



Agriculture, Forestry, and Waste Technical Work Group Teleconference Meeting #5

August 4, 2006



Today's Agenda

- Call to order
- Roll Call of Technical Work Group (TWG) members
- Review and approval of last call summary
- Review of CAPAG approval on prioritization of potential state actions
- Assignment of TWG volunteers to draft straw proposals for policy options
- Review straw proposal template
- Review remaining issues on the draft emissions inventory and forecast for Agriculture, Forestry, and Waste
- Call to the public
- Proposed agenda items for next meeting
- Announcements

CAPAG Approval of TWG Prioritization of Potential State Actions

CAPAG Meeting #3 Results:

- Approved AFW-1 (Manure Digesters/Other Waste Energy Utilization) after clarification to include animal waste generally rather than just manure
- Approved AFW-2 (Biodiesel Production - incentives for feedstocks and production plants)
- Approved AFW-3 (Conservation Tillage/No-Till - carbon sequestration and reduced energy use) after adding “bio-char” as a fourth item to improve soil quality and soil carbon
- Approved AFW-4 (Preserve Open Space/Agricultural Land)
- Approved AFW-5 (Agricultural Biomass Feedstocks for Electricity or Steam Production)
- Approved AFW-6 (Policies to Promote Ethanol Production)

CAPAG Approval (continued)

- Approved AFW-7 (Forest Protection – Reduced Clearing and Conversion to Nonforest Cover)
- Approved AFW-8 (Afforestation and/or Restoration of Nonforested Lands)
- Approved AFW-9 (Expanded Use of Forest Biomass Feedstocks for Electricity - fuel switching)
- Approved AFW-10 (Expanded Use of Forest Biomass Feedstocks for Residential, Commercial/Institutional, or Industrial Heating)
- Approved AFW-11 (Landfill Methane and Biogas Energy Programs)
- Added AFW-12 (Increased Recycling Infrastructure and Collection), as a new option

TWG List of Volunteers

Option No.	GHG Reduction Policy Option	Volunteer Lead (*) and Volunteers
AFW-1	Manure Digesters/Other Waste Energy Utilization	
AFW-2	Biodiesel Production (incentives for feedstocks and production plants)	
AFW-3	Conservation Tillage/No-Till (carbon sequestration and reduced energy use)	
AFW-4	Preserve Open Space/Agricultural Land	
AFW-5	Agricultural Biomass Feedstocks for Electricity or Steam Production	
AFW-6	Policies to Promote Ethanol Production	
AFW-7	Forest Protection – Reduced Clearing and Conversion to Nonforest Cover	
AFW-8	Afforestation and/or Restoration of Nonforested Lands	
AFW-9	Expanded Use of Forest Biomass Feedstocks for Electricity (fuel switching)	
AFW-10	Expanded Use of Forest Biomass Feedstocks for Residential, Commercial/Institutional, or Industrial Heating	
AFW-11	Landfill Methane and Biogas Energy Programs	
AFW-12	Increased Recycling Infrastructure and Collection	

Policy Straw Proposal Template

- See Separate MS Word Template

Forestry

- TWG Issues? Emission Sources and Sinks:
 - Forested land = 56% of NC land area
 - Emissions based on carbon stock changes
 - Four carbon accounts:
 - Live and dead standing trees
 - Forest floor and coarse woody debris
 - Soils
 - Wood products and landfills

Forestry

NC Emissions and Sinks	1990-2000
Live and Dead Standing Trees	-6.9
Forest floor and coarse woody debris	-0.8
Soils	-3.1
Wood products and landfills	-13.0
Total	-23.7

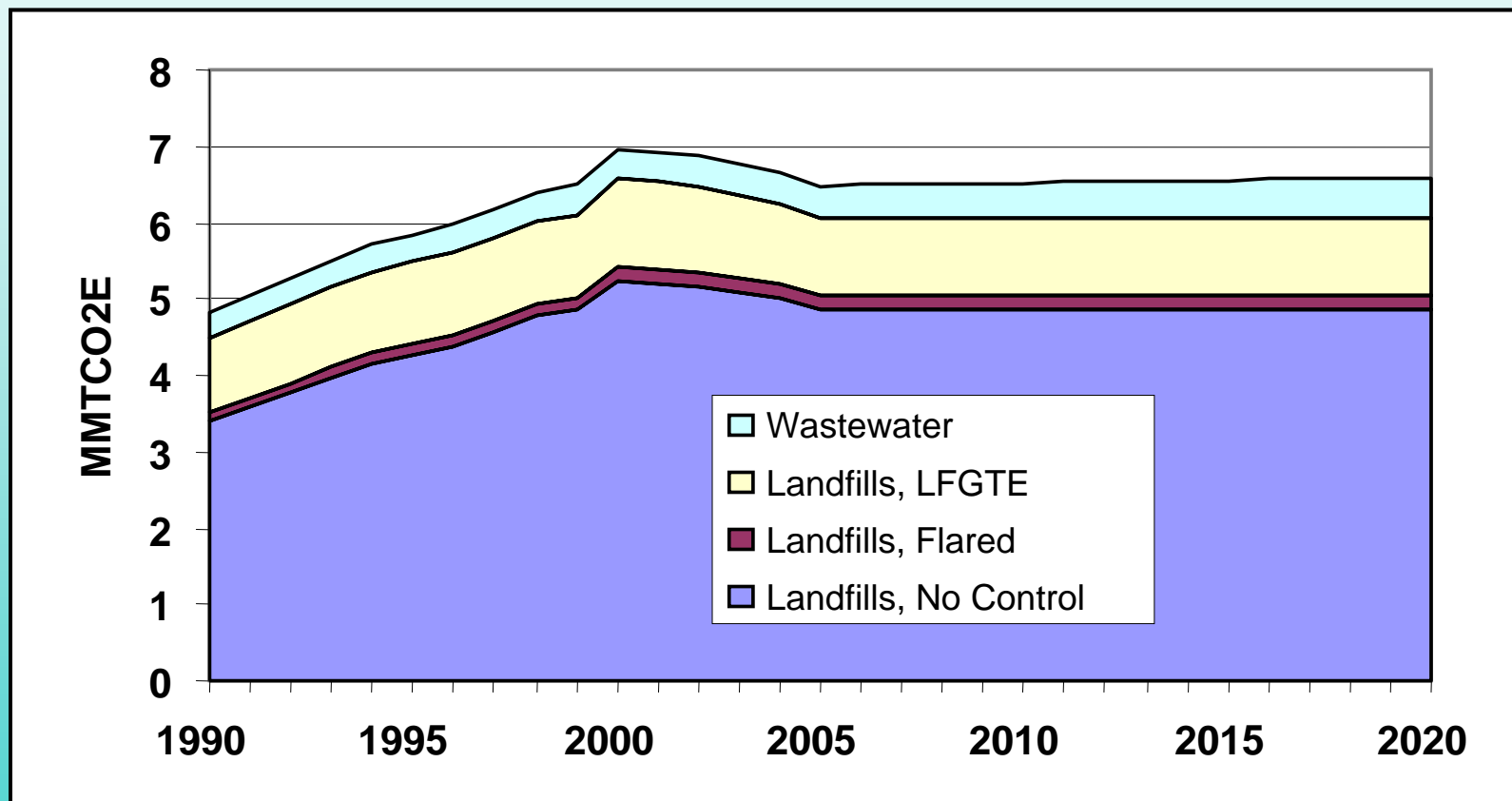
Forestry

- Inventory (1990 and 2000):
 - Data Sources
 - U.S. Forest Service data from Forest Carbon Model (FORCARB) based on FIA data from years 1987-1997
 - Methods
 - Carbon stock changes, plus estimated flows from soil carbon and harvested wood products – **Information from C. Hopkins shows that mortality included in FIA data**
 - **New data available for wood products?**
- Ref. Case Projections (2001–2020):
 - Held constant at 1987-1997 rates

Waste Management

- TWG Issues? Emission Sources:
 - Wastewater
 - Uncontrolled Landfills
 - Landfills with Landfill Gas Collection System and Flare
 - Landfills with Landfill Gas Collection System and Landfill-Gas-to-Energy Plant (LFGTE)

Waste Management



Waste Management

- Inventory (1990–2005):
 - Data Sources
 - NC OSBM Population Estimates
 - EPA Landfill Methane Outreach Program (LMOP) Database
 - **No revisions recommended by the TWG**

Waste Management

- Inventory (1990–2005):
 - Methods
 - Wastewater
 - Emissions = Pop. x Per Capita BOD (kg/day) x Fraction of BOD anaerobically digested x 365 Days/Year x Emission Factor

Waste Management

- Inventory (1990–2005):
 - Methods
 - Landfills
 - Classify landfills as small or large (large defined as greater than 1.1 million tons waste-in-place)
 - Emissions calculated using regression equation specific to large or small landfills
 - » $\text{Emissions} = (\text{No. of Landfills} \times \text{Y-intercept}) + (\text{Slope} \times \text{Waste-in-Place})$
 - Controlled Landfills
 - Collection efficiency assumed to be 75%

Waste Management

- Ref. Case Projections (2006–2020):
 - Data Sources
 - NC OSBM Population Projections
 - Methods
 - Wastewater
 - Assumed to grow at same rate as population
 - Landfills
 - No Growth
 - » Historical emissions do not follow population
 - » Per capita CH₄ emissions expected to decline due to Federal requirements (NSPS and Emission Guidelines)

Waste Management

- Key Uncertainties
 - Landfill Activity
 - Landfill Gas Recovery Data: **Landfills without collection & control information in LMOP are assumed to be uncontrolled**
 - Landfill and Wastewater Emission Factors
 - Affects of Federal Landfill Requirements

Public Input, Announcements

Next TWG Call

- Agenda
 - Review and discussion of straw proposal development
 - Final review of inventory and forecast
- Time and date