Alaska Climate Change Mitigation Advisory Group

FAW Technical Working Group Meeting #11
March 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 of Quantification Process and Draft Results
• Final 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-1 and FAW-2 quantification complete
  – Revisions to FAW-3 complete

• Finalize updates to AK GHG I&F
  – Soil Carbon assumption in permafrost areas – Referred to RNWG
  – Boreal and Coastal forest carbon flux - Referred to RNWG
  – Revisions made to waste management I&F
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

• Draft FAW-1 Quantification Available
  – See FAW Policy Options Document
Quantification Process – FAW-2

• Draft FAW-2 Quantification Available
  – See FAW Policy Options Document
Quantification Process – FAW-3

• Draft FAW-3 Quantification Available
  – See FAW Policy Options Document
  – Preliminary review provided by TWG
  – Revisions made based on changes to the baseline solid waste management, as suggested by TWG
GHG Inventory & Forecast

• Updated Appendices:
  – Agriculture
    • Updated Appendix to reflect extension of forecast to 2025
  – Waste Management
    • Updated emission Inventory and Forecast to reflect changes to waste disposal data provided by TWG.
    • Updated Appendix to reflect extension of forecast to 2025
  – Forestry
    • Inserted brief discussion of uncertainties regarding permafrost and carbon flux
    • Updated Appendix to reflect extension of forecast to 2025
Agriculture

![Graph showing changes in agricultural emissions from 1990 to 2025.]

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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

[Diagram showing data on waste management over time, with categories such as Uncontrolled LFs, LFGTE LFs, Industrial LFs, Municipal WW, and Industrial WW.]

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Waste Management – Updated Draft Inventory and Forecast

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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
  – FAW TWG data on landfill disposal

• 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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<th>Source</th>
<th>CO₂e Flux (MMtCO₂e)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>1990</th>
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<th>2005</th>
<th>2010</th>
<th>2020</th>
<th>2025</th>
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<td><strong>Total – Managed Forests</strong></td>
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</table>

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

<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.

<sup>b</sup> 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.

<sup>c</sup> 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 input from CCMAG
  - Final input and review of FAW POD
  - Review final revisions to Alaska emissions inventory and projection (if necessary)

Time and Date: April 15, 2009.
10:00 AM – 11:30 AM Alaskan Time

CCMAG Meeting: April 2, 2009
Public Input, Announcements