

# Sustainability of the Arroyo Colorado Watershed Partnership and Continued Implementation of the Arroyo Colorado Watershed Protection Plan Final Report

Texas Water Resources Institute TR-467  
August 2014



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Watershed Partnership  
& Continued Implementation of the  
Arroyo Colorado Watershed Protection  
Plan  
Final Report**

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**By**

**Jaime Flores and T. Allen Berthold**

**Texas Water Resources Institute**

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**Final Report**

**TCEQ Agreement No. 582-12-10078**

**Texas Water Resources Institute Technical Report 467**

**College Station, Texas**

**August 2014**

**Funding provided through a Clean Water Act §319(h) Nonpoint Source Grant from the  
Texas Commission on Environmental Quality and the U.S. Environmental Protection  
Agency**

## **List of Acronyms**

AC – Arroyo Colorado  
ACW – Arroyo Colorado Watershed  
ACWPP – Arroyo Colorado Watershed Protection Plan  
ACWPPII – Arroyo Colorado Watershed Protection Plan-Phase II  
ACWP – Arroyo Colorado Watershed Partnership  
ACWC – Arroyo Colorado Watershed Coordinator  
ACSC – Arroyo Colorado Steering Committee  
B-WET-Bay Watershed Education and Training  
BMPs – Best Management Practices  
DO – Dissolved Oxygen  
HESTEC-Hispanic Engineering Science Technology  
TAMUK-Texas A&M University at Kingsville  
TCEQ – Texas Commission on Environmental Quality  
TWRI – Texas Water Resources Institute  
TMDL – Total Maximum Daily Load  
TXDOT – Texas Department of Transportation  
IMAS – International Museum of Arts and Science  
LRGVDC – Lower Rio Grande Valley Development Council  
NRA – Nueces River Authority  
IBWC – International Boundary and Water Commission  
UTB – University of Texas at Brownsville  
UTPA – University of Texas Pan American  
WWI – Waste Water Infrastructure  
WWTP – Waste Water Treatment Plant

## **Acknowledgments**

The Texas Water Resources Institute has prepared the following report. Jaime Flores and Allen Berthold served as the primary authors. Ross Anderson, Texas Water Resources Institute, has maintained and updated a project website that has been used by over 10,000 individuals during the course of the project. Dr. Kevin Wagner, Texas Water Resources Institute, and Dr. Ruben Saldana, Texas AgriLife Extension Service, served as the principal investigators for this project.

We would like to extend a special thanks to Kathy Wythe, Texas Water Resources Institute, who has been instrumental in producing newsletters, press releases and other avenues of communication.

We would also like to thank Arthur Talley and Tim Cawthon from the Texas Commission on Environmental Quality for their help, oversight and management of the project.

We greatly appreciate the involvement of local organizations and individuals who are the primary reason for the successes of such projects. Specifically, those at the University of Texas – Brownsville, Texas A & M University Kingsville, LRGV-TPDES Storm Water Task Force, Local Cities, the Lower Rio Grande Valley Development Council, Texas AgriLife County Extension Agents, and Texas AgriLife Extension provide valuable leadership, time, resources, and input as the Arroyo Colorado Watershed Protection Plan is being implemented.

Funding for this project was provided through a Clean Water Act Section 319(h) Nonpoint Source Grant from the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency.

## **Executive Summary and Background**

The Arroyo Colorado (AC) is an ancient channel of the Rio Grande and is approximately 90 miles long. The headwaters of the AC begins at the Anzalduas Diversion Dam in Mission, TX and flows eastward through southern Hidalgo County, into Cameron County until it makes a North-North Easterly turn through the city of Harlingen and Rio Hondo and eventually discharging into the Laguna Madre near the Cameron-Willacy County line. The AC has been impaired for low dissolved oxygen (DO) levels within the tidal segment since 1996. The AC tidal segment does not meet the aquatic life use designated by the State of Texas and described in the Water Quality Standards. Additionally, bacteria has always been a parameter of concern for the AC and as of 2006, both the tidal and non-tidal segments of the AC were listed on the 303d list of impaired water bodies due to elevated levels of bacteria.

The Arroyo Colorado Watershed Protection Plan: Phase I (ACWPP) is a comprehensive watershed-based strategy developed by the Arroyo Colorado Watershed Partnership (ACWP) to address these impairments over a 10-year implementation period. The ACWPP primarily addresses the low DO levels in the tidal segment of the AC. The goal of the ACWPP is to reduce the addition of pollutants such as oxygen-demanding substances, nitrogen, phosphorus and sediment to the AC and to improve natural habitat to the degree necessary to meet the uses designated by the State of Texas. Although not specifically targeted for reduction, fecal bacteria loading to the AC is also expected to diminish as a result of the ACWPP implementation. The ACWPP takes into consideration the current uses of the water body, including flood control, navigation, conveyance of municipal/industrial wastewater discharges and irrigation return flows, recreation, and environmental uses and presents a detailed strategy to restore and protect these uses. The WPP included five major components: Wastewater Infrastructure; Agricultural Issues; Habitat Restoration; Further Study and Monitoring/ Refinement of TMDL Analysis; and O&E. The five workgroups developed recommendations for each of their components including action items that will improve water quality.

The watershed coordinator (WC) has primarily focused on promoting the adoption of the WPP by local stakeholders, implementing and tracking measures/milestones listed within the plan and establishing partnerships to enhance and increase outreach activities.

As a result of the intense focus on implementing the WPP, less focus has been given to sustainability of the partnership through local support. A sound strategy for sustaining the Partnership beyond federal funding was not clearly outlined in the WPP or in the original implementation workplan, and therefore, efforts to build local funding and sustain the Partnership have been lacking during WPP implementation. The WC will work with the ACWP to develop a plan to begin efforts to sustain the ACWP through local funds outside of the CWA NPS 319 program. The plan will identify local entities that may be willing to help support the ACWP and fundraising events to promote the ACWPP. The ACWP will then host fundraising events to raise funds to help support the organization. The ACWP will also gauge the success of the events to determine which avenue/fundraiser works best to promote the efforts of the ACWP and help support the ACWP so that the community may continue to be served and educated and the watershed may continue to see improvement.

## **Project Description**

The Texas Commission on Environmental Quality (TCEQ) funded this project in an effort to establish a sustainable program, the ACWP, through local financial and technical support and to continue the implementation of the Arroyo Colorado WPP that facilitates the involvement of the Partnership and relies on the guidance of the Arroyo Colorado Watershed Coordinator. The watershed coordinator will provide structure/encouragement for continued stakeholder participation and involvement; arrange and facilitate Arroyo Colorado Watershed Steering Committee meetings; ensure activities of work groups are consistent with goals and objectives of the Arroyo Colorado Steering Committee; and will advance the goals of implementing individual components of the Arroyo Colorado WPP and track all accomplishments and milestones completed.

The watershed coordinator will also facilitate implementation of the WPP through O&E activities in the Arroyo Colorado watershed. The watershed coordinator will identify local, regional and national groups and agencies planning, or engaging in activities with goals similar to those of the ACWP and, to the highest extent practicable, coordinate and integrate the efforts of the ACWP with the activities of the groups identified.

The watershed coordinator will also work with the ACWP Sustainability group and Arroyo Colorado Steering Committee (ACSC) to develop a plan to sustain the ACWP through local funds. The WC will work to establish a 501(c)3 non-profit group the “Arroyo Colorado Conservancy,” will develop levels of support and membership for private and public financial assistance or sponsorship as well as a fundraising plan to outline the most probable way for sustainability.

In this project, Texas A&M Department of Agricultural Leadership, Education, and Communications (ALEC) will also work closely with the local AgriLife County Extension Agents during the duration of the project to conduct surveys, assess producer gain in knowledge of the ACWP efforts and environmental needs, and determine how producer needs can be met that will allow them to further adopt BMPs as well as work with other interest groups in similar efforts. ALEC will also formulate a report that will present the results of the above mentioned and determine the increase in watershed knowledge among stakeholders within the Arroyo Colorado as a result of WPP implementation.

Annual accomplishments are crucial in keeping stakeholders engaged in the implementation process. In this project, an annual Accomplishment Report will be written and the overall milestones table in the Arroyo Colorado WPP will be updated annually.

Through this project, the following specific activities were conducted:

- An Arroyo Colorado Watershed Coordinator was funded.
- Implementation measures as described in the ACWPP were facilitated, coordinated, and tracked.
- Additional feasible measures were identified for reducing pollutant loadings to the AC.
- Additional funding to continue watershed protection efforts were pursued.
- Partners and projects available for funding were linked.

- Local workshops were held with state, local and regional agencies and organizations.
- Awareness was built about watershed improvement efforts and a plan was developed to solicit local support and participation.
- Water quality data and water related links were posted on the Arroyo Colorado website that serves as a clearinghouse for continued outreach and education efforts.

Also, the Texas Water Resources Institute (TWRI) helped to identify and acquire additional resources for use by the Steering Committee, Partnership and individual workgroups to implement the ACWPP.

### **Task 1: Project Administration**

TWRI has effectively coordinated and monitored all technical and financial activities performed under this contract, prepared progress reports, and maintained project files and data. TWRI has also been responsible for hiring and supervision of all project personnel.

#### **Task 1.1: Project Oversight**

TWRI has effectively coordinated and monitored all technical and financial activities performed under the contract, prepared quarterly progress reports (QPRs), and maintained project files and data. TWRI was also responsible for hiring and supervision of all project personnel. A detailed listing of activities related to project administration can be found in the QPRs.

#### **Task 1.2: QPRs**

QPRs containing the status of tasks and goals/milestones were completed during each quarter, an overview of activities to be completed next quarter, and highlights of related issues or problems associated with the project were provided to TCEQ quarterly and can be found on the Arroyo Colorado website (<http://arroyocolorado.org/projects/wppimplementation>). In addition to TWRI efforts, an update of the project was provided to the Arroyo Colorado Watershed Partnership Steering Committee during its quarterly meetings.

#### **Task 1.3: Reimbursement Forms**

TWRI provided fiscal oversight to ensure tasks and deliverables were acceptable and completed within budget. Fiscal oversight consisted of submitting reimbursement forms per the schedule that was established in the request.

#### **Task 1.4: Contract Communication**

TWRI initiated a post-award orientation meeting with TCEQ within 30 days of contract execution. TWRI maintained regular telephone and/or email communication with the TCEQ Project Manager regarding the status and progress of the project in regard to any matters that require attention between QPRs. This included a call or meeting each January, April, July and October. Minutes recording the important items discussed and decisions made during each call will be attached to each QPR. Matters that must be communicated to the TCEQ Project Manager in the interim between QPRs may include:

- Requests for prior approval of activities or expenditures for which the contract requires advance approval or that are not specifically included in the scope of work

- Notification in advance when TWRI has scheduled public meetings or events, initiation of construction, or other major task activities under this contract

Information regarding events or circumstances that may require changes to the budget, scope of work or schedule of deliverables; these events or circumstances must be reported within 48 hours of discovery

### **Task 1.5: Annual Report Article**

TWRI provided an article for the Fiscal Year 2013 Nonpoint Source Annual Report in August 2013.

### **Task 2: WPP Accomplishment Reporting**

Annual accomplishments are crucial in keeping stakeholders engaged in the implementation process of a WPP. Arroyo Colorado accomplishments have been tracked and recorded on an annual basis as well as updating the overall milestones table in the Arroyo Colorado WPP.

#### **Task 2.1: Annual Accomplishments Report**

An annual report was produced stating the accomplishments during the fiscal year. An updated status of achieved milestones and ongoing activities has been included in this report. Three Accomplishments reports, 2012, 2013 and 2014 were produced during the project period. These reports can be found in Appendix A. A Final Accomplishments Report was compiled based on the accomplishments from all three reports submitted throughout the project period. The Final Accomplishments Report is listed below.

**Project 582-12-10078**  
**Arroyo Colorado Watershed Protection Plan**  
**Final Accomplishments Report 9/1/11-8/31/14**

<b>Activity</b>	<b>Accomplishments</b>
O&E Events/Workshops	A total of 18 O&E events/workshops were hosted throughout the watershed during the project period.
Watershed Model Usage	Both watershed models were displayed at 94 different events/educational programs throughout the watershed and viewed by approximately 20,000 watershed residents during the project period.
Public Service Announcements	The Ag PSA was aired in December 2012 through January 2013. The Urban PSA was run throughout the month of August 2013 and again throughout the month of August 2014.
Partnership Meetings	12 Arroyo Colorado Steering Committee meetings, 11 Habitat WG meetings, 6 Outreach & Education meetings, 7 Agricultural issues, 1 WWI WG meeting was held
Wastewater Treatment Plant Upgrades or New Construction	There was 1 new WWTP completed during the project period: HWSC Progresso. The city of Alamo is currently planning/designing to upgrade current WWTP, upgrades to be completed by 2017
Colonia Wastewater Service	The City of Donna decommissioned 440 septic tanks and connected 425 homes to their South WWTP in 2012. The City of Alamo has connected 219 homes to their WWTP in 2013.
Arroyo Colorado Signs	36 signs total, 10 original entering the watershed, 14 crossing the AC and 12 entering the AC watershed installed during the project period.
Wetlands	Cameron County Drainage District #1-Cascade Park-50 acre wetland and park
Acres of Irrigated cropland under a WQMP	<p>Current Project  17 plans certified  845.5 acres for the Arroyo Project, all in Cameron Co.</p> <p>Since 1999 County wide (Hidalgo, Cameron, Willacy)  140,612 acres under some type of conservation plan</p> <p>Currently working to verify “active” practices and break them down by practice within sub basin.</p>
Agriculture O&E Events	There have been 9 Agricultural O&E events during the project period
Low Impact Development and Urban Stormwater BMPs	<p><b>BMPs Under Construction:</b></p> <ul style="list-style-type: none"> <li>- Valley Nature Center LID</li> <li>- Brownsville LID</li> </ul>

	<ul style="list-style-type: none"> <li>- San Juan LID</li> <li>- City of Harlingen LID</li> <li>- Cameron County Drainage District LID</li> <li>- Alton LID- Alamo Sports Complex Demonstration LID Project</li> <li>- La Joya LID Parking Lot</li> </ul> <p><b>BMPs Complete:</b></p> <ul style="list-style-type: none"> <li>- LID Paver Parking Lot and Bioswale (La Feria)</li> <li>- Rainwater Harvesting (Weslaco Library)</li> </ul> <p>3 Enhanced Regional Detention Facilities (McAllen): Construction is complete at the 3 sites and BMP effectiveness monitoring has begun. Evaluation should be complete before Spring 2013.</p>
Stream Team	Only 1 TX Stream Team Workshop was conducted during this project period.
Storm Drains Marked	Approximately 8,000 storm drain markers/stencils have been installed throughout the watershed during the project period.
Trash Removal	Approximately 122,904 tons of sediment were picked up by street sweepers, 195 tons of trash collected in neighborhoods cleanups and 54,000 tires in the Cities of Harlingen and Mission during the project period.
Partnership Sustainability	The ACC has created a list of project partners and sponsors, planned, coordinated and hosted a successful “Save the Arroyo Fiesta” and Boat Raffle in 2013. The ACWP has been planning, coordinating another “Save the Arroyo Fiesta” and Boat Raffle for 2014. The ACWP has already begun selling tickets and planning the event, which is to be held on October 9, 2014.
Water Reuse	A total of 9 WWTPs reported reuse of WWTP effluent totaling 5.49 Billion Gallons during the project period.

**Task 2.2: Annual WPP Milestone Table Revision**

Information regarding the implementation measures specified in the WPP has been tracked through interviews, phone calls, emails and surveys. The WC has made annual revisions/updates to the WPP milestones table on page 157 of the WPP and submitted the revised table to TCEQ annually for review and comments to ensure that adequate progress is being made. The information entered in Milestones Revision was gathered by the WC through meetings with stakeholders representing the various milestones being update; WWTP Upgrades, Colonia Connections, Ag acreage under WQMPs, Wetland Development and Effluent Reuse.

The ACWC has revised the AC milestones table annually throughout the project period. The Updated Milestones table can be found in Appendix B

### **Task 3: Continued WPP Implementation**

The ACWC has facilitated stakeholder and workgroup meetings as well as implementation of the WPP through O&E activities in the Arroyo Colorado Watershed, and other activities designed to promote private and public support for the implementation of the WPP. The ACWC has identified local, regional and national groups and agencies planning, or engaging in activities with goals similar to those of the ACWP and, to the highest extent practicable, coordinate and integrate the efforts of the ACWP with the activities of the groups identified. Additionally, ALEC has worked with the ACWC and local AgriLife Extension Agents to develop surveys to further measure each of the various interest groups as well as help track implementation measures.

#### **Task 3.1: Survey Questions**

The ACWC developed an evaluation instrument that was used during a 6-month Bay-Watershed Education Training (B-WET) AC Teacher workshops. There were a total of eight workshops with 140 science teachers attending the workshops and filled out the survey. Allen Berthold, TWRI Project Manager, further refined the evaluation instrument and posted it on the AC website for 11 months. Allen was able to collect another 167 surveys and evaluated all of the surveys collected during the project period. The Evaluation Report and results are listed in Appendix C.

#### **Task 3.2: Facilitate and Coordinate Meetings**

The ACWC has facilitated the Arroyo Colorado Watershed Steering Committee meetings (quarterly) and the Workgroup meetings (semi-annual) by working with the chairman and workgroup leaders. Specifically, the ACWC was responsible for:

- developing agendas, arranging meeting facilities, sending e-mail notices for all Steering Committee and Workgroup meetings and developing summaries as requested by Workgroup Leaders
- compiling and submitting all individual Workgroup meeting agendas and meeting summaries to the TWRI Project Manager and Website Manager (these will be posted on the website and attached as an appendices to the QPR submitted to the TCEQ Project Manager)
- coordinating efforts of the individual Workgroups and the Steering Committee to facilitate the integration of the different components of the WPP 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 WPP

The WC has successfully continued to facilitate the ACSC meetings and WG meetings by working with the SC Chairman and WG leaders. During the project period a total of 36 meetings were held; 12 Arroyo Colorado Steering Committee meetings, 11 Habitat WG meetings, six Education & Outreach meetings and seven Agricultural issues meetings. Summaries of the WG meetings were prepared by the ACWC and distributed via email to the WG members, TWRI and TCEQ and posted on the website.

#### **Task 3.3: Implementation of Education and Outreach Measures as Outlined in the WPP**

- The ACWC has implemented the Arroyo Colorado Watershed outreach campaign as described in the WPP and this contract.

The ACWC gave 32 presentations throughout the watershed to raise awareness about the issues facing the Arroyo Colorado.

The AC watershed model has been displayed at 94 different events throughout the watershed and viewed by approximately 70,000 watershed residents. These numbers are skewed a bit by two events: HESTEC-Hispanic Engineering Science Technology Week. HESTEC is a weeklong event hosted by UTPA. Approximately 20,000 students and 5,000 teachers attend HESTEC every year and the AC model is on display. We are uncertain of the awareness raised at HESTEC since there are so many students and activities going on but are glad the ACWP is given an opportunity to display the model at such a great event. The ACWC has tracked and recorded all ACWPP O&E activities throughout the watershed. The AC watershed model log can be found in the QPR's for this project and are posted on the AC website.

#### **Task 3.4: Implementation of Agricultural Pollution Control Measures as Outlined in WPP**

The ACWC has implemented the measures as described in the WPP and this contract. The ACWP hosted seven Ag WG meetings and nine AC Cost Share workshops and educational events. The ACWP has also participated in six field days.

#### **Task 3.5: Implementation of Recommended Measures Described in the Habitat Component of the WPP**

The ACWC has implemented the measures as described in the WPP and this contract.

The AC Habitat WG has continued to work to identify potential wetland areas and projects. Currently, the ACWP is working with the City of Harlingen and TAMUK to design and implement expansion of the wetlands at Hugh Ramsey World Birding Center in Harlingen, TX.

Cascade Park is part of a 50-acre wetland project funded by the TCEQ located in Brownsville, TX and is part of the AC Low Impact Development demonstration project.

The ACWC has also been in discussion with the City of San Benito in regards to expanding its existing wetlands. San Benito has agreed to partner with the ACWP to submit a Coastal Management Program to expand its existing wetlands from the four existing wetland cells to include six additional wetlands cells.

The ACWP and ACSC have agreed to continue to investigate what would be required to begin the Llano Grande Lake Restoration Project. This Lake is part of the Arroyo Colorado that has silted in over the years. It used to be a boating, fishing and outdoor recreational area for a number of years between the 1950s-1980s. These projects will also be listed in the ACWPPII.

#### **Task 3.6: Implementation of Wastewater Infrastructure Pollution Control Measures and Stormwater Control Measures as outlined in the WPP**

The ACWC has implemented the measures as described in the WPP and this contract.

There was one WWI Infrastructure WG meeting held during the project period. The WWI WG leader, Dr. Lee Clap, has not been able to continue to coordinate the WG meetings. The WC has met with individual WWTP operators and/or Public Utility directors in order to keep track of WWI milestones such as Construction of new WWTPs, Construction of WWTP upgrades, Effluent Discharge Permits, number Colonia connections and wetland enhancement projects. These accomplishments are listed in the annual Accomplishments report and the updated milestones table.

### **Task 3.7: Monthly Updates**

The ACWC has provided e-mail updates to TWRI, TCEQ and the ACWP on progress made in implementation of the WPP at least once monthly.

A total of 33 Monthly Updates were provided through email updates to TWRI, TCEQ and the ACWP during the project period. The updates can be found in the QPRs for the project and have been posted on the Arroyo Colorado website.

### **Task 3.8: Membership Lists**

The ACWC has provided TWRI with updated lists, as necessary, of the Steering Committee and their contact information. The Updated list can be found in Appendix B. While reviewing and updating the ACSC list, the ACWC reviewed Appendix B of the ACWPP outlining the ACSC ground rules. In Section II, Time Frame on page 163, it reads, “The development of a Watershed Protection Plan for the Arroyo Colorado will require at least an 18-month period from the date this document is approved and signed by the committee members. Development of a TMDL for pollutants causing low dissolved oxygen in the Arroyo Colorado is expected to require at least 4 years from the date this document is approved and signed by the committee members.” Furthermore, in Section IX, Meeting Plans on page 167, it reads, “There will be a minimum of 10 Committee meetings that are expected to occur in the 18-month period beginning with the first meeting July 30, 2003”. The Committee will determine the scheduling of additional meetings. The Committee will also determine the timing and number of work group meetings. Since the ACWP wrote and approved a WPP for the Arroyo Colorado, it appears that the time frame for the original ACSC and its members has expired. The original ACSC consisted of 29 members. The number of ACSC actively participating needs to be reviewed and addressed. A smaller ACSC consisting of 12-15 active ACSC or WG members is currently being discussed by the ACSC. This updated ACSC will be especially important as the ACWP continues to write the ACWPPII. The ACWP will rely on this smaller ACSC to identify information gaps and BMPs to be included in the ACWPPII and edit the document. The ACWP and TWRI have done an excellent job of facilitating, planning and hosting the ACSC and Work Group meetings beyond the time frame listed in the ACWPP and will continue to do so as implementation of the ACWPP continues. The ACSC member list status has been updated and can be found in Appendix D.

### **Task 3.9: Annual Newsletter Publication**

Two newsletters were produced and distributed: one in February 2013 and one in September 2013. The newsletters were posted on the AC website. Another newsletter will be produced and distributed in September 2014.

### **Task 4: Sustain the ACWP**

The ACWC has worked with local private and public entities to develop a sustainable program established through local financial and technical support.

#### **Task 4.1: Identify public and private entities**

The ACWC has identified public and private entities and created a list of potential sponsors. The Entity list can be found in Appendix E.

#### **Task 4.2: Solicit Financial and Technical Support from Local Entities**

Starting in October 2012, the idea of the “Save the Arroyo Fiesta” and Boat Raffle was discussed and approved. In November of that year, the ACWC met with Dargel Boats to discuss the Fiesta and potential partnership. Dargel Boats agreed to partner with the ACC to host the Fiesta. Beginning in January 2013, the ACWC began to plan and organize the Fiesta. The ACWC had the boat raffle tickets printed and created a Fiesta flyer. The entities on the list identified by the ACWC were sent an Arroyo Colorado sponsorship package consisting of; an AC Benefits summary, Save the Arroyo sponsorship letter, sponsorship levels and Save the Arroyo Fiesta Flyer. The Fiesta was considered a success because the ACC was able to pay for the Dargel 190 Skout boat and all expenses associated with hosting the Fiesta and post a \$4,224 profit. The ACWP and the ACC decided to host a second “Save the Arroyo Fiesta” and Boat Raffle. The ACWC created a Fiesta Summary based on the first event. The Fiesta Summary was added to the Arroyo Colorado Sponsorship Package. After the Arroyo Fiesta, the ACWC reviewed the original Entity list and made notes according to the Entities that sponsored/participated in the Fiesta and added additional entities to contact for the Second “Save the Arroyo” Fiesta. The ACWC observed that the entities contacted for sponsorship were more receptive to entertaining the idea of becoming a sponsor based on the Fiesta Summary. The entities contacted liked the fact that there had already been one successful Fiesta and they could read the summary and review the pictures of the event. This observation was confirmed when five of the first ten sponsors contacted agreed to become a sponsor. The AC Benefits Summary, Sponsorship package consisting of a sponsor letter, levels of support, AC Benefits Summary and Fiesta Flyer, Fundraising plan and Fiesta Summary can be found in Appendix F.

#### **Task 4.3: Continued Financial Support**

The ACWC provided a summary of the “Save the Arroyo Fiesta” to the ACWP, TCEQ and sponsors of the event. The ACWC has provided recognition to sponsors on the AC website, monthly updates and in the Fiesta Summary. The ACWC also developed an annual budget for the first and second “Save the Arroyo Fiesta.” The budget is only for the hosting of the Fiesta fundraiser. This budget is listed in Appendix G. Hosting an event as the Fiesta does require intense planning and organization, lots of time and effort, partners, sponsors and you have to raise a lot of money through tickets sales and auction items the night of the event to make it a success. Much like WPP implementation efforts, sustaining the ACWP through local funding requires a lot of time and effort. It would take 5-6 years of fundraisers and O&E events to get a reasonable network of partners and volunteers to make the sustainability efforts a success.

Based on the success of the second “Save the Arroyo Fiesta”, the ACWP and the ACC will have to decide if they want to continue to host the Fiesta as the main fundraising event or expand to include additional fundraising events including but not limited to; a Arroyo Colorado Fishing tournament, photo contest, shrimp cook-off and BB-Qs.

The ACWC believes that the “Save the Arroyo” Fiesta is a good way to raise awareness about the challenges facing the Arroyo Colorado among some of the most important target groups identified in the ACWPP O&E component: the boaters, anglers, professional hunting and fishing guides, hunters, sportsmen and outdoor enthusiasts. These target groups are directly affected by water quality issues and historically have proven to be willing to organize and volunteer in grassroots efforts, such as implementing a WPP. Approximately 90% of the people that attended the Fiesta were boaters/anglers, professional fishing guides and duck hunters.

The ACWC and ACWP received a lot of positive feedback from the people that attended the Fiesta and from the Dargel Boat owners and staff. The owners of Dargel Boats encouraged us to host the second Fiesta. They felt that Dargel and the ACWP/ACC could work together to assess last year’s Fiesta and identify ways to make the second Fiesta more efficient, informative and successful. The ACWC met with the Dargel ownership in February to begin planning and organizing the second Fiesta. Since the first meeting, the ACWC has met with Dargel ownership in April, June and July with another meeting scheduled for August 12, 2014. The ACWP/ACC will continue to partner with Dargel to make the second “Save the Arroyo” Fiesta a bigger success than the first one. This will enable the ACWP/ACC to refine the Entity List again, identify which entities that have been most willing to participate or sponsor our fundraising events and establish new partnerships with target groups identified in the ACWPP. The ACWP and ACC will be able to utilize the fundraising plan, the entities list and all of the promotional items developed during this project to continue implementing ACWP Sustainability efforts.

#### **Task 5: Final Project Report**

The ACWC has produced a Final Report that summarizes all project activities completed and conclusions reached, and that contains all the reports completed under previous tasks either in the text or as appendices.

## **Appendix A**

**Fiscal Year 2012**  
**Arroyo Colorado Watershed Protection Plan**  
**Annual Accomplishments**

<b>Activity</b>	<b>FY12 Accomplishments</b>
Watershed Coordinator Presentations	10 presentations were given by the watershed coordinator. These presentations were given at the following events: Earth Kind Gardening Seminar-Master Naturalist TX AgriLife Dist. 12 Extension Training Spooky Science Fest Valley Environmental Summit Bass Pro Shop Grand Opening Texas Irrigation Expo Cotton/Grain Growers Pre Plant meeting LRGV-TPDES Storm Water Task Force Conference Classroom Presentation-Weslaco East Classroom Presentation-Noemi Dominguez Elementary
Public Service Announcements	No public service announcements were aired in this fiscal year. The AG PSA will run in the next fiscal year to coincide with the kickoff of the soil testing campaign. The Urban PSA will air after the AG PSA is complete.
Partnership Meetings	4 Arroyo Colorado Steering Committee meetings, 4 Habitat WG meetings, 2 Outreach & Education meetings, 2 Agricultural issues meetings
Wastewater Treatment Plant Upgrades or New Construction	1 New WWTP- Military Highway Water Supply Corporation-Progreso WWTP, Weslaco, A new extended aeration mechanical wastewater treatment plant was constructed in 2011 to replace the existing biological pond treatment system, to increase the treatment capacity from 400,000 GPD to 750,000 GPD. Completed March 2012.
Colonia Wastewater Service	City of Donna-Western Colonia Wastewater Improvement Project- Decommissioned over 440 septic tanks and connected/hooked up 425 households.
Arroyo Colorado Signs	26 signs total, 14 crossing the AC and 12 entering the AC watershed. GPS data and pictures of the signs will be included in the next QPR.
Wetlands	The Valley Nature Center in Weslaco, TX. Completed construction of a small 8,383ft <sup>2</sup> wetland. During the next 2 fiscal years, the effectiveness will be monitored.
Acres of Irrigated cropland under a WQMP.	No acres were added under WQMP's during the reporting period. All acres that were added under WQMP's were added early in 2011.
Agriculture	Booth at Texas Irrigation Expo-December 2011 Booth at Rio Grande Valley Cotton/Grain Growers Pre Plant meeting-January 2012
Low Impact Development and Urban Stormwater BMPs	<b>BMPs Under Construction or Pre-Construction:</b> - Valley Nature Center LID

	<ul style="list-style-type: none"> <li>- Brownsville LID</li> <li>- San Juan LID</li> <li>- La Feria LID</li> <li>- Harlingen Water Works LID</li> <li>- Cameron County Drainage District LID</li> <li>- Alton LID</li> <li>- Weslaco Library LID</li> </ul> <p><b>BMPs Complete:</b>  3 Enhanced Regional Detention Facilities (McAllen):  Construction is complete at the 3 sites and BMP effectiveness monitoring has begun. Evaluation should be complete before Spring 2013.</p>
Stream Team	1 TX Stream Team Workshop-May 12, 2012, 22 people attended and completed the training and received Stream Team Certification
Storm Drains Marked	Harlingen-2,800 San Benito-1,710 La Feria-100 Mission-500 San Juan-1000 Alamo-50 Donna-100 Weslaco-1000 More storm drains were marked than what is listed but not all of the cities had submitted their information at the time of this report
Trash Removal	Harlingen-1,788.97 Tons picked up by street sweepers 29.36 Tons trash / 436 tires picked up, monthly neighborhood cleanup
Partnership Sustainability	The Arroyo Colorado Conservancy BOD met February 8, 2012. Fundraising activities were discussed and introduced to the ACSC. It was decided that we would host a raffle as a fundraising event. It was also decided to form a PayPal account in order to accept donations and to enable members to join/renew their membership through the AC website. The account was set up and operational by July 2012. The website and pay pal account will be merged in the next fiscal year. A \$3,000 donation was given to the ACC by the LRGV Stormwater Task Force. No other donations were collected in FY12.
Water Reuse	<u>San Benito</u> - 4.1 million gallons monthly reuse for wetland system, 49.2 million gallons per year <u>Harlingen</u> – 46 million gallons monthly reuse for golf course, soccer complex and Ramsey Park, 552 million gallons per year <u>La Feria</u> – 2 million gallons monthly reuse for wetland system and irrigation at WWTP, 24 million gallons per year <u>Pharr</u> – reuse of 18 million gallons per month for golf course and 5 million gallons per month for irrigation at WWTP, 276 million gallons per year <u>San Juan</u> – Reuse of 6.2 million gallons per month for wetland

	<p>and 74 million gallons per year for irrigation at WWTP</p> <p><u>Weslaco South</u> – Reuse of 400 million gallons per year to irrigate Tierra Santa Golf Course</p> <p><u>McAllen South</u> – Reuse of 36 million gallons per month to irrigate Cimarron Golf Course, 432 Million gallons per year</p> <p><u>Mercedes</u> – Reuse water used in entire WWTP. Has enabled the plant to reduce water usage by 96%.</p> <p><u>Total reuse</u>-1,810,000,000 gallons per year</p>
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**Fiscal Year 2013**  
**Arroyo Colorado Watershed Protection Plan**  
**Annual Accomplishments**

<b>Activity</b>	<b>FY13 Accomplishments</b>
Watershed Coordinator Presentations	<p>15 presentations were given by the watershed coordinator. These presentations were given at the following events:</p> <ul style="list-style-type: none"> <li>• 4 AC presentations as part of the BWET Teachers Workshop hosted by UTPA Coastal Studies Lab</li> <li>• Keynote speaker for Society of Ecological Restoration Conference</li> <li>• Dr. Rodriguez Elementary</li> <li>• Save the Arroyo Meeting in Rio Hondo</li> <li>• World Water Day-IMAS</li> <li>• Harlingen Early College Ecology Club</li> <li>• Mercedes Earth Day</li> <li>• LRGV-TPDES Storm Water Task Force Conference</li> <li>• Hidalgo Master Naturalists</li> <li>• 2 RGBI “Beat the Heat” Workshops</li> <li>• Quinta Mazatlan Ecology Summer Camp</li> </ul>
O&E Events/Workshops	<p>Rio Grande Basin Initiative Funded Programs:</p> <ul style="list-style-type: none"> <li>• 9 Educational Events were held in Starr County <ul style="list-style-type: none"> <li>○ Reached over 100 residents</li> <li>○ Trained on how to conserve water in the home and landscape</li> <li>○ 35 homeowners reported that they purchased and installed water saving fixtures</li> <li>○ Trained on how to install rainwater collection systems and drip irrigation</li> <li>○ 220 Fix a Leak pledges were collected</li> </ul> </li> <li>• 2 Educational Events were held at elementary schools in Starr Co. <ul style="list-style-type: none"> <li>○ Students learned about water conservation</li> <li>○ 1,098 students returned signed pledges to conserve water</li> </ul> </li> <li>• 4 large native gardens were installed at 2 elementary schools and at 2 community centers in Starr Co. with drip irrigation and rainwater collection systems.</li> <li>• An educational program about water conservation and rainwater collection was held in Cameron County <ul style="list-style-type: none"> <li>○ 27 people attended and all signed up for the 40 Gallon Challenge. Each person is challenged to save at least 40 gallons of water/day/person</li> <li>○ 13 participants received rain barrels and signed commitments to have them installed within 1 month</li> </ul> </li> <li>• In Hidalgo County volunteer work day was held where Master Gardeners worked with 4H volunteers to install gardens and trails for a native tree trail occurred in San</li> </ul>

	<p>Juan. The whole trail and all gardens showcase native plants. Everything was set up on a drip irrigation system and used rainwater as supplemental water sources</p> <ul style="list-style-type: none"> <li>• Hidalgo Co. also held an educational program for children teaching them how to conserve water. <ul style="list-style-type: none"> <li>○ Participants learned to brush their teeth with a cup of water instead of leaving the faucet running.</li> </ul> </li> <li>• At the District 12 Office in Weslaco, 2 “Beat the Heat” educational programs were held. <ul style="list-style-type: none"> <li>○ Over 50 people participated and learned about our current drought situation, water conservation in the home and landscape, rainwater collection and landscaping with native plants</li> <li>○ All participants signed the 40 Gallon Challenge Pledge</li> <li>○ 24 people received rain barrel kits (included barrel and 50 feet of gutters) and committed to installing them within 1 month</li> </ul> </li> </ul>
Watershed Model Usage	Both Watershed models were displayed at 50 different events/educational programs throughout the watershed and viewed by approximately 6,800 watershed residents
Public Service Announcements	The Ag PSA was run in December 2012 through January 2013. The Urban PSA was run throughout the month of August 2013.
Partnership Meetings	4 Arroyo Colorado Steering Committee meetings, 4 Habitat WG meetings, 2 Outreach & Education meetings, 2 Agricultural issues meetings were held
Wastewater Treatment Plant Upgrades or New Construction	There were no new WWTPs completed this year. The city of Alamo is currently planning/designing to upgrade current WWTP, upgrades to be completed by 2017
Colonia Wastewater Service	City of Alamo-Texas Water Development Board Colonia’s project: Campo Alto, Rancho Escondido, Colonia Salazar, Guadalupe 1, 2 & 3 and Val-Bar subdivision. 219 homes will be hooked up and will have their septic system decommissioned. Project is currently occurring with termination date of October 2013
Arroyo Colorado Signs	26 signs total, 14 crossing the AC and 12 entering the AC watershed. Alamo installed 2 more signs within city limits.  La Feria installed 4 signs
Wetlands	The Valley Nature Center in Weslaco, TX. Completed construction of a small 8,383ft <sup>2</sup> wetland. Adding plants throughout the year to complete wetland design. During the next 2 fiscal years, the effectiveness will be monitored.
Acres of Irrigated cropland under a WQMP.	Hidalgo County-92 acres cropland Cameron County-116.2 acres cropland, 76 acres hayland Total added-284.2 acres
Agriculture O&E Events	<ul style="list-style-type: none"> <li>• Booth at Rio Grande Valley Cotton/Grain Growers Pre</li> </ul>

	<p>Plant meeting-January 2013</p> <ul style="list-style-type: none"> <li>• Fike Farms/Rio Farms Field Day-Grain Sorghum and Corn-May 2013</li> <li>• Rio Farms Field Day-Southern Pea, Sunflower, Grain Sorghum, Guar, Corn-June 2013</li> </ul>
Low Impact Development and Urban Stormwater BMPs	<p><b>BMPs Under Construction:</b></p> <ul style="list-style-type: none"> <li>- Valley Nature Center LID</li> <li>- Brownsville LID</li> <li>- San Juan LID</li> <li>- La Feria LID</li> <li>- Harlingen Water Works LID</li> <li>- Cameron County Drainage District LID</li> <li>- Alton LID</li> <li>- Weslaco Library LID</li> <li>- Alamo Sports Complex Demonstration LID Project.</li> </ul> <p><b>BMPs Complete:</b> Three Enhanced Regional Detention Facilities (McAllen): Construction is complete at the 3 sites and BMP effectiveness monitoring has begun. Evaluation should be complete before Spring 2013.</p>
Stream Team	No TX Stream Team Workshops were conducted this year due to turnover of staff at TX Stream Team. Planning to schedule a workshop for spring of 2014
Storm Drains Marked	<p>Harlingen-2,800 San Benito-1,710 La Feria-100 Mission-700- San Juan-1000 Alamo-300 Storm drains stenciled- Donna-100 Weslaco-1000</p> <p>More storm drains were marked than what is listed but not all of the cities had submitted their information at the time of this report</p>
Trash Removal	<p>Harlingen-1,788.97 Tons/month sediment picked up by street sweepers 29.36 Tons trash / 436 tires picked up, monthly neighborhood cleanup</p> <p>Mission- 1,625 Tons/month sediment picked up by Street Sweepers, Trash /Debris, Tires picked by City Crews Neighborhood clean-up Trash/Debris 75 Cubic yards/month Tires 700/month</p>
Partnership Sustainability	We have been planning “The Save the Arroyo Fiesta” and Boat Raffle since last year. The Partnership has been selling tickets and planning the event, which is to be held on October 10, 2013.
Water Reuse	<p><u>San Benito</u> - 4.1 million gallons monthly reuse for wetland system, 49.2 million gallons per year</p> <p><u>Harlingen</u>– 46 million gallons monthly reuse for golf course,</p>

	<p>soccer complex and Ramsey Park, 552 million gallons per year</p> <p><u>La Feria</u> – 2 million gallons monthly reuse for wetland system and irrigation at WWTP, 24 million gallons per year</p> <p><u>Pharr</u> – Reuse of 18 million gallons per month for golf course and 5 million gallons per month for irrigation at WWTP, 276 million gallons per year</p> <p><u>San Juan</u> – Reuse of 6.2 million gallons per month for wetland and 74 million gallons per year for irrigation at WWTP</p> <p><u>Weslaco South</u> – Reuse of 400 million gallons per year to irrigate Tierra Santa Golf Course</p> <p><u>McAllen South</u> – Reuse of 36 million gallons per month to irrigate Cimarron Golf Course, 432 Million gallons per year</p> <p><u>City Of Mission</u> – Reuse of 2 million gallons per month used for irrigation of WWTP grass/landscaping, Bioways odor control, belt press &amp; clarifiers, 24 million gallons per year. <u>Mercedes</u> – Reuse water used in entire WWTP. Has enabled the plant to reduce water usage by 96%.</p> <p><u>Total reuse</u>-1.83 Billion gallons per year</p>
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**Fiscal Year 2014**  
**Arroyo Colorado Watershed Protection Plan**  
**Annual Accomplishments**

<b>Activity</b>	<b>FY14 Accomplishments</b>
Watershed Coordinator Presentations	<p>7 presentations were given by the watershed coordinator. These presentations were given at the following events:</p> <ul style="list-style-type: none"> <li>• Willacy County Field Day</li> <li>• Cotton/Grain Growers Pre-Plant meeting</li> <li>• All Valley Boat Show</li> <li>• LRGV-TPDES Storm Water Task Force Conference</li> <li>• Riparian Workshop</li> <li>• Arroyo Cost Share Conference</li> <li>• Cameron Co. South Texas Master Naturalist</li> </ul>
O&E Events/Workshops	<ul style="list-style-type: none"> <li>• Texas A&amp;M AgriLife District 12 Office in Weslaco Arroyo Colorado Riparian Workshop <ul style="list-style-type: none"> <li>○ Over 30 people participated and learned about Riparian Corridors, plants, ecology and purpose</li> </ul> </li> <li>• Arroyo Colorado Financial and Technical Assistance Program <ul style="list-style-type: none"> <li>○ Over 40 participants attended the conference</li> </ul> </li> </ul>
Watershed Model Usage	Both Watershed models were displayed at 41 different events/educational programs throughout the watershed and viewed by approximately 12,500 watershed residents
Public Service Announcements	The Urban PSA was run throughout the month of August 2014.
Partnership Meetings	4 Arroyo Colorado Steering Committee meetings, 3 Habitat WG meetings, 2 Outreach & Education meetings, 3 Agricultural issues meetings were held
Wastewater Treatment Plant Upgrades or New Construction	There were no new WWTPs completed this year. The city of Alamo is currently planning/designing to upgrade current WWTP, upgrades to be completed by 2017
Colonia Wastewater Service	No projects to hook up colonias the WWTPs have been reported this year
Arroyo Colorado Signs	26 signs total, 14 crossing the AC and 12 entering the AC watershed.
Wetlands	<p>The Valley Nature Center in Weslaco, TX. Completed construction of a small 8,383ft<sup>2</sup> wetland-2012</p> <p>Cameron County Drainage District #1-Cascade Park-50 acre wetland and park-2013</p>
Acres of Irrigated cropland under a WQMP.	<p>Current Project  17 plans certified  845.5 acres for the Arroyo Project, all in Cameron Co.</p> <p>Since 1999 County wide (Hidalgo, Cameron, Willacy)  140,612 acres under some type of conservation plan</p> <p>Currently working to verify “active” practices and break them</p>

	down by practice within sub basin.
Agriculture O&E Events	<ul style="list-style-type: none"> <li>• Willacy County Field Day</li> <li>• Booth at Rio Grande Valley Cotton/Grain Growers Pre Plant meeting-January 2014</li> <li>• Arroyo Cost Share Conference</li> <li>• NRCS Soil Health Workshop-Hilltop Gardens</li> </ul>
Low Impact Development and Urban Stormwater BMPs	<p><b>BMPs Under Construction:</b></p> <ul style="list-style-type: none"> <li>- Valley Nature Center LID</li> <li>- Brownsville LID</li> <li>- San Juan LID</li> <li>- La Feria LID</li> <li>- Harlingen Water Works LID</li> <li>- Cameron County Drainage District LID</li> <li>- Alton LID</li> <li>- Weslaco Library LID</li> <li>- Alamo Sports Complex Demonstration LID Project.</li> </ul> <p><b>BMPs Complete:</b></p> <p>3 Enhanced Regional Detention Facilities (McAllen): Construction is complete at the 3 sites and BMP effectiveness monitoring has begun. Evaluation should be complete before Spring 2013.</p>
Stream Team	No TX Stream Team Workshops were conducted this year due to turnover of staff at TX Stream Team. Planning to schedule a workshop for spring of 2014
Storm Drains Marked	<p>Harlingen-2,800 San Benito-1,710 La Feria-100 Mission-700- San Juan-1000 Alamo-300 Storm drains stenciled- Donna-100 Weslaco-1000</p> <p>More storm drains were marked than what is listed but not all of the cities had submitted their information at the time of this report</p>
Trash Removal	<p>Harlingen-1,788.97 Tons/month sediment picked up by street sweepers 29.36 Tons trash / 436 tires picked up, monthly neighborhood cleanup</p> <p>Mission- 1,625 Tons/month sediment picked up by Street Sweepers, Trash /Debris, Tires picked by City Crews Neighborhood clean-up Trash/Debris 75 Cubic yards/month Tires 700/month</p>
Partnership Sustainability	We have been planning “The Save the Arroyo Fiesta” and Boat Raffle since last year. The Partnership has been selling tickets and planning the event, which is to be held on October 9, 2014.
Water Reuse	<u>San Benito</u> - 4.1 million gallons monthly reuse for wetland

system, 49.2 million gallons per year  
Harlingen– 46 million gallons monthly reuse for golf course, soccer complex and Ramsey Park, 552 million gallons per year  
La Feria – 2 million gallons monthly reuse for wetland system and irrigation at WWTP, 24 million gallons per year  
Pharr – Reuse of 18 million gallons per month for golf course and 5 million gallons per month for irrigation at WWTP, 276 million gallons per year  
San Juan – Reuse of 6.2 million gallons per month for wetland and 74 million gallons per year for irrigation at WWTP  
Weslaco South – Reuse of 400 million gallons per year to irrigate Tierra Santa Golf Course  
McAllen South – Reuse of 36 million gallons per month to irrigate Cimarron Golf Course, 432 Million gallons per year  
City Of Mission – Reuse of 2 million gallons per month used for irrigation of WWTP grass/landscaping, Bioways odor control, belt press & clarifiers, 24 million gallons per year. Mercedes – Reuse water used in entire WWTP. Has enabled the plant to reduce water usage by 96%.

Total reuse-1.83 Billion gallons per year

## **Appendix B**

**WWTP  
Construction/Upgrades**

<b>Anticipated Completion Date</b>	<b>Milestone</b>	<b>Status</b>	<b>Actual/Anticipated Completion Date</b>
<b>January 1, 2007: Construction completed for 3 new wastewater treatment facilities</b>			
1-Jan-07	South Rio Hondo	NA	NA
1-Jan-07	ERHWSC	Complete	New Plant in 2006
1-Jan-07	San Benito	NA	Upgrade complete 2009
1-Jan-07	La Feria	Complete	New Plant in 2009
<b>January 1, 2009: Upgrades/expansions completed for 5 municipal wastewater treatment facilities</b>			
1-Jan-09	Pharr	Complete	Upgrade complete 2011
1-Jan-09	Donna	Complete	Upgrade complete 2011
1-Jan-09	Hidalgo	Currently no update planned	Last Upgraded in 2003
1-Jan-09	San Benito	Complete	Upgraded in 2006 and Capacity Expanded in 2009
1-Jan-09	Rio Hondo	Currently no update planned	
<b>January 1, 2010: Construction completed for 2 new wastewater treatment facilities</b>			
1-Jan-10	Alamo	Planned	Anticipated completion date: End of calendar year of 2017
1-Jan-10	MHWSC-Progreso	New Facility: Currently Under Construction	Anticipated completion date: End of calendar year 2012
1-Jan-10	Harlingen	NA	Upgrade completed for HWWS Plant #1 wastewater treatment facility
<b>January 1, 2011: Upgrades/expansions completed for 2 municipal wastewater treatment facilities</b>			
1-Jan-11	Rio Hondo	NA	NA
1-Jan-11	Mercedes	Complete	Completed construction in 2011
<b>1-Jan-12</b>	NA	Complete	Completed construction of a new wastewater treatment facility in Arroyo City (e.g., ERHWSC) in 2006
<b>31-Dec-15</b>	Construction Complete	Completed in 2005 but does not	Upgrade/expansion completed for Mission wastewater treatment facility to include denitrification

		include de-nitroficiation	
<b>Not on Milestones List</b>	New Facility: Complete	Complete in 2000, plan to upgrade existing facility in 2013 for WW Reuse	Weslaco WWTP

Colonia Connections

Anticipated Completion Date	Milestone	Status	Actual/Anticipated Completion Date
<b>January 1, 2007: Connection of 13,547 <i>colonia</i> residents to existing wastewater municipal collection systems completed (e.g., Mercedes, Donna, Hidalgo, MHWSC and ERHWSC)</b>			
1-Jan-07	Mercedes	Complete: Hook up 7 <i>colonias</i> , 744 residents	By end of 2011
1-Jan-07	Donna	Complete: Hook up 5 <i>colonias</i>	Fall 2012
1-Jan-07	Hidalgo	NA	NA
1-Jan-07	MHWSC	All <i>colonias</i> within service area have been hooked up	prior to 2007
1-Jan-07	ERHWSC	129 current connections; ready to hook up 126 more but not enough residents have agreed	Complete: Fall 2012
<b>January 1, 2008: Connection of 4,456 <i>colonia</i> residents to existing wastewater municipal collection systems completed (e.g., Pharr and La Feria)</b>			
1-Jan-08	Pharr	Hooked up 854 <i>colonia</i> residents	2002

1-Jan-08	La Feria	Hooked up 8 <i>colonias</i> with approximately 1200 residents-2005-2009; will begin additional 81 connections to be completed in Fall 2012	9-Nov-13
<b>January 1, 2009: Connection of 37,450 <i>colonia</i> residents to existing wastewater municipal collection systems completed (e.g., Weslaco and Mission)</b>			
1-Jan-09	Weslaco	Hooked up 2 <i>colonias</i>	2009
1-Jan-09	Misson	Hooked up 2500 connections	
<b>August 31, 2012: Connection of 1,636 <i>colonia</i> residents to existing wastewater municipal collection systems completed (e.g., ERHWSC and Mercedes)</b>			
31-Aug-12	ERHWSC	129 current connections; ready to hook up 126 more but not enough residents have agreed	NA
31-Aug-12	Mercedes	Pending: Hook up 7 <i>colonias</i> , 744 residents	By end of 2011
<b>December 31, 2015: Connection of 4,700 <i>colonia</i> residents to existing wastewater municipal collection systems completed (e.g., Rio Hondo, San Juan, and ERHWSC)</b>			
31-Dec-15	Rio Hondo	NA	NA
31-Dec-15	San Juan	NA	NA
	ERHWSC	129 current connections; ready to hook up 126 more; switched with Harlingen to complete project	NA
<b>Not on Milestones List: August 31, 2013: Connection of 219 homes in 7 <i>colonias</i> residents to existing wastewater municipal collection systems completed</b>			
1-Aug-13	Donna	Western Colonia Wastewater Improvement Project- Decommissioned over 440 septic tanks and connected/hooked up 425 households.	2012

31-Oct-13

Alamo

City of Alamo-Texas  
Water Development  
Board Colonia's  
project: Campo Alto,  
Rancho Escondido,  
Colonia Salazar,  
Guadalupe 1, 2 & 3  
and Val-Bar  
subdivision. 219  
homes will be hooked  
up and will have their  
septic system  
decommissioned.  
Project is currently  
occurring with  
termination date of  
October 2013

2013

Arroyo Colorado Watershed Milestones: Agricultural Acres

Anticipated Completion Date	Milestone	Status	Actual Completion Date
31-Aug-06	20% of irrigated cropland (-60,000 acres) under management plans	112,657 *	Calculated at end of Calendar Year
31-Aug-07	23% of irrigated cropland (-70,000 acres) under management plan	118,007 *	Calculated at end of Calendar Year
31-Aug-08	27% of irrigated cropland (-80,000 acres) under management plan	120,651 *	Calculated at end of Calendar Year
31-Aug-09	30% of irrigated cropland (-90,000) under management plan	129,081 *	Calculated at end of Calendar Year
31-Aug-10	33% of irrigated cropland (-100,000 acres) under management plan	133,310 *	Calculated at end of Calendar Year
31-Aug-11	37% of irrigated cropland (-110,000) acres under	137,849 *	Calculated at end of Calendar Year

	managem nt plan		
<b>31-Aug-12</b>	40% of irrigated cropland (-120,000) under managem nt plan	140,513 *	Calculated at end of Calendar Year
<b>31-Aug-13</b>	43% of irrigated cropland (-130,000 acres) under managem nt plan	140,612 *	Calculated at end of Calendar Year
<b>31-Aug-14</b>	47% of irrigated cropland (-140,000 acres) under managem nt plan	NA	NA
<b>31-Aug-15</b>	50% of irrigated cropland (-150,000 acres) under managem nt plan	NA	NA
* Acres are cumulative acres under a conservation plan (WQMP or EQIP) for three counties in watershed.			
* Does not only include irrigated cropland			

## Arroyo Colorado Watershed Milestones: Water Reuse

Anticipated Completion Date	Milestone	Status	Completion Date
<b>1-Jan-15</b>	Wastewater irrigation reuse system expansion for McAllen	Planning/design	2016
<b>31-Dec-15</b>	Wastewater irrigation reuse system expansion for Harlingen	complete	2013
Not on Milestones List	Wastewater irrigation reuse system for Weslaco	Planned: 401 MG/YR to irrigate Tierra Santa Golf Course	Ongoing
Not on Milestones List	Wastewater irrigation reuse system for Pharr	Planned: Reuse at golf course and 18 mg/month and 5mg/month at WWTP	Ongoing
Not on Milestones List	Wastewater irrigation reuse system for San Juan	Planned: Reuse 6.2 mg/month for wetland and 74 mg/year for irrigation at WWTP	Ongoing
Not on Milestones List	Wastewater irrigation reuse system for San Benito	Planned: Reuse 4.1 mg/month for wetland	Ongoing
Not on Milestones List	Wastewater irrigation reuse system for Harlingen	Planned: Reuse 46 mg/month for golf course, soccer complex and Ramsey Park	Ongoing
Not on Milestones List	Wastewater irrigation reuse system for La Feria	Planned: Reuse 2 mg/month for wetland and for irrigation at WWTP	Ongoing
Not on Milestones List	Wastewater irrigation reuse system for McAllen South	Planned: Reuse 36 mg/month for irrigation at golf course	Ongoing
Not on Milestones List	Wastewater irrigation reuse system for Mission	Planned: Reuse 2 mg/month for irrigation at WWTP	Ongoing

## **Appendix C**

**An Evaluation of Perceived Effectiveness of  
Implementation of the Arroyo Colorado  
Watershed Protection Plan Phase I**

August 2014

## **Acronyms**

ACWP – Arroyo Colorado Watershed Partnership

ACWPP – Arroyo Colorado Watershed Protection Plan Phase I

ALEC – Department of Agricultural Leadership, Education and Communications

B-WET – Bay-Watershed Education Training

LRGV – Lower Rio Grande Valley

TCEQ – Texas Commission on Environmental Quality

TWRI – Texas Water Resources Institute

## **Abstract**

The Arroyo Colorado Watershed Protection Plan: Phase I has been implemented since 2007 and one effort to measure effectiveness is to survey individuals. Through this project, a web survey was used on the Arroyo Colorado website as well as a hard copy survey used at a Bay-Watershed Education Training. Results of the survey indicated that most respondents thought that agriculture was the primary source of pollution, that the website was the primary source that is used for information, and that they agreed that the Arroyo Colorado Watershed Partnership has been effective primarily in implementing habitat components, but also in raising awareness, being effective in education and outreach, agricultural efforts, and wastewater. Recommendations for future activities consist of enhancing education and outreach activities in all areas of the Arroyo Colorado Watershed Protection Plan to increase public awareness of Partnership activities. Enhanced programs should include specific activities of what people can do to mitigate all causes and sources of pollution.

## **Introduction**

The Arroyo Colorado Watershed Protection Plan Phase I (ACWPP) has been implemented since 2007 and there have been a variety of methods to measure effectiveness, including water quality parameters, acres under best management practices, acres of wetlands developed, number of people educated, etc. One variable that had not yet been measured was how effective do people think the partnership has been in implementing various components of the ACWPP. The Texas AgriLife, Texas Water Resources Institute (TWRI) and Texas A&M Department of Agricultural Leadership, Education, and Communications (ALEC) conducted an evaluation for the Texas Commission on Environmental Quality (TCEQ) to assess the public's perception of the Arroyo Colorado Watershed Partnership's (ACWP) efforts in implementing various areas outlined of the ACWPP. The following sections of this report contain the specific approach that was used, results and conclusions.

## **Methods**

The objective of this study was to determine the public perception of the effectiveness of implementing the ACWPP. This was measured by using a study population consisting of users of the ACWP website ([arroyocolorado.org](http://arroyocolorado.org)) from April 15, 2013 through December 31, 2013, as well as a teacher training at the Bay-Watershed Education Training (B-WET), located at South Padre Island during October 1, 2012 – March 31, 2013 where approximately 150 teachers attended 8 workshops.

For this study, the same instrument was administered in both hard copy (at B-WET events) and electronic format (on the website). Twenty-six questions were asked that included demographic questions and screening questions. One such screening question included "Do you know what the Arroyo Colorado is?" where if no was selected, respondents would be sent to the end of the evaluation. Other questions included three ranking questions about perceived sources of pollution, where individuals get their information, nine Likert scale questions (with four response categories) asking about effectiveness in different areas identified in the ACWPP, and one question about how effective the ACWP has been in gaining local support. In some questions, an "other" category was made available to respondents to select and add a response not previously included.

Statistical Package for Social Sciences (SPSS) Version 22 was used to conduct data analysis. Descriptive statistics such as frequencies of responses, mean, standard deviation and percentages were primarily used to present data on the four effectiveness questions relating to different areas of the ACWPP, Cronbach's alpha was calculated to test reliability of the scale. Also, a repeated measures test

was used to identify possible differences in effectiveness areas. Tables and figures were created to help in presenting data as well. Finally, one respondent indicated that he/she was under 18; therefore, that individual's response was removed from the dataset.

## Results

Response received were 304 total where 170 (55.9%) responded via the website and 134 (44.1%) responded at the B-WET events. While not every question was answered by individuals, many of the questions were. The following tables and figures provide descriptive statistics for each of the demographic variables, broken down by web or B-WET events.

Beginning with Table 1 The majority of the participants fell within the age range of 31-50, followed by 18-30 and 51-70. Of the website respondents, respondent's ages were fairly evenly distributed between the three categories of 18-30 (40), 31-50 (49), 51-70 (40) and only three individuals responded as being 71 and over. For the B-WET training, most (75) of the participants indicated that they fell between the ages of 31-50, followed by 18-30 (32), 51-70 (24), and 71 and over (1).

*Table 1. Number of Responses by Age Group of Website and B-WET Attendee Respondents*

Age	Website	B-WET	Total
18 - 30	40	32	72
31 - 50	49	75	124
51 - 70	40	24	64
71 and over	3	1	4
Total	132	132	264

Table 2 contains the number of participants by gender for each of the methods that they could have responded with. Overall, the majority of the participants were female (165) and there were 98 males. For the web responders, 77 were male and 54 were female. BWET responders were primarily female (111) but there were 21 males.

*Table 2. Number of Responses by Gender of Website and B-WET Attendee Respondents*

Gender	Website	B-WET	Total
Male	77	21	98
Female	54	111	165
Total	131	132	263

Ethnicity was asked of each participant and 172 indicated that they were Hispanic/Latino, 80 responded as being Anglo/Caucasian, eight responded as being other, and two responded as being African American. Of the web responders, 67 were Hispanic/Latino, 56 were Anglo/Caucasian, six responded as being Other, and two responded as being African American. B-WET participants responded mainly as being Hispanic/Latino (105), Anglo/Caucasian (24) and Other (2).

*Table 3. Number of Responses by Ethnicity of Website and B-WET Attendee Respondents*

Ethnicity	Website	B-WET	Total
African American	2	0	2
Anglo/Caucasian	56	24	80
Hispanic/Latino	67	105	172
Other	6	2	8
Total	131	131	262

Table 4 contains the educational backgrounds of the respondents where the majority contained a bachelor's degree (142), a post-graduate degree (73), some college (39), a high school diploma (5), and less than high school (3). Of the web responders, the majority had at a bachelor's degree (47), a post-graduate degree (41), some college (36), high school diploma (5) and less than high school (2). The majority of the B-WET participants had a bachelor's degree (95), a post-graduate degree (32), some college (3), and less than high school (1).

*Table 4. Number of Responses by Education of Website and B-WET Attendee Respondents*

Education	Website	B-WET	Total
Less than high school	2	1	3
High school diploma	5	0	5
Some college	36	3	39
Bachelor degree	47	95	142
Post-graduate degree	41	32	73
Total	131	131	262

The majority of respondents to the survey indicated that they were fulltime residents of the Lower Rio Grande Valley (225), five indicated they were a resident for about 9 months of the year, three responded as being a resident for 6 months out of the year, six responded as being a resident for about 3 months per year, 32 said they came to the LRGV a few days per year, and 30 said they never came to the

LRGV. Of the web respondents, the majority (105) responded as being a fulltime resident of the LRGV, two responded as being a resident for about 9 months per year, two responded as being a resident for about 6 months per year, four responded as being a resident for about 3 months per year; 27 visited the LRGV a few days per year, and 28 never spent time in the LRGV. This indicates that the majority of the web respondents either lived in the LRGV fulltime or visited a few days or not at all. Of the B-WET respondents, the majority (120) was fulltime residents of the LRGV; three, one and two respondents were a resident for 9, 6, and 3 months, respectively, five only for a few days per year, and two never.

*Table 5. Number of Responses by Time in LRGV of Website and B-WET Attendee Respondents*

Time In LRGV	Website	B-WET	Total
Full-Time Resident	105	120	225
Resident for about 9 months per year	2	3	5
Resident for about 6 months per year	2	1	3
Resident for about 3 months per year	4	2	6
A few days per year	27	5	32
Never	28	2	30
Total	168	133	301

Table 6 contains information about respondent's primary interest to the LRGV. Overall, the majority of respondents were residential only (33%), followed by recreational/sportsman (26%), federal, state, local government/academia (16%), agricultural (9%), business/ecotourism (8%), and other (7%). Other areas of interested listed by participants can be found in Appendix A. Of the web responders, recreational/sportsman was the primary interest (27%) followed by federal, state, local, government/academia (21%), residential only (20%), agricultural and business/ecotourism both at 11%, and other (10%). For B-WET responders, 50% claimed to be resident only, 25% as recreational/sportsman, 10% in federal, state, local government/academia, 8% in agricultural, 5% for business/ecotourism, and 4% for other.

*Table 6. Number of Responses and Percentages of Website and B-WET Attendee Respondents for Interest Areas in the LRGV*

	<u>Website</u>		<u>B-WET</u>		<u>Total</u>	
	n	%	n	%	n	%
Agricultural	18	11	10	8	28	9
Business/Ecotourism	18	11	7	5	25	8
Recreational/Sportsman	46	27	33	25	79	26

Federal, State, Local Government/Academia	35	21	13	10	48	16
Residential Only	34	20	66	50	100	33
Other	17	10	4	3	21	7
Total	168		133		301	

Evaluation participants were asked if they knew what the Arroyo Colorado is. This question was used to screen respondents so that if they did not know what the Arroyo Colorado was, they did not complete the remainder of the evaluation. Table 7 contains a breakdown of the respondents and whether they had heard of the Arroyo Colorado or not.

*Table 7. Number of Respondents by Website and B-WET Attendee Respondents that Know What the Arroyo Colorado is*

Know of Arroyo	Website	B-WET	Total
Yes	149	131	280
No	20	1	21
Total	169	132	301

Next, participants were asked if they thought the Arroyo Colorado was important to the LRGV, and overall, they strongly agreed ( $M=3.54, SD=.95$ ) that the Arroyo Colorado was important to the LRGV and they also agreed ( $M=3.06, SD=.91$ ) that they or their organization is impacted by the Arroyo Colorado. Participants were also asked to rank what they thought were the primary sources of pollution were to the Arroyo Colorado and Figures 1 – 6 contains specific information. Overall, the majority of respondents thought that agriculture contributes the most pollution to the Arroyo Colorado, followed by municipal, stormwater, *colonias*, wildlife, natural, and other sources. Other sources identified by respondents can be found in Appendix B.

Figure 1. Participants responded to the following as being the primary source of pollution the Arroyo Colorado

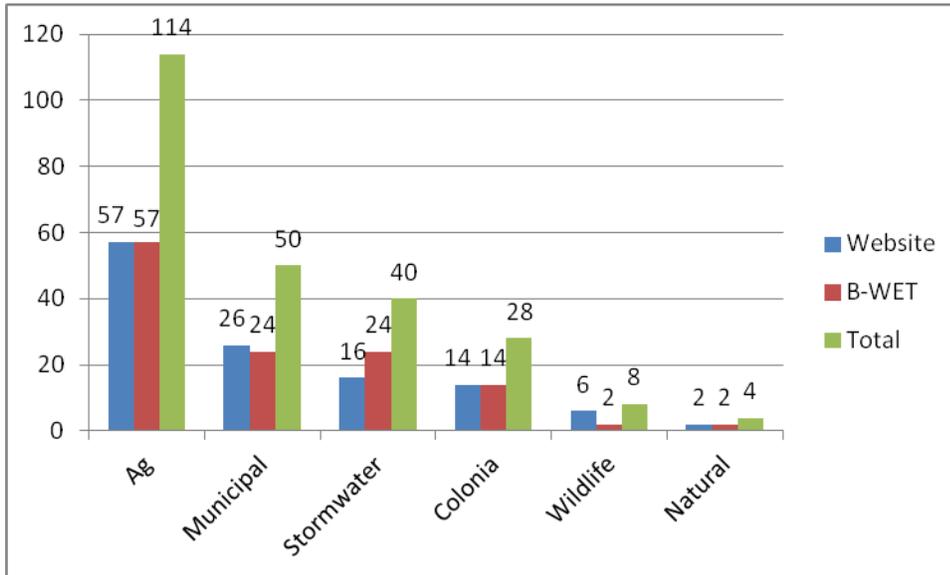


Figure 2. Participants responded to the following as being the second main source of pollution the Arroyo Colorado

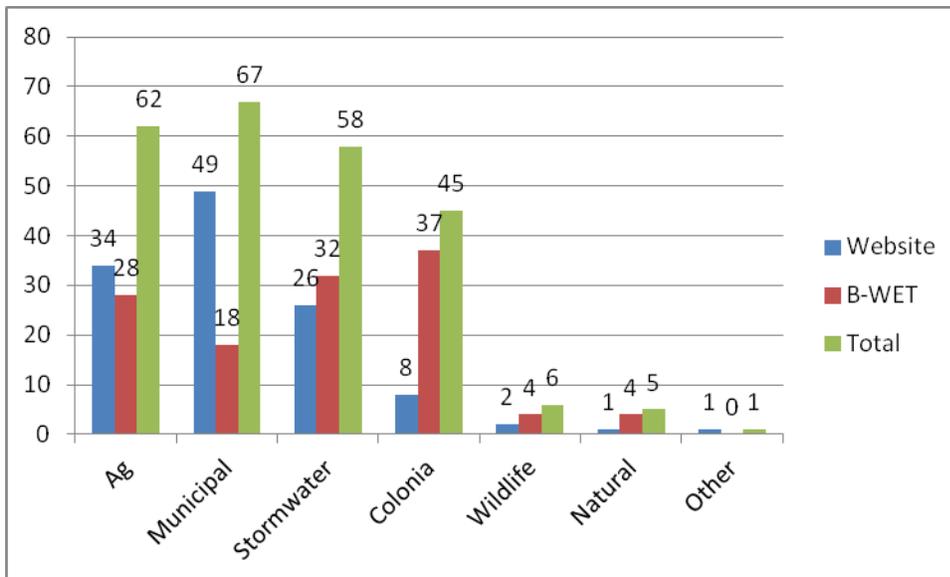


Figure 3. Participants responded to the following as being the third main source of pollution the Arroyo Colorado

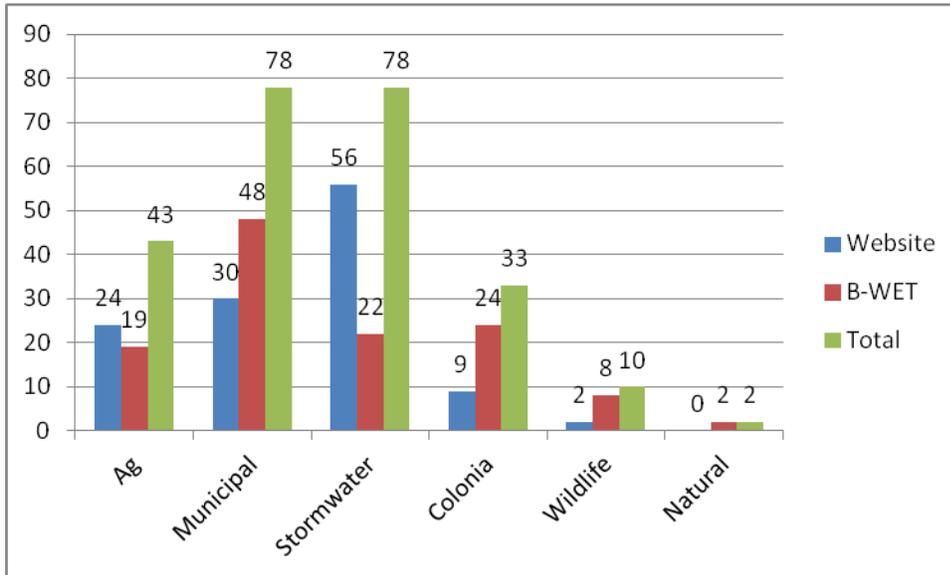


Figure 4. Participants responded to the following as being the fourth main source of pollution the Arroyo Colorado

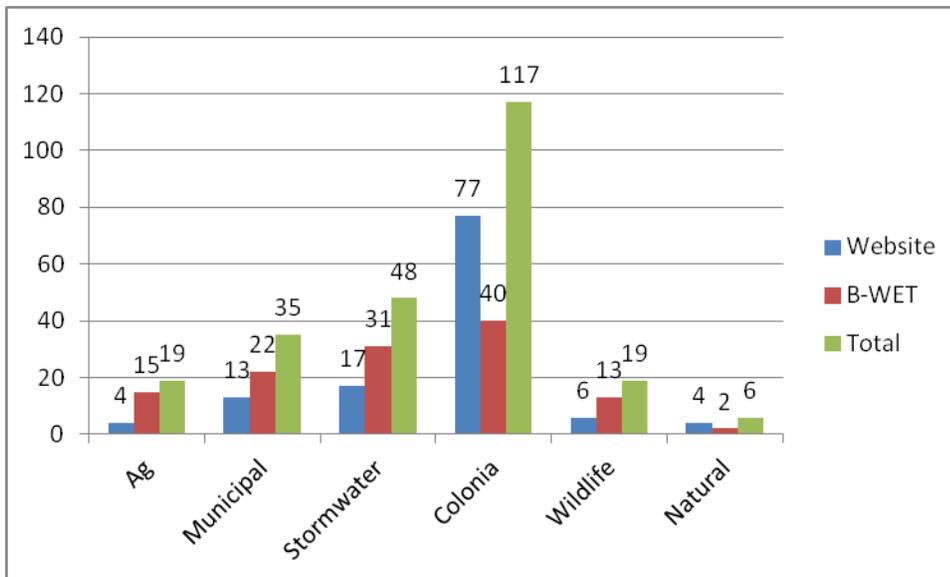


Figure 5. Participants responded to the following as being the fifth main source of pollution the Arroyo Colorado

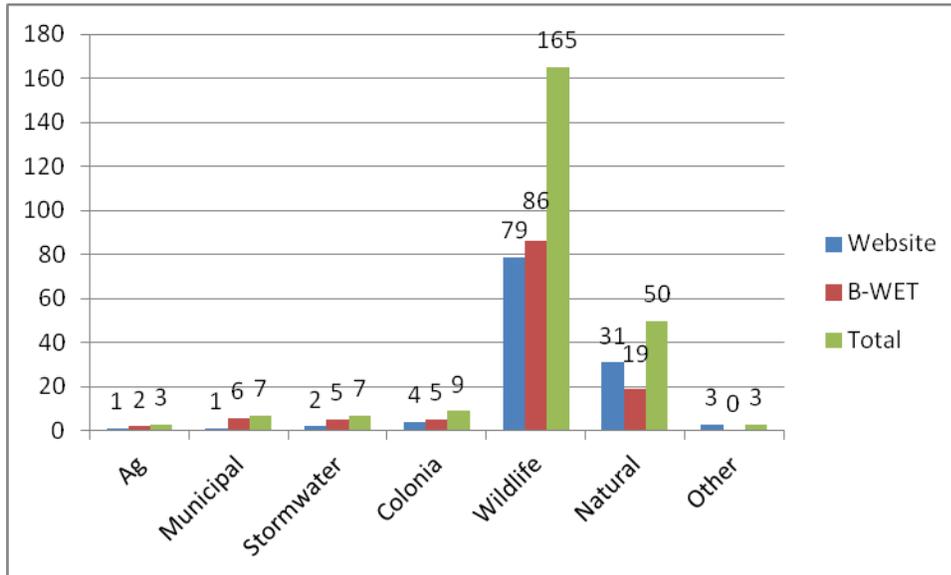
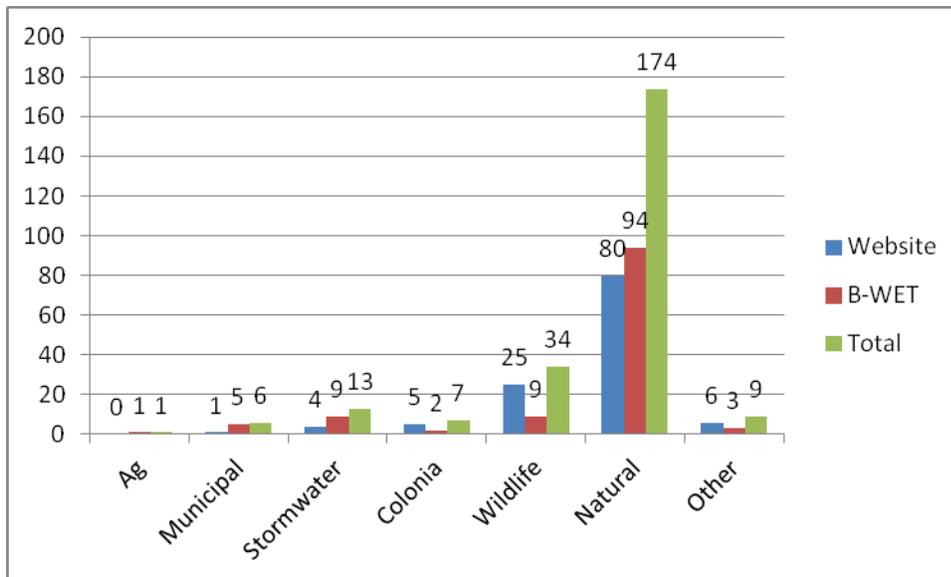


Figure 6. Participants responded to the following as being the least main source of pollution the Arroyo Colorado.



Next, respondents were asked where they primarily received information about the Arroyo Colorado and were asked to rank in order from most to least the sources of information that they used. Figures 7 – 12 display the frequencies of the number of participants that selected each of the choices. Also, some respondents indicated that they used other sources to get information and provided these sources. The list provided by participants can be found in Appendix C. Overall, participants primarily

used the website for their primary source of information, followed by newspapers, radio, news stations, AgriLife Extension programs and other sources.

Figure 7. Participants responded to the following as being the primary source for information related to the Arroyo Colorado

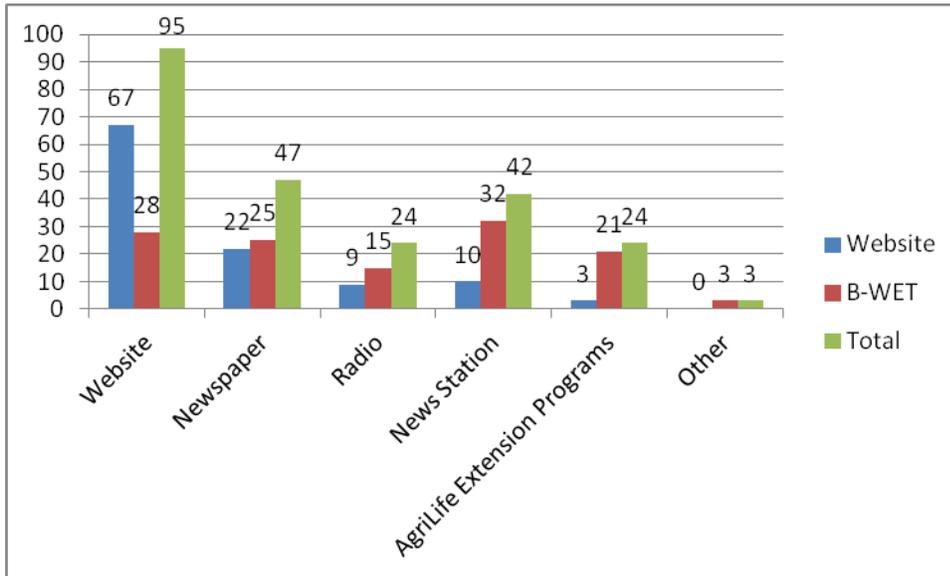


Figure 8. Participants responded to the following as being the second main source for information related to the Arroyo Colorado

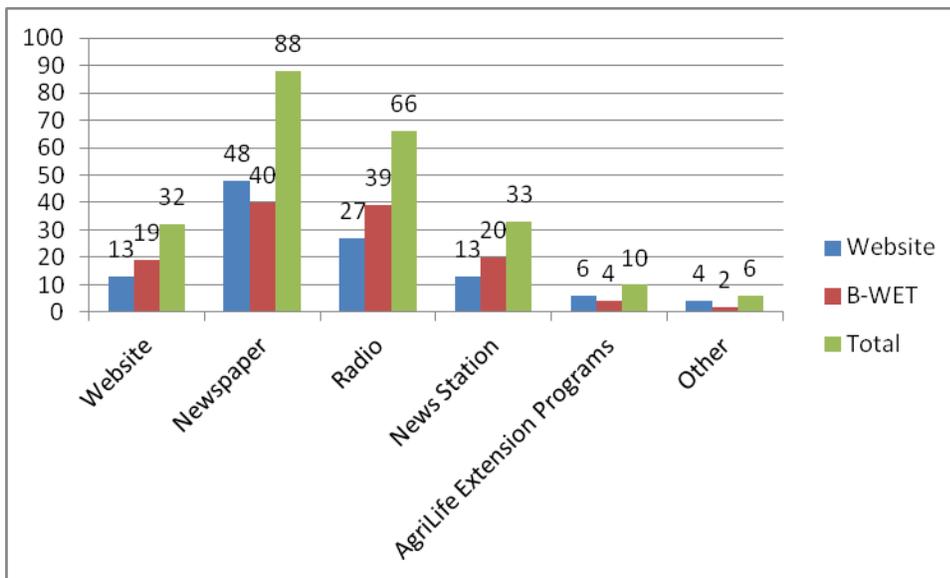


Figure 9. Participants responded to the following as being the third main source for information related to the Arroyo Colorado

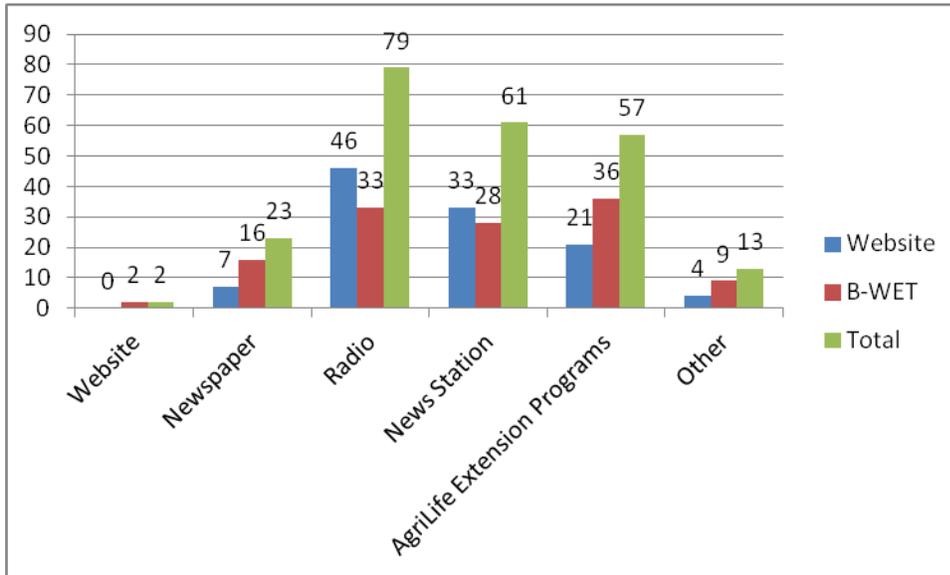


Figure 10. Participants responded to the following as being the fourth main source for information related to the Arroyo Colorado

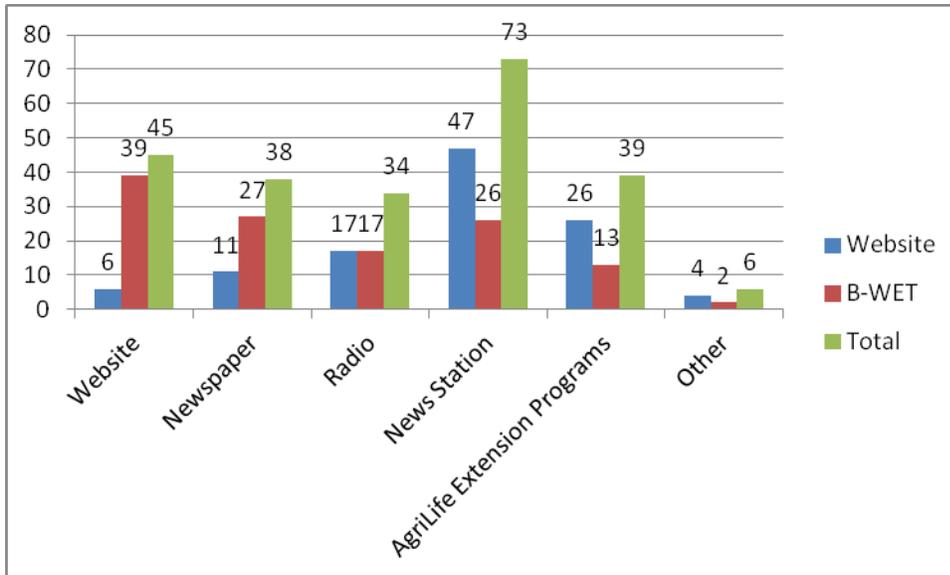


Figure 11. Participants responded to the following as being the fifth main source for information related to the Arroyo Colorado

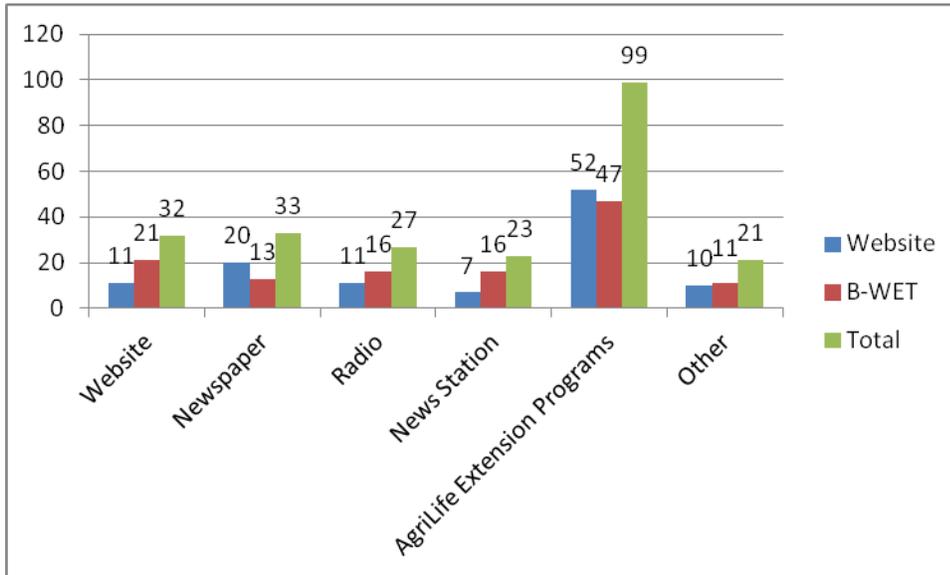
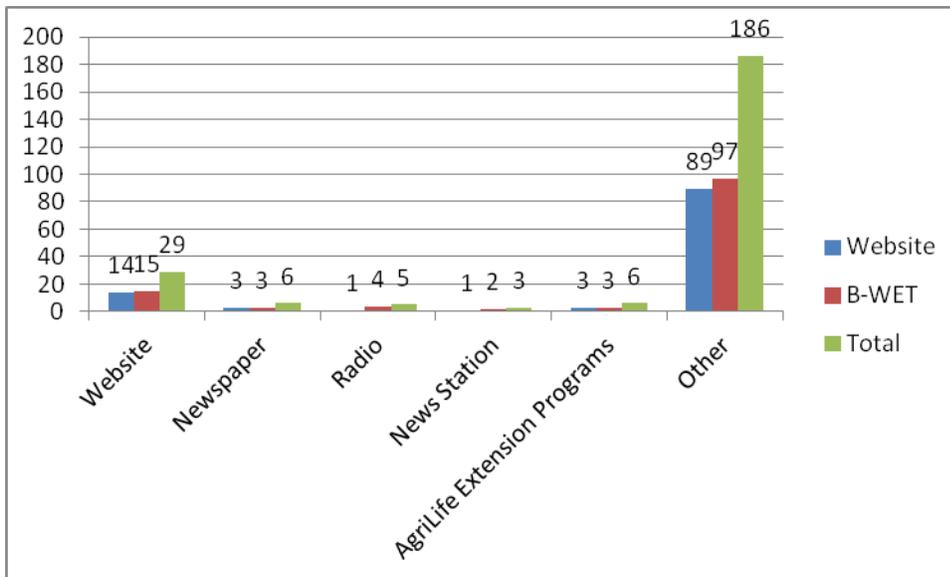


Figure 12. Participants responded to the following as being the sixth main source for information related to the Arroyo Colorado



Next, respondents were asked whether or not they had heard of the ACWPP or ACWPP. Of the respondents, 157 (51.6%) indicated yes and 111 (36.5%) indicated no. If an individual responded as not having heard of the ACWPP or ACWP, skip logic embedded into the online evaluation pushed them to respond to demographic questions reported above; therefore, the following responses are indicative of only those that have heard of the ACWPP or Partnership.

As described in totals of Table 6, respondents agreed most that the ACWP has been effective in implementing habitat components of the ACWPP ( $M=3.14$ ,  $SD=.58$ ) followed by raising awareness about the ACWPP ( $M=3.10$ ,  $SD=.61$ ), being effective in Education and Outreach efforts ( $M=3.10$ ,  $SD=.60$ ), being effective in implementing Agricultural measures ( $M=3.01$ ,  $SD=.59$ ) and being effective in implementing Wastewater measures ( $M=2.97$ ,  $SD=.59$ ). Also, to measure the reliability of this scale, Cronbach's alpha was calculated to be .80, indicating a reliable scale. Further, a repeated measures test was conducted and it was determined that no significant difference could be identified between any of the variables ( $F(1,260)=.66$ ,  $p=.42$ ) ( $\eta_p^2 = 0.01$ ,  $1-\beta = 0.13$ ).

*Table 6. Number, Mean and Standard Deviation for Responses to the Effectiveness of Areas of the ACWPP*

Area of ACWPP		n	M	SD
Education and Outreach	Website	66	2.97	.58
	B-WET	130	3.16	.55
	Total	196	3.10	.57
Agriculture	Website	61	2.90	.60
	B-WET	128	3.06	.59
	Total	189	3.01	.59
Habitat	Website	62	2.98	.56
	B-WET	129	3.21	.58
	Total	191	3.14	.58
Wastewater	Website	61	2.93	.60
	B-WET	8	3.25	.46
	Total	69	2.97	.59
Raising Awareness	Website	63	2.95	.58
	B-WET	131	3.19	.61
	Total	194	3.11	.61

*Note.* Scale: 1.00-1.49 = “strongly disagree;” 1.50-2.49 = “disagree;” 2.50-3.49 = “agree;” 3.50-4.00 = “strongly agree”

Participants were asked to indicate their level of agreement on whether water quality had improved as a result of implementing the ACWPP. The majority of both website and B-WET respondents agreed or strongly agreed that water quality had improved and contained a mean of 3.01 and standard deviation of .61. Table 7 provides the number of respondents and percentage within each agreement category.

*Table 7. Number of Responses and Percentage by Website and B-WET Attendee Respondents on Level of Agreement of Water Quality Improving as a Result of Implementing the ACWPP*

	<u>Strongly Disagree</u>		<u>Disagree</u>		<u>Agree</u>		<u>Strongly Agree</u>		<u>Total</u>
	n	%	n	%	n	%	n	%	n
Website	2	3	13	19	47	70	5	7	67
B-WET	4	3	4	3	91	73	26	21	125
Total	6	3	17	9	138	72	31	16	192

Table 8 contains data on respondent's level of agreement when asked if their behavior had changed towards that that would improve water quality as a result of ACWPP and ACWP activities. The majority of respondents either agreed or strongly agreed that their behavior had changed with a mean of 3.18 and standard deviation of .67.

*Table 8. Number of Responses and Percentage by Website and B-WET Attendee Respondents on Level of Agreement of Changing Behavior Towards Improving Water Quality as a Result of the ACWPP*

	<u>Strongly Disagree</u>		<u>Disagree</u>		<u>Agree</u>		<u>Strongly Agree</u>		<u>Total</u>
	n	%	n	%	n	%	n	%	n
Website	0	0	9	15	40	65	13	21	62
B-WET	5	4	5	4	75	58	45	35	130
Total	5	3	14	7	115	60	58	30	192

Participants were asked which of the choices they thought were the most effective in raising water quality awareness within local communities. Table 9 contains results from this question. Overall, 41% of the respondents believe that school presentations are the most effective, followed by public service announcements, public meetings, AgriLife Extension programs, the website or some other method.

*Table 9. Number of Responses and Percentage by Website and B-WET Attendee Respondents on What Has Been Most Effective in Raising Water Quality Awareness in Communities*

	<u>School Presentations</u>		<u>Public Meetings</u>		<u>Public Service Announcements</u>		<u>Website</u>		<u>AgriLife Extension Programs</u>		<u>Other</u>		<u>Total</u>
	n	%	n	%	n	%	n	%	n	%	n	%	n
Website	17	26	10	15	12	18	9	14	10	15	8	12	66
B-WET	64	48	16	12	29	22	5	4	14	10	6	4	134
Total	81	41	26	13	41	21	14	7	24	12	14	7	200

The question of “Please rank (1 being the highest and 5 being the lowest) the primary areas in which you would like to see the Arroyo Colorado Partnership involved” was asked. Figures 13 – 16 contain visual information for both website and B-WET respondents as well as a combination of the two. In all, respondents would like to see the ACWP more involved in Education, followed by habitat, agriculture, and finally, stormwater. Also, participants had the option to provide other areas that they would like to see the ACWP involved in and Appendix D contains a list of those descriptions.

*Figure 13. Participants responded to the following as being the primary areas that they would like to the ACWP involved in*

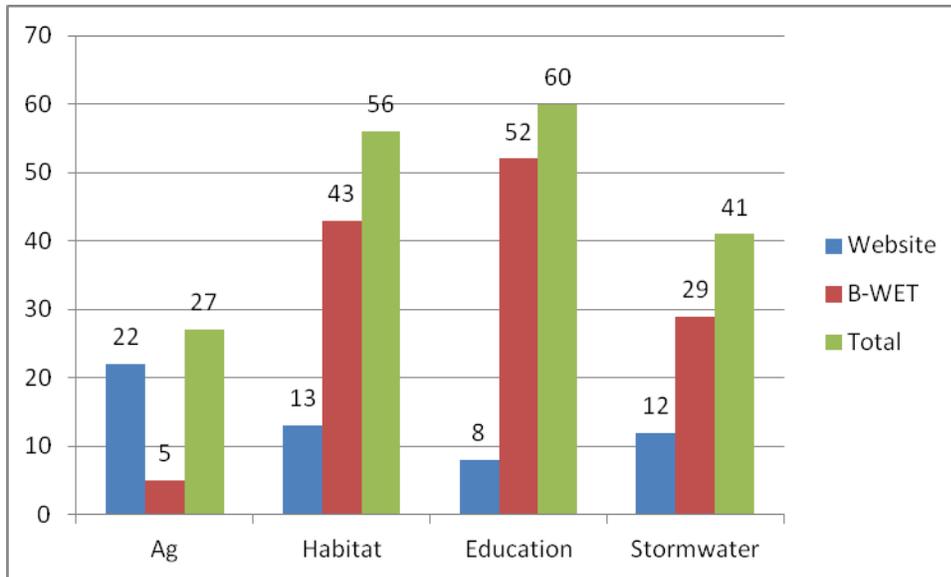


Figure 14. Participants responded to the following as being the second main area that they would like to see the ACWP involved in

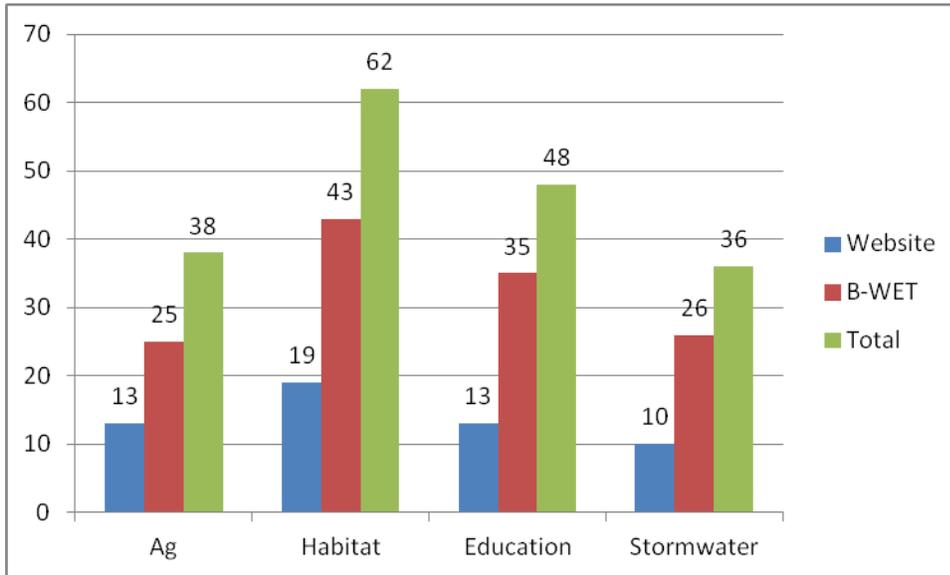


Figure 15. Participants responded to the following as being the third main area that they would like to see the ACWP involved in

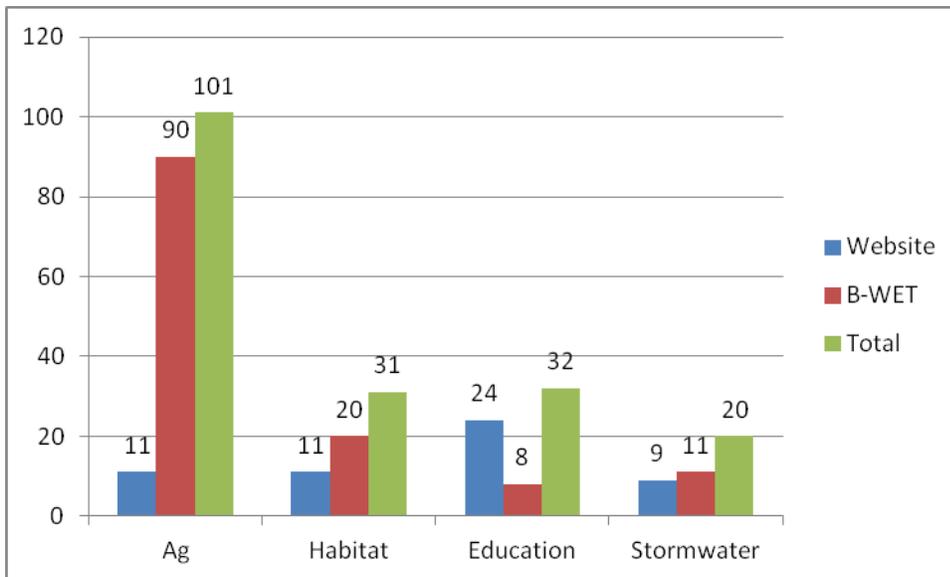
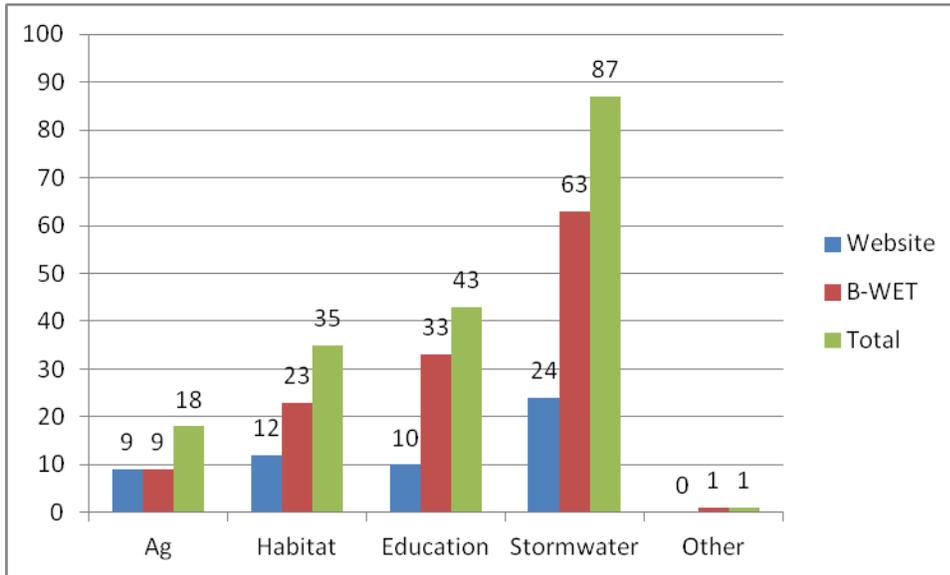


Figure 16. Participants responded to the following as being the third fourth area that they would like to see the ACWP involved in



In the last question of do you believe the ACWP has been effective in gaining local support for implementation efforts, only web respondents provided their input. Table 10 contains the responses to the question of “do you think that Phase I (2007-2015) of the ACWPP has been effective in gaining local support for implementation efforts?” Overall, respondents primarily agreed or disagreed to the question but a mean of 3.18 (SD=.67) indicates that the majority of respondents will agree.

Table 10. Number and percent web responses to the question of do you think that Phase I (2007-2015) of the ACWPP has been effective in gaining local support for implementation efforts

	<u>Strongly Disagree</u>		<u>Disagree</u>		<u>Agree</u>		<u>Strongly Agree</u>		<u>Total</u>
	n	%	n	%	n	%	n	%	n
Website	1	2	13	21	43	68	6	10	63

## Conclusions

### *Web Respondents*

For web respondents, there was not much difference between the three age ranges of 18-30, 31-50, and 51-70; indicating that not as many people over the age of 71 may visit the website. More males than females completed the website and there were not much differences between Anglo/Caucasian and Hispanic/Latino respondents. The majority of web respondents had a bachelor's degree, a post-graduate degree or at least some college. Also, the majority of web respondents were a fulltime resident to the LRGV or only visited a few days per year or never. Primary interests of respondents were recreational/sportsman and federal, state, local government/academia, followed by residential only. Most of the respondents knew what the Arroyo Colorado was and indicated that agricultural sources were the primary sources of pollution, followed by municipal, stormwater, *colonias*, wildlife, and natural sources. Of web respondents, the primary source of information was the website, newspapers, radio, news stations and AgriLife programs. Web respondents tended to agree most that habitat efforts were most effective, followed by education and outreach, raising awareness, wastewater and agriculture. Most agree that water quality has improved as a result of the ACWPP efforts and that they have changed their behavior towards that which would improve water quality. Participants indicated that school presentations and public service announcements were the most effective in raising water quality awareness and that they would like to see the ACWP more involved in Agricultural implementation, followed by habitat, education, and stormwater. Finally, web respondents indicated that they primarily agreed that the partnership has been effective in gaining local support for implementation efforts.

### *B-WET Respondents*

About half of the B-WET respondents fell into the 31-50 age range but also, the other half of respondents were split between the age groups of 18-30 and 51-70. Most of the respondents were females and responded as being Hispanic/Latino with at least a bachelor's degree. Almost all of the respondents were full-time residents to the LRGV and about 1/3 indicated that their primary interest was residential only. All except for 1 indicated that they knew what the Arroyo Colorado was and thought that agriculture was the primary source of pollution. Most B-WET respondents felt that the news station was the primary source of information, followed by the newspaper, radio and website. Participants agreed that the ACWP has been most effective in implementing wastewater, followed by habitat, raising awareness, education and outreach, and agriculture. B-WET respondents agreed or strongly agreed that water quality has changed as a result of implementing the ACWPP measures also that they agreed or strongly agreed that their behavior has changed as a result of the ACWPP. Finally, respondents indicated that school presentations and public service announcements would be the most effective in raising awareness of water quality and that they would like to see the ACWP most involved in education in the future.

## *Overall Respondents*

Overall, respondents fell in the 31-50 age range followed by the 18-30 and 51-70 ages. Most respondents were female and of Hispanic/Latino or Anglo/Caucasian descent and contained at least a bachelor's degree. The vast majority of respondents indicated that they were a fulltime resident of the LRGV and that their primary interest was residential only. Most respondents knew what the Arroyo Colorado was and thought that agriculture was the primary source of pollution, followed by municipal, stormwater and *colonias*. Most participants indicated that the website was their primary source of information, followed by newspapers, radio and new stations. The majority of respondent had heard of the ACWPP and indicated that the ACWP has been most effective in implementing habitat components of the ACWPP, followed by raising awareness and being effective in education and outreach efforts. Most participants agreed that water quality has improved as a result of implementation efforts and agreed that they have changed their behavior towards one that would improve water quality. B-WET respondents indicated that school presentations were the most effective method of raising water quality awareness followed by public service announcements. Finally, participants indicated that they would like to see the ACWP more involved in education in the future, followed by habitat, agriculture and stormwater.

## **Recommendations**

Education and outreach is the primary area that participants would like to see the ACWP focus on in upcoming years. Education and outreach messages should not only be focused on water quality, but about specific measures that can be taken to reduce each cause and source of water quality pollutants. Some measures have been previously developed by the respective entities but should be repackaged (if needed) such that the layperson can easily understand and implement them. It is recommended that future implementation efforts focus on continuing and enhancing education and outreach and raising public awareness regarding all areas of the ACWPP. The list below contains some broad recommendations that should be implemented but future activities should not be limited to the following:

- Increasing the number of school presentations across the LRGV using the physical watershed model.
- Other education and outreach efforts should include
- Hosting and increasing educational events throughout the LRGV such as the delivery of existing Texas AgriLife Extension programs
  - Hosting and increasing public education events across the LRGV for participants to learn about what they can do to improve water quality
  - Develop new and continue airing existing Public Service Announcements over television and radio stations to increase awareness of the ACWP and drive traffic to the Arroyo Colorado website
  - Continue to enhance the Arroyo Colorado website with new features as they are developed and increase educational messages for viewers
  - Continue to host other events (e.g. Arroyo Colorado Fiesta) that engages additional participants

Appendix A – Other areas of interest of participants

Research
News
education
student
Arroyo Colorado
environmental
none
Former Resident concerned about environmental Quality
Engineering
water quality
water quality interest
Nature
winter Texan
environmental
Education
education

Appendix B – Other responses for the causes of pollution to the Arroyo Colorado

Port of Harlingen fertilizer unloading docks
Dumping by waste-bearing trucks
vandals
people
Littering
industrial discharges
Mexico chemical outfall
Dumping
Barges
sewage
Industrial Waste

Appendix C - Other sources that participants use to get information about the Arroyo Colorado

news letter
i was born 5 miles from it
bi-weekly update
Watershed Task Force
Meetings on Arroyo
Facebook/Email
LRGV Stormwater TF
internet
Book
books
<a href="http://sky.swri.edu/demo/">http://sky.swri.edu/demo/</a>
Programs with other entities networked with the above.
All of the above
backyard
website
word of mouth
I live on it.
boating on the river
Sierra club
Friends
online
Neighbors
Meetings
Landowner
meetings
Friend on the steering committee

programs
MS4 Web
colleagues
Friends
Colleagues
email
workshop
Professional development & WET
workshop
IMAS
online news
workshops

Appendix D - Text description of what respondents would like to see the ACWP more involved in

organizing kayaking trips
educating and improving waste water treatment plant operations
no opinion
Prevent dumping up river near Rio Hondo

## Appendix E - Arroyo Colorado Evaluation

Please provide the last four numbers of your telephone number (Confidential - only to be used to ensure results are not duplicated)

Which of the following closest represents the amount of time that you are in the Lower Rio Grande Valley?

- Full-Time Resident (1)
- Resident for about 9 months per year (2)
- Resident for about 6 months per year (3)
- Resident for about 3 months per year (4)
- A few days per year (5)
- Never (6)

What category closest relates to your interest to the Lower Rio Grande Valley?

- Agricultural (1)
- Business/Ecotourism (2)
- Recreational/Sportsman (3)
- Federal, State, Local Government/Academia (4)
- Residential Only (5)
- Other (6) \_\_\_\_\_

Do you know what the Arroyo Colorado is?

- Yes (1)
- No (2)

If No Is Selected, Then Skip To What range does your age fall into?

The Arroyo Colorado is important to the Lower Rio Grande Valley.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Please rank in order (1 being the highest contributor and 5 being the lowest contributor) what you think the top 3 causes of pollution to the Arroyo Colorado are.

- \_\_\_\_\_ Agriculture (1)
- \_\_\_\_\_ Municipal Discharges (2)
- \_\_\_\_\_ Urban Stormwater Runoff (3)
- \_\_\_\_\_ Colonias (4)
- \_\_\_\_\_ Wildlife (5)
- \_\_\_\_\_ Natural Sources (6)
- \_\_\_\_\_ Other (7)

You or your organization is impacted by the Arroyo Colorado.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Please rank in order (1 being the highest and 6 the lowest) the primary methods that you get information about the Arroyo Colorado.

- \_\_\_\_\_ Website (arroyocolorado.org) (1)
- \_\_\_\_\_ Newspaper (2)
- \_\_\_\_\_ Radio (3)
- \_\_\_\_\_ News Station (4)
- \_\_\_\_\_ AgriLife Extension Programs (5)
- \_\_\_\_\_ Other (6)

Have you heard of the Arroyo Colorado Watershed Protection Plan or Partnership?

- Yes (1)
- No (2)

If No Is Selected, Then Skip To What range does your age fall into?

Water Quality has improved (since 2007) in the Arroyo Colorado as a result of implementing the Watershed Protection Plan.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

The Arroyo Colorado Watershed Protection Plan and Partnership have been effective in implementing outreach and education activities.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

The Arroyo Colorado Watershed Protection Plan and Partnership has been effective in implementing agricultural programs.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

The Arroyo Colorado Watershed Protection Plan and Partnership have been effective in implementing habitat restoration efforts.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

The Arroyo Colorado Watershed Protection Plan and Partnership have been effective in improving wastewater treatment plants.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

The Arroyo Colorado Watershed Partnership has been effective in raising water quality awareness within local communities.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

As a result of the Arroyo Colorado Watershed Protection Plan and Partnership activities, I have changed my behavior towards those that improve water quality where possible.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

Which of the following choices do you think has been the most effective in raising water quality awareness within local communities?

- School Presentations (1)
- Public Meetings (i.e., Workgroup and Steering Committee) (2)
- Public Service Announcements (3)
- Website (arroyocolorado.org) (4)
- AgriLife Extension Programs (5)
- Other (6) \_\_\_\_\_

Which of the following choices do you think has been the most effective avenue for informing people about the Arroyo Colorado Watershed Partnership's activities?

- Website (arroyocolorado.org) (1)
- Newsletter (2)
- Monthly Update (3)
- Public Meetings (i.e., Workgroup and Steering Committee) (4)
- Not Involved with the Partnership (5)

Please rank (1 being the highest and 5 being the lowest) the primary areas in which you would like to see the Arroyo Colorado Watershed Partnership involved.

- \_\_\_\_\_ Agricultural Implementation (1)
- \_\_\_\_\_ Habitat Restoration (2)
- \_\_\_\_\_ Outreach and Education (3)
- \_\_\_\_\_ Urban Stormwater Management (4)
- \_\_\_\_\_ Other (5)

The Partnership will be updating the Watershed Protection Plan over the next few years; do you think that Phase I (2007 - 2015) of the Arroyo Colorado Watershed Protection Plan has been effective in gaining local support for implementation efforts?

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

What range does your age fall into?

- Under 18 (1)
- 18 - 30 (2)
- 31 - 50 (3)
- 51 - 70 (4)
- 71 or over (5)

What is your gender?

- Male (1)
- Female (2)

What is your ethnicity?

- African American (1)
- Anglo/Caucasian (2)
- Hispanic/Latino (3)
- Other (4)

What is the highest level of education you have completed?

- less than high school (1)
- high school diploma (2)
- some college (3)
- bachelors degree (4)
- post-graduate degree (5)

Would you like more information about the Arroyo Colorado and the Arroyo Colorado Watershed Partnership?

- yes (1)
- No (2)

If No Is Selected, Then Skip To Do you have any other comments that y...

How would you like to receive information about the Arroyo Colorado Watershed Partnership?

- Website (1)
- Newsletter (2)
- Email (3) \_\_\_\_\_
- Facebook (4)

Do you have any other comments that you would like to share?

## **Appendix D**

## Updated ACSC Member List

Steve Bearden Rio Grande Valley Sugar Growers- Mr. Bearden no longer works here. We do not have a representative from the RGVSG

Jude A. Benavides UT-RGV- Dr. Benavides is the SC chair and an active member in good standing.

Paul H. Bergh Coalition to Save Arroyo Colorado / Coastal Conservation Association- Mr. Bergh no longer attends the meetings due to age and health reasons but keeps up with all Partnership activities.

Mary Lou Campbell Frontera Audubon/Sierra Club- Mrs. Campbell no longer attends the meetings due to age and health reasons but keeps up with all Partnership activities.

Patrick Daize International Boundary Water Commission- Mr. Daize is no longer with the IBWC. Rodolfo Montero has replaced him as a SC member.

Laura De La Garza Watershed Resident- Ms. De La Garza has moved out of the RGV and is no longer an active member.

Richard Eyster Texas Department of Agriculture- Mr. Eyster has retired.

Rocky Freund Nueces River Authority- Ms. Freund has been replaced by Sam Sugarek

Andy Garza Texas State Soil and Water Conservation Board- Mr. Garza has retired and been replaced by Ronnie Ramirez.

Darrell Gunn City of Harlingen- Mr. Gunn is an active member in good standing.

Wayne Halbert Harlingen Irrigation District Cameron County #1- Mr. Halbert is an active member in good standing.

Neil Haman Tx Water Development Board- Mr. Haman no longer attends the meetings. Connie Townsend attends the Region M meetings. Currently no one from the TWDB is active on the ACSC.

Joe Hinojosa LRGV Storm Water Task Force- Mr. Hinojosa is an active member in good standing.

Alan Johnson Texas State Bank- Mr. Johnson has moved to Rio Grande Regional Medical Center and is the President of the BOD of the Port of Harlingen. Mr. Johnson is an active member in good standing.

Ken Jones Lower Rio Grande Valley Development Council- Mr. Jones is an active member in good standing.

Kim Jones Tx A&M Kingsville- Dr. Jones is the Habitat WG Co Chair and is an active member in good standing.

Clare Lee\* U.S Fish and Wildlife Service- Ms. Lee has been replaced by Ernesto Reyes

Mark Lingo Texas Parks and Wildlife- Mr. Lingo is an active member but has Willy Cupit attend the SC meetings.

Minerva Martinez Arroyo Property Owner/East Rio Hondo Water Supply- Ms. Martinez is not an active member.

Alan Moore Cameron County Drainage District #5- Mr. Moore is not an active member but still is at CCDD#5.

Butch Palmer Jr The Port of Harlingen Authority- Mr. Palmer has retired. The POH is currently looking to hire another director in 2014. The new director will replace Mr. Palmer.

Marco Pedraza City of McAllen- Mr. Pedraza is an active member in good standing.

Ray Prewett TX Citrus Mutual- Mr. Prewett is an active member in good standing.

Chris Rakestraw\* Coalition to Save The Arroyo Colorado- Ms. Rakestraw is an active member in good standing.

Tony Reisinger Jr Sea Grant Marine Advisory Committee- Mr. Reisinger is the Habitat WG Co Chair and is an active member in good standing.

Amado E. Salinas Military Highway WSC- Mr. Salinas is an active member in good standing.

Sam Simmons Cotton Growers Association- Mr. Simmons is an active member in good standing.

Jim Tabak Valley Land Fund- Mr. Tabak has retired from the Board of Directors. Mr. Tabak is an active member in good standing.

John Wallace USFWS Laguna Atascosa NWR- Mr. Wallace is no longer with the Laguna Atascosa NWR. He has been replaced with Marion Mason.

## **Appendix E**

## Entity List

### 2013 List of Entities/Businesses contacted for sponsorship

Brownville PUB	Bert Ogden Nissan
Academy	South TX Buick
HEB	Desperado Harley Davidson
MVEC	Spike's Ford
Lowe's	Bert Ogden Cadillac
McCoy's	Jaguar Land Rover San Juan
L & F Distributors	Audi San Juan
TX Ag Finance	Charlie Clark Nissan
Allied Waste	Dargel Boats
Swenson RV	CASA Engineering
Ruben O' Bell	TWRI
Tuff Shed Distributors	G & L Group
Texas Trader	Port of Harlingen Authority
Mueller Steel Buildings	TOPS Outdoor Power Store
Hertz Construction	LRGV-TPDES Stormwater Task Force
Innovative Block & Brick	Glick Twins
Hart Drywall & Acoustic	Professional Services Industries
L & G Engineering	LRVDC
Mercedes Benz San Juan	Ambiotec Consulting Engineers
F & T Valley Motorsports	Burn's Motors
Paupaudeux's	Coastal Conservation Association
Toyota Hyundai	

All of the businesses and organizations listed above were sent an Arroyo Colorado Benefits Summary, a "Save the Arroyo Fiesta" Package consisting of a sponsor letter and levels of sponsorship and an Arroyo Fiesta Flyer.

The ACWC had meetings to discuss the ACC and the Save the Arroyo Fiesta with the following:

Dargel Boats-Cleve Ford  
Casa Engineering-David Day  
G&L Group-Robert Garza  
HEB-Rosemary Melody  
Port of Harlingen-Butch Palmer  
PSI-Hector Lopez  
Ambiotec Environmental Consultants-Carlos Marin  
Glick Twins-Bob Glick  
Earth Co-Rudy Martinez  
TPDES-Stormwater Task Force-Javier Guerrero  
Bogus Ford-Frank Bogus  
Salazar Burgers-Leo Salazar

Ruben's Body Shop-Ronnie Reyna  
956 Sports-Carlos Robledo  
Tops Power Equipment-Luis Ramirez  
LRGDC-Ken Jones

These are the sponsors that contributed to the 2013 "Save the Arroyo Fiesta:"

Private Entities

Dargel Boats- Use of Facility to host event  
G&L Group-\$1,500  
HEB-\$1500  
Tops Power Equipment-15 Tickets=\$1,500  
Port of Harlingen-8 Tickets=\$800  
PSI-\$300  
Glick Twins-3Tickets=\$300  
Casa Engineering-2 Tickets=\$200

Public Entities/Agencies

TWRI/IRNR-\$500  
LRGVDC-RGV Water Summit-\$250  
TPDES-Stormwater Task Force-30 Tickets=\$3,000

**2014 List of Entities/Businesses Contacted for Sponsorship**

Halff & Associates	ICE Engineers
Hydro Systems	Ambiotec Environmental Consultants
TX Citrus Mutual	TOPS Power Equipment Store
Brownsville PUB	Hook Line & Sinker
Water PR	Down South Lures
Black & Vetch	The Sportsman-Shallow Sport Boats
Electric Generating Utilities	Allegra Printing
American Wind Energy Association	Glick Twins
Duke Energy	LRGV-TPDES Stormwater Task Force
TX Floodplain Management Association	Glick Twins
LNV Engineers	Professional Services Industries
LRVDC-RGV Water Summit	
Ambiotec Consulting Engineers	
Burn's Motors	
Coastal Conservation Association	
Casa Engineering	
Charlie Clark Nissan	
Aurora Algae	
J&D Produce	
Capital Farm Credit	
RPS Consultants	

These are the sponsors that contributed to the 2014 "Save the Arroyo Fiesta:"

Private Entities

Dargel Boats- Use of Facility to host event

HEB-\$2500-pending

Aurora Algae-\$250

Duke Energy-\$2,500

G&L Group-pending

J&D Produce-\$1,500

Capital Farm Credit-\$500

Black & Vetch-\$100

RPS Consultants-\$100

Tops Power Equipment-30 Tickets-pending

Port of Harlingen-pending

Hook Line & Sinker-10 Tickets-pending

PSI-\$300pending

Glick Twins-Tickets pending

Casa Engineering-Tickets pending

Public Entities/Agencies

TWRI/IRNR-pending

LRGVDC-RGV Water Summit-pending

TPDES-Stormwater Task Force-30-50 Tickets=pending

## **Appendix F**

## Importance of the Arroyo Colorado



Water is an essential and basic element of life. Without adequate water and of good quality, we would not be able to produce crops, enjoy recreational events, grow as a region or even survive. The Arroyo Colorado is a water body fixed in the Lower Rio Grande Valley (LRGV) of Texas and flows approximately 90 miles from its headwaters southwest of the city of Mission, to its confluence with the Lower Laguna Madre in the northeast portion of Cameron County. The land area that drains into the Arroyo Colorado is known as the Arroyo Colorado Watershed. This area is approximately 706 square miles, covering portions of three Texas counties (Hidalgo, Cameron, and Willacy), and over twenty-five municipalities in the LRGV. The Arroyo Colorado is the primary source of freshwater for the Lower Laguna Madre (LLM), which is one of only three hyper-saline lagoons (i.e. saltier than the ocean) in the world and is considered to be the most productive hyper-saline lagoon system. It is imperative to ensure that pollutants entering the Arroyo Colorado are reduced and an adequate supply of fresh water continues to flow into the LLM. This will protect the various agricultural, recreational, municipal and commercial uses of the Arroyo Colorado and LLM, and also improve the region's economy.

Dating back to 1996, the Arroyo Colorado has been identified by the State of Texas as impaired for several pollutants including nutrients, bacteria, PCBs and mercury (in edible fish tissue). These pollutants not only cause harm to aquatic life, but also potentially cause harm to human health. High levels of nutrients in water causes aquatic plants to grow rapidly during the day through the process of photosynthesis producing more than enough oxygen to support fish species and other aquatic life; however, at night aquatic plants go through the process of respiration which consumes the oxygen that aquatic animals need causing fish kills and other negative impacts. Elevated levels of bacteria are monitored as indicators of pathogens that threaten human health. The Arroyo Colorado is a water body that is highly used for swimming, fishing and boating and has a high risk of people ingesting the water.

As a result, bacteria levels are needed to be kept at a minimum so that the risk to human health is reduced. Finally, PCBs and mercury have been found in the edible fish tissue of Alligator Gar and Buffalo Carp, meaning that humans can potentially become fatally ill if high levels of these pollutants are consumed through eating fish.

The Arroyo Colorado is an essential part of the LRGV. The Arroyo Colorado runs through the center of the LRGV and is in essence the Heart of the LRGV. It is a working river that serves the LRGV in a variety of ways. The Arroyo Colorado aids in control of flooding and drainage.

It carries commercial barge traffic from the Port of Harlingen to the Laguna Madre; it receives treated wastewater from municipal plants, along with stormwater runoff from urban areas, and excess irrigation waters. The Arroyo Colorado provides sanctuary for birds and is a nursery for juvenile fish, shrimp and crabs. It also provides recreation opportunities for families and tourists, including swimming, fishing, hiking, and bird and butterfly watching. The LRGV generates close to \$2 billion dollars a year through Agriculture production, Tourism, Eco-tourism and commercial and recreational fishing. A healthy Arroyo Colorado equals a healthy and prosperous economy for the LRGV. Let's work together to keep it clean.



# Arroyo Colorado Conservancy

2401 E. Highway 83  
Weslaco, Texas 78596

956/969-5607 Office 956/969-5639 Fax [www.arroyocolorado.org](http://www.arroyocolorado.org)

Dear Supporter,

**The Arroyo Colorado Conservancy is having a Fiesta!**

Since 1998, when dedicated stakeholders began meeting to come up with ways to address the various issues facing the Arroyo Colorado in Weslaco, we have been working to improve the water quality and to preserve, expand, and enhance native wildlife habitat along the Arroyo Colorado for the benefit of current and future generations.

Today we are asking you to consider sponsoring the Arroyo Colorado Conservancy (ACC) and our upcoming "Save the Arroyo" Fiesta. Your support of this work is vital as it will allow us to continue to improve the water quality of the Arroyo Colorado located in the heart of Deep South Texas. Sponsorship is available at many levels and provides the opportunity to support critical conservation work. This year at the Fiesta we will raffle a custom 186 Dargel Skout.

As we celebrate the ongoing efforts of the ACC, we hope you will join us in turning towards the future and ensuring it is one with abundant wild land, healthy waters, clean air and beautiful places to enjoy the great outdoors. Help us raise a glass to the health of the waters of the Arroyo Colorado we so love and treasure.

**Please join us on Thursday, October 9<sup>th</sup>, 2014 at Dargel Boats in Donna for The Arroyo Colorado Conservancy "Save the Arroyo" Fiesta.** Celebrate 14 years of local conservation and watershed protection! Join new and old friends of the ACC at a spirited Fiesta with an opportunity to win a boat. Visit our website for more information about the work the ACC does to protect the Arroyo Colorado: [www.arroyocolorado.org](http://www.arroyocolorado.org). **Please sponsor today!**

Arroyo Colorado Conservancy "Save the Arroyo" Fiesta  
Thursday, October 9, 2014  
6:00 - 9:00 PM

Dargel Boats  
4110 N. FM 493  
Donna, Texas

Sincerely,  
**Jaime Flores**  
Executive Director  
The Arroyo Colorado Conservancy

**Dr. Jude Benavides**  
President  
Board of Directors

The Arroyo Colorado Conservancy "Save the Arroyo" Fiesta  
 Thursday, October 9<sup>th</sup>, 2014, 6-10 pm | Dargel Boats, Donna

<b>Sponsorship Levels</b>		
Silver Preservationist <input type="checkbox"/>	\$10,000	<ul style="list-style-type: none"> <li>• Reserved Tables for 16 at "Save the Arroyo" Fiesta</li> <li>• Table Recognition with Company Name</li> <li>• Recognition as Title Sponsor in Event Program</li> <li>• Recognition as Title Sponsor on Event Banner</li> <li>• Recognition as Title Sponsor on ACC website</li> <li>• Arroyo Colorado Conservancy Membership</li> <li>• Opportunity to Place Branded Material in Event Gift Bags</li> <li>• Recognition during Event Programming</li> <li>• Recognition as Title Sponsor in all Event Publicity &amp; Materials</li> </ul>
Montezuma Cypress Conservationist <input type="checkbox"/>	\$5,000	<ul style="list-style-type: none"> <li>• Reserved Table for 8 at "Save the Arroyo" Fiesta</li> <li>• Table Recognition with Company Name</li> <li>• Logo/Name featured in Event Program</li> <li>• Logo/Name on Event Banner</li> <li>• Logo/Name/Link on ACC website</li> <li>• Arroyo Colorado Conservancy Membership</li> <li>• Opportunity to Place Branded Material in Event Gift Bags</li> </ul>
Ocelot Guardian <input type="checkbox"/>	\$2,500	<ul style="list-style-type: none"> <li>• Reserved Table for 8 at "Save the Arroyo" Fiesta</li> <li>• Table Recognition with Company Name</li> <li>• Logo/Name featured in Event Program</li> <li>• Logo/Name on Event Banner</li> <li>• Logo/Name/Link on ACC website</li> <li>• Arroyo Colorado Conservancy Membership</li> </ul>
Green Jay Steward <input type="checkbox"/>	\$1,500	<ul style="list-style-type: none"> <li>• Reserved Table for 8 at "Save the Arroyo" Fiesta</li> <li>• Table Recognition with Company Name</li> <li>• Logo/Name featured in Event Program</li> <li>• Arroyo Colorado Conservancy Membership</li> </ul>
Kickoff Gift <input type="checkbox"/>	\$500	<ul style="list-style-type: none"> <li>• Recognition in Event Program</li> <li>• 4 tickets for "Save the Arroyo" Fiesta</li> <li>• Arroyo Colorado Conservancy Membership</li> </ul>
Individual Gift <input type="checkbox"/>	\$100	<ul style="list-style-type: none"> <li>• Single ticket for "Save the Arroyo" Fiesta and entry for boat raffle</li> <li>• Arroyo Colorado Conservancy Membership</li> </ul>
Friend of the ACC <input type="checkbox"/>	\$50	<ul style="list-style-type: none"> <li>• Arroyo Colorado Cap</li> <li>• Arroyo Colorado Conservancy Membership</li> </ul>

To becoming a sponsor of the ACC "Save the Arroyo" Fiesta, fill in the information below and return to ACC Executive Director, Jaime Flores by **mail: 2401 E. Hwy 83, Weslaco, TX 78596, fax: 956-969-5639** or **email: [jjflores@ag.tamu.edu](mailto:jjflores@ag.tamu.edu)**. If you have any questions please contact, Jaime Flores at 956-495-5532.

\_\_\_ YES! I would like to sponsor the ACC "Save the Arroyo Fiesta"

Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Organization: \_\_\_\_\_  
 Email: \_\_\_\_\_

Address: \_\_\_\_\_  
 City/State: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_

**The Arroyo Colorado Conservancy  
wants you to win this boat!**



**Dargel 190 Skout w/115HP Evinrude Motor, McClain Trailer  
Total package valued at more than \$35,000**

**Tickets are \$100 each, and only 500 will be printed. Odds are 1 in 500!**

**The raffle will be drawn at the ACC Membership Gala to be held at the Dargel Boats Showroom on October 10, 2013. There will be door prizes and a silent auction during the gala leading up to the raffle.**

**For tickets please contact Jaime Flores at  
956-495-5532 or [jjflores@ag.tamu.edu](mailto:jjflores@ag.tamu.edu).**

**[arroyocolorado.org](http://arroyocolorado.org)**



**ARROYO COLORADO  
CONSERVANCY**

## **“First Annual Save the Arroyo Fiesta”**

The Arroyo Colorado Conservancy (ACC) held its 1<sup>st</sup> Annual “Save the Arroyo Fiesta” and Boat Raffle on October 10, 2013 at the Dargel Boats showroom in Donna, TX.



The “Fiesta” was a huge success and everyone that attended had a great time! Dr. Benavides, the ACC Steering Committee Chairman, gave a brief overview of the problems facing the Arroyo Colorado and a presentation on a Dissolved Oxygen sampling project that was conducted in the tidal segment of the Arroyo Colorado by his research team this summer.



We had approximately 110 eager and optimistic people attend the “Fiesta,” hoping that they had the winning ticket for the 190 Dargel Skout the ACC was giving away.





There was a bucket auction and a silent auction as well as some great smoked brisket and homemade rice and beans a la charra.



Save the Arroyo Fiesta guests look at some of the great items in the bucket raffle

The winner was Butch Palmer from Harlingen, TX. Butch is from Harlingen and lifelong Arroyo Colorado Watershed resident. He purchased his ticket just 2 days before the raffle!



Pictured from L-R, Jim Tabak, Dr. Jude Benavides, ACC Board Members, Jaime Flores, Arroyo Colorado Watershed Coordinator, Butch Palmer, Winner, Alan Johnson, Arroyo Colorado Steering Committee Member, and Cleve Ford, Dargel Boats

We would like to thank all of our sponsors: **Dargel Boats, LRGV-TPDES Stormwater Task Force, HEB, the G&L Group, Port of Harlingen, Texas A&M Texas Water Resources Institute/Institute of Renewable Natural Resources, UT Brownsville, Ambiotec Engineering, TX A&M Kingsville, TOPS Outdoor Power Store, Rio Grande Valley Water Awareness Summit, Glick Twins, CASA Engineering and Professional Services Industries.** We could not have hosted this great event without their help! Thanks again. We would also like to thank everyone that purchased a ticket. We are already making plans for next year and hope to see all of you there.

Texas A&M  
Institute of Renewable  
Natural Resources



## **Appendix G**

Save the Arroyo Fiesta '13	
Dargel Boat	\$25,000
Fiesta Expenses	\$5,366
Total Expenses	\$30,366
Tickets before raffle	-\$22,640
Tickets at fiesta/auction items	-\$8,200
Sponsors	-\$3,750
Net	\$4,224

Save the Arroyo Fiesta '14	
Dargel Boat	\$25,000
Fiesta Expenses	\$7,500
	32,500
Tickets before raffle	N/A
Tickets /auction	N/A
Sponsors	\$5,000
Net	N/A

## **Arroyo Colorado Conservancy Fundraising Program**

The Arroyo Colorado Conservancy (ACC) fundraising program will consist of soliciting money to support the Arroyo Colorado Watershed Partnership from a variety of sources: donations from individuals and membership dues, Foundations, Corporations, Grants and by hosting fundraising events.

The ACC Board of Directors consist of; Jim Tabak, Valley Land Fund, Dr. Jude Benavides, University of Texas at Brownsville, and Joe Hinojosa, Storm Water Task Force Chairman. Jaime Flores, the Arroyo Colorado Watershed Coordinator, is the Executive Director. On October 20, 2011 the Arroyo Colorado Steering Committee approved the formation of the Arroyo Colorado Financial Development (ACFD) Work Group (WG). The initial WG consists of the ACC Board of Directors, Executive Director, Patty Alexander, Valley Nature Center/Cameron Co Drainage District #1, Melisa Gonzalez, City of Alamo and Irene Szedlmayer, City of La Feria.

The ACC Board will meet in mid-December and early January to draft the strategic plan and fundraising options and ideas. The ACFD WG will meet at least once before the ACSC scheduled for February 9, 2012. The purpose of the meeting will be to discuss and edit the draft strategic plan and include any additional fundraising options and ideas to be included in the fundraising plan/program and present the final draft to the ACSC for discussion and action.

The ACC strategic fundraising plan will consist of the following tasks:

- 1) Create a list of possible sources from which the ACC can get names of possible prospects. The initial list like come from the ACC BOD, ACFD WG members and the ACSC. Each member of the ACFD WG will provide a minimum of 5 and up to 10 names/contact person information of potential donors/sponsors that they know personally or professionally and that might be willing to donate/sponsor the ACC. The WG members will follow up by making the initial contact with the contact person on their respective lists and provide follow up information the ACWC. Additional possible sources will be collected during O&E events and from AC WG members and volunteers. Once the initial list has been created, the ACFD WG will group the names into 4 sub lists according to what they are: Individuals, Foundations, Corporations and Government. Each prospect will be researched and analyzed to determine if they are a “real” prospect for the fundraising program. The information gathered will be stored in a database and will be accessible to all ACSC and ACC members to continue adding to the database. From the information in the database, the ACFD WG will create “customized prospect list” that fit into one or more categories; 1) Donor under \$100, 2) Major Donor, 3) Foundations/Corporations 4) Government and 5) Events.
- 2) The ACFD WG will then match the prospect lists to the most appropriate cultivation and solicitation medium.
- 3) The ACWC will develop levels of support or membership for private and public financial assistance or sponsorship. The ACWC will develop a plan or summary that outlines how the Arroyo Colorado Partnership and Arroyo Colorado Conservancy benefits local

private and public entities. The ACWC will provide the benefit summary to the identified local private and public entities seeking financial and technical support. The summary will be provided in the form of a letter and a follow-up phone call, presentation, or meeting will occur.

- 4) If the plan is successful, money will come into the ACC and the ACC would start the recognition step of the plan. It is essential to have a recognition process in the plan for every gift and contribution received from an individual, foundation and business
- 5) The plan also involves fundraising events. The ACWC presented the SC and ACC BOD several options for fundraising events. In 2011, the Valley Land Fund was willing to partner with the ACWP for their annual photo contest. The theme of this year's photo contest will be the Arroyo Colorado. The photo contest is an excellent opportunity to raise awareness of the Arroyo Colorado and to showcase the beauty of the Arroyo Colorado through photography. The winning photographs from the photo contest are compiled to produce a coffee table book of the incredible wildlife images showcasing the important wildlife species of the area. Through the Partnership between the Valley Land Fund and the ACWP, a portion of the proceeds from the purchase of every coffee table book sold after the photo contest will go directly to the Arroyo Colorado Conservancy. This partnership and photo contest did materialize. The VLF board did not agree to the partnership with the ACWP and the contest and was not approved.

Based on the work group members past experiences, the group decided to begin fundraising through a raffle. The WG members are going to ask local businesses to donate items for the raffle. We will collect all the items throughout the year and have the raffle in August/September to coincide with the start of Football season. Based on the success of the raffle, the group can decide to hold another raffle and/or begin planning larger events: BBQ plates, Shrimp Cook-Off, Fishing Tournament and a music festival.

**Modification to plan on 11/8/12.** The ACC have partnered with Dargel Boats for a fundraising event. The ACC will purchase a 19' Dargel Scout from Dargel boats at a cost of \$25,000. The retail value of the boat is \$35,000. The ACC will print 500-\$100 raffle tickets to raise money for the ACC. We will hold the first ticket to the raffle and raffle it at the gala in an effort to raise more money. The ACC will look to local businesses to help underwrite the cost of the boat. We need to raise \$35,000 in sponsors to underwrite the entire event. We need our SC members to solicit sponsors for the gala and commit to sell raffle tickets. The ACC will also solicit hunting and fishing gear for a silent auction during the raffle. Dargel Boats have agreed to host the gala at their showroom, collect items for the silent auction and help sell tickets. As the Boat raffle evolved, the ACFD WG changed the name of the event to the "Save the Arroyo Fiesta." The WG felt that this title would resonate more with AC watershed residents. An Arroyo Colorado Sponsorship Package was created consisting of a sponsor letter, levels of sponsorship, a Fiesta Flyer and the AC benefits Summary. This package was mailed out, hand delivered and emailed to potential sponsors. The WC also met with some of the potential sponsors in person to discuss sponsorship levels and participation in the Fiesta.

The Arroyo Colorado Conservancy (ACC) held its 1<sup>st</sup> Annual “Save the Arroyo Fiesta” and Boat Raffle on October 10, 2013 at the Dargel Boats showroom in Donna, TX. The “Fiesta” was a huge success and everyone that attended had a great time! Dr. Benavides, the ACC Steering Committee Chairman, gave a brief overview of the problems facing the Arroyo Colorado and a presentation on a Dissolved Oxygen sampling project that was conducted in the tidal segment of the Arroyo Colorado by his research team this summer. We had approximately 110 eager and optimistic people attend the “Fiesta,” hoping that they had the winning ticket for the 190 Dargel Skout the ACC was giving away. There was a bucket auction and a silent auction as well as some great smoked brisket and homemade rice and beans a la charra. The winner was Butch Palmer from Harlingen, TX. Butch is from Harlingen and lifelong Arroyo Colorado Watershed resident. He purchased his ticket just two days before the raffle!

- 6) The Arroyo “Save the Arroyo Fiesta” and Boat Raffle was considered a success. Mainly because the ACC was able to pay for the boat and cover all expenses associated with the Fiesta, approximately \$31,000, and still make a profit of \$4,224. Based on a post “Fiesta” meeting with Dargel Boat ownership/staff and ACFD WG members, the ACC decided to host a second “Save the Arroyo Fiesta” to be held on October 9, 2014. Shortly after the Fiesta, the WC completed a “Save the Arroyo Fiesta” summary. This summary was added to the Arroyo Colorado Sponsorship Package. Based on the first 7 months of 2014, the WC has surmised that the addition of the “Save the Arroyo Fiesta” summary has helped solicit more sponsors. He feels that already having hosted one successful Fiesta and have a proven track record reassures potential sponsors that the Fiesta is a legitimate and worthwhile cause.