Agricultural NPS Measures

Kevin Wagner
Aaron Wendt
How are Ag BMPs Implemented?

Texas Conservation Partnership

- Providing Conservation Assistance to Private Landowners for 70 Years
- LOCAL - 217 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)
SWCDs

• 217 SWCDs organized statewide, generally reflect county boundaries, but not necessarily

• Each is an independent political subdivision of state government, like a county or school district; but, no taxing authority

• Governed by five-member board of directors elected by their fellow landowners (farmers and ranchers)
SWCDs

• Primary responsibility is to carry out natural resources conservation programs within the SWCD
  – Technical and financial assistance for landowners to develop and implement a complete soil and water conservation plan
  – Operate and maintain flood control structures
  – Education programs for landowners and students

• Advocate a voluntary, incentive-based approach to natural resources conservation using economically feasible practices based on scientifically sound data
The soil conservation district is the workshop through which those who love the land pool their efforts and information in making land more stable and productive and our country more prosperous and a better land in which to live.

The fact that landowners themselves have the responsibility for voting in a district, formulating its program, administering its business and entering into cooperative agreements with their fellow landowners, makes soil conservation districts a democracy in action.

V.C. Marshall
Father of the Texas SWCD Program
TSSWCB

- Established in 1939 by the Texas Legislature
- Governed by a seven-member State Board composed of five locally-elected members and two Governor-appointed members, all of whom must be landowners actively engaged in farming or ranching
- Lead agency in Texas responsible for planning, implementing and managing programs and practices for preventing and abating agricultural and silvicultural (forestry) nonpoint sources of water pollution (Texas Agriculture Code §201.026)
TSSWCB

- Fulfills water quality mandate through joint administration (with TCEQ) of the Texas Nonpoint Source Management Program
- Through federal Clean Water Act §319(h) grants and State appropriations, funds projects encompassing water quality monitoring, bacterial source tracking, computer modeling, watershed planning, education and best management practice demonstration and implementation
- TSSWCB (not TCEQ) is responsible for investigating and resolving water quality complaints associated with agricultural or silvicultural nonpoint sources
TSSWCB

- Water Quality
  - Water Quality Management Plan (WQMP) Program
  - TMDL Program
  - Watershed Protection Plan Program
  - Coastal Coordination Council
  - Texas Groundwater Protection Committee
  - Texas Clean Rivers Program

- SWCDs
  - Coordinates/supports programs statewide
  - Public Information and Education Program
  - Texas Conservation Awards Program
  - Wildlife Alliance for Youth

- Water Quantity
  - Flood Control Structures
  - Drought Preparedness Council
  - Water Conservation Advisory Council
  - Texas Brush Control Program
NRCS

- Since 1935, NRCS has helped America's private landowners and managers conserve their soil, water, and other natural resources
- NRCS provides technical assistance based on sound science suited to a customer's specific needs - Resource Management Systems (RMS)
- NRCS provides financial assistance for many conservation activities
- NRCS has established standards & specifications for BMPs (FOTG)
- Supports the programs of local SWCDs
- Flood Control Structures
- Resource Conservation and Development Councils (RC&D)
- Conservation Effects Assessment Project (CEAP)
- National Resources Inventory
- Soil Survey Program
Critical Partners

• Texas AgriLife Extension Service
  – Education and demonstration of BMPs
  – Soil testing campaigns
• Texas Forest Service
  – Silvicultural NPS mgmt
• Texas Department of Agriculture
  – lead state agency for the regulation of pesticide use and application
• Texas AgriLife Research
  – Research and demonstration of BMP effectiveness
• 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.
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
Agricultural or Silvicultural?

Agriculture
- cultivating the soil
- producing crops for human food, animal feed, planting seed, or fiber
- floriculture
- viticulture;
- horticulture
- aquaculture
- raising or keeping livestock or poultry
- planting cover crops or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure

Silviculture
- practices to establish, nurture, protect, and enhance the desired growth of trees for human and/or wildlife benefit
- natural or planted afforestation
- propagation and culture of tree seedlings, tree saplings, and Christmas trees
- controlling, suppressing, or culling unwanted woody or herbaceous vegetation in a forested area
- establishing and/or maintaining strips or belts of trees for purposes of providing wildlife habitat, wind breaks, or riparian buffers
- construction and maintenance of roads and fire lanes related to other silvicultural activities
- practices and operations that facilitate harvesting, handling, and removing timber products from a site where they were grown
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
WQMP statutory authority

• Created by the 73rd Texas Legislature in 1993 through Senate Bill 503 (often referred to as 503 Program, or 503 plans, or 503 cost-share)

• Voluntary enrollment in WQMP Program for farmers and ranchers, except that the 77th Texas Legislature in 2001 (Senate Bill 1339) said poultry operations must obtain a WQMP
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
District Cooperative Agreement

Matagorda County Soil and Water Conservation District #316
2200 Avenue A - Bay City, Texas 77414

DISTRIBUTION – COOPERATOR AGREEMENT

I, the undersigned cooperator, understand the purpose of the Matagorda County Soil and Water Conservation District, its objectives and program. I desire to use my land within its capabilities and to treat it according to its needs. To this end, therefore, I enter into the following agreement with the Matagorda County Soil and Water Conservation District.

I AGREE:

1. To develop as rapidly as feasible, with the assistance of the district a conservation plan for my operating unit that will be mutually acceptable to me and the district.
2. To carry out this plan as rapidly as my resources and help available to me from the district, will permit.
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 on my unit.
5. That members of the district governing body or their representatives will have the right of ingress and egress to my operating unit during the period of this agreement for the purpose of conducting surveys, planning, and installing or inspecting conservation measures or structures.

THE DISTRICT AGREES TO:

1. To supply soil survey information for the operating unit.
2. To provide technical assistance to help in the development or revision and application of the conservation plan.

IT IS MUTUALLY AGREED:

1. That neither the district nor the cooperator will be liable for damages to the other in connection with the installation of structures or other conservation measures unless damages are caused by negligence or misconduct.
2. This agreement will become effective on the date of the last signature and may be terminated by mutual agreement of the parties hereto.

______________________________  ______________________________
Cooperator                        Date

BY: ____________________________  ____________________________
Director                         Date

MATAGORDA COUNTY SOIL AND WATER CONSERVATION DISTRICT

We are happy to have you as a cooperator. Feel free to call us anytime we can be of assistance.
Request For Planning Assistance

REQUEST FOR WATER QUALITY MANAGEMENT PLANNING ASSISTANCE
SOIL AND WATER CONSERVATION DISTRICT #

County , Texas  HUA No.  

Name:  

Address:  

City/State:  Zip Code:  Phone #:  

I hereby apply for assistance in developing a Water Quality Management Plan, as provided by Section 201.026 (c) of the Agricultural Code. It is my intention to implement and maintain this plan in order to meet the State's requirements for water quality as expressed in Section 26.121(a)(2)*, Texas Water Code.

(1) General description and 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 Animal Feeding Operation is involved ( ) Yes ( ) No  If yes, is a permit required ( ) Yes ( ) No

(4) I understand that my plan could be randomly selected for an annual status review by personnel of the State Soil and Water Conservation Board.

Applicant's Signature  Date

District Director  Date

NOTE: If you are not a cooperator with the Soil and Water Conservation District, a District Cooperative Agreement must be completed and attached to this application.

*See back of this sheet for full text of quoted Sections.
Soils Map
Non-Technical Descriptions

Any County, Texas

Only those map units that have entries for the selected non-technical description categories are included in this report.

Map Unit: CaC - Carbengele loam, 3 to 5 percent slopes

Description Category: AGR

Map Unit CaC, Component CARBENGELE is >20 - 40 inches thick. Permeability is MODERATE and available water holding capacity is LOW. A water table when present is >60 - feet. The soil has a capability subclass of 3E dryland and NONE irrigated.

Description Category: PHG

8C - LOAMY UPLAND - Moderately deep to very deep uplands with loamy surfaces and friable loamy subsoils; slopes 0 to 8 percent; medium natural fertility; medium to high water holding capacity with good plant-soil-moisture relationships; medium to high production potential.

Description Category: RNG

CLAY LOAM SITE - Deep, fertile, loamy soils. Climax vegetation includes big and little bluestem, indiangrass, switchgrass, wildrye, and side oats grama; with maximilian sunflower, engelmann daisy, pensetum, gayfeather, sundrops, and other forbs. Pecan, hackberry, elm, oaks, burmula, and sumac are sparse inhabitants.

Description Category: SOI

THE CARBENGELE SERIES CONSIST OF MODERATELY DEEP, WELL DRAINED, MODERATELY PERMEABLE, VERY GENTLY TO STRONGLY SLOPING SOILS ON UPLANDS. THE SOIL FORMED FROM WEAKLY CEMENTED CALCAREOUS SANDSTONE. IN A REPRESENTATIVE PROFILE; THE SURFACE LAYER IS VERY DARK GRAY CLAY LOAM, 12 INCHES THICK. THE NEXT LAYER IS LOAM, ABOUT 22 INCHES THICK. IT IS LIGHT GRAY IN THE UPPER PART AND WHITE IN THE LOWER PART. BELOW THIS IS WEAKLY CEMENTED SANDSTONE INTERBEDDED WITH LOAMY MATERIALS.

Map Unit: FsB - Frelsburg clay, 1 to 3 percent slopes

Description Category: AGR

Map Unit FsB, Component FIRELSBURG is >60 - inches thick. Permeability is VERY SLOW and available water holding capacity is HIGH. A water table when present is >60 - feet. The soil has a capability subclass of 2E dryland and NONE irrigated.

Description Category: PHG

7A2 - HEAVY CLAYEY UPLAND (CALCAREOUS) - Deep and very deep heavy clayey uplands with slopes of 0 to 5 percent; dense clayey subsoils; reaction is moderately alkaline throughout; high natural fertility; seasonally wet or dry; to very high to high water holding capacity but fair plant-soil-moisture relationships; medium to high production potential.

Description Category: RNG

BLACKLAND SITE - Deep, fertile, clay soils. Climax vegetation is eastern gamagrass, big bluestem, indiangras, switchgrass, and little bluestem; with maximilian sunflower, engelmann daisy, button snakeroot, coreflower, gayfeather, indanthra, hairy sunflower, bundleflower, and prairie clover. Osage orange and honey locust may dot the site.
Conservation Plan Map
Practices Needed & Schedule (CPO)
DEFINITION
Managing the amount, form, placement, and timing of application of plant nutrients.

PURPOSES
This practice is to be applied as part of a conservation management system to support one or more of the following:

- To supply plant nutrients for the optimum growth and crop yields.
- To maintain or improve water quality, surface soil erodibility, and ground water quality.
- To maintain or improve chemical and biological conditions of the soil.

CONDITIONS WHERE PRACTICE APPLIES
On land where plant nutrients are applied.

GENERAL CRITERIA APPLICABLE TO ALL PURPOSES
A nutrient management plan will be developed to specify the kind, source, amount, and application method of nutrients to meet crop needs. Nutrient application will be adapted to meet the requirements of the soils, climate, and other applicable state or local regulations.

NRCS Practice Standards (FOTG)
LOW HEAD DROP INLET DESIGN

U. S. Department of Agriculture
Natural Resources Conservation Service

TX - ENG - 204 - 1
Rev. 6/92

SWCD Wharton County
Cooperator ___________________

Field Office Wharton County
Location Magnet, TX

Wharton County County, Texas : Field No. 1 Replace

Designed By M.J. Northcut Date 28 Feb. 2002
Approved By ___________________

Emergency spillway elev. 96.0

Spillway bottom width Overland ft. ______________

Spillway flow depth 0.5 ft. (2 yr. Freq.)

Design depth of flow over lip 10.0 ft.

Elev. Top of Riser 86.0

Elev. 71.0 Elev. 69.0 Elev. Bottom of barrel 64.0

Drainage Diaphragm Section A-A
Alt. Section B-B

End of stub 4 ft. 54 ft.

H 17 ft.

Gage 12

NOTES

1 Drainage Diaphragm (See Sheet 6).
1 Wooden Pipe Support (See Sheet 7).
N/A Cathodic Protection (See Sheet ).

Design drop inlet capacity 198.46 cfs.
Design spillway capacity Overland cfs.

Barrel - Diameter 48 in. Gage 12
Total Length 204 Ft.

Riser - Diameter 66 in. Gage 12
Total Length 15 Ft.

Footings Dimensions 7.75 Ft. X 7.75 Ft. X 1.5 Ft.

Final Check
Elev. Bottom barrel at outlet ______________
Elev. Top riser at inlet ______________
Material and component parts meet the plan and design.
Signature ___________________ Date ____________
Title ___________________
Remarks ___________________

Engineering Designs
CERTIFICATION

I (We) concur in the conservation practices and implementation schedules indicated in this Water Quality Management Plan. I (We) understand that when these planned Conservation Practices are applied and maintained, the Resource Management Plan will meet the State’s requirements for water quality. Failure to comply with this plan and implementation schedule will result in the loss of certification. I (We) agree to notify the local Soil and Water Conservation District in the event of deviation from the implementation schedule. Any substitution or changes to the above practices or implementation schedule must be in accordance with the Field Office Technical Guide and approved by the Soil and Water Conservation District.

Applicant (Producer) ____________________________ Date ___________

The above Water Quality Management Plan meets the requirements of the Field Office Technical Guide and the resource quality criteria for water quality.

Certified By: NRCS Representative ____________________________ Date ___________

The Water Quality Management Plan includes the conservation management unit and meets the Soil and Water Conservation District’s program, plan and its priorities.

Approved by: Soil & Water Conservation District ____________________________ Date ___________

The Water Quality Management Plan satisfies the State Board’s criteria; complies with Section 26.121 (a) (2) of the Water Code which prohibits the discharge of other waste (agriculture nonpoint source pollution), unless the discharge complies with the person’s Certified Water Quality Management Plan approved by the State Soil and Water Conservation Board as provided by Section 291.028 of the Agriculture Code.

Certified by: Texas State Soil & Water Conservation Board ____________________________ Date ___________
• **WQMPs may be revised if**
  - Land use changes
  - Property acquired or lost
  - Changes in planned practices

• **WQMPs may be transferred between old and new owners/operators of same property**

• **Status Reviews are conducted by TSSWCB to verify implementation and determine if modifications needed**
TSSWCB Financial Assistance

- TSSWCB limits cost-share rate to 75% and maximum amount to $10,000 per WQMP
- Each SWCD sets its own rate and maximum not to exceed state

- Practices for cost-share must be approved by TSSWCB
- SWCD must also approve practices for cost-share (may be more restrictive than state list)

- Each SWCD sets average cost of each practice based on local economics

- Applies regardless of funding source (503, 319)
<table>
<thead>
<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>313</td>
<td>Waste Storage Facility (no.)</td>
<td>10</td>
<td>442</td>
<td>Sprinkler-low pressure-new installations</td>
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<td>314</td>
<td>Brush Management (acre)</td>
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<td>442</td>
<td>Sprinkler – Conversion to low pressure</td>
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<tr>
<td>316</td>
<td>Animal Mortality Facility (no.)</td>
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<td>Sprinkler – Chemigation equipment</td>
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<td>317</td>
<td>Composting Facility (no.)</td>
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<td>443</td>
<td>Surface – Shallow flood, rice (all needed components)</td>
<td>10</td>
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<td>324</td>
<td>Deep Tillage (acre)</td>
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<td>443</td>
<td>Surface – Surge valves</td>
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<td>332</td>
<td>Contour Buffer Strips (acre)</td>
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<td>447</td>
<td>Irrigation System, Tailwater Recovery (no.)</td>
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<td>342</td>
<td>Critical Area Planting (acre)</td>
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<td>Precision Land Forming (acre)</td>
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<td>350</td>
<td>Sediment Basin (no.)</td>
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<td>Irrigation Land Leveling (acre)</td>
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<td>351</td>
<td>Well Decommissioning (no.)</td>
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<td>512</td>
<td>Pasture and Hayland Planting (acre)</td>
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<td>359</td>
<td>Waste Storage Lagoon (no.)</td>
<td>10</td>
<td>516</td>
<td>Pipeline (ft.)</td>
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<td>360</td>
<td>Closure of Waste Impoundments (no.)</td>
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<td>521</td>
<td>Pond Sealing or Lining (no.)</td>
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<td>362</td>
<td>Diversion (ft.)</td>
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<td>550</td>
<td>Range Planting (acre)</td>
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<td>378</td>
<td>Pond (no.)</td>
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<td>552-A</td>
<td>Irrigation Pit (no.)</td>
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<td>382</td>
<td>Fence (ft.)</td>
<td>10</td>
<td>552</td>
<td>Irrigation Regulating Reservoir (no.)</td>
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<td>386</td>
<td>Field Border (ft.)</td>
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<td>558</td>
<td>Roof Runoff Structure (no.)</td>
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<td>390</td>
<td>Riparian Herbaceous Cover (acre)</td>
<td>10</td>
<td>560</td>
<td>Access Roads (hard surface lanes) (ft.)</td>
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<td>391</td>
<td>Riparian Forest Buffer (acre)</td>
<td>10</td>
<td>600</td>
<td>Terrace (ft.)</td>
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<td>393</td>
<td>Filter Strip (acre)</td>
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<td>Subsurface Drain (ft.)</td>
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<td>Grade Stabilization Structure (no.)</td>
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<td>Tree/Shrub Establishment (acre)</td>
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<td>Grassed Waterway (acre)</td>
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<td>Watering Facility (no.)</td>
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<td>430</td>
<td>Irrigation Water Conveyance, Pipeline (ft.)</td>
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<td>Manure Transfer (no.)</td>
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<td>Irrigation Storage Reservoir</td>
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<td>Water and Sediment Control Basin (no.)</td>
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<td>441</td>
<td>Microirrigation (all needed components)</td>
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<td>642</td>
<td>Well Head Protection (no.)</td>
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<td><strong>TSSWCB Cost-Share Funded w/ State Appropriations (503)</strong></td>
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<tr>
<td>• <strong>FY2008 funding level = $2.063 M</strong></td>
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<tr>
<td>- <strong>Statewide Program = $0.117 M</strong></td>
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<tr>
<td>• Animal Feeding Operations</td>
<td></td>
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<tr>
<td>• Water Quality Complaints</td>
<td></td>
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<tr>
<td>- <strong>TSSWCB Priority Areas = $1.946 M</strong></td>
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<tr>
<td>• Allocated to 75 SWCDs</td>
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<td>• Based, in part, on 305(b) inventory</td>
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</tbody>
</table>
Regional Offices and SB 503 Cost-share Areas

TSSWCB Regional Offices & Cost Share Areas
Federal Farm Bill Programs

• Conservation Technical and Financial Assistance Programs offered by USDA are authorized in the federal Farm Bill

• Implications and changes to existing programs as a result of recently passed new federal Farm Bill are not certain at this time
NRCS Environmental Quality Incentives Program (EQIP)

- EQIP is a voluntary conservation program that supports production agriculture and environmental quality as compatible goals.
- Farmers and ranchers receive financial assistance with structural and management conservation practices.
- Program is 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
- FY2007 Texas allocation = $89M
NRCS EQIP Program

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
  - Far West - Rio Grande
  - Lower Rio Grande Valley
  - Texas Coastal Area
  - West Texas
NRCS EQIP Program
State Resource Concerns

- **AFO-CAFO**
  - Beef - Water/Air Quality
  - Dairy - Water/Air Quality
  - Poultry - Water/Air Quality
  - Swine - Water Quality

- **Invasive Species**
  - Chinese Tallow
  - Saltcedar

- **Water Quality**
  - South Central Texas (four TMDL watersheds)

- **Wildlife**
NRCS EQIP Program

County Concerns

- **Base Allocation** = $144,000/county
- **To view County Concerns/Practices:**
  - Select a Zone on the map
  - Select a County
  - View
    - State Resource Concerns in County
    - County EQIP Resource Concerns
    - Eligible Practices
    - Application Screening Criteria
## Other USDA Programs

### USDA – Farm Services Agency
- Conservation Reserve Program (CRP)
- Conservation Reserve Enhancement Program (CREP)
- Source Water Protection Program

### USDA – NRCS
- Conservation Security Program (CSP)
- Grassland Reserve Program (GRP)
- Wetlands Reserve Program (WRP)
- Wildlife Habitat Incentives Program (WHIP)
Getting Started - First Step

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

• Meet with all local SWCDs & NRCS District Conservationists (DCs)
  - http://www.tsswcb.state.tx.us/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’s 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
<table>
<thead>
<tr>
<th>RESOURCE CONCERN</th>
<th>CONSERVATION PRACTICES</th>
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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
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<th>Soil Erosion; Sheet &amp; Rill</th>
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<th>Soil Erosion; Concentrated Flow</th>
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<th>Soil Condition; Till, Crusting Infiltration, Organic Matter</th>
<th>Water Quantity; Runoff &amp; Flooding</th>
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<td>Fishpond Management - 355</td>
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<td>Forel Ice Harvest Management - 311</td>
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<td>Forest Hardwood/Transition &amp; Landline - 355</td>
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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
Estimating Financial Assistance (FA)

• 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
Estimating Financial Assistance (FA)

• **How many WQMPs? (continued)**
  - Assume 50% participation - divide total # farms by 2
  - Multiply by $10K per WQMP to estimate FA

• **20-25 plans per technician per year**
### Estimating Financial Assistance (FA)

- **Option 2 - Estimate by practices needed**
- **For all practices - list # or ac needed**
- **Multiply # or ac needed by NRCS Practice Costs**
- **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

- **$53K/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 = 65 miles/wk @ state mileage rate
  - Computer = $2.5K
  - Office supplies = $50/mo
  - SWCD financial audit = $3k
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
QUESTIONS?