

Agricultural Air Quality Update: USDA-NRCS

AAQTF October 2007
Indianapolis

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Washington, DC

Overview

- Programs
- Training
- Technology

Program Support for Air Resources

- **Conservation Technical Assistance (CTA)**
- **Environmental Quality Incentives Program (EQIP)**
- **Conservation Innovation Grants (CIG)**
- **Conservation Security Program (CSP)**

Conservation Technical Assistance (CTA) Program

- Foundation for all NRCS science and technology
- Funds technology transfer
 - Interim and final practice standards
 - Measurement tools
 - Models

CTA Program

- **Reviewing practice standards**
 - Identify changes to existing standards
 - Identify needs for new standards
- **3 new CA interim standards for AQAC**
 - **Dust control on unpaved roads and surfaces**
 - **Stationary engine replacement/upgrade**
 - **Precision pest control application**

Environmental Quality Incentives Program (EQIP)

- Voluntary program
- Promotes agricultural production and environmental quality
- Provides financial and technical incentive payments and cost-share assistance

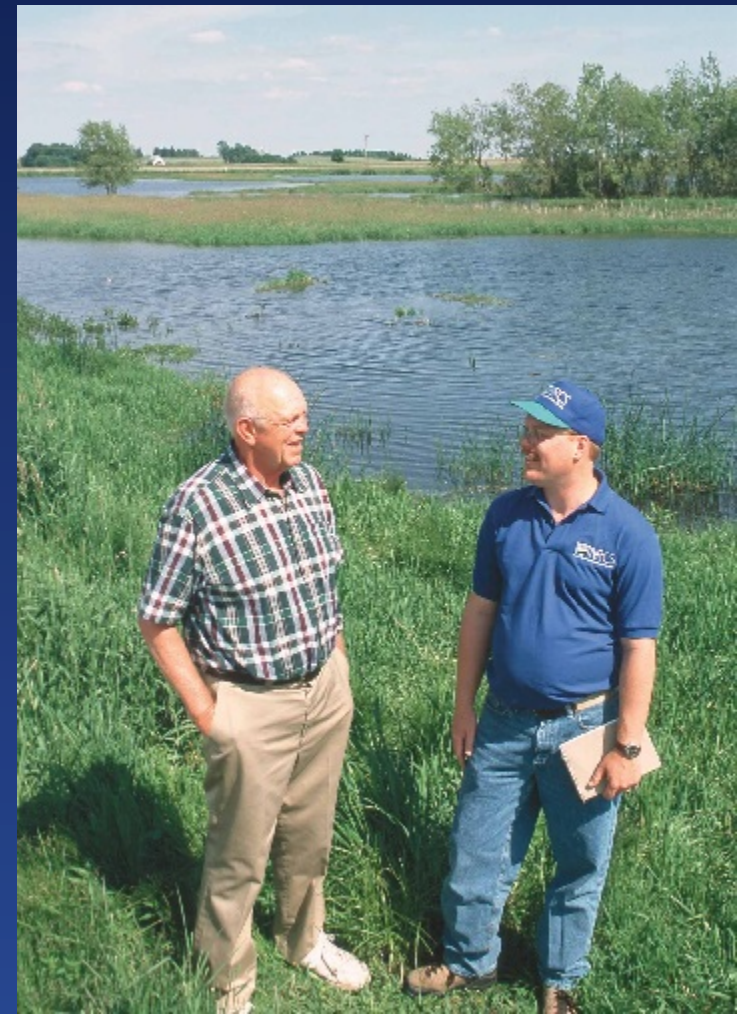


EQIP

- **Over \$1 billion allocated for FY07**
- **\$648 million in total national EQIP contracts for FY06**
 - \$26 million of those were AQAC-related contracts
- **113 FY06 EQIP contracts covering almost 25,000 acres in Indiana were AQAC-related**
- **Practices include:**
 - Windbreaks
 - Manure/nutrient management and utilization
 - Conservation tillage to reduce PM
 - Also, irrigation pump engine replacement in CA

Conservation Innovation Grants (CIG)

- To stimulate the development and adoption of innovative conservation approaches and technologies
- Cooperating producers must be “EQIP eligible”
- National and State grants; up to 50% cost share



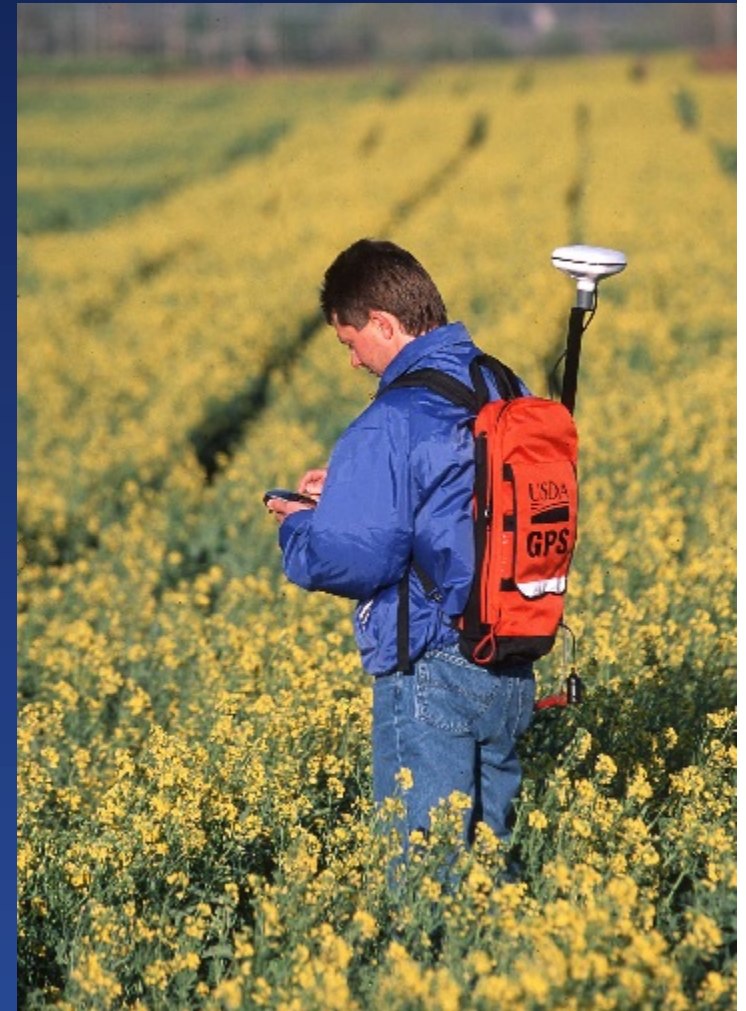
CIG 2007 - National

- **51 national grants in 2007 for \$19.3 million**
 - 6 with full AQ focus for ~\$2.6 million
 - 11 others with partial AQ or renewable energy focus for ~\$4.9 million
- **Examples:**
 - Michigan State University
 - Development of a National Air Quality Self Assessment Tool
 - California Association of Resource Conservation Districts – Dust Control Unit



CIG Technology Transfer

- **Committee developing a strategy to better move CIG technology into NRCS planning and programs, and into US agriculture**
- **Improving technology transfer a key goal**
 - **More emphasis in 2007 on technology deliverables and transfer**
 - **National technical leaders involved in review of CIG 2007 deliverables**
 - **CIG Showcase at SWCS Tampa, July 2007 (CA Winegrowers—AQ)**



Conservation Security Program (CSP)

- Voluntary program to support ongoing stewardship of private agricultural lands
- Provide payments for maintaining and enhancing natural resources
- \$18 million on AQ enhancements from 2006-2015
- 31 states with some AQ emphasis



CSP Air Resource Enhancement Goals

Managing

- Particulate matter (PM_{10} , $PM_{2.5}$)
- Odors
- Airborne chemical drift (working with water quality)
- Ozone precursors (VOCs, NO_x)
- Greenhouse gas emissions (CO_2 , CH_4 , N_2O) and increasing carbon sequestration

CSP AQAC Job Sheets

- **New job sheets prepared for anticipated FY08 CSP**
 - **Particulate matter**
 - **Ozone precursors**
 - **Odors**
 - **Greenhouse gases and carbon sequestration**
 - **Airborne chemical drift**



CSP AQAC Job Sheets

- **Over 30 different activities for addressing AQAC**
- **Examples:**
 - Install, maintain, and enhance windbreaks
 - Manage prescribed burning
 - Manure and feed management
 - Engine replacement
 - Biofilters
 - Precision pesticide application



Air Quality, Climate Change and Energy (ACE) Working Group

- Coordination/Integration of Venture Goals within the NRCS
- 5 Focus Areas
 - Policy
 - Planning and Programs
 - Technology and Training
 - Data Integration
 - Communication



Training and Technology Update

- Training
- Tools
 - COMET-VR
 - SNAP
 - Odors
 - Particulate Matter
 - Burn/Smoke Outlook



Training

- A training curriculum plan has been developed
- AQAC/Energy pilot training was provided to CO NRCS staff in June
- Second pilot training is scheduled for PA NRCS staff in December
- Advising ag AQAC training development projects funded by NRI and Western SARE



COMET-VR Overview



- www.cometvr.colostate.edu
- **C**arbOn **M**anagement **E**valuation **T**ool-- **V**oluntary **R**eporting of GHGs
- On-line decision support tool for estimating soil carbon sequestration
- Calculates annual carbon change using a dynamic Century model simulation
- For official GHG reporting and potential for carbon credit trading
- Interfaces to a land use database

COMET-VR Overview



- Version 1.1 released April 16
- Newly expanded for thousands of additional scenarios—for crop and rangeland
- Version 1.2 (agroforestry) out this spring
- Version 1.3 (incl. N₂O) coming in 2008

Future AQAC Tools

- NOSE

- NRCCS Odor Siting
Evaluator

- Will be used to evaluate odor impacts from animal operations and determine the effects of operational changes and application of management practices/activities



Future AQAC Tools

- **SNAP**

- **S**imple **N**RCS **A**QAC **P**lanning Tool
- Given inputs regarding an agricultural operation, SNAP will assess AQAC resource concerns and identify potential management practices/activities for addressing recognized concerns



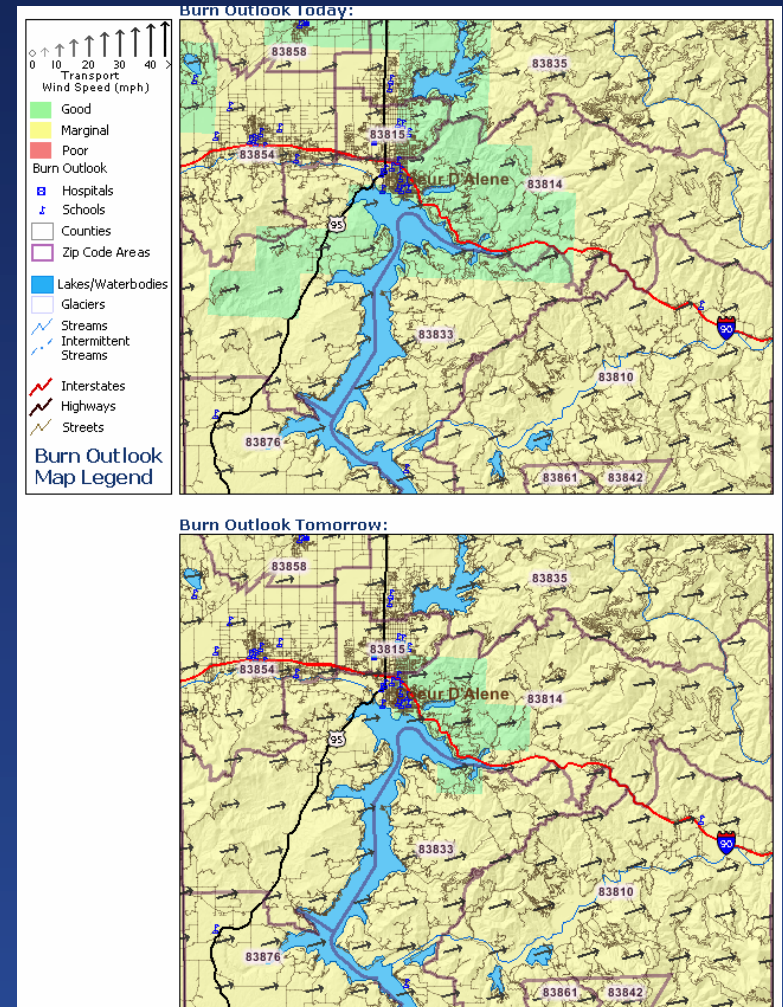
Future Tools

- **Particulate Matter Emissions Estimator Tool**
 - Based on CA PM emission factors
 - Determine PM emissions reductions from application of various practices



Future Tools

- **Ag Burn Outlook**
 - Dispersion conditions for Today & Tomorrow
 - **Red** = No Burn
 - **Yellow** = Marginal
 - **Green** = Burn Ok
 - Based on: Surface and transport winds, mixing height, ventilation index



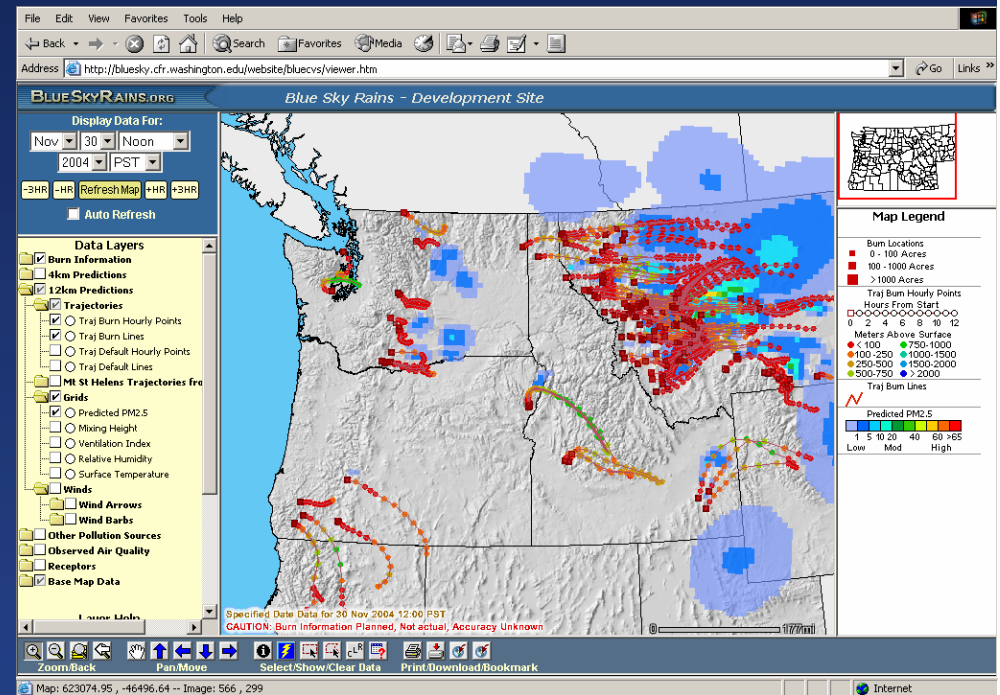
Future Tools

- **WEPS**
 - **W**ind **E**rosion **P**rediction **S**ystem
 - Working with ARS, this tool will predict PM10 moving off-site



Other Tools

- **BlueSky Smoke Modeling Framework**
 - Surface PM_{2.5} concentrations from fires
 - 12-hr trajectories from the fires
 - Other GIS and meteorological data
 - Web-based



<http://www.blueskyrains.org>



Questions ???

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