

Education of Best Management Practices in the Arroyo Colorado Watershed Scope of Work

I. Background

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.

II. 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

II. Tasks

TASK 1: Project Coordination

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.

TASK 2: Conducting Local Educational Meetings

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 / 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, TCE 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.*