

Agricultural Air Quality Update: USDA-NRCS

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Overview

- *Programs*
- *Technology and Training*
- *Conservation Effects*



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



Significant NRCS effort in California is educating producers and staff about air quality conservation activities, including roadway and harvest operation dust prevention

CTA Program

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



CTA Program

- *Funds conservation planning before enrollment in financial assistance programs*

Practice	FY 2006 (acres)	FY 2007 (acres)
Atmospheric resource quality management	47,684	65,645
Cross wind ridges	1,471	2,556
Cross wind trap strips	4,024	355
Herbaceous wind barriers	125,317	6,800
Windbreak/shelterbelt establishment and renovation	2,422,538	1,319,835

EQIP

- *Environmental Quality Incentives Program*
- *Voluntary program; promotes agricultural production and environmental quality*
- *Provides financial and technical*
- *Incentive payments and cost-share assistance*



EQIP

- *\$648 million EQIP total in 2005*
- *\$26 million Air Quality-related contracts*
- *Practices include: Irrigation Pump Engine Replacement in CA; Animal waste lagoon cover; Conservation Tillage to reduce PM; etc.*



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 2006

- *66 national grants in 2006*
 - *7 with full or partial air quality focus*
 - *Total AQ dollars: \$3.28 million*
- *96 grants in 22 states for \$5.6 million*
 - *8 with full or partial AQ focus for \$411,927*
(Note: state agreements have a \$75,000 cap)
- *National CIG Examples:*
 - *Colorado State Univ.: Odor and Ammonia reduction BMP demo on feedlots and dairies*
 - *WA Wheat Growers: Undercutter demo and promotion for dust control in wheat/fallow region of PNW*



California CIGs in Air Quality

- *CA Winegrowers: Air Quality Improvements*
- *Sustainable Conservation: GHG, Carbon credits, marketing from row crops; Conservation Tillage*
- *California Dairy Campaign: Lagoon Management*
- *Adept Technologies: Capture of VOCs from propane tanks*
- *Lincoln (Ag) High School: Air Quality Demonstration Project*



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 Request for Proposals in 2007 on technology deliverables and transfer*



CIG Showcase

- *Tampa FL July 2007 at SWCS Conference*
- *14 Oral Presentations*
- *20 Posters*
- *Highlighting key CIG projects nationwide over the past 3 years*
- *6 with Air Quality Focus*



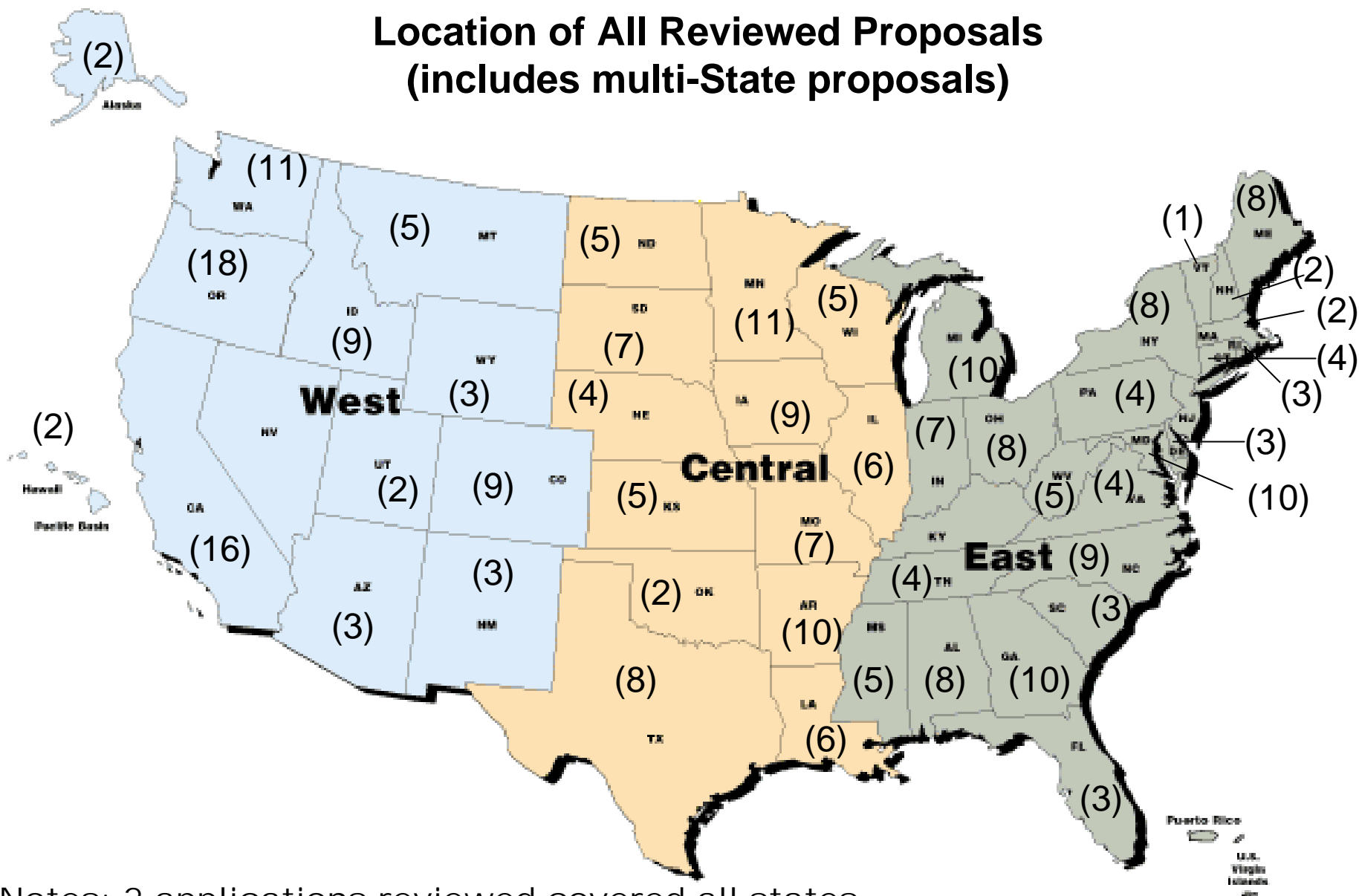
CIG 2007

- *National Awards will be announced this summer*
- *Total number of proposals – 171*
- *Proposal category and number*
 - *Atmospheric Resources: 19*
 - *Energy: 25*
 - *Grazing Land and Forest Health: 29*
 - *Soil Quality: 25*
 - *Water Quality: 25*
 - *Water Quality (Livestock): 29*
 - *Water Quantity: 19*



Conservation Innovation Grants 2007

Location of All Reviewed Proposals (includes multi-State proposals)



Notes: 2 applications reviewed covered all states

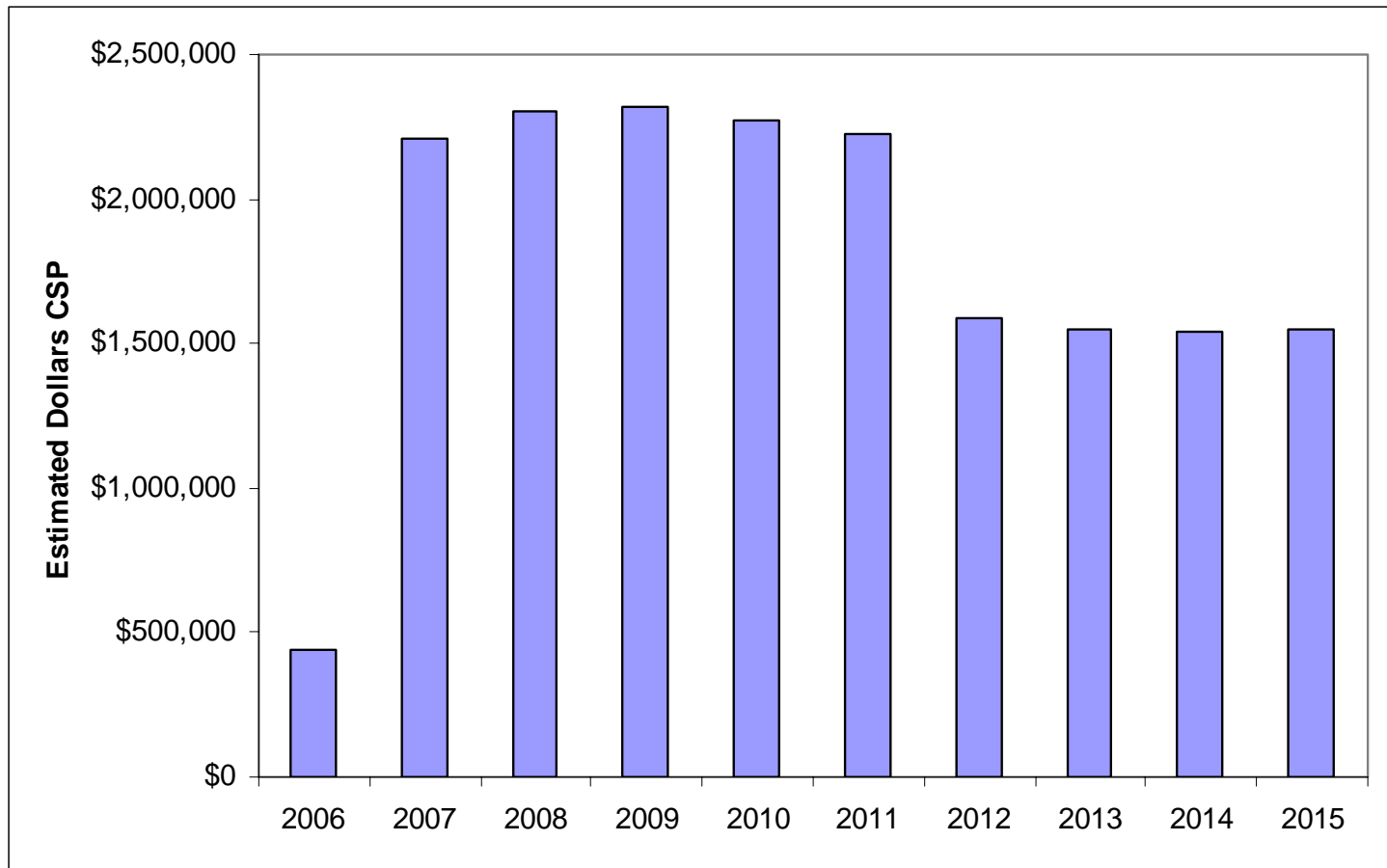
No applications reviewed from KY, NV, or NJ or Pac Basin or Car Areas

Conservation Security Program (CSP)

- *\$18 million on air quality enhancements from 2006-2015*
- *31 States with some air quality emphasis*
- *\$8.57 million (48%) on no-till, strip-till, direct seed operations*
- *\$5.38 million (30%) on alternatives to burning*
- *\$0.5 million on Carbon Sequestration (COMET-VR)*



CSP Estimated Air Quality Investments, 2006-2015



California NRCS Air Quality Efforts

- *San Joaquin Valley Conservation Management Plans for PM10:*
 - >6000 producers participating***
- *\$28.4 million in EQIP in CA for Air Quality since 1998!*
- *\$5.5 million AQ budget for 2007*
- *2 full-time air quality specialists (Fresno), and part-time staff in field offices*



California EQIP Diesel-Related Initiative - 2007

- ***Diesel Engine Replacement Initiative***
- *Primary motivation: Reducing nitrogen oxides (NOx)*
- *Replacement of stationary or portable irrigation pump*
- *Under NRCS EQIP program*
- *Must certify destruction or recycling of old engine and replace with new*
- *New engines must meet "Tier III" diesel, electric motor, propane or natural gas-powered engine certification*





EQIP Diesel Pump Replacement Initiative: *California Example - 2007*

- *Diesel Replacing Diesel*
 - *EQIP Cost Share from \$5,000 to \$40,000, horsepower dependent*
- *Electric Replacing Diesel*
 - *EQIP Cost Share from \$5,000 to \$42,500, horsepower dependent*
- *27 Engines so far in 2007; \$389,000*



EQIP Diesel Pump Replacement Initiative: *California 2003-2006*

- ***Total Engines Replaced by NRCS: 307***
- ***Total Cost Share: Nearly \$4.5 million***
- ***Total Tons of NO_x reduced in 4 years: Nearly 1300 Tons***



This DEMO FIELD was strip-tilled and planted on October 8, 2006.

Previous crop residues include triticale, corn, wheat and cotton.

SUCCESS!!

- *NRCS partnering with Univ. California, and others in advancing conservation tillage, and other activities that help to clear the air and sequester carbon*
- *The San Joaquin Valley is now in attainment for PM10, thanks in part to good conservation efforts*

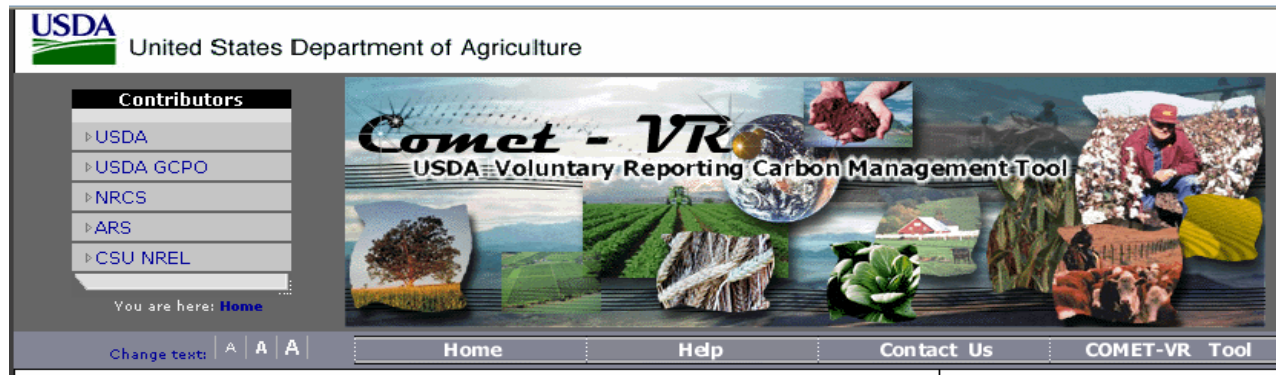
Technology Update Related to Air Resources

- *COMET-VR 1.1 Released April 2007*
 - *Also, GHG quantification of NRCS Conservation Practices*
- *SNAP tool in progress*
- *Initial work on other tools*
 - *Odors*
 - *Particulate Matter*
 - *Burn/Smoke Outlook*



COMET-VR 1.1

www.cometvr.colostate.edu



- *Version 1.1 released April 16, 2007*
- *Expanded number of scenarios*
- *Currently for cropland and rangeland*
- *Returns estimated carbon storage over next 10 years, and diesel and fertilizer usage*
- *Version 1.2 (includes agroforestry) in summer '07*



SNAP Tool

- *Simple Nrcs Air quality Planning (SNAP) Tool*
- *For NRCS field staff, and for land managers*
- *Given inputs regarding an agricultural operation, SNAP will assess NRCS Air resource concerns and propose management practices/activities for addressing identified concerns*

NRCS Air Quality Training

- *Comprehensive Training Program being developed for NRCS Staff*
- *Air Quality Contacts in each state*
- *In-class and e-Learning*
- *Air Quality and Energy Training to Colorado NRCS Staff in June 2007*
- *Example Courses:*
 - *Animal Air Quality Issues*
 - *Greenhouse Gases and Carbon Sequestration*
 - *Agricultural Air Quality Basics*
 - *Smoke Management*



Six NRCS National Engineering Handbook Chapters Nearing Completion

- *Odor Management*
- *Tropospheric Ozone*
- *Greenhouse Gases and Carbon Seq.*
- *Chemical Drift*
- *Visibility*
- *Fugitive Dust*

Conservation Effects Assessment Project (CEAP)

- *Partnership program*
- *Quantifies environmental effects and benefits of conservation practices*
 - *Sampling and modeling approach*
 - *Utilizes representative crop field data*
 - *Provides indicators for a number of areas including, but not limited to:*
 - *Wind erosion*
 - *Soil carbon accumulation*



CEAP

- *Deliverables include:*
 - *Environmental Benefits of Conservation on Cropland*
 - *Wetlands in Agricultural Landscapes*
 - *Environmental Effects of Conservation Practices on Grazing Lands*
 - *Cultivated Cropland Report (future deliverable)*

[Note: Additional product information available at -
<http://www.nrcs.usda.gov/technical/NRI/ceap/library.html>]



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