

**WATER QUALITY MANAGEMENT PLAN
IMPLEMENTATION ASSISTANCE IN THE
OSO CREEK WATERSHED**

Final Report

Clean Water Act, Section 319 (h) Non-Point Source Grant

Contract #02-13

NUECES SOIL & WATER CONSERVATION DISTRICT

USDA-Natural Resources Conservation Service

Robstown, Texas

TSSWCB Regional Office

Harlingen, Texas

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INTRODUCTION

The Oso Creek watershed is located entirely in Nueces County and drains approximately 165,000 acres. The topography of the area is relatively flat with elevation ranging from about 15 feet above sea level at the outlet to about 65 feet above sea level in the upland areas. The creek and its tributaries drain into Oso Bay which in turns drains into Corpus Christi Bay.

The upper portion of the Oso Creek watershed includes a substantial amount of cropland acreage whereas the lower portion meanders through the southern edge of the city of Corpus Christi. The primary crops are grain sorghum, cotton and small amounts of corn. Acreage of improved pastureland can be found scattered throughout the watershed.

Oso Bay was first listed on the 1996 Texas Water Quality Inventory and 303(d) list of impaired waters for not meeting standards for dissolved oxygen.

In September, 2002, the Nueces SWCD executed an agreement with the Texas State Soil and Water Conservation Board to develop and implement water quality management plans (WQMP) in the watershed. The targeted best management practice was conservation tillage. Incentive payments were made to those participants who successfully implemented the practice.

A goal was set to develop 40 WQMPs within the boundaries of the Oso Creek watershed. A total of \$449,323.00 were earmarked for conservation tillage incentive payments at the rate of \$10.00 per acre. In order to include the 2005 crop, the project was extended through December 31, 2005.

PROGRAM DEVELOPMENT

The Nueces SWCD announced the opening of the Conservation Planner in the fall, 2002. Interviews were conducted in December, 2002 and final selection was made in early January, 2003.

By working jointly with the USDA-natural Resources Conservation Service and the Farm Service Agency, the planner was able to identify the majority of the producers in the watershed. Once identified the local SWCD sent letters informing them about the project.

The first signup was completed in March, 2003.

PROJECT ACCOMPLISHMENTS

A total of 40 WQMPs were developed, certified and implemented on 12, 699 acres within the confines of the watershed. A total of \$210,109.00 were made incentive payments for the 2003, 2004 and 2005 crop cycles.

Conservation tillage systems have the potential to offer numerous benefits that intensive or conventional tillage simply can not match. For example, crop residue help hold soil particles and associated nutrients and pesticides on the field, thus, improving surface water quality. With conservation tillage, crop residues on the soil surface reduce erosion by water and wind. Depending on the amount of residues present, soil erosion can be reduced by up to 90% compared to an unprotected, intensively tilled field. Another benefit potentially derived from conservation tillage is improved water infiltration. Crop residues act as tiny dams to slow water runoff from the field, allowing the water more time to soak into the soil. Infiltration is enhanced by channels created by earthworms and old plant roots left intact.

The primary objective was to encourage farmers to adopt and implement conservation tillage and/or reduced tillage. It was a difficult task in the beginning primarily because the concept of conventional tillage and/or excessive tillage is deeply embedded in this part of the state. However, by the third year, there was a dramatic change in the level of acceptance of this best management practice. The cost of fuel, the wear and tear on equipment and the fact that conservation tillage did not have a negative impact on crop yield were some of the factors that influenced farmers to implement conservation tillage.

Another concern was soil compaction. The majority of fields in the program were tested for compaction with a penetrometer. Levels of compaction were minimal at best.

In conclusion, conservation tillage is expanding not only in the watershed but throughout the county. Crop residue management is proving to be good for the environment and the producer's bottom line.

PROJECT ACCOMPLISHMENTS BY TASK

TASK 1: Program Coordination with project Participants

Costs: \$112,330 (Federal), \$0 (Non-Federal), \$112,330 (Total). Task is 20% of total.

Objective: To foster coordinated technical assistance activities in the Oso Creek watershed between the TSSWCB, NRCS, and Nueces SWCD.

Subtask 1.1 The Nueces SWCD will hire a planner who will coordinate and carry out the project. The TSSWCB Harlingen Regional Office will train the planner. (Start Date: Month 1; Completion Date: Month 36)

The SWCD hired the first planner in January 2003. A replacement was hired in January 2004, who left his job on August, 2004. The Harlingen Regional Office completed the project.

Subtask 1.2 Conducted semi-annual meetings with project participants and TSSWCB project manager to discuss technical assistance activities. (Start Date: Month 1; Completion Date: Month 36)

Semi-annual meetings were scheduled to coincide with Program Development meetings held in conjunction with EQIP.

Subtask 1.3 Coordinate with other agencies and programs providing landowners incentives for adopting Best Management Practices. (Month 1 through month 36)

Sound coordination was established with USDA-NRCS and its programs and the Texas Cooperative Extension Service.

Subtask 1.4 Prepare quarterly reports and a final report for submittal to the TSSWCB. (Start Date: Month 1; Completion Date: Month 36)

All quarterly reports were completed in a timely manner.

PROJECT ACCOMPLISHMENTS BY TASK

Task 2: Development and Implementation of WQMPs

Costs: \$449,323 (Federal), \$0 (Non-Federal), \$449,323 (Total). Task is 80% of total.

Objective: To provide technical assistance to landowners in developing and implementing WQMPs within the Oso Creek Watershed.

Subtask 2.1 The SWCD planner will develop approximately 40 WQMPs within the Oso Creek/Oso Bay Watershed. The SWCD planner will complete all WQMPs with assistance from the NRCS as needed. (Month 1 to Month 36)

A total of 42 WQMPs were developed, certified and implemented in the watershed.

Subtask 2.2 The SWCD planner will send out notifications announcing the availability of assistance for implementing WQMPs, and will assist the Harlingen Regional Office, NRCS and Nueces SWCD in accepting and prioritizing the WQMP applications.

Letters were sent to producers in February, 2003.

Subtask 2.3 The planner, with assistance from NRCS and the TSSWCB 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 Oso Creek watershed. (Start Date: Month 1; Completion Date: Month 32)

All certified WQMPs were fully implemented as per schedule.

Subtask 2.4 TSSWCB will provide technical review and certification of WQMPs. (Start Date: Month 1; Completion Date: Month 32)

The Harlingen Regional Office of the TSSWCB reviewed and certified WQMPs.

Subtask 2.5 The SWCD planner will conduct status reviews on all WQMPs to ensure BMP implementation schedules are being followed.

WQMP status reviews were conducted as planned.



Conservation tillage on a grain sorghum field. After a burndown herbicide is applied prior to harvest, no more than 2 field operations will be made before the next crop is planted.



Conservation tillage being applied on a cotton field. It will take 2 additional field operations to plant the next crop; one to fertilize and another one to plant.



Conventional tillage on a grain sorghum with no residue remaining on the soil surface.