NONPOINT SOURCE SUMMARY PAGE

FY 05 CWA 319(h)

1. TITLE OF PROJECT: Education of Best Management Practices in the Arroyo Colorado Watershed

2. PROJECT GOALS/OBJECTIVES: The overall objective of this project is to educate agricultural producers on how to better produce and manage their acreage and in doing so reduce the potential for nonpoint source pollution. Secondly, the project will support and promote associated programs implementing best management practices related to water quality protection.

3. PROJECT TASKS: (1) To provide support to education efforts through the development of an integrated team of multiple agencies and groups. (2) Host educational meetings in accordance with priority issues identified and addressed in the Watershed Protection Plan.

4. MEASURES OF SUCCESS: The overall impact of this project will be that it will provide landowners with accurate technically sound information that they can utilize to reduce the potential for nonpoint source pollution caused by improper use of land management techniques and to maintain and improve water quality in the Arroyo Colorado Watershed. TWRI and TCE will document project participation at all events and meetings. Programs will have a pre and post assessment survey where knowledge learned can be gauged. Follow-up surveys will be used to gage implementation of BMP. Overall success will be measured by the number of individual producers the project reaches.

5. PROJECT TYPE: Statewide ( ); Watershed Implementation/Education (X) Watershed Planning/Assessment( ) Watershed Protection(X)

6. WATERBODY TYPE: River (X) Lake ( ) Wetland ( ) Ground Water ( ) Other ( )

7. PROJECT LOCATION: The educational project will cover the Arroyo Colorado Watershed within Cameron, Hidalgo and Willacy County. TCEQ classified stream segment 2201, 'Arroyo Colorado Tidal', is located from the confluence with Laguna Madre in Cameron/Willacy County to a point 100 meters (110 yards) downstream of Cemetery Road south of Port Harlingen in Cameron County. TCEQ classified stream segment 2202, 'Arroyo Colorado Above Tidal', is located from a point 100 meters (110 yards) downstream of Cemetery Road south of Port Harlingen in Cameron County to FM 2062 in Hidalgo County.

8. NPS MANAGEMENT PROGRAM REFERENCE: State of Texas Agricultural/Silvicultural Nonpoint Source Management Program – Approved February 15, 2000.

9. NPS ASSESSMENT REPORT STATUS: Impaired (X) Impacted ( ) Threatened ( )
According to the 2002 Water Quality Inventory and 303(d) List, stream segment 2201, 'Arroyo Colorado Tidal', is classified as categrory 5c for depressed dissolved oxygen and ambient toxicity in sediment. And stream segment 2202, 'Arroyo Colorado Above Tidal', is classified in category 5a and 5c for bacteria and organic compounds in fish tissue, respectively.

10. KEY PROJECT ACTIVITIES: Hire Staff (X); Monitoring ( ); Regulatory Assistance ( ); Technical Assistance ( ); Education (X); Implementation ( ); Demonstration ( ); Other ( )

11. NPS MANAGEMENT PROGRAM ELEMENTS: Milestones from the "1999 Texas Nonpoint Source Pollution Assessment Report and Management Program," which will be implemented include: 1) Coordinating with federal, state, and local programs, and 2) Committing to technology transfer, technical support, administrative support and cooperation between agencies and programs for the prevention of NPS pollution.

12. PROJECT COSTS: Federal ($103,959); Non-Federal Match ($68,414); Total Project ($172,373)

13. PROJECT MANAGEMENT: Dr. B. L. Harris, Texas Water Resources Institute

14. PROJECT PERIOD: Three years from receipt of funding.

Education of Best Management Practices in the Arroyo Colorado Watershed

FY05 CWA Section 319(h)

WORKPLAN

Problem/Need Statement

The Arroyo Colorado is an ancient channel of the Rio Grande that extends eastward for about 90 miles from near the City of Mission through southern Hidalgo County to the City of Harlingen in Cameron County, eventually discharging into the Laguna Madre near the Cameron-Willacy county line. The watershed of the Arroyo Colorado drains approximately 700 square miles and generally consists of coastal plain that slopes gently toward the Gulf of Mexico.

The Arroyo Colorado Watershed is the major drainage-way for approximately two dozen cities in the area, with the exception of Brownsville. Additionally, almost 500,000 acres in the three counties are irrigated for cotton, citrus, vegetables, grain sorghum, corn and sugar cane production. Thus, much of the watershed is sustained by runoff and return flows from these areas, including urban wastewater discharges, irrigation and other agricultural return flows, stormwater runoff and base flows from groundwater.

Use of the water in the Arroyo Colorado for municipal, industrial or irrigation purposes is severely limited because of poor quality conditions. Salinity concentrations in the Arroyo typically exceed the limits considered desirable for human consumption, as well as, those acceptable for irrigation of crops. Furthermore, water quality and fish tissue testing have found that: (1) low dissolved oxygen levels have impaired the fish community and other aquatic life downstream from the Port of Harlingen; (2) elevated levels of pesticides (chlordane, toxaphene and DDE) have resulted in a fish consumption advisory upstream from the Port of Harlingen; and, (3) bacteria levels are occasionally elevated indicating a potential health risk to people who swim or wade in the Arroyo upstream from the Port of Harlingen.

General Project Description

The Agricultural Issues Workgroup was created by the Arroyo Colorado Watershed Steering Committee to develop the agriculture portion of the
Watershed Action Plan to restore water quality in the Arroyo Colorado Watershed. Stakeholder involvement within this group as well as other planning groups have identified needs specific to water quality protection and improvement for the agricultural community. Therefore, Texas Water Resources Institute (TWRI) proposes to work through Texas Cooperative Extension (TCE) to implement an educational program within the three-county area to address these issues related to agriculture production identified by the stakeholder groups.

Specifically, the educational program will serve two purposes. First, TCE will utilize its already developed resources and delivery system to educate producers on proper management and production techniques. Programs will address cotton, grain sorghum, sugar cane, citrus and vegetable production and proper nutrient management practices including a soil testing campaign. Second, TCE will promote programs associated with Arroyo Colorado water quality protection. For example, cost-share programs to support implementation of best management practices and technologies previously developed in the area did not reach full potential due to a lack of awareness among producers. TCE will be able to both promote these programs and provide education on the proper use of these technologies following installation. 103

Tasks, Objectives, Schedules, and Estimated Costs

Task 1: Project Coordination

Costs: $14,552 (Federal), $9,100 (State), $ 23,652 (Total)

Objective: TWRI will organize an integrated team among the multiple agencies and groups involved with the project to develop a comprehensive work plan to efficiently achieve project goals and to summarize activities and achievements made throughout the course of the project. (Months 1-36)

Subtask 1.1: Conduct quarterly meetings as appropriate with project participants (TWRI, TCE, TSSWCB, SWCDs, NRCS, Arroyo-Colorado Watershed Coordinator, TAMU Kingsville, etc.) to discuss project schedule, completion of deliverables, outreach and participation strategies, communication needs and other requirements.

Subtask 1.2: TWRI will submit project strategies / programs and project status as necessary to the Ag Issues Workgroup via TSSWCB for inclusion in the Watershed Protection Plan.

Subtask 1.3: TWRI will prepare electronic quarterly reports and submit to TSSWCB.

Subtask 1.4: TWRI and TCE will develop a final project report and submit to TSSWCB.

Deliverables

- Project activities and status submitted to the Ag Issues Workgroup
- Quarterly Progress Reports
- Final Project Report

Task 2: Conducting Local Educational Meetings

Costs: $89,407 (Federal), $59,314 (State), $ 148,721 (Total)

Objective: TWRI and TCE will host educational meetings in accordance with priority issues identified in Task 1 and outlined in the work plan.

Subtask 2.1: Meetings will serve to educate individuals on specific crop production techniques. Each of the following meetings will be held on an annual basis.

- 2 cotton production meetings in Hidalgo, Cameron and Willacy Counties
- 1 sorghum production meeting in Hidalgo, Cameron and Willacy Counties
- 1 sugar cane production meeting in Hidalgo County
- 1 citrus production meeting in Hidalgo County
- 1 vegetable production meeting in Hidalgo County
- County and multi-county Pesticide Applicator Safety Training and Continuing Education

Subtask 2.2: Meetings, demonstrations and other educational activities will serve to educate individuals on nutrient management techniques. Specifically:

- A soil testing campaign will be conducted within the 3 counties to promote proper use of fertilizers.
- When available, summarized data will be collected from TAMU-Kingsville and compiled into educational fact sheets or presented.

Subtask 2.3: Meetings and promotional events will serve to advertise and educate individuals on related programs addressing water quality. For example, Texas Cooperative Extension will:

- Promote cost–share programs (319(h), EQIP, etc.)
- Educate producers or assist SWCDs in development of water quality management plans
- Educate producers on involvement and development of the Watershed Protection Plan and the potential effects of its implementation.

Deliverables

- Results from pre and post evaluation surveys conducted at select meetings
- Results from survey quantifying effectiveness of soil testing campaign
- Promotional materials including news-releases, fact-sheets, etc.

Coordination, Roles and Responsibilities:

Participating Agencies and Organizations along with their roles in this project include:

- Texas State Soil and Water Conservation Board (TSSWCB): Project management.
- TSSWCB Harlingen Regional Office: Provides information regarding cost-share programs to TCE personnel. Assists in educating producers in their involvement in these programs. Also when appropriate includes education efforts in the Agriculture Issues portion of the Arroyo Colorado Watershed Protection Plan led by the TSSWCB
- TAMU-Kingsville: Conducts water quality research and BMP assessment under separate project. Will coordinate with TAES Researchers in summarizing data to develop education material for TCE activities.
- Arroyo Colorado Watershed Coordinator: Facilitates communication and interaction between all project personnel ensuring adequate and efficient completion of tasks.
- Natural Resources Conservation Service (NRCS): Works with and assists TCE in publicizing education events and Watershed Protection Plan development activities. Also provides information or education on cost-share programs facilitated by NRCS.
- Texas Cooperative Extension (TCE): Provides water quality education.
- Texas Agricultural Experiment Station (TAES): Assists with providing water quality education through the use of demonstrations, coordination of research activities led by TAMU-Kingsville and/or development of educational material.
- Texas Water Resources Institute (TWRI): Coordination of project personnel and project reporting.

Measures of Success

- Document project participation at all events and meetings.
- Conduct pre and post assessment surveys at education programs where knowledge learned can be gauged.
- Conduct follow-up surveys to gage implementation of BMP.
- Report number of individual producers the project reaches.

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Itemized Budget

05-10 "Education of Best Management Practices in the Arroyo Colorado Watershed" Budget Revision 5/27/2008			
Federal 319(h)	$103,959	% of total project	60%
Non-Federal Match	$68,414	% of total project (at least 40%)	40%
Total $ Cost	$172,373	Total project %	100%

Category	Federal	Non-Federal Match	Total
Personnel	$53,087	$38,882	$91,969
Fringe Benefits	$14,228	$9,524	$23,752
Subtotal Personnel & Fringe	$67,315	$48,406	$115,721
Travel	$7,990	$0	$7,990
Equipment	$0	$0	$0
Supplies	$6,000	$0	$6,000
Contractual	$0	$0	$0
Construction	$0	$0	$0
Other	$7,060	$0	$7,060
Subtotal	$21,050	$0	$21,050
Total Direct Costs	$88,365	$48,406	$136,771
Indirect Costs (15%)	$15,594	$20,008	$35,602
Total Project Costs	$103,959	$68,414	$172,373