

**WQMP Implementation Assistance in the Arroyo Colorado Watershed**  
**Texas State Soil and Water Conservation Board**  
**Project #05-12**

**NONPOINT SOURCE SUMMARY PAGE**

**1. Title of Project:** WQMP Implementation Assistance in the Arroyo Colorado Watershed

**2. Project Goals/Objectives:** (1) To foster coordinated technical assistance activities in the Arroyo Colorado watershed between the TSSWCB, local SWCDs, and NRCS. (2) To provide technical assistance to landowners to aid in the development and implementation of WQMPs. Additional technical assistance will be provided by a Technician position directed by the Harlingen Regional Office in the Arroyo Colorado watershed. (3) To compile information on the location and types BMPs for each WQMP implemented.

**3. Project Tasks:** (1) Program Coordination with Project Participants, (2) Development and Implementation of WQMPs, (3) Compilation of WQMPs Implemented in the Arroyo Colorado watershed

**4. Measures of Success:** (1) Implementation of a minimum of 78 WQMPs throughout the Arroyo Colorado watershed, (2) Conduct a minimum of 144 Status Reviews of WQMPs implemented in the Arroyo Colorado watershed, (3) Reduction of nutrient levels from agriculture in the Arroyo Colorado as recommended in the Watershed Protection Plan, (4) Provide testing of 300 soil samples.

**5. Project Type:** Statewide (); Watershed (); Demonstration ()

**6. Waterbody Type:** River (); Groundwater (); Other ()

**7. Project Location:** Segments 2201 and 2202 of the Arroyo Colorado Watershed

**8. NPS Management Program Reference:** *Texas Nonpoint Source Pollution Assessment Report and Management Program*, October 1999

**9. NPS Assessment Report Status:** Impaired (); Impacted (); Threatened (); Other ()

**10. Key Project Activities:** Hire Staff (); Monitoring (); Regulatory Assistance (); Technical Assistance (); Education (); Implementation (); Demonstration (); Other ()

**11. NPS Management Program Elements:** Milestones implemented include the following: (1) providing financial assistance to Soil and Water Conservation Districts (SWCDs) for the implementation of WQMPs in order to reduce NPS pollution, (2) coordinating with Federal, State, and Local Programs, and (3) technology transfer, technical support, administrative support and cooperation between agencies and programs for the prevention of NPS pollution

**12. Project Costs:** Federal (\$970,478); Non-Federal Match (\$495,722); Total Project (\$1,466,200)

**13. Project Management:** Hidalgo and Southmost SWCDs

**14. Project Period:** September 1, 2005 – December 31, 2009

**WQMP Implementation Assistance in the Arroyo Colorado River Basin**

Texas State Soil and Water Conservation Board

FY05 CWA Section 319(h)

Project #05-12

**WORKPLAN**

9/1/05 – December 31, 2009

**Problem/Need Statement:**

The Arroyo Colorado flows through Hidalgo, Cameron and Willacy County in the Lower Rio Grande Valley of Texas into the Laguna Madre. Flow in the Arroyo Colorado is sustained by waste water discharges, agricultural irrigation return flows, urban runoff, and base flows from shallow groundwater. The Arroyo is the major source of fresh water to the lower Laguna Madre, an economically and ecologically important resource to the region. The Laguna Atascosa National Wildlife Refuge and several county and city parks are located within the Arroyo watershed. The mild climate, semi-tropical plants and animals, and many recreational opportunities draw large numbers of people to the Arroyo Colorado watershed. One third of the stream is also used for shipping from the Gulf Intracoastal Waterway to the Port of Harlingen.

The lower reaches of the Arroyo Colorado have historically failed to meet their use under Section 303(d) of the U.S. Clean Water Act due to fecal coliform bacteria and low dissolved oxygen (DO). In order to meet the dissolved criteria (24-hour average of 4.0 mg/L and minimum of 3.0 mg/L) at least 90% of the time between the critical period of March through October, TCEQ (2003) estimates a 90% reduction in nitrogen, phosphorous, oxygen demanding substances and sediment will be necessary.

Watershed Protection Plan Development

In response to this impairment, a local effort has been initiated to develop a watershed protection plan (WPP) to improve conditions in the Arroyo Colorado. Working with the TCEQ, the TSSWCB, and other agencies, a local steering committee will devise and implement strategies to increase dissolved oxygen in the Arroyo and improve its environmental condition.

The Arroyo Colorado Watershed Steering Committee has established several work groups to address the five major components of the watershed plan: wastewater infrastructure; agricultural issues; habitat restoration; refinement of the TMDL analysis; and public education. The project has significant financial support from federal nonpoint source grants under CWA Section 319(h). Already, the stakeholders have made great progress. The Education and Outreach Work Group has developed an outstanding multimedia presentation about pollution problems in the Arroyo and how to get involved in addressing them. In May 2004, the TCEQ and the Habitat Restoration Work Group established contracts with Texas A&M's Sea Grant program and the Texas Parks and Wildlife Department to provide an independent watershed coordinator and a habitat restoration specialist to assist in the development of the WPP. The WPP is expected to be completed January 2006.

Water Quality Management Plans in the Arroyo Colorado

As the lead agency for the State of Texas in abating agricultural NPS pollution, the State Board works closely with local SWCDs to reduce NPS pollution from various agricultural activities. The State Board addresses the prevention or abatement of NPS pollution through the Water Quality Management Plan (WQMP) program. Concurrent to the Watershed Protection Plan development efforts, the TSSWCB, in conjunction with local SWCDs and the NRCS, are

implementing Water Quality Management Plans to reduce NPS from agricultural operations. A WQMP is a site-specific plan which includes appropriate land treatment practices, production practices, technologies and combinations thereof, and an implementation schedule.

TCEQ (2003) estimates that between 1989 and 1999, agricultural NPS runoff was responsible for 87% of the suspended sediment, 41% of the BOD, 68% of the nitrate, 64% of the ammonia, and 49% of the phosphate load in the Arroyo (Segment 2201). Through the use of state cost-share funds and a number of 319 projects in the Arroyo Colorado watershed the TSSWCB and SWCDs have begun addressing the loading attributed to the approximately 290,000 acres of irrigated cropland in the watershed. To date, the TSSWCB has certified 223 water quality management plans (WQMPs) covering 28,702 acres. Through these WQMPs approximately 10,000 acres have been contracted for incentive payments for nutrient management, 7,634 acres have had irrigation land leveling done and 96,483 feet of subsurface drains and 143,570 feet of irrigation pipeline have been installed. Approximately 98% of the 28,702 acres mentioned above is designated as irrigated cropland. Much work remains to be done in the Arroyo, but with continued support from the 319 program and state, the State is confident that water quality improvements will be achieved. This timely project will be incorporated into the overall Watershed Protection Plan for the Basin in order to address the potential agricultural sources of NPS pollution and will be coordinated with educational and assessment activities planned within the watershed.

#### **General Project Description:**

This proposed project will consist of TSSWCB working cooperatively with local SWCDs in the Arroyo Colorado Watershed to provide technical and financial assistance to landowners in the implementation of WQMPs. The primary focus of the 319(h) program is to provide funds to States to implement BMPs that abate or reduce NPS pollution. The use of 319(h) funds will greatly improve and enhance the abilities of local SWCDs to provide technical and financial assistance to landowners in the implementation of WQMPs.

In this project, technical assistance will be provided by two SWCDs (Hidalgo and Southmost) and the TSSWCB Harlingen Regional Office to landowners within the Arroyo Colorado Watershed to develop and implement WQMPs within the watershed in each SWCD. A full-time Technician in the Southmost SWCD and a part-time Technician in the Hidalgo SWCD will provide assistance in developing and implementing WQMPs. Technical assistance is best provided by local SWCDs because it will allow for greater local support from landowners in the implementation of WQMPs.

The objective of WQMP implementation is to achieve a level of pollution prevention or abatement determined by the State Board in consultation with the local SWCDs to be consistent with State water quality standards. Highest priority is given to the implementation of the most cost effective and most needed pollution abatement practices. Local SWCDs determine which landowners receive technical assistance for the development and implementation of WQMPs based on a three tier system. The system consists of the following:

- 1st priority: Irrigated Cropland/Citrus with tile drains
- 2nd priority: Irrigated Cropland/Citrus without tile drains
- 3rd priority: Areas of cropland conversion to grassland

The SWCDs will offer a sign up for the implementation assistance. Upon compiling the list of producers who are interested in assistance, they will be ranked based on the 3-tier system above

and based on land units that are in the greatest need of WQMP implementation in the targeted subwatersheds. Water quality improvement and protection will be the basis for making these decisions. The focus of the TSSWCB in this watershed will be to reduce agricultural nutrient NPS pollution. The three tiered system targets the three dominant land activities in the watershed. Once the rankings have been made based on the three-tiered system, the land units will further be prioritized based on site evaluations to achieve the greatest water quality benefits in the watershed. All activities on an operating unit must be covered under the WQMP. Similar to the S.B. 503 program, producers will be eligible for financial assistance at a rate of \$10,000 per WQMP. For further clarification, the landowner may only need \$8,000 for WQMP implementation. In that case, the producer will apply for only what he needs, not the full \$10,000. To obtain a WQMP, landowners and operators must first submit a request to the local SWCD. The district will review the request and assign a priority and number to each request. Upon approval of the request by the SWCD, the Technician will work with the landowners to develop the WQMP. WQMPs that are developed will be done according to the NRCS Field Office Technical Guide. Some of the tasks that the Technicians will perform include:

- Developing Conservation Plan Maps showing boundaries, field, land use, acres and facilities
- Acquire soil maps with appropriate interpretations
- Developing an implementation schedule
- Completing worksheets used during the planning phases (nutrient management plans, erosion worksheets, and field notes)

Once the WQMP is completed by the Technician, it will be sent by the District to the TSSWCB Regional office in Harlingen for technical review and certification. Upon certification of the WQMP by the State Board, the Technician will work with the landowner in taking the appropriate steps needed to implement the WQMP. If the landowner does not implement the WQMP according to the conditions established in the plan, then the plan will be decertified by the State Board. As part of this process, the producer must also sign a contract stating that he agrees to maintain the WQMP for the life of the practices. Hence, once this project is completed the producers will still be required to maintain their WQMPs.

The TSSWCB Harlingen Regional office will provide technical review of developed WQMPs during this project to ensure that the WQMPs are consistent with TSSWCB procedures.

The BMPs contained in these WQMPs have proven to be effective in removing nutrients in the past. Based on the effectiveness of these previously implemented BMPs we are confident that this project will improve water quality significantly in the watershed.

The Technicians hired as part of this project will work with landowners to develop and implement WQMPs within the watershed. Information will be compiled on the location and types of BMPs implemented for each WQMP.

### **Tasks, Objectives, Schedules, and Estimated Costs:**

#### **Task 1: Program Coordination with Project Participants**

Costs: \$18,748 (Federal), \$0 (Non-Federal), \$18,748 (Total).

**Objective:** (1) Provide technical assistance to agricultural producers in the Arroyo Colorado watershed. (2) Develop timely and comprehensive reports.

**Subtask 1.1:** The Southmost SWCD will hire a full-time technician to develop, implement, and maintain WQMPs and other tasks in this workplan. The Hidalgo SWCD will hire a part-time technician to develop, implement, and maintain WQMPs and other tasks in this workplan.

**Subtask 1.2:** The technicians will attend monthly SWCD board meetings to discuss technical assistance activities, project schedule, lines of responsibility, communication needs, and other required tasks with project participants.

**Subtask 1.3:** The technicians will attend meetings with the TSSWCB project manager and other meetings, as needed, to review project status, deliverables, etc.

**Subtask 1.4:** The Technicians will participate in Arroyo Partnership Meetings and Arroyo Ag Steering Committee Meetings as necessary. (Start Date: Month 1; Completion Date: Month 40)

**Subtask 1.5:** The full-time Technician employed by the Southmost SWCD, with assistance from the Harlingen Regional office and the Hidalgo Technician, will complete and submit quarterly reports to the TSSWCB project manager. (Start Date: Month 1; Completion Date: Month 40)

**Subtask 1.6:** The full-time Technician employed by the Southmost SWCD, with assistance from the Harlingen Regional office and the Hidalgo Technician, will complete and submit a final report to the TSSWCB at the culmination of the project. This report will be completed and provided to the TSSWCB in both electronic (i.e. compact disc; etc.) and paper format.

### **Deliverables**

- Quarterly reports documenting project status.
- Final report.
- Copies of agendas, attendance, minutes and other materials from meetings attended

### **Task 2: Development and Implementation of WQMPs**

Costs: \$932,982 (Federal), \$495,722 (Non-Federal), \$1,466,200 (Total).

**Objective:** (1) Encourage irrigation operations in the Arroyo Colorado watershed to implement BMPs that reduce nutrient runoff through a traditional, voluntary-based incentive program by assisting farmers in developing, implementing and maintaining WQMPs. (2) Provide free soil testing for farmers in the Arroyo Colorado watershed who operate under a WQMP. (3) Conduct Status Reviews of WQMPs in the Arroyo Colorado watershed.

**Subtask 2.1:** The technicians will develop a minimum of 78 WQMPs within the Arroyo Colorado watershed (Month 1 to Month 40)

**Subtask 2.2:** Cost-share will be provided to farmers in the Arroyo Colorado watershed to implement BMPs that reduce nutrient runoff as follows:

- A WQMP will be required in order to qualify for financial assistance.
- The maximum cost-share rate shall not exceed 60% of the cost of implementation of the BMPs.
- Cost share will be based on actual cost not to exceed average cost of the practice.
- Landowners shall be eligible to receive a maximum cost-share amount of \$10,000.
- Only land located directly in the Arroyo Colorado watershed is eligible for cost-share funding. Operations nearest to the zone of impairment will be given highest priority.

**Subtask 2.3:** The Technicians, with assistance from the Harlingen Regional Office and the SWCDs will send out notifications announcing the availability of WQMP implementation assistance funds. (Start Date: Month 1; Completion Date: Month 12)

**Subtask 2.4:** The Technicians will assist the Harlingen Regional Office, NRCS and the SWCD in accepting and prioritizing the WQMP applications based on the previously mentioned three tiered system. Furthermore, within this system, landowners will be ranked based on the greatest need of BMP implementation. (Start Date: Month 1; Completion Date: Month 36)

**Subtask 2.5:** The Technicians, with assistance from the Harlingen Regional Office, will provide landowners with information on appropriate best management practices and will work with landowners in developing and implementing WQMPs within the Arroyo watershed. The Technicians will be trained by the TSSWCB Harlingen Regional Office. (Start Date: Month 1; Completion Date: Month 36)

**Subtask 2.6:** TSSWCB will provide technical review and certification of WQMPs. During this process, TSSWCB will certify all WQMPs and ensure that they are consistent with state water quality standards. (Start Date: Month 1; Completion Date: Month 36)

**Subtask 2.7:** The technicians will conduct Status Reviews of all WQMPs developed through this project. In addition, the technicians will conduct Status reviews of 10% of the existing 223 WQMPs in the Arroyo annually. A list of the WQMPs reviewed will be reported quarterly. A total of 144 Status Reviews will be conducted during the project period.

**Subtask 2.8:** The technician will assist holders of WQMPs in the acquisition of current soil tests through utilization of project funding.

**Deliverables:**

- 78 WQMPs developed and implemented within the Arroyo Colorado River Watershed.
- 144 Status Reviews will be submitted to the TSSWCB

**Task 3: Compilation of WQMPs Implemented in the Arroyo Colorado Watershed**

Costs: \$18,748 (Federal), \$0 (Non-Federal), \$18,748 (Total).

**Objective:** To compile information on the location and types of BMPs for each WQMP implemented.

**Subtask 3.1** The Technicians, with assistance from NRCS, the TSSWCB Harlingen Regional Office and the SWCDs will compile information on the location and types of BMPs for WQMPs implemented within the Arroyo Colorado watershed. (Start Date: Month 1; Completion Date: Month 40)

**Subtask 3.2:** The technicians will create a map showing the location of all WQMPs developed and implemented in the Arroyo Colorado watershed for inclusion in the final report.

**Deliverables:**

- Spreadsheet and map showing location and types of BMPs for each WQMP implemented

**Coordination, Roles and Responsibilities:**

Participating organizations and agencies along with their roles in this project include:

- Texas State Soil & Water Conservation Board- Project Lead- Responsible for technical review and certification of WQMPs. Work with and assist as needed local SWCDs in the implementation and development of WQMPs. Also assist the district in inventorying current BMPs and land use practices and the implementation of WQMPs
- Southmost and Hildago SWCDs - Responsible for developing and implementing WQMPs on a district-wide and subwatershed basis. Also responsible for inventorying current BMPs and land use practices on a subwatershed basis and for tracking/inventorying the implementation of WQMPs on a district-wide and subwatershed basis
- Natural Resources Conservation Service- Work with and assist as needed local SWCDs in the implementation and development of WQMPs

**Public Participation:**

This project will be highly coordinated with the Arroyo Partnership and Arroyo Ag Steering Committee as well as the educational and assessment projects planned in the watershed. These groups and projects will provide for a great deal of public participation and many opportunities for public input. This project will provide technical assistance to landowners in the Southmost and Hildago SWCDs in the implementation of WQMPs in the Arroyo Colorado watershed consistent with the Watershed Protection Plan.

**Measures of Success:**

- Implementation of 78 WQMPs throughout the Arroyo Colorado watershed.
- Conduct a minimum of 144 Status Reviews of WQMPs implemented in the Arroyo Colorado watershed.
- Reduction of nutrient levels from agriculture in the Arroyo Colorado as recommended in the Watershed Protection Plan.
- Provide testing of 300 soil samples.

**Reference to Project in the NPS Management Program:**

Category: Agriculture

**Project Lead:**

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**Arroyo Watershed project  
Itemized Budget 8-10-09  
Contract 05-12**

<b>Object Class Category</b>	<b>Federal</b>	<b>Non-Federal</b>	<b>Total</b>
<b>1 Personnel</b>			
Technician at Southmost SWCD	\$153,200	\$0	\$153,200
Part time technician - Southmost	<u>\$32,992</u>	\$0	<u>\$32,992</u>
Subtotal Personnel	\$186,192	\$0	\$186,192
<b>2 Fringe Benefits @ 28%</b>	\$40,286	\$0	\$40,286
<b>3 Travel</b>	\$0	\$0	\$0
<b>4 Equipment</b>	\$0	\$0	\$0
<b>5 Supplies @ \$50/month</b>	\$1,800	\$0	\$1,800
<b>6 Contractual</b>			
SWCD Financial Audit	<u>\$3,000</u>	<u>\$0</u>	<u>\$3,000</u>
Subtotal Contractual	\$3,000	\$0	\$3,000
<b>7 Construction</b>			
WQMP 60:40 Cost-Share Assistance - Southmost	\$535,418	\$366,667	\$902,085
WQMP 60:40 Cost-Share Assistance - Hidalgo	<u>\$193,582</u>	<u>\$129,055</u>	<u>\$322,637</u>
Subtotal Construction	\$729,000	\$495,722	\$1,224,722
<b>8 Other</b>			
Truck gas, maintenance, etc.	\$7,200	\$0	\$7,200
Soil Samples (300 @ \$10)	<u>\$3,000</u>	<u>\$0</u>	<u>\$3,000</u>
Subtotal Other	\$10,200	\$0	\$10,200
<b>9 Total Direct Costs</b>	\$970,478	\$495,722	\$1,466,200
<b>10 Total Indirect Costs</b>	\$0	\$0	\$0
<b>11 Total Costs</b>	\$970,478	\$495,722	\$1,466,200

