



MINNESOTA
Climate Change
Advisory Group



Minnesota Climate Change Advisory Group

AFW Technical Work Group Meeting #2

June 7, 2007

Minnesota Department of Commerce
Minnesota Pollution Control Agency
The Center for Climate Strategies

Agenda

- Roll Call
- Review and approval of previous call summary
- Continued Review of the Catalog of State Actions & Action Descriptions
- Continued Review of Minnesota Emissions Inventory & Forecast
- Agenda, Time and Date for Next Meeting
- Public Input and Announcements

Stepwise Planning Process

1. Develop inventory and forecast of emissions
2. Identify a full range of possible actions
3. Identify initial priorities for analysis
4. Develop straw proposals
5. Quantify GHG reductions and costs/savings
6. Evaluate externalities, feasibility issues
7. Develop alternatives to address barriers
8. Aggregate results
9. Iterate to final agreements
10. Finalize and report recommendations

Catalog of State Actions & Action Descriptions

- Refer to the Documents Posted at the AFW Web Page.

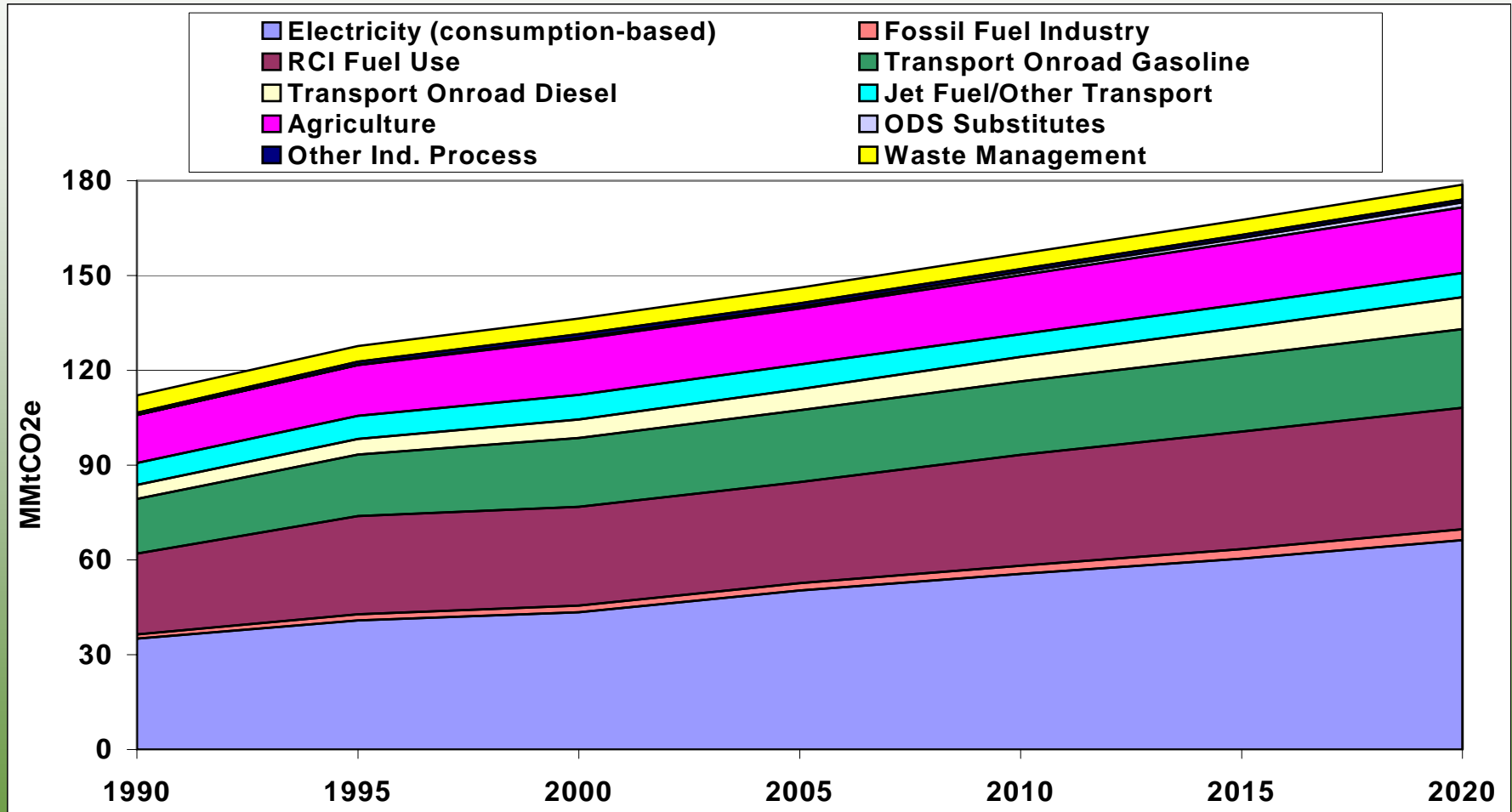
Next Steps for the AFW TWG

- Complete Catalog for review by the MCCAG on June 14
- CCS incorporates comments from the MCCAG
- TWG fills in nominal ratings for GHG reductions, costs, and additional information
- TWG recommends priorities for analysis
- MCCAG reviews and approves TWG priorities
- TWG develops straw proposals for policy design

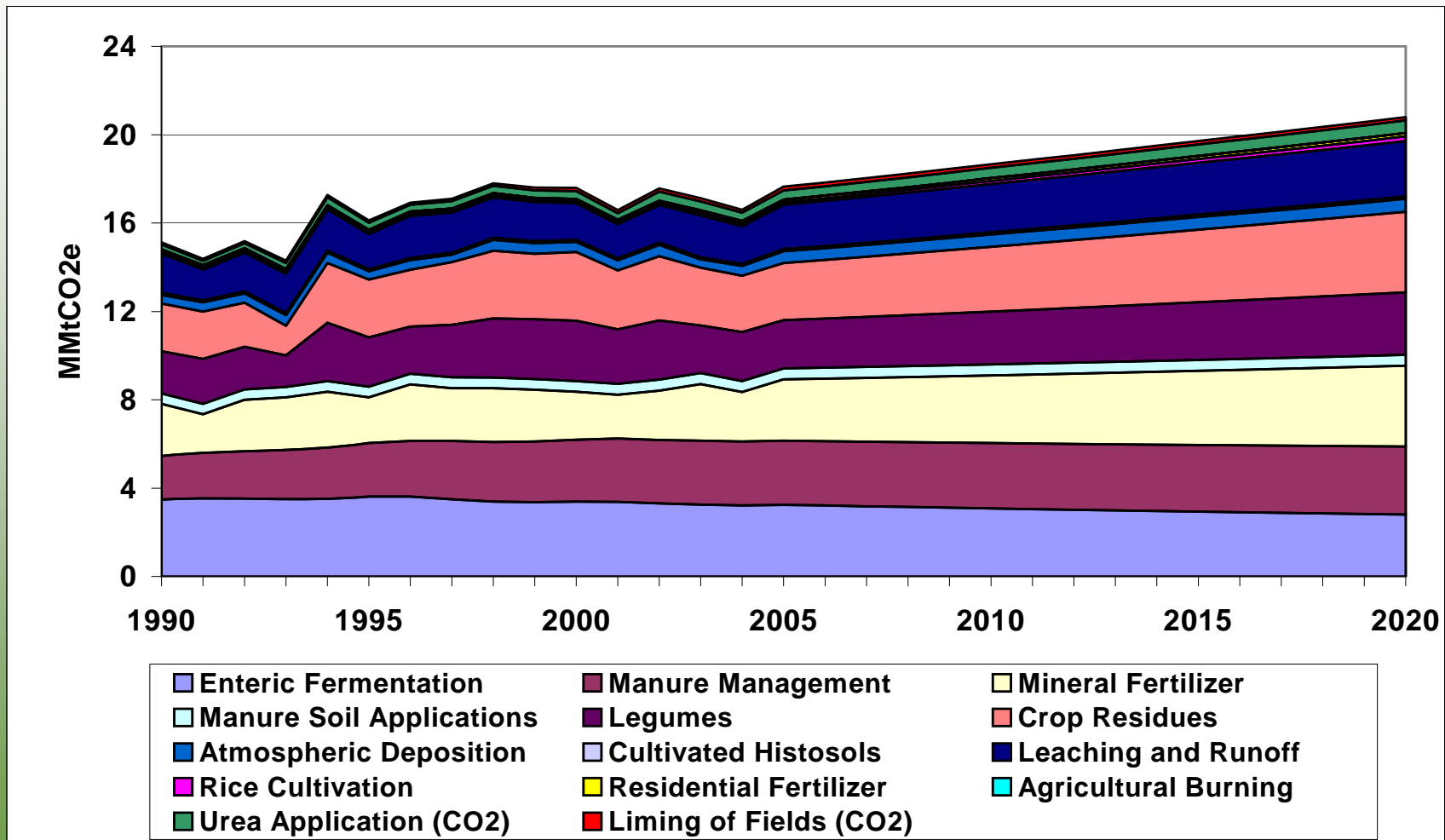
GHG Inventory & Forecast

- All TWGs need to extend forecast to at least 2025
- Matches time horizon of MN Next Generation Energy Act of 2007:
 - Per capita fossil fuel use reduced 15% by 2015
 - Renewable energy provides 25% of all energy consumed by 2025

Gross MN GHG Emissions By Sector, 1990-2020



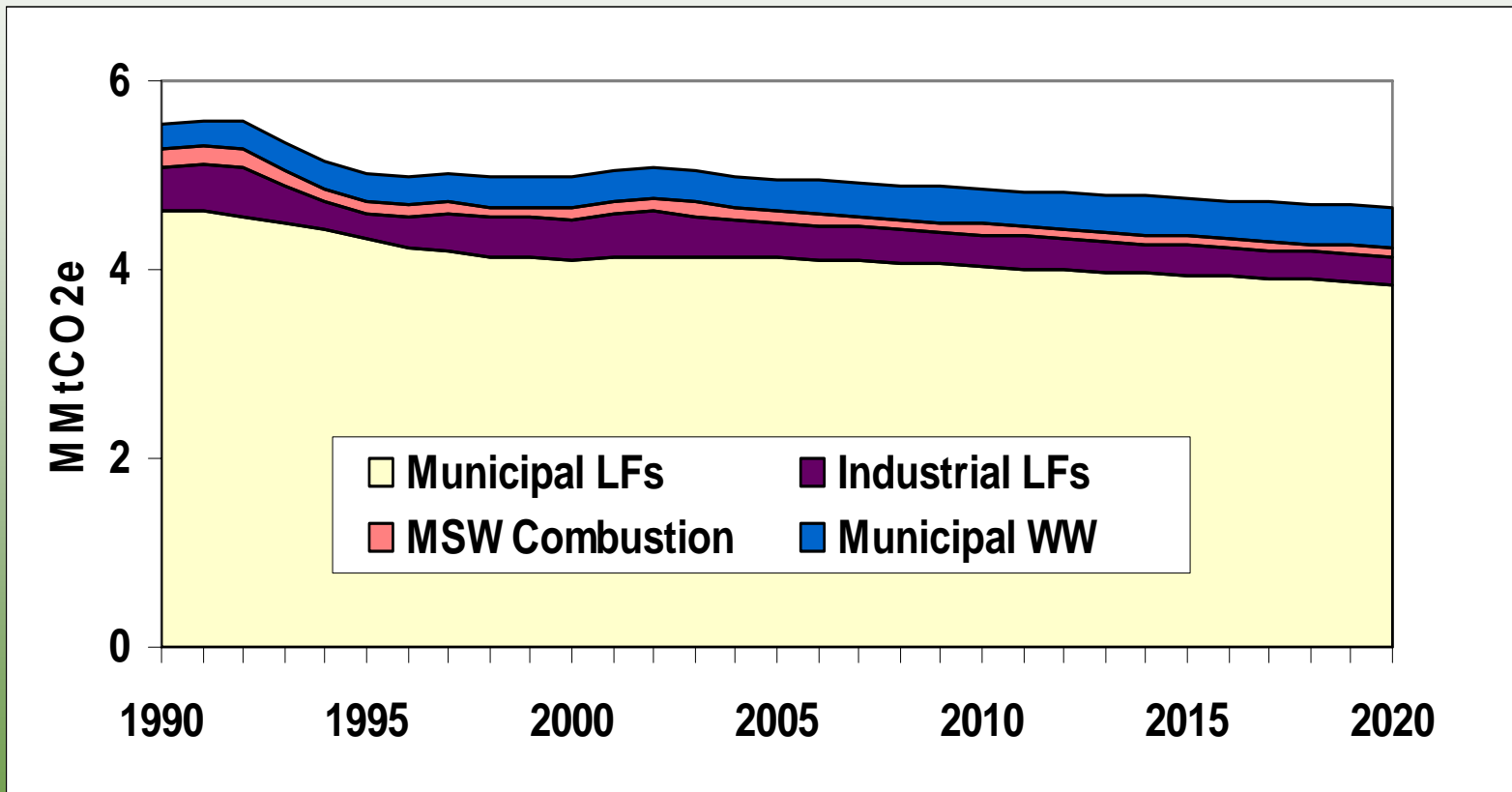
Agriculture



Agriculture

- Data Sources: MN PCA Inventory
- Methods
 - Agricultural Soils: Crop production data and EPA emission factors
 - Enteric Fermentation and Manure Management: livestock populations and EPA emission factors
 - Fertilizer: Fertilizer consumption and EPA emission factors
 - Agricultural Burning: SGIT and crop production data
 - Growth based on historical trends
- Key Assumptions
 - Future growth assumed to follow historical trends
- Key Uncertainties
 - Projection data

Waste Management



Waste Management

- Data sources
 - Landfills: EPA LandGEM Model with MN PCA inputs
 - Waste combustion: MN PCA
 - Wastewater: State population
- Methods
 - LandGEM Model estimates emissions
 - Waste combustion and Wastewater: EPA emission factors with data sources above

Waste Management

- Key Assumptions
 - Growth Rates: based on historical emissions trends
- Key Uncertainties
 - Future controls applied to uncontrolled landfills
 - Assumption that future growth will follow historical trends
 - Industrial WW –lack of data for meat/poultry, pulp/paper, and food/vegetable processing

Forestry

USFS - Stock Change 1990-2003

Carbon Pool	MMtCO ₂ e/yr (positive # net emission)
Live Trees	3.5
Standing Dead Trees	0.56
Live Understory	0.08
Down and Dead Trees	0.33
Forest Floor	1.09
Soil Organic Carbon	22
Harvested Wood Products and Landfills	-4.6
Total (with/without SOC)	23/0.92

Forestry

USFS - Stock Change 1990-2003

	1990	2003	Difference (2003-1990)
Forests (1,000 hectares)	6,751	6,568	-182
Timberland (1,000 hectares)	5,958	5,973	15
Total (1,000 hectares)	12,709	12,541	-168

Forestry

- Data Sources

- USFS carbon stock for 2 inventories (1990-2003) based on FORCARB2 model
- USFS also provides modeled estimates for harvested wood products

- Methods

- Forestry: USFS FORCARB2 carbon stock change model provides carbon pools for each inventory cycle
- Flux calculated for each pool based on difference in time between inventory cycles
- Carbon pool data for the 1990-2003 time-period used to quantify flux.

Forestry

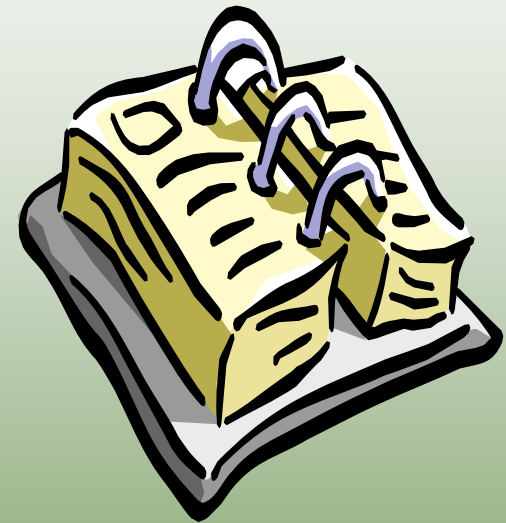
- Key Assumptions
 - 1990-2003 carbon stock trends representative of current conditions
 - No significant change in sequestration trends from 2006-2020
- Key Uncertainties
 - Effects of future development on forested acreage
 - Effects of near-term climate change on forest sequestration levels

Next Steps

- Review MCCAG input on AFW Catalog of Policy Options & Descriptions
- Discuss policy option prioritization procedure
- Continued review and revision of GHG Inventory & Forecast

Next TWG Meeting

- Agenda:
 - Review/revise policy options catalog based on MCCAG input
 - Discuss procedure for prioritizing policy options for analysis
 - Continue review/revision of Minnesota emissions inventory and projections
- Time and Date (tentative): June 21, 3:00-4:30 pm
- Remaining TWG meetings (tentative): July 19, August 16, September 6, October 4, October 25, November 29, December 20.



Public Input, Announcements