Implementing Ag BMPs

Texas Conservation Partnership

- Providing Conservation Assistance to Private Landowners for 70 Years
- LOCAL - 216 Soil and Water Conservation Districts (SWCDs)
- STATE - Texas State Soil and Water Conservation Board (TSSWCB)
- FEDERAL - U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS)
Critical Partners

Texas AgriLife Extension Service
- Education and demonstration of BMPs
- Soil testing campaigns

Texas AgriLife Research
- Research and demonstration of BMP effectiveness

Texas Department of Agriculture
- Lead state agency for the regulation of pesticide use and application

Texas Forest Service
- Silvicultural NPS mgmt

USDA Agricultural Research Service
- Research and demonstration of BMP effectiveness

Implementation Strategy

Proactively address agricultural and silvicultural nonpoint sources of pollutants through voluntary implementation of BMPs by landowners to bring impaired waterbodies back into compliance with water quality standards or prevent waterbodies from becoming impaired.
State’s Implementation Strategy

- Technical assistance for landowners to develop WQMPs or RMS
- Financial assistance for landowners to implement BMPs
- Research on effectiveness of BMPs
- Education on and Demonstration of BMPs

WQMPs & RMS

- Site specific plans with a combination of BMPs for the treatment of identified resource concerns
- Based on:
  - Soil types
  - Planned land use/production goals
  - Known/potential water quality/natural resource problems (SWAPA)
  - Other site specific factors (topo, etc.)
ONLY WQMPs

- Cover the entire farm or ranch
- Specifically designed to achieve pollution prevention/abatement
  - Consistent with Texas water quality goals
- Texas Water Code §26.121 essentially grants TSSWCB-certified WQMPs the same legal status as TCEQ point source permits

Technical Criteria for WQMPs & RMS

NRCS Field Office Technical Guide (FOTG)

To view all approved practices for selected county:
- Select region
- Select county
- Select Section IV
- Select A. Conservation Practices
BOTH include FOTG “essential practices” for each land use:

- **Cropland**
  - Conservation crop rotation
  - Residue mgmt.

- **Pastureland**
  - Prescribed grazing
  - Livestock water

- **Rangeland**
  - Prescribed grazing
  - Livestock water

- **Wildlife**
  - Wildlife mgmt.

- **Forestland**
  - Forest mgmt.

WQMPs & RMS also include:

- Nutrient management
- Pest management
- Animal waste management system
- Waste utilization
- Irrigation water management
WQMPs & RMS also include:

- Erosion control measures to bring soil loss to acceptable levels (T)

- Erosion control to treat other forms of erosion (i.e. gullies) according to FOTG quality criteria

- Other practices to meet site specific concerns

Obtaining a RMS or WQMP

- Producer requests planning assistance thru SWCD

- Plan developed with assistance from NRCS, SWCD, &/or TSSWCB

- Plan approved by producer & SWCD and NRCS verifies FOTG consistency
Obtaining a RMS or WQMP

- TSSWCB reviews WQMP for consistency with Texas water quality goals
- WQMP certified by TSSWCB
- Individual plan implementation
- Annual status review

WQMP Content
District Cooperative Agreement

Maricopa County Soil and Water Conservation District

1. The undersigned counties, understand the purposes of the Maricopa County Soil and Water Conservation District, its obligations and purpose. I desire to use my land within the applicable rules and to treat it according to the rules. To do so, therefore, I enter into the following agreement with the Maricopa County Soil and Water Conservation District.

I agree to:

1. To develop a plan in a manner consistent with the assistance of the District's conservation plan for my operating unit that will be mutually acceptable to me and the District.
2. To review any of the plans prepared by my engineer and help heath to me from the District, if needed.
3. To comply, in carrying out this plan, with any applicable State laws governing the beneficial use of water.
4. To maintain all structures and other conservation measures which the District has helped me put into effect as long as they are needed.
5. That members of the District's governing body or their representatives will have the right of ingress and egress to the operating unit during the period of this agreement for the purpose of conducting surveys, planning, and installing or inspecting conservation covers or structures.

THE DISTRICT AGREES TO:

1. To provide all necessary information for the execution of the plan.
2. To provide technical assistance to help in the development, revision, or application of the conservation plan.

IT IS MUTUALLY AGREED:

1. That neither the District nor the cooperators shall be liable for damages to the other for damages to the vehicle in connection with the installation on the other conservation measures herein and shall not be held liable for any unauthorized improvements or work of any kind.
2. This agreement will become effective on the date of the last signature and may be terminated by written agreement of the parties.

COOPERATOR

Date

DISTRICT

Date

Maricopa County Soil and Water Conservation District

We are happy to have you as a cooperators. Thank you for all we can see ever the life of this program.

REQUEST FOR WATER QUALITY MANAGEMENT PLANNING ASSISTANCE

Soil and Water Conservation District

I hereby apply for assistance in developing a Water Quality Management Plan, as provided by Section 205.5264 (c) of the Agricultural Code. It is not intended to implement and maintain this plan in order to meet the State's requirements for water quality as expressed in Section 28.2320(a)(8)(h), Texas Water Code.

(1) General description of location of all property within this operating unit.

Total Acres:

(2) The land is controlled and operated by the applicant(s). ( ) Yes ( ) No. If no, explain.

(3) An Annual Feeding Operation is involved. ( ) Yes ( ) No. If yes, a permit required ( ) Yes ( ) No

(4) I understand that my plan shall be subject to an annual status review by personnel of the State Soil and Water Conservation Board.

Applicant's Signature

Date

NOTE: If you are a cooperators with the Soil and Water Conservation District, a District Cooperative Agreement must be completed and attached to this application.

*The last of this sheet for full text of general business.
Soils Map

Soils Description

Non-Technical Descriptions

Any County, Texas

Map Unit: C1C - cherish loam, 3 to 6 percent slopes.

Soil Description:

- **Map Unit:** C1C - Cherish loam, 3 to 6 percent slopes
- **Soil Type:** C1C
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1D - Clarks loam, 3 to 6 percent slopes
- **Soil Type:** C1D
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1E - Ennis loam, 3 to 6 percent slopes
- **Soil Type:** C1E
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1F - Fairview loam, 3 to 6 percent slopes
- **Soil Type:** C1F
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1G - Granger loam, 3 to 6 percent slopes
- **Soil Type:** C1G
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1H - Haynes loam, 3 to 6 percent slopes
- **Soil Type:** C1H
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1I - Idalou loam, 3 to 6 percent slopes
- **Soil Type:** C1I
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1J - Jelinek loam, 3 to 6 percent slopes
- **Soil Type:** C1J
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1K - Kress loam, 3 to 6 percent slopes
- **Soil Type:** C1K
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1L - Lamado loam, 3 to 6 percent slopes
- **Soil Type:** C1L
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1M - Lakehills loam, 3 to 6 percent slopes
- **Soil Type:** C1M
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1N - Lubbock loam, 3 to 6 percent slopes
- **Soil Type:** C1N
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1O - Midland loam, 3 to 6 percent slopes
- **Soil Type:** C1O
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1P - Midland loam, 3 to 6 percent slopes
- **Soil Type:** C1P
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1Q - Muleshoe loam, 3 to 6 percent slopes
- **Soil Type:** C1Q
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1R - Odessa loam, 3 to 6 percent slopes
- **Soil Type:** C1R
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1S - Plainview loam, 3 to 6 percent slopes
- **Soil Type:** C1S
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1T - Plano loam, 3 to 6 percent slopes
- **Soil Type:** C1T
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1U - Quanah loam, 3 to 6 percent slopes
- **Soil Type:** C1U
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1V - Ralls loam, 3 to 6 percent slopes
- **Soil Type:** C1V
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1W - Snyder loam, 3 to 6 percent slopes
- **Soil Type:** C1W
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1X - Sweetwater loam, 3 to 6 percent slopes
- **Soil Type:** C1X
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1Y - Terrell loam, 3 to 6 percent slopes
- **Soil Type:** C1Y
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.

- **Map Unit:** C1Z - Torrance loam, 3 to 6 percent slopes
- **Soil Type:** C1Z
- **Soil Characteristics:** Moderate to high water holding capacity, good structural development, moderate to high organic matter content, moderate to high nutrient content.
Conservation Plan Map

Practices Needed & Schedule (CPO)
NRCS Practice Standards (FOTG)

Engineering Designs
FY2013 funding level = $1.9 M

- Statewide Program = $0.2 M
- Animal Feeding Operations
- Water Quality Complaints

- TSSWCB Priority Areas = $1.7 M
  - Allocated to 66 SWCDs
  - Based, in part, on 305(b) inventory
### TSSWCB Cost Share Program - Practice Eligibility

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<tr>
<th>Code</th>
<th>Practice Name and Unit</th>
<th>Minimum Life Span (Yrs)</th>
<th>Code</th>
<th>Practice Name and Unit</th>
<th>Minimum Life Span (Yrs)</th>
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<td>Sprinkler – Chemigation equipment</td>
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<td>314</td>
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<td>Surface – Shallow/roll, rice (all needed components)</td>
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<td>Surface – Surge valves</td>
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<td>Deep Tillage (acre)</td>
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<td>Precision Land Forming (acre)</td>
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<td>327</td>
<td>Conservation Cover (acre)</td>
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<td>Irrigation Land Leaking (acre)</td>
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<td>332</td>
<td>Contour Buffer Strips (acre)</td>
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<td>Pasture and Hayland Planting (acre)</td>
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<td>Critical Area Planting (acre)</td>
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<td>Pipeline (ft.)</td>
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<td>Pond Sealing or Lining (no.)</td>
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<td>Well Decommissioning (no.)</td>
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<td>Pumping Plant (no.)</td>
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<td>Closure of Waste Impoundments (no.)</td>
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<td>Irrigation Regulating Reservoir (no.)</td>
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<td>Fences (ft.)</td>
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<td>Riparian Herbaceous Cover (acre)</td>
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<td>Subsurface Drain (ft.)</td>
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<td>Manure Transfer (no.)</td>
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<td>SolidLiquid/Waste Separation Facility (no.)</td>
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<td>Microirrigation (all needed components)</td>
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<td>Water and Sediment Control Basin (no.)</td>
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<td>Sprinkler-low pressure new installations</td>
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<td>Well Head Protection (no.)</td>
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NRCS Environmental Quality Incentives Program (EQIP)

- Voluntary conservation program
- Supports production agriculture & environmental quality as compatible goals
- Provides farmers & ranchers with financial assistance for BMP implementation
- Designed to address both locally identified resource concerns and state priorities
  - State Technical Advisory Committee recommends State Resource Concerns
  - County work groups (SWCDs + ) set local priorities

FY2012 Texas allocation = $75M

NRCS EQIP Program
2012 State Resource Concerns

- Water Quantity - Brush Mgmt.
  - North Concho
  - Pedernales
  - Spring/Dove Creek, Twin Buttes
  - Edwards Aquifer Range
  - North & South Llano

- Water Quantity - Irrigation
  - Edwards Aquifer
  - Lower Rio Grande Valley
  - Gulf Coast Cropland
  - West Texas
NRCS EQIP Program
Texas’ State Resource Concerns

AFO-CAFO
• Beef - Water/Air Quality
• Dairy - Water/Air Quality
• Poultry - Water/Air Quality

Water Quality
• South Central Texas

Others
• Texas Cattle Fever Tick
• Plant Health – Erosion
• Rolling Plains Quail
• Pronghorn Antelope

Max Base Allocation ≈ $140,000/co.

To View County Concerns:
• http://www.nrcs.usda.gov/wps/portal/nrcs/detail/tx/programs/financial/equip/?cid=proc0115p3_000135
• Select a Zone on the map
• Select Resource Team for Area of Interest
• View:
  • Resource Team EQIP Resource Concerns for Area
  • Priority for Funding
  • Eligible Practices and Payment Rates
  • Ranking Criteria
Other USDA Programs

○ USDA – NRCS
  • Cooperative Conservation Partnership Initiative (CCPI)
  • Conservation Stewardship Program (CSP)
  • Grassland Reserve Program (GRP)
  • Wetlands Reserve Program (WRP)
  • Wildlife Habitat Incentives Program (WHIP)

○ USDA – Farm Services Agency
  • Conservation Reserve Program (CRP)

Getting Started - First Step

○ Contact TSSWCB (HQ, Regional Office, & Field Representative)

○ Meet with all local SWCDs & NRCS District Conservationists (DCs)
  • http://www.tsswcb.texas.gov/swcds/locatormap

○ Meet with all Extension Agents
  • http://county-tx.tamu.edu/

Assess formation of Ag Work Group
Inventory Existing Efforts

- NRCS EQIP, etc.
- TSSWCB WQMPs
- Extension Education Efforts

How can you capture & build upon these efforts in your WPP?

Develop “Preliminary” BMP List

What is needed to address the pollution issues of concern?

SOURCES OF INFO

- FOTG Section V
- National Management Measures to Control Nonpoint Source Pollution from Agriculture
  - EPA 841-B-03-004, July 2003
Considerations for selecting BMPs

- Technical Feasibility
- Efficiency of Pollutant Removal
- Cost / Cost Effectiveness
- Acceptability / Adoption by Producers
- Impact on other resources
Evaluate BMP Efficiency

- Model BMP effects (preferred)
- Use literature values (difficult to find)
- Monitor

Which one you use depends on:
- Your use of modeling for watershed characterization
- Your Budget
- What’s required by stakeholders

Assess Impact on Other Resources

- A practice may moderately decrease (+3) an erosion problem & slightly increase (-1) a water quality problem.

To evaluate, refer to FOTG Section V
### Previous BMPs Consideration Practices

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### Develop Final BMP List & Rank

- **Accomplished by Ag Work Group**
- **Rank according to:**
  - Efficiency
  - Cost / Cost Effectiveness
  - Acceptability
  - Impact on other resources
Option 1 – Estimate by # of WQMPs

How many WQMPs?

- Estimate total # of farms
  - Divide targeted acreage by average farm size (from federal Census of Agriculture) to estimate total # of farms
  - If targeting land adjacent to waterbody, visit tax assessor’s office (or sometimes NRCS/FSA) to determine # of farms

How many WQMPs? (continued)

- Assume 50% participation - divide total # farms by 2
- Multiply by $15K per WQMP to estimate FA

20-25 plans per technician per year
Barriers to BMP Implementation

Texas – Statewide

Estimating Financial Assistance

- Option 2 - Estimate by practices needed
- For all practices - list # or ac needed
- Multiply # or ac needed by NRCS Practice Costs
  - Obtain Texas Payment Schedules from NRCS Field Office
- NOTE = no more than 50-66% participation should be expected
Estimating Technical Assistance

- **20-25 WQMPs per year can be developed per technician**
  - Divide total WQMPs needed by 20-25 to determine # of technician-yrs needed

- **$52K/yr per technician**
  - Technician Salary = $33K/yr + 2% annual increase
  - Bookkeeper time = 10 hr/mo @ $10/hr
  - 28.6% fringe for Technician and Bookkeeper
  - Travel = Dependent on watershed size. Average = $2K
  - Computer & Printer = $1.5K
  - Office supplies = $30/mo
  - SWCD financial audit = $3-4K

Final Tips on Estimating Costs

- **Adjust for inflation (3% annually)**

- **WQMPs & RMS will likely need to be renewed every 5-10 years (depending on life span of BMPs implemented) → adaptive mgmt**