-associated uplands	USFWS	\$1,000,000 max; \$75,000 min		
Gulf of Mexico Community-Based Restoration Partnership	7/2008	Coastal habitat restoration, creation or enhancement with community involvement; public education	GCRP	\$20,000-\$50,000		
Fish America Foundation's Funding Conservation	7/2008	Habitat Improvement; stream atabilization; aeration systems; fishing reeves; silt removal; litter pick-ups; heavy equipment usage; vegetation planting	Fish America	\$7,500 average		
National Wetland Program Development Grants	8/2008	Support and/or build any aspect of a comprehensive wetlands program; Address 1 or more of the 4 National Priority Areas: regulation; monitoring and assessment; restoration; and water quality standards	EPA	\$120,000 max \$25,000 min	Not applicable because required submission by a non-profit organization	
Estuary Habitat Restoration Program	8/2008	Restoration and creation of estuary habitat; includes creation of riparian buffer zone in estuary	USACE	\$1,000,000 max \$100,000 min		

Endangered Species Grant Program	8/2008	Species and habitat conservation on non-federal land; includes habitat restoration, public education and outreach, land acquisition, and research/surveys	USFWS	\$1,000 and \$24,000,000		
Environmental Technology Development and Demonstration	9/2008	Develop and/or demonstrate technology to detect and quantify the impacts of human activity on coastal water quality, species, and habitats; develop and/or demonstrate technology to protect coastal water quality and/or restore coastal habitats.	Coop Inst for Coastal and Estuarine Env. Tech.	\$15,000 and \$220,000		
Community-Based Restoration Project Grants	9/2008	Habitat restoration that benefits marine resources; educational and social benefits to the community	NOAA	\$50,000-\$200,000		
NAWCA Small Grants	11/2008	Restoring or establishing wetlands, on-the-ground projects, land acquisition, and enhancement projects on private lands	USFWS	Unspecified		
Regional Water and Wastewater Facility Planning	12/2008	Evaluation and determination of feasible alternatives to meet water supply and/or wastewater facility needs; estimate costs; identify institutional arrangements	TWDB	\$100,000 to \$250,0000		
Environmental Education Grant	12/2008	Education and outreach	EPA	Up to \$50,000; \$15,000 average		

Appendix E

Project Proposals (scope of work) Submitted

Developing a PSA in the Arroyo Colorado Watershed

A Curriculum for the Arroyo Colorado Watershed

Arroyo Colorado Watershed Wetlands Education and Outreach Pavilion and Interpretive Center

Integrated Farm Management Education Program

Developing a PSA in the Arroyo Colorado Watershed

PROJECT SUMMARY

Organization: The Arroyo Colorado Watershed Partnership (ACW Partnership) is a coalition of organizations and concerned citizens, approximately 400 dedicated individuals, committed to restoring and protecting the aquatic resources of the Arroyo Colorado-Lower Laguna Madre Estuarine System. The ACW Partnership, administered by the Texas Water Resources Institute (TWRI), will work with Texas Cooperative Extension and Texas A&M Agricultural Communications (Ag Communications) to develop and deliver public service announcements (PSAs) regarding the state of the Arroyo Colorado Watershed and more specifically, how citizens can actively participate in improving it.

Summary Statement: The Arroyo Colorado and the Lower Laguna Madre are important environmental and economic resources in the Lower Rio Grande Valley of South Texas. However, both waterbodies are listed as impaired, identified in the 2006 Texas Water Quality Inventory and 303(d) listed for low dissolved oxygen concentrations and elevated bacteria. Increasing public knowledge and encouraging local action through education are key elements to assure progress in achieving an ecologically sound Arroyo Colorado and Lower Laguna Madre. This project will support the development and distribution of PSAs, which will educate watershed residents about local water quality issues, disappearing wetlands, coastal issues, endangered habitat and proper use of natural land and water resources. These educational pieces will be broadcasted via television and radio in both English and Spanish to raise awareness and increase community involvement in the activities of the Arroyo Colorado Watershed Protection Plan (WPP). Based on independent research conducted during the development of the Arroyo Colorado WPP, most individuals indicated a willingness to do their part to clean up the Arroyo Colorado *if they are told ways they can help*. By providing a personal, motivational message with clear actionable suggestions for behavior changes, the residents will work to improve water quality, thereby achieving the goals set by the Arroyo Colorado WPP.

Educational Priority: This project achieves educational priority 3 of this Grant Program - Community Stewardship. This project will design and implement PSAs to educate the public about environmental issues facing the Arroyo Colorado and its communities through audio and video forms of media.

Delivery Method: The PSAs will be aired on local television and radio stations. As costs allow, message will be broadcast on multiple stations to ensure wide distribution to a broad audience.

Audience: The message will be developed to reach the general public within the Arroyo Colorado watershed. According to the Suma/Orchard Social Marketing Report released in 2006, over 60% of residents in the watershed are of Hispanic descent. Therefore, PSAs will be aired in both Spanish and English. Furthermore, the social marketing study discovered that a majority of homes have televisions and individuals prefer messages to come via television or direct mail. Therefore, the emphasis of broadcast will be via television.

EPA Costs: Total EPA funds requested: \$41,870 (\$33,230 direct + \$8,640 indirect). Funds will support project management (\$3,230), production of video (\$12,500), air time (\$16,500) and project evaluation (\$1,000).

PROJECT DESCRIPTION

Why:

Loss of natural habitats, engineered modifications, and pollution from human activities continue to degrade water quality in the Arroyo Colorado. Therefore, it is a main concern and top priority of the Arroyo Colorado WPP to improve water quality. A goal of the ACW Partnership is to reduce the addition of pollutants such as oxygen-demanding substances, nitrogen, phosphorus and sediment to the Arroyo Colorado and to restore natural habitat to the degree necessary to meet the uses designated by the State of Texas. The Arroyo Colorado is the primary source of fresh water for the Lower Laguna Madre, an important nursery for fish, shrimp and crab, and a popular site for recreational fishing and boating. These natural resources are extremely important for the area's economy and ecotourism.

In 2006, the ACW Partnership conducted a telephone market survey to area residents to evaluate the level of awareness, attitudes, and beliefs concerning the Arroyo Colorado. The survey concluded that there is a pervasive lack of awareness and knowledge about the water quality in the Arroyo Colorado. The PSA developed and distributed by this project will increase environmental stewardship by making individuals in the community aware of how their personal actions impact the watershed in which they live and how simple changes in behavior (e.g. not dumping) can make a difference for them and future generations. The PSAs will strive to instill a sense of ownership of the Arroyo Colorado in its residents and increase community stewardship, an educational priority of this program.

Because the Arroyo Colorado WPP is one of the first completed plans in Texas, the implementation of this WPP is a model for other watershed partnerships in the state currently developing their own WPPs. In addition, EPA Region 8 is currently using the Arroyo Colorado WPP as a template for all WPPs being developed in their region and activities such as this that implement the WPP will also be modeled within the region. The ACW Partnership leads their effort with the utmost concern for their environment creating an exemplary program for others to model.

Who:

TWRI will administer the project and ensure project deliverables are met in a timely fashion. In cooperation with Texas Cooperative Extension, Ag Communications will develop draft PSAs and submit them to the ACW Partnership for review. Upon final approval, Ag Communications will produce the final PSAs and work with TWRI to obtain air time for the messages. Both TWRI and Ag Communications are units of Texas A&M Agriculture. Ag Communications has a long history of delivering the information that people need while creating messages that people understand and value. TWRI also has vast experience in project management as the Institute manages about 70 projects in a typical year.

The target audience of the PSAs is general public within the Arroyo Colorado Watershed. It will be a priority to air the messages on the most viewed stations first and the PSAs will be in both English and Spanish to ensure it reaches the majority of the residents. Based on independent research conducted during the development of the Arroyo Colorado WPP, it is understood that there is a gross lack of awareness and understanding within the Arroyo Colorado watershed and the residents are in need of a better grasp of their local environmental issues. The research

found that most residents are unaware of the current state of their water quality and 25 percent did not believe they lived in the watershed.

Television will be the most effective means to reach our target audience. Based on the research conducted in the social marketing survey, a significant number of individuals (over 50%) stated they received their information from the television, with direct mailings falling in second.

The survey also suggested “making message positive, motivating, simple, clear, contain graphics, and should focus on them and their children”

How:

A logic model is included in the Appendices.

TWRI and Ag Communications will develop, produce, and distribute radio and television PSAs in English and Spanish in the Arroyo Colorado watershed. At least 3 different PSAs will be developed for delivery and each will be approximately 30 seconds in length.

This project will achieve strategies 2, 3 and 6 of the education and outreach strategies in the Arroyo Colorado WPP as it will 2) deliver basic facts about the Arroyo Colorado, 2) raise awareness and increase community involvement through stewardship, and 3) evaluate the success of the outreach efforts. Increased knowledge, community awareness and involvement will lead to a greater respect for the Arroyo Colorado, thereby resulting in an improvement in current environmental conditions and prevent future pollution and degradation of the watershed. A post marketing survey will be conducted to gauge overall effectiveness of PSAs and determine if necessary, how a greater impact can be made in the future.

With What:

Based on research conducted, the most effective message has a two-fold approach. It provides the tools needed for the viewers to learn and adopt a specific environmental practice and it speaks to the viewer so that the new behavior is best for ‘their family’. Therefore, the PSAs will be direct and informative containing simple and clear suggestions of behavior modifications to improve water quality. The beauty of the Arroyo Colorado, its recreational uses and the service it provides to the public will be emphasized and positively portrayed, which will motivate the viewers to take responsibility for their local environment and take an active role in cleaning up their watershed.

A Curriculum for the Arroyo Colorado Watershed

PROJECT SUMMARY

Organization: The Arroyo Colorado Watershed Partnership (Partnership) is a coalition of organizations and concerned citizens, approximately 400 dedicated individuals, committed to restoring and protecting the aquatic resources of the Arroyo Colorado-Lower Laguna Madre Estuarine System. The Partnership, administered by Texas Water Resources Institute (TWRI), will work with Texas Cooperative Extension, International Museum of Art and Science (IMAS), Texas Watch and City of McAllen to finalize and enhance the existing “Arroyo Colorado Watershed Curriculum Educator’s Guide” and offer opportunities for local educators to increase awareness and spark interest among students.

Summary Statement: The Arroyo Colorado and Lower Laguna Madre are important economic and environmental resources in the Lower Rio Grande Valley of South Texas. However, both waterbodies are 303(d) listed for low dissolved oxygen concentrations and elevated bacteria. Increasing public knowledge and encouraging local action through education are key elements to assure progress in achieving an ecologically sound environment. All educators, especially of sciences, are key players in providing information and education on local environmental issues to the public through their students. Therefore, an “Arroyo Colorado Watershed Curriculum Educator’s Guide” was developed by IMAS in collaboration with the Partnership, and City of McAllen Recycling Center and Public Utilities. The guide, developed to raise awareness of local watershed issues, will offer educators opportunities for school projects to enhance awareness and interest among students. However, the guide was drafted in a limited time frame and preliminary evaluations provided recommendations for necessary improvements that have yet to be added to the document. Through this project, the Partnership will revise and improve the guide, disseminate it to local educators and provide trainings to further environmental education and stewardship. The guide will be made easily accessible to educators across the Arroyo Colorado watershed with anticipated distribution throughout the Rio Grande Valley and possibly beyond.

Educational Priority: This project achieves priority 5 of this Grant Program – Teaching Skills. It will provide professional development for teachers, faculty, or non-formal educators about environmental issues and content, such as sustainability, by offering an in-depth look at the Arroyo Colorado, its current state, activities that contribute to impairment, and how individuals can improve water quality in the local watershed. The curriculum will give ideas for hands-on education activities that will improve their overall environmental education skills.

Delivery Method: The Partnership will provide workshops and interactive programs to communicate the use of this guide to local educators. Educators will test and select appropriate and interesting activities for use in their classroom. In addition, the Curriculum Educator’s Guide will be made available on the Arroyo Colorado Web site to increase distribution and access.

Audience: Target audience includes after-school program directors, extracurricular program sponsors, and local science teachers, who teach or are involved with students from schools within the Arroyo Colorado Watershed. All grade levels are included in the curriculum.

Costs: Total EPA funds requested: \$26,510 (\$21,040 direct + \$5,470 indirect). Funds will support project management (\$3,230), travel for leading workshops (3 trips @ \$542/trip = \$1,626), water testing kits (6 @ \$500 ea = \$3,000), Publish curriculum guides (60 guides @ \$60 ea = \$3,600), Review & rewrite of curriculum (235 hrs @ \$35/hr = \$8,225), travel for Texas Watch participation in workshop (3 trips @ \$453/trip = \$1,359)

PROJECT DESCRIPTION

Why:

Loss of natural habitats, engineered modifications, and pollution from human activities continue to degrade water quality in the Arroyo Colorado. Therefore, it is a main concern and top priority of the Arroyo Colorado WPP to improve water quality. A goal of the Partnership is to reduce the addition of pollutants such as oxygen-demanding substances, nitrogen, phosphorus and sediment to the Arroyo Colorado and to restore natural habitat to the degree necessary to meet the uses designated by the State of Texas. The Arroyo Colorado is the primary source of fresh water for the Lower Laguna Madre, an important nursery for fish, shrimp and crab, and a popular site for recreational fishing and boating. These natural resources are extremely important for the area's economy and ecotourism.

In 2006, the Partnership conducted a telephone market survey to area residents to evaluate the level of awareness, attitudes, and beliefs concerning the Arroyo Colorado. The survey concluded that there is a pervasive lack of awareness and knowledge about the water quality in the Arroyo Colorado. Increasing public knowledge and encouraging local action through education are key elements to assure progress in achieving an ecologically sound Arroyo Colorado and Lower Laguna Madre. Educators of all levels, especially of the sciences, are key players in providing information and education on local environmental issues to the public through their students. The 2006 survey specifically recommended the following activities related to the state of the Arroyo Colorado: developing training for teachers, using schools as distribution points for basic information, provide ideas for local educators to adopt to raise awareness and interest among students and work with local organizations and groups to develop a watershed specific curriculum.

Because the IMAS in collaboration with the Partnership, City of McAllen Recycling Center, and City of McAllen Public Utilities already developed a curriculum titled "*Restore Our Watershed: Educator's Guide-Arroyo Colorado Watershed Curriculum*," this project has a head start. A preliminary review was conducted upon completion of the initial Guide. However, the suggestions and edits from this first review were never incorporated. This project will use the existing Guide and the preliminary review results to begin improving the curriculum. With this head start and the results from the review process of the experienced educators proposed in this project, the Partnership will be able to update and finalize the Arroyo Colorado Watershed Curriculum and conduct workshops within the one year project period.

Therefore, teachers in the Arroyo Colorado Watershed will have easily accessible information, curriculums, and activities related to the watershed and the issues it faces. Giving these individuals guidance and a starting point enhances their teaching skills and gives them a step up on environmental education. Further, by providing development for education professionals, this project will create a sense of awareness and commitment to protect the local watershed. Workshops will introduce teachers to the Arroyo Colorado with hands-on training in monitoring the water's quality with assistance from the City of McAllen Public Utilities, IMAS, and Texas Watch. These workshops will be an opportunity for teachers and educators to be connected to the network of the Partnership and gain skills in effective teaching methods related to this material.

Environmental stewardship will be promoted through this project by bringing about a sense of knowledge and awareness to teachers that will be shared with their students and families. Teachers, students, and residents will understand how the combined efforts of a family and community can improve water quality where they live.

Because the Arroyo Colorado WPP is one of the first completed plans in Texas, the implementation of this WPP is a model for other watershed partnerships in the state currently developing their own WPPs. In addition, EPA Region 8 is currently using the Arroyo Colorado WPP as a template for all WPPs being developed in their region and activities such as this that implement the WPP will also be modeled within the region. The Partnership leads their effort with the utmost concern for their environment creating an exemplary program for others to model.

Education is the key to success in many watersheds and while excellent environmental education programs already exist, many are general and there is a need to tailor these programs for individual watersheds. The partnership, through this project, will provide an example and model for other watershed groups to follow in refining existing environmental curriculum into watershed-specific curriculum that will effectively communicate and educate the message and goal of the WPP.

Who:

The Partnership and TWRI will manage and conduct improvements and enhancements to the existing guide book by seeking comments and assistance from educators experienced in curriculum development and environmental education. Once the guide is revised, TWRI and the Partnership will host workshops (at least 3), which will include interactive activities for local extra-curriculum sponsors, after-school program directors, and science teachers. In order to recruit these educators, the Partnership will build upon an already developed educator database provided by Texas Watch to send informational emails and flyers to local schools and use the local media to advertise this opportunity and create an interest for this program. Workshops will be held to teach local educators about the new guide and provide ideas for activities and hands-on learning in the classroom.

How:

A logic model is included in the Appendices.

Because the existing “Arroyo Colorado Watershed Curriculum Educator’s Guide” is a thorough collection of water education curriculums and activities specific to the Rio Grande Valley’s local watershed, it is an excellent starting point for this enhancement and education project. TWRI and the Partnership will obtain the already developed curriculum from IMAS and the City of McAllen to assess the current state of the guide and review the preliminary assessment provided by local educators. With input from a select group of local educators, TWRI and Partnership will edit and revise the guide to ensure it addresses the issues facing the Arroyo Colorado and meets the education goals outlined in the Arroyo Colorado WPP. Efforts will also be made to ensure the guide can be readily adopted by local teachers. For example, the current guide has excellent hands-on activities, but some require the use of costly equipment that may prohibit educators from following certain lessons in the classroom. This project will edit the guide to include more applicable activities that use less expensive or readily available items such as water quality field testing kits rather than multi-function probes. Finally, efforts will be made to ensure that the

guide can be integrated into the classroom to cover TEKS objectives and include assessment tools as outlined by TAKS.

Once the curriculum review and revision is completed, training workshops will be held to introduce the guide to local educators. TWRI and the Partnership will identify education professionals to assist in administering and delivering the trainings. Texas Watch volunteers will also be invited to attend and participate or conduct various aspects of the workshops. All efforts will be made to ensure that the workshop material satisfies requirements for participants to earn professional education (CPE) credits to apply towards State Board of Educator Certification and earn Texas Environmental Education Advisory Committee (TEEAC) credits. These workshops will be marketed toward extra-curriculum sponsors, after-school program directors, and science teachers. To encourage participation in the workshops, 2 water testing kits, purchased with these grant funds will be given away at each workshop. These testing kits would allow a school to implement the curriculum in the classroom and take full advantage of the hands-on activities. It is anticipated with success of this program and curriculum, additional funds will be sought to purchase testing kits for any interested school. TWRI and the Partnership will use lists provided by Texas Watch to advertise the events. In addition, press releases to local media will be developed and the project Web site (<http://www.arroyocolorado.org>) will be used to announce each training event to ensure wide participation.

Finally, the curriculum will also be made available on the Web site to increase distribution of the material and make sure it is accessible to educators within and outside the Arroyo Colorado watershed. It is the intention of TWRI and the Partnership to share the information in this guide as well as the experiences gained through this project with other watershed groups and those interested in expanding or enhancing environmental education. The project results could even have International impacts given the location of the Arroyo Colorado watershed. Results and the guide could eventually be distributed throughout the Rio Grande Valley and the neighboring border institutes of learning in Mexico.

As with any program, continued evaluation and improvement are beneficial. Therefore, TWRI and the Partnership will ensure the project is properly assessed per the project evaluation plan outlined in this work plan.

With What:

Documents provided by the Texas Education Agency will assist in creating curriculum that demonstrates TEKS objectives.

Arroyo Colorado Watershed Wetlands Education and Outreach Pavilion and Interpretive Center

Project Summary

Location:	Cameron County
Duration:	24 months
Total Estimated Cost:	\$99,609
Cost per Calendar Year:	\$68,659 (2008); \$30,950 (2009)

The project will construct a pavilion and an interpretive center at Adolph Thomas Park. The interpretive center will focus on the Arroyo Colorado and the importance of wetlands and associated wildlife. This project is a component of the Arroyo Colorado Watershed Protection Plan (ACWPP) to improve the quality of water in the Arroyo Colorado. A significant part of the plan is education, outreach, and the use of wetlands to cleanse water. The activity begun on this project includes the ACWPP itself, a social market survey, and the development of partnerships, including local technical experts.

Public benefits include a gathering place for education field trips and public events, such as fishing tournaments. Eco-tourism brings millions of dollars to the Lower Rio Grande Valley. Increased stewardship of the natural environment and the encouragement of wetland development could increase the extent of wildlife habitat in the Lower Rio Grande Valley and increase the support of conservation efforts.

Authorized Use

#4 Implementation of a federally approved marine, coastal, or comprehensive conservation management plan.

The project implements the following goals of the CMP:

- Goal 1: To protect, preserve, restore and enhanced the diversity, quality, quantity, functions and values of coast natural resource areas (CNRAs)
- Goal 4: To ensure and enhance planned public access to and enjoyment of the coastal zone in a manner that is compatible with private property rights and other uses of the coastal zone; and
- Goal 10: To education the public about the principal coastal problems of state concern and technology available for the protection and improved management of CNRAs.

Intent to Use CIAP Funds for Cost Sharing or Matching Purposes

No CIAP funds relative to this project will be used for federal cost sharing or matching purposes.

Scope of Work

Task 1: Project Management

TWRI will coordinate and monitor all technical and financial activities performed under this contract, prepare progress reports, and maintain project files and data. TWRI will be responsible for hiring and supervision of all project personnel.

Subtask 1.1: Project Oversight – TWRI will provide technical and fiscal oversight to ensure Tasks and Deliverables are acceptable and completed as scheduled and within budget.

Subtask 1.2: Regular Meetings – To facilitate good communication between project participants, meetings or teleconferences will be scheduled and hosted by TWRI as needed (at least quarterly).

Subtask 1.3: TWRI will provide for reporting requirements and documentation of project accomplishments and outcomes.

Deliverables and Timeline

1. Quarterly Reports
2. Agendas and summaries of meetings.
3. Final Report

Task 2: Pavilion

Cameron County Parks Department will oversee the construction of the Pavilion and educational kiosks including acquisition of materials and labor. Cameron County will also assume ownership and maintenance responsibilities of the facility.

Subtask 2.1: Cameron County Parks Department will provide leadership for construction of the 38' X 38' structure to house a waterproof educational gallery.

Subtask 2.2: Cameron County Parks Department will provide leadership for construction of the an interpretive center (educational gallery). Information to be used in the kiosks will be developed per task 3.3.

Subtask 2.3: Cameron County Parks Department will assume responsibilities for upkeep and maintenance for the facility (pavilion and gallery) following construction.

Deliverables and Timeline

1. Finalize design of pavilion and educational gallery
2. Solicit bids
3. Construct 38' x 38' pavilion and weatherproof educational gallery

Task 3: Educational Kiosk Planning

Because the pavilion and interpretive center will be constructed to benefit the public, it is imperative to solicit and utilize the vast resource of experts within the community. Therefore, the Watershed Coordinator will organize meetings where the Partnership, U.S. Fish and Wildlife, Texas Parks and Wildlife, Nature Conservancy, Sea Grant Marine Service, Cameron County Parks, and other partners will obtain guidance to finalize the design for the educational kiosk and incorporate effective education components.

Subtask 3.1: The Watershed Coordinator will coordinate meetings involving all appropriate entities and interested personnel to develop the layout and design of the educational kiosks.

Subtask 3.2: The Partnership will finalize design ideas for the kiosks within the educational gallery and produce educational materials on water quality and ecological issues in the coastal zone of the Arroyo Colorado.

Subtask 3.3: The Watershed Coordinator, in collaboration with Cameron County Parks Department, the Partnership and Texas AgriLife Extension Service, will provide leadership for development of the educational components of the gallery including overall educational focus, graphics, language, procedures for placing and removing educational materials to provide rotation of educational focus and other issues important to the success and relevancy of the kiosk.

Deliverables and Timeline.

1. Host meetings
 2. Finalize design of educational kiosks within the educational gallery
 3. Develop and publish educational materials
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PROJECT TITLE: Integrated Farm Management Education Program**OBJECTIVES:**

- Enhance awareness of pesticide related water quality issues facing the Lower Rio Grande Valley and encourage producers to use lower risk pesticides in production practices.
- Implement an integrated pest management (IPM) education program through education programs, newsletters and fact sheets.
- Encourage producers to adopt an integrated farm management system ('whole system' approach) including pesticide, nutrient, irrigation and production management practices.
- Develop partnerships between Texas AgriLife Extension and local Soil and Water Conservation Districts to encourage growers to implement best management practices and adopt management plans to protect water quality.

PROJECT NARRATIVE/WORKPLAN:

This integrated farm management education program will meet three of the six goals identified by the Strategic Agricultural Initiative Program. First, Extension will utilize demonstration projects, outreach, and education programs to increase the adoption of reduced risk/IPM practices that provide alternatives to the use of highly toxic pesticides. Second, through these education programs, Extension will encourage partnerships between the producers and local and state government agencies (TSSWCB and local Soil and Water Conservation Districts) in the implementation of water quality management plans and best management practices that utilize reduced risk/IPM practices in the field. Finally, whole-farm management systems (nutrients, pesticides, water and production) will be taught and producers will be encouraged to adopt an integrated farm management approach.

To meet these goals and the specific project objectives, Extension and the Texas Water Resources Institute (TWRI) will collaborate on the following tasks (Task 1 and Task 2) over a two year period.

TWRI will administer the project (subtask 1.1), ensure responsible use of fiscal resources (subtask 1.2), facilitate regular communication (subtask 1.3) and maintain an accurate record of project activities and status and communicate this to EPA Region 6 (subtask 1.4).

Extension will utilize its already developed resources and delivery system to enhance their programs to host educational meetings and produce educational materials for producers on the: adoption of proper pesticide application safety practices (subtask 2.1); adoption of an integrated farm management system approach including the proper use and implementation of IPM, nutrient, irrigation and production practices (subtask 2.2); and adoption of water quality management plans and cost-share programs to implement management practices (subtask 2.3). Extension will also produce and distribute an IPM newsletter to encourage the adoption of practices and educate producers about their integrated farm management systems (subtask 2.4). Extension will document project participation at all events and meetings. Selected programs will have pre and post assessment surveys or knowledge assessment surveys that will be used to quantify implementation of BMPs or the intent of the producers to adopt IPM, nutrient, irrigation or production practices.

Task 1. Project Coordination:

TWRI will effectively coordinate and monitor all technical and financial activities performed under this contract, prepare progress reports, and maintain project files and educational

materials. TWRI will be responsible for hiring and supervision of all project personnel. (Months 1-24)

Subtask 1.1: Project Oversight –TWRI will provide technical and fiscal oversight to ensure Tasks and Deliverables are acceptable and completed as scheduled and within budget.

Subtask 1.2: Fiscal/invoicing – The Texas AgriLife Extension Service will submit reimbursement forms per the schedule established/requested.

Subtask 1.3: Regular Meetings - To facilitate good communication between project participants, a quarterly meeting or teleconference will be scheduled and hosted by TWRI.

Subtask 1.4: Quarterly progress reports - TWRI, with the assistance of the project personnel, will submit progress reports to EPA Region 6 quarterly. The Reports will include the status of deliverables for each Objective and Task and a narrative description of activities for each task outlined in this Scope of Work in Progress Report format

Subtask 1.5: Final Report – TWRI, with assistance of project personnel, will provide EPA Region 6 with a comprehensive report on the activities during the course of this project.

Task 1 Deliverables and Timeline.

1. Quarterly Progress Reports (QPRs) - December 15, 2008; March 15, 2009; June 15, 2009; September 15, 2009; December 15, 2009; March 15, 2010; June 15, 2010.
2. Agendas, attendance and summaries from regularly scheduled meetings submitted with QPRs - December 15, 2008; March 15, 2009; June 15, 2009; September 15, 2009; December 15, 2009; March 15, 2010; June 15, 2010.
3. Quarterly Reimbursement Forms - December 31, 2008; March 31, 2009; June 30, 2009; September 30, 2009; December 31, 2009; March 31, 2010; June 30, 2010.
4. Final report — August 31, 2010

Task 2. Conducting Integrated Farm Management System Education Programs:

Extension will host educational programs promoting the adoption of an integrated farm management system. Agricultural producers will learn how to better manage their land and resources through the adoption of IPM, nutrient, irrigation and production practices that reduce the potential for nonpoint source pollution. The programs will typically be held as multi-county events, except where noted. (Months 1-24)

Subtask 2.1: A joint county Pesticide Applicator Safety Training and Continuing Education Program will be held on a quarterly basis for growers in Cameron, Willacy and Hidalgo County to educate individuals on the following topics:

- principles of integrated pest management
- non-chemical alternatives and pest features
- ground and surface water protection
- laws and regulations and record keeping
- cost benefit of IPM
- pesticide labels
- endangered species protection

- Worker Protection Standards and personal protection
- maintenance and calibration of application equipment
- pesticide application safety training

Subtask 2.2: Educational meetings will be held to educate producers on crop production, proper nutrient and irrigation management, soil testing, and integrated pest management practices including the economic benefits of an integrated management approach. Each of the following meetings will be held on an annual basis.

- 1 cotton production meetings
- 1 sorghum production meeting
- 1 sugar cane production meeting
- 1 citrus production meeting
- 1 vegetable production meeting
- A soil testing campaign to promote proper use of fertilizers and nutrient management

Subtask 2.3: Texas AgriLife Extension Service will hold joint county training events (2 per year) to advertise and educate individuals on related programs addressing water quality.

- Promote cost-share programs (319(h), EQIP, etc.)
- Educate producers or assist local Soil and Water Conservation Districts (as possible) in development of water quality management plans
- Educate producers on involvement and implementation of the Arroyo Colorado Watershed Protection Plan and the potential effects

Subtask 2.4: Expand the outreach program to include a fact sheet and IPM newsletter (distributed annually and more frequently if needed) addressing the adoption of an integrated farm management system including implementation of IPM practices, production and best management practices to protect water quality, nutrient and irrigation management practices and participation in cost-share programs.

Task 2 Deliverables and Timeline.

1. Results from pre- and post-evaluation surveys or knowledge assessment surveys conducted at selected trainings (subtask 2.1, 2.2, 2.3)
2. Education materials including fact sheets, website postings, etc. (at least 1 fact sheet will be released annually)
3. IPM Newsletter produced annually