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

![Graph showing emissions from different agricultural activities over time. The graph illustrates the trend of emissions in MtCO2e from 1990 to 2025, highlighting the contributions from Ag Soils - Livestock, Ag Soils - Fertilizer, Ag Soils - Crops, Ag Residue Burning, Manure Management, and Enteric Fermentation.]
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

February 18, 2009

www.akclimatechange.us
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
    • 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

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<td><strong>Total State-Level</strong></td>
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<td>38</td>
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<tr>
<td><strong>Flux for Managed Forests$^c$</strong></td>
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<td>CH$_4$ Flux</td>
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<tr>
<td><strong>Total – Managed Forests</strong></td>
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Positive values represent net CO$_2$e emissions. Non-CO$_2$ 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 MMtCO$_2$e/yr used for forecast years. See Section on CH$_4$ emissions from Alaskan ecosystems.

$^c$ Managed forests are the coastal maritime forests of the state. CH$_4$ 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