

Alaska Climate Change Mitigation Advisory Group

FAW Technical Working Group
Meeting #10

February 18, 2009

Office of the Governor
The Center for Climate Strategies

Agenda

- Call to order and roll call
- Review and Approval of Prior Call Summary
- Review Next Steps for TWG
- Review CCMAG Meeting Results
- Review of Quantification Process and Draft Results
- Review of Alaska 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 quantification process
 - CCS to work with TWG on data sources, methods
 - Draft FAW-3 quantification complete (under revision)
 - Quantification initiated on FAW-1 and FAW-2
- Finalize updates to AK GHG I&F
 - Soil Carbon assumption in permafrost areas
 - Boreal and Coastal forest carbon flux
 - Revisions being made to waste management I&F

CCMAG Meeting Results

- FAW-1 Straw Proposal
 - Approved by CCMAG
 - Questions:
 - How many acres are currently being thinned?
Include this under baseline information.
 - Address biomass – to be put to beneficial use (energy versus wood products)?
 - Define pre-commercial and/or commercial thinning
 - Add National Park Service and BLM to “Parties Involved”

Research Needs Work Group

- Update from RNWG member

Quantification Process

- See Policy Options Document
 - Posted on the FAW TWG webpage

Quantification Process – TWG

Input Needed

- Input needed from each TWG volunteer sub-group for the following sections of the Policy Options Document:
 - ****Implementation Mechanisms****
 - Related Policies / Programs in Place
 - Key Uncertainties
 - Additional Benefits and Costs
 - Feasibility Issues

Quantification Process – FAW-1

- Quantification methods under development

Quantification Process – FAW-2

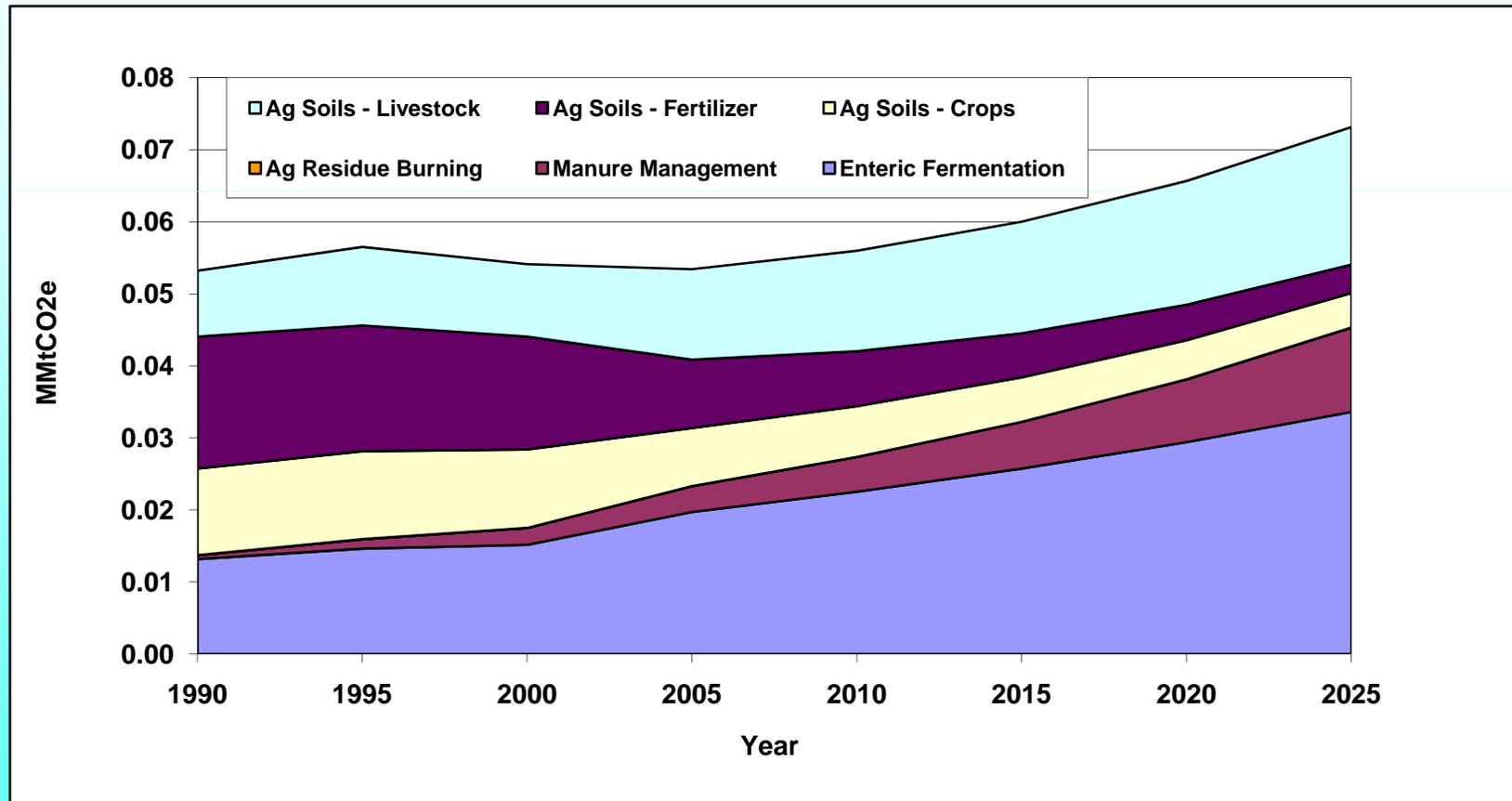
- Quantification in progress
- Issues to Consider:
 - **Biomass to Electricity Information**
 - Biomass Feedstocks to Consider
 - Heat Rate (MMBTU/MWH)
 - Energy Content (MMBTU/dry ton)
 - Cost (\$/delivered ton)
 - **Biomass Heating Oil Information**
 - Extent of Local Biomass in Analysis
 - **Residential vs Commercial Focus**
 - **Biofuel Information**
 - Feedstocks to consider (Cellulosic Ethanol, Biodiesel, Starch Based Ethanol?)

Quantification Process – FAW-3

- Draft FAW-3 Quantification Available
 - See FAW Policy Options Document
 - Preliminary review provided by TWG
 - Revisions being made to baseline solid waste management

GHG Inventory & Forecast

Agriculture



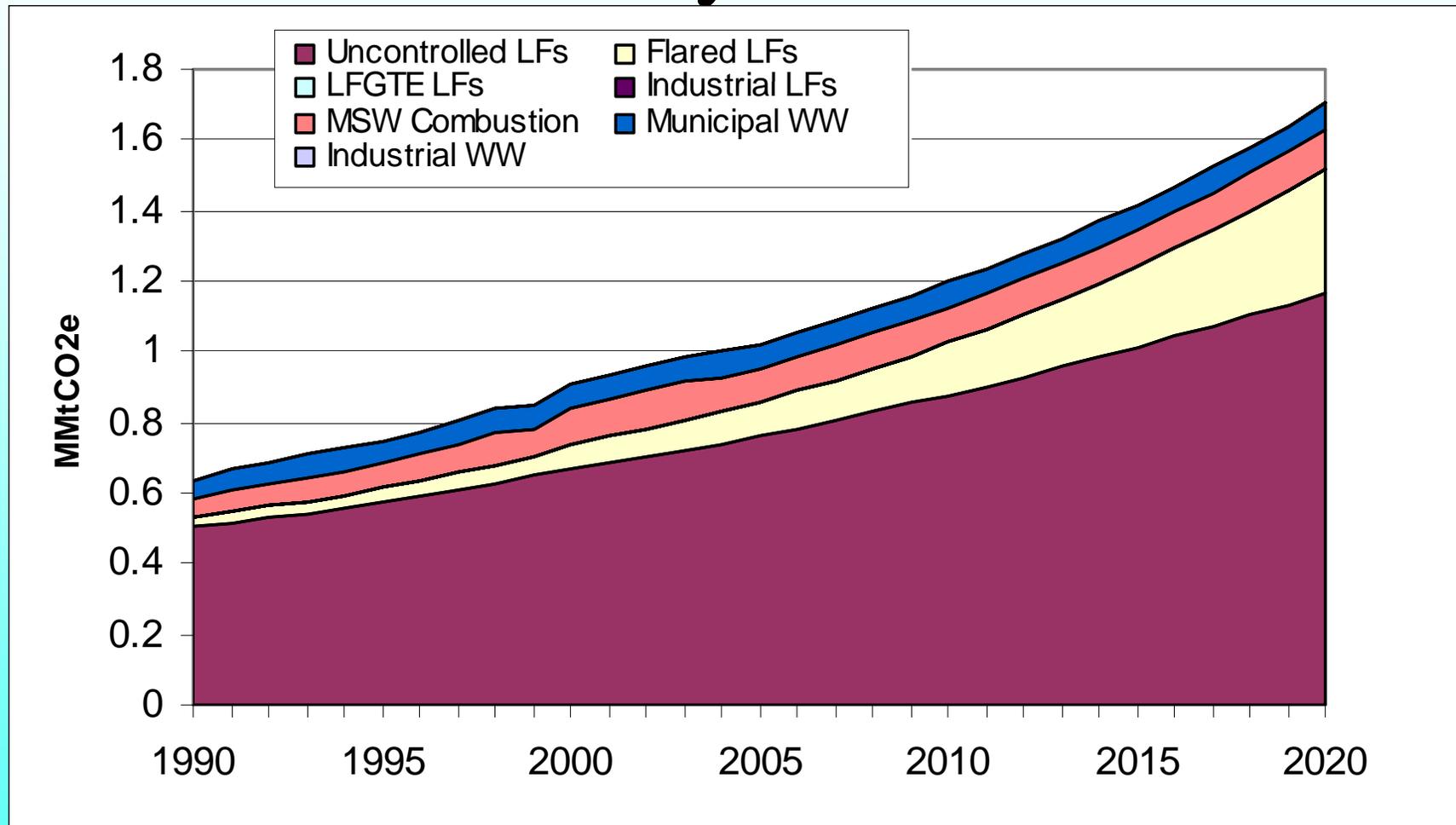
Agriculture

- 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

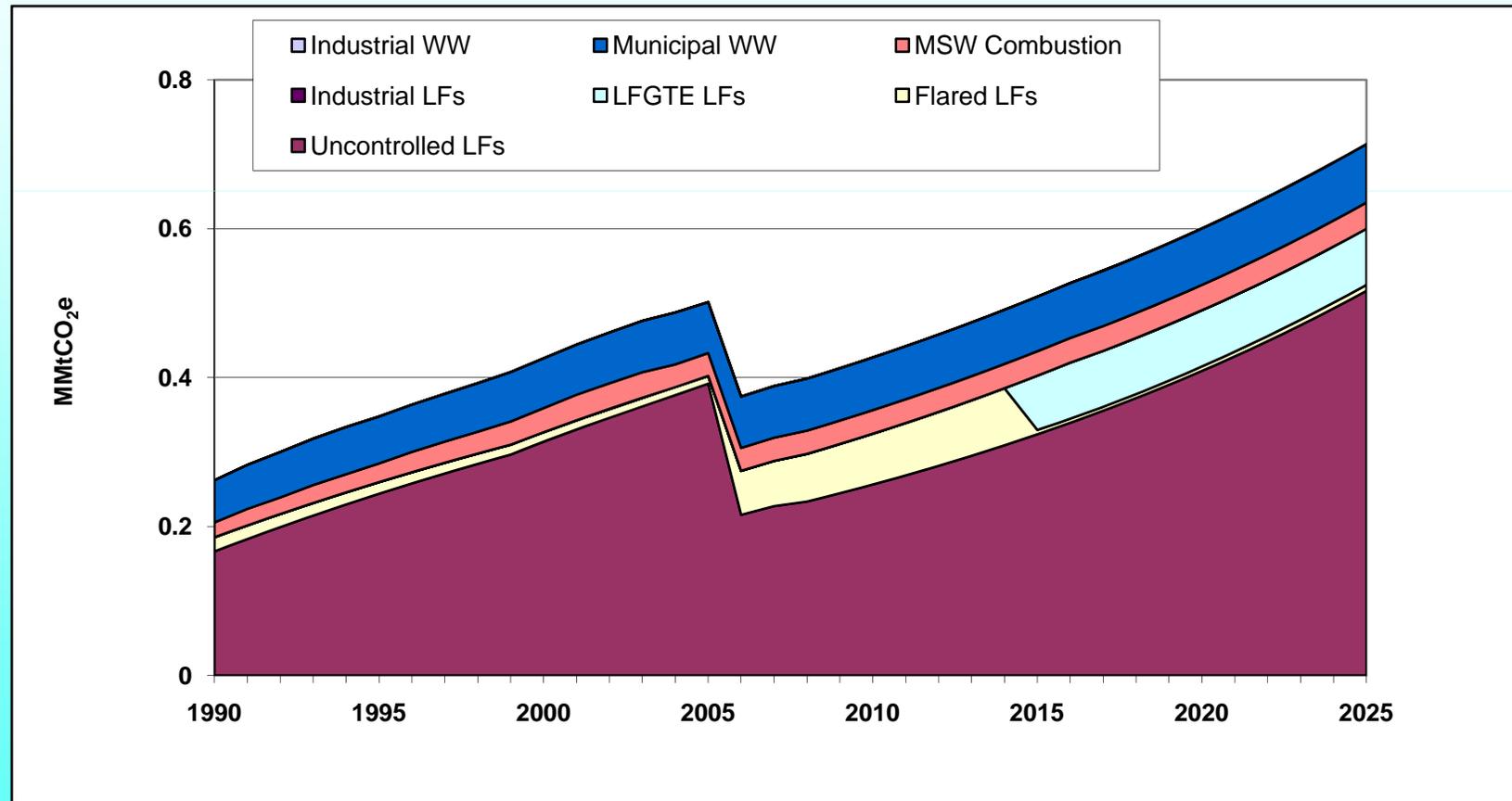
Agriculture

- Key Assumptions
 - Future growth for agricultural soils will follow historical trends
 - Livestock population growth will follow five-year growth rate from 1997 – 2025.
- 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



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 2025
 - 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 ₂ e Flux (MMtCO ₂ e) ^a					
	1990	2000	2005	2010	2020	2025
<i>State-Level Forest Flux</i>						
CO ₂ Flux	4.6	12	12	12	12	12
Non-CO ₂ Gases from Fire	4.5	4.9	4.9	4.9	4.9	4.9
CH ₄ Flux ^b	16	21	24	26	31	36
Total State-Level	25	38	41	43	48	53
<i>Flux for Managed Forests^c</i>						
CO ₂ Flux	-0.3	-1.4	-1.4	-1.4	-1.4	-1.4
Non-CO ₂ Gases from Fire	0.0	<0.01	<0.01	<0.01	<0.01	<0.01
CH ₄ Flux	n/a	n/a	n/a	n/a	n/a	n/a
Total – Managed Forests	-0.3	-1.4	-1.4	-1.4	-1.4	-1.4

Positive values represent net CO₂e emissions. Non-CO₂ gases are methane and nitrous oxide.

^a 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.

^b UAF estimate for the 1980-1996 period used for 1990. UAF growth rate of 0.5 MMtCO₂e/yr used for forecast years. See Section on CH₄ emissions from Alaskan ecosystems.

^c Managed forests are the coastal maritime forests of the state. CH₄ flux estimates were not available for managed forests.

Forestry

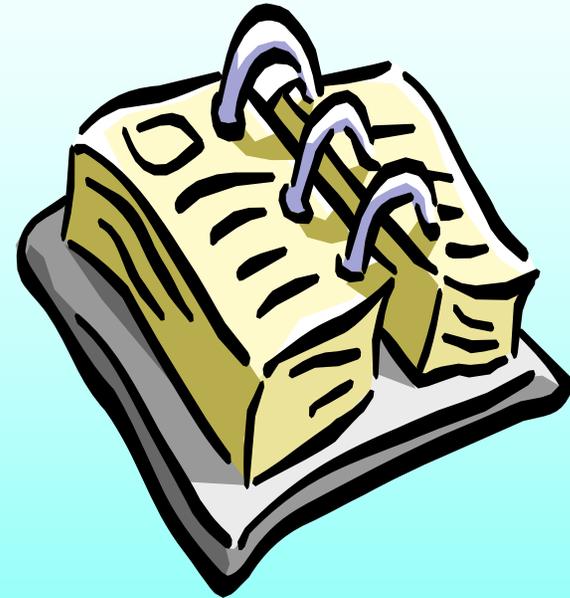
- Data Sources
 - University of Alaska carbon flux estimates, wildfire acreages
 - WRAP 2002 Wildfire Inventory
- Methods
 - Forestry: UA study used to develop estimates and projections of anthropogenic emissions and sinks
 - Carbon flux data for the 2001-2005 time-period assumed to remain constant through 2025

Forestry

- Key Assumptions (managed forests)
 - 2001-2005 carbon stock change representative of current conditions
 - No significant change in carbon flux from 2006-2025
- 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 quantification results by CCS
 - Review policy option text provided by TWG members
 - Review final revisions to Alaska emissions inventory and projection



Time and Date: March 18, 2009.
10:00 AM – 11:30 AM Alaskan Time

CCMAG Meeting: April 2, 2009

Public Input, Announcements