

# Alaska Climate Change Mitigation Advisory Group

FAW Technical Working Group  
Meeting #6

November 5, 2008

Office of the Governor  
The Center for Climate Strategies

# Agenda

- Call to order and roll call
- Review and approval of previous call summary
- Review next steps for TWG
- Presentation of Preliminary Straw Proposals
- Review of the AK Draft 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

# Next Steps for TWG

- Continue straw proposal process
  - TWG completes straw proposals for policy design
  - Straw proposals presented to CCMAG during 11/06 meeting
  - CCMAG approves straw proposals or sends back for revision
- Finalize updates to AK GHG I&F
  - Updates to Waste Appendix based on TWG input
  - No comments thus far on Forestry or Agriculture Appendices

# Straw Proposal Process

- Policy Description – Brief description of policy option elements. Should not be more than one or two paragraphs in length. May be based on text from the “Brief Description for Catalog Actions” document.
- Policy Design – Quantitative goal in “everyday” metric (i.e. kWh produced, gallons produced, efficiency target, recycling rate).

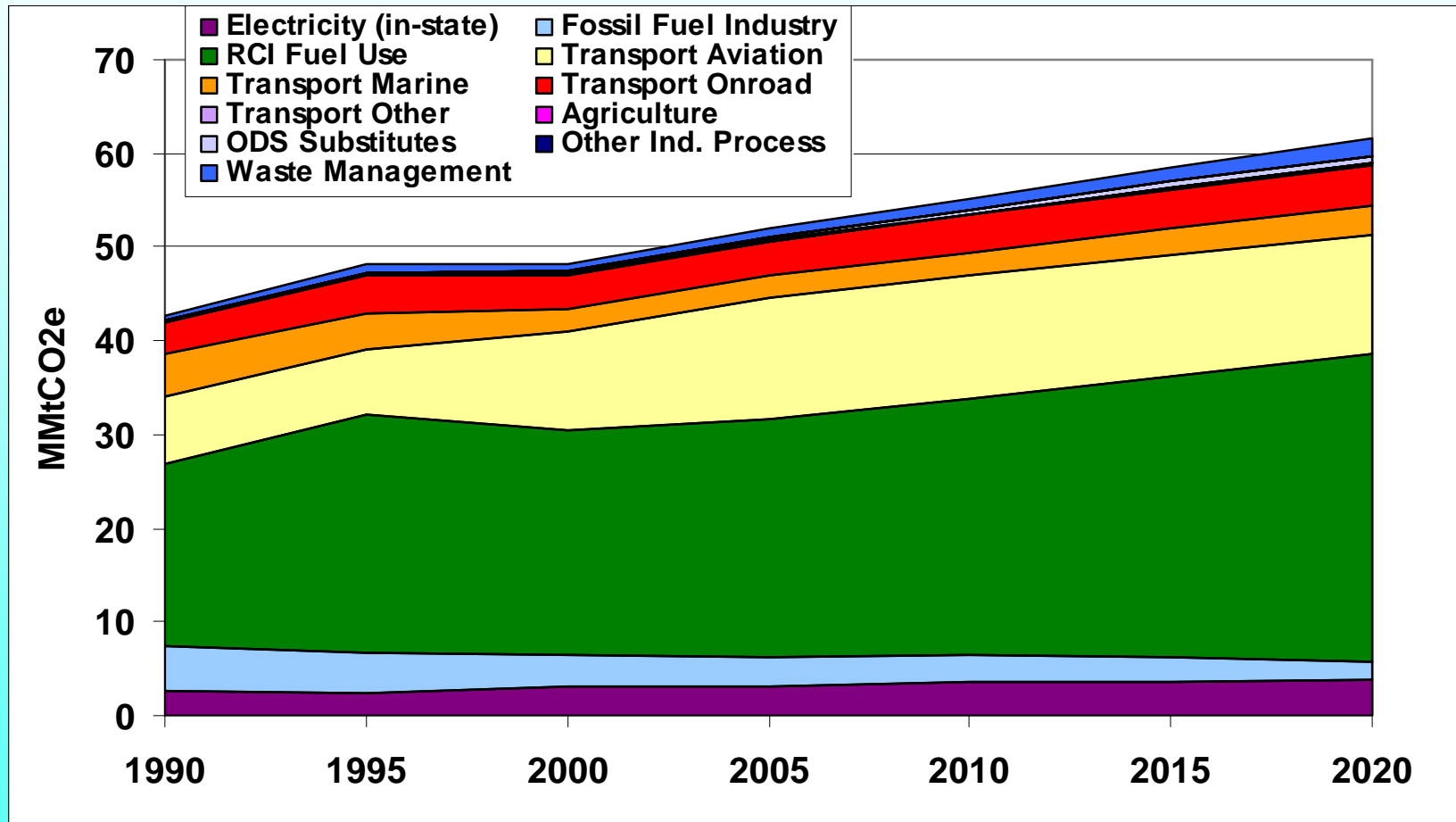
# Straw Proposal Process

- See Straw Proposal Template.
  - Available on the FAW web page

# GHG Inventory & Forecast

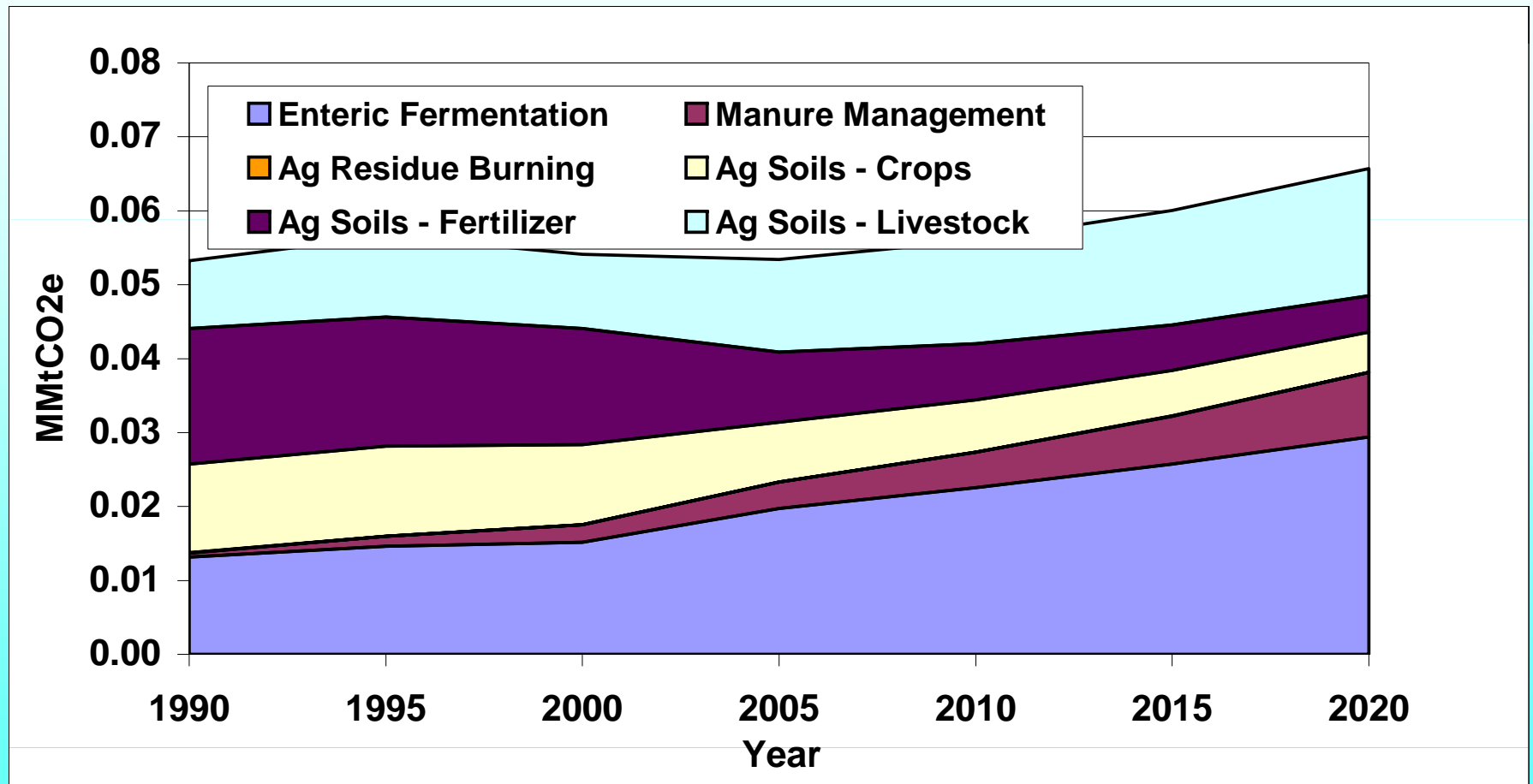
# Alaska Gross GHG Emissions By Sector, 1990-2020

Note: Does not include updated Waste I&F. Will be updated upon approval of TWG.





# Agriculture



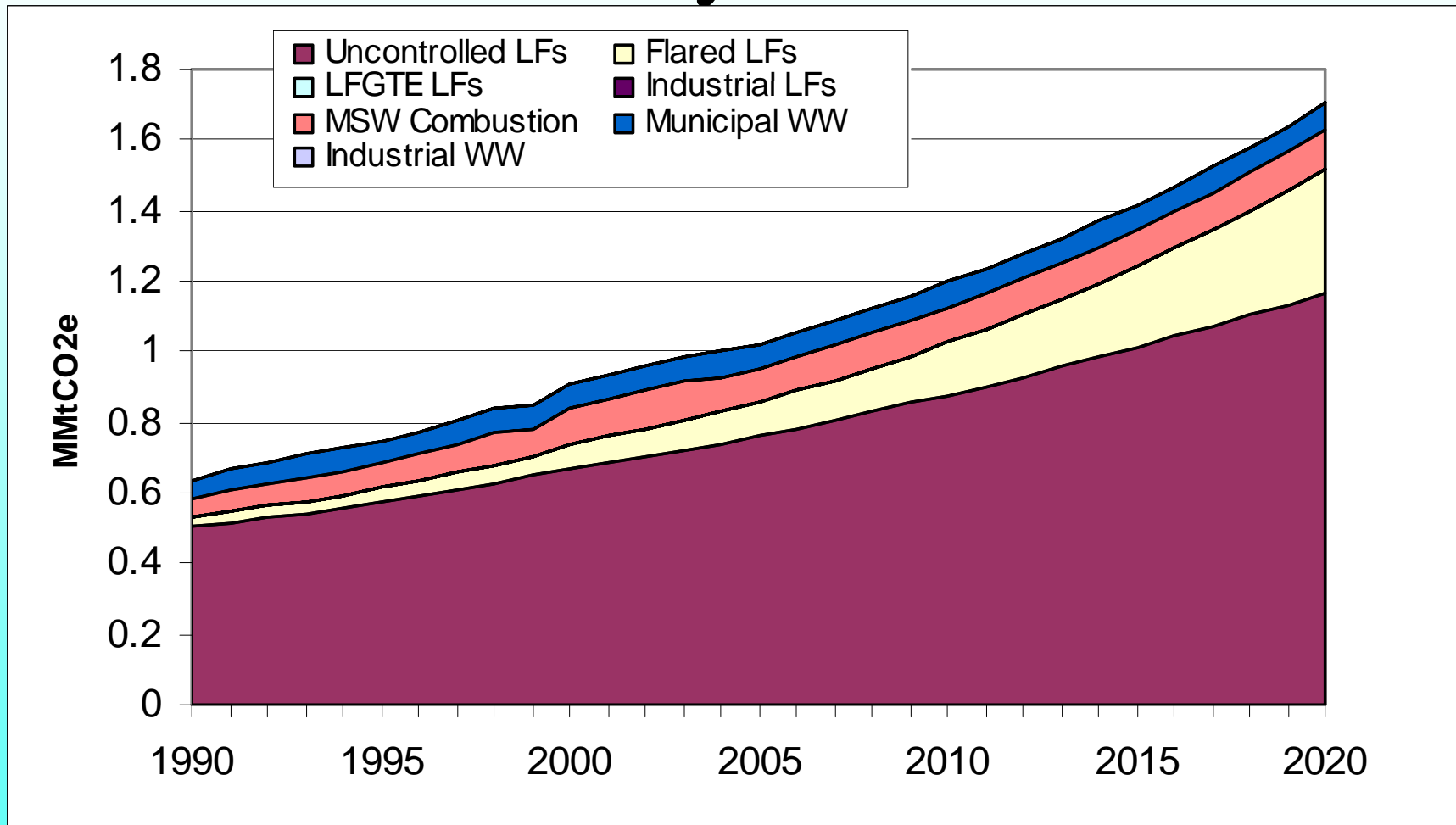
# Agriculture

- Data Sources
  - Crop Production: USDA/NASS
  - Livestock: USDA/NASS
  - Fertilizer: Fertilizer Institute
- Methods
  - Crops: SGIT emission factors and crop production data
  - Livestock: SGIT emission factors and livestock populations
  - Fertilizer: SGIT fertilizer consumption
  - Projections for other categories based on historical growth trends

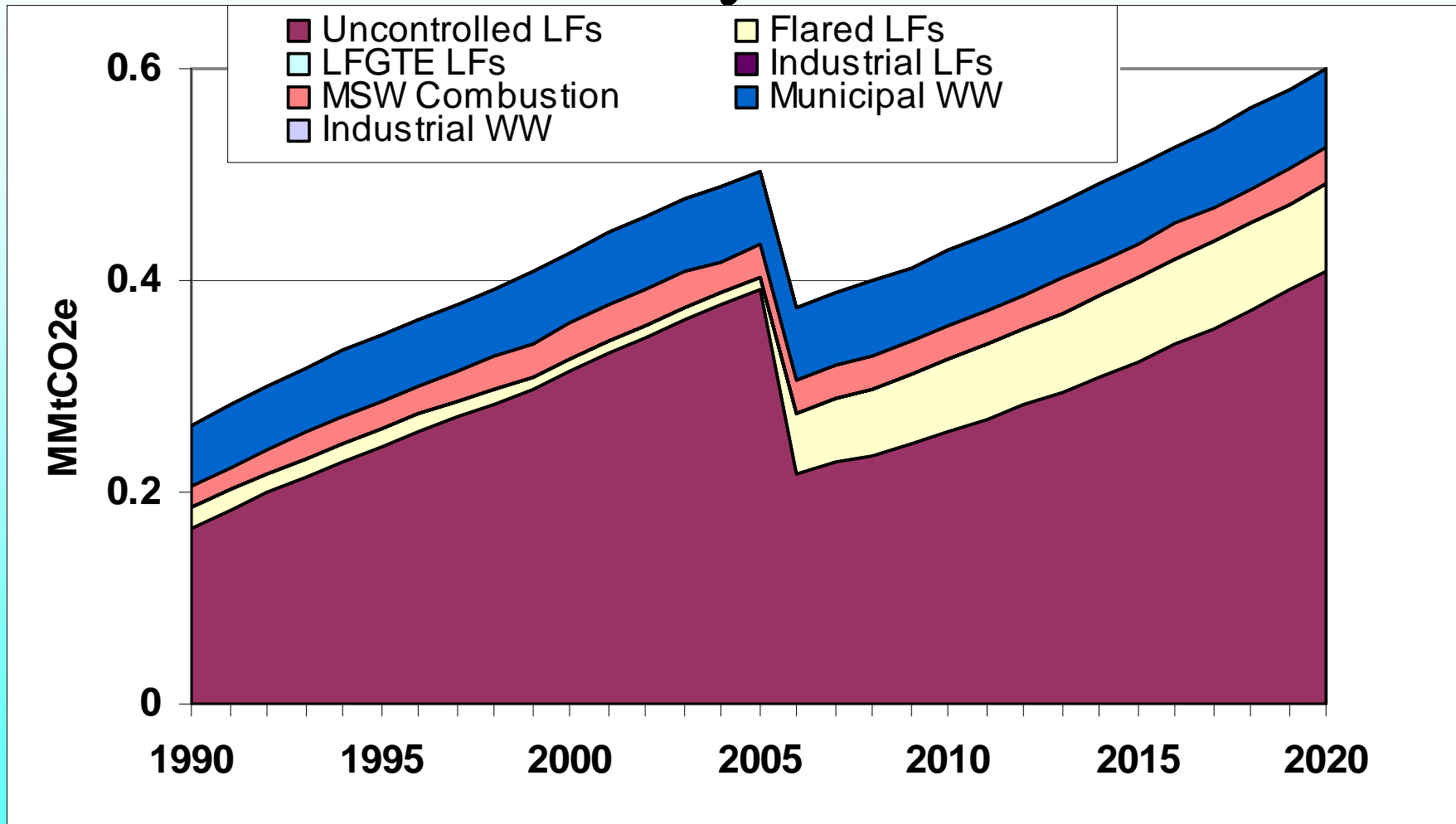
# Agriculture

- Key Assumptions
  - Future growth for agricultural soils will follow historical trends
  - Livestock population growth will follow five-year growth rate from 1997 – 2020.
- Key Uncertainties
  - Manure management emission factors derived from limited data sets
  - Livestock numbers based on point estimates for each year to represent populations that fluctuate throughout the year
  - Projection assumptions

# Waste Management – Initial Draft Inventory and Forecast



# Waste Management – Updated Draft Inventory and Forecast



# Summary of Comments from TWG

- Update the number of Class I, II, and III landfills to 222, 14, and 7, respectively
- Update the annual waste accepted at landfills (initial estimates too high)
- Input on larger (Class I) landfills now collecting and flaring landfill gas

# Waste Management

- Data sources
  - EPA Landfill Methane Outreach Program Database
  - Additional landfill data provided by DEC
  - DEC data on waste combustion
  - State population and SGIT default data for municipal WW treatment
- Methods
  - SGIT with data sources above
  - CCS post-processing to account for controls and growth

# Waste Management

- Key Assumptions

- Growth Rates

- Uncontrolled Landfills – based on historic emissions growth (1995-2005)
    - Controlled Landfills – assumes continuation of current emplacement rates through 2020
    - Waste Combustion and Municipal WW – AK population projections

- Key Uncertainties

- Methods do not account for landfill controls that will be required during period of analysis
  - Many small landfills may be frozen for as much as half the year.
  - Data was not available to estimate industrial wastewater, treatment of fish processing waste, and ballast water.



# Forestry

Source	CO <sub>2</sub> e Flux (MMtCO <sub>2</sub> e) <sup>a</sup>				
	1990	2000	2005	2010	2020
<i>State-Level Forest Flux</i>					
CO <sub>2</sub> Flux	4.6	12	12	12	12
Non-CO <sub>2</sub> Gases from Fire	4.5	4.9	4.9	4.9	4.9
CH <sub>4</sub> Flux <sup>b</sup>	16	21	24	26	31
<b>Total State-Level</b>	<b>25</b>	<b>38</b>	<b>41</b>	<b>43</b>	<b>48</b>
<i>Flux for Managed Forests<sup>c</sup></i>					
CO <sub>2</sub> Flux	-0.3	-1.4	-1.4	-1.4	-1.4
Non-CO <sub>2</sub> Gases from Fire	0.0	<0.01	<0.01	<0.01	<0.01
CH <sub>4</sub> Flux	n/a	n/a	n/a	n/a	n/a
<b>Total – Managed Forests</b>	<b>-0.3</b>	<b>-1.4</b>	<b>-1.4</b>	<b>-1.4</b>	<b>-1.4</b>
<p>Positive values represent net CO<sub>2</sub>e emissions. Non-CO<sub>2</sub> gases are methane and nitrous oxide.</p> <p><sup>a</sup> Values reported are ten year averages of annual data surrounding the year reported (e.g., 1990 average is the average of data for 1985-1994). For 2000, data only available through 2002. After 2000, flux estimates are assumed to remain constant.</p> <p><sup>b</sup> UAF estimate for the 1980-1996 period used for 1990. UAF growth rate of 0.5 MMtCO<sub>2</sub>e/yr used for forecast years. See Section on CH<sub>4</sub> emissions from Alaskan ecosystems.</p> <p><sup>c</sup> Managed forests are the coastal maritime forests of the state. CH<sub>4</sub> flux estimates were not available for managed forests.</p>					

# Forestry

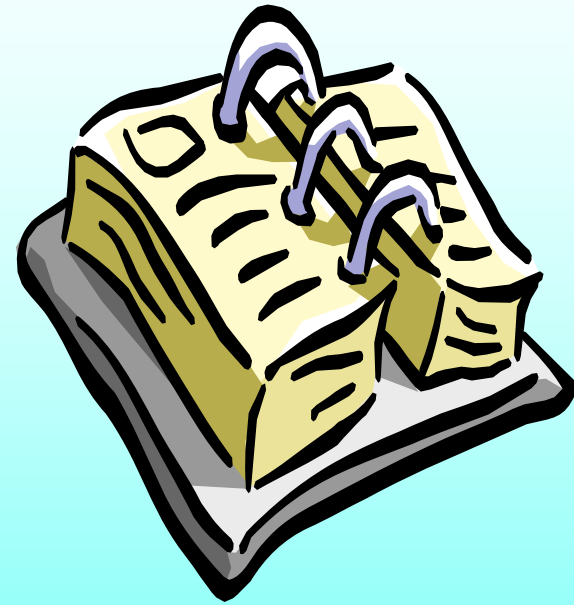
- Data Sources
  - University of Alaska carbon flux estimates, wildfire acreages
  - WRAP 2002 Wildfire Inventory
- Methods
  - Forestry: UA study used to develop estimates and projections of anthropogenic emissions and sinks
  - Carbon flux data for the 2001-2005 time-period assumed to remain constant through 2020

# Forestry

- Key Assumptions (managed forests)
  - 2001-2005 carbon stock change representative of current conditions
  - No significant change in carbon flux from 2006-2020
- Key Uncertainties (managed forests)
  - Effects of future development on forested acreage
  - Effects of near-term climate change on forest sequestration levels
- Key Uncertainties (unmanaged forests) –
  - Many, including impacts of early thaw (see Forestry appendix)

# Next TWG Meeting

- Agenda:
  - Review comments on Straw Proposals from CCMAG
  - Discuss review of straw proposals, if needed
  - Discuss next steps in policy option development
  - Review final revisions to Alaska emissions inventory and projection, if needed



Time and Date: November 19, 2008. 10:00 AM – 11:30 AM Alaskan Time

CCMAG Meeting: November 6, February 5

Both CCMAG meetings in Anchorage, AK.

# Public Input, Announcements