Alaska Climate Change
Mitigation Advisory Group

FAW Technical Working Group
Meeting #5
October 1, 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
- Review of CCMAG Recommendations
- Description of Straw Proposal Process
- 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

• Affirm high priorities for analysis
• Begin straw proposal process
  – TWG develops straw proposals for policy design
  – Members volunteer for one or more options
  – Straw proposals developed off-line and presented to group at future TWG meetings
  – CCMAG approves straw proposals
Review of CCMAG Recommendations

• TWG affirms high priorities for further development
• Consider time and resources available to thoroughly develop all high priority options
• Those options affirmed by consensus of the groups move on to the straw proposal process
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 web

• Sub-group volunteers for straw proposal development.
Alaska Gross GHG Emissions By Sector, 1990-2020
Agriculture

Enteric Fermentation
Manure Management
Ag Residue Burning
Ag Soils - Crops
Ag Soils - Fertilizer
Ag Soils - Livestock

October 1, 2008
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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 – 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

[Graph showing the emissions of various waste management sources from 1990 to 2020. The graph indicates a significant increase in emissions over time, with notable contributions from uncontrolled LFs, LFGTE LFs, Flared LFs, Industrial LFs, MSW Combustion, Municipal WW, and Industrial WW.]
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
    • Landfills – based on historic emissions growth (2000-2005)
    • Industrial WW – based on historic emissions growth (1990-2005)
    • Municipal WW – AK population projections

• Key Uncertainties
  – Future controls applied to uncontrolled landfills
  – Industrial landfills
    • SGIT default of 7% of municipal landfills
  – Industrial WW
    • Growth for food/vegetable processing
## Forestry

<table>
<thead>
<tr>
<th>Source</th>
<th>CO$_2$e Flux (MMtCO$_2$e)$^a$</th>
<th>1990</th>
<th>2000</th>
<th>2005</th>
<th>2010</th>
<th>2020</th>
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<tbody>
<tr>
<td><strong>State-Level Forest Flux</strong></td>
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<td>CO$_2$ Flux</td>
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<td>Non-CO$_2$ Gases from Fire</td>
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<td>CH$_4$ Flux$^b$</td>
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<tr>
<td><strong>Total State-Level</strong></td>
<td><strong>25</strong></td>
<td><strong>38</strong></td>
<td><strong>41</strong></td>
<td><strong>43</strong></td>
<td><strong>48</strong></td>
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<tr>
<td><strong>Flux for Managed Forests$^c$</strong></td>
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<tr>
<td>CO$_2$ Flux</td>
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<tr>
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<td>&lt;0.01</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Total – Managed Forests</strong></td>
<td><strong>-0.3</strong></td>
<td><strong>-1.4</strong></td>
<td><strong>-1.4</strong></td>
<td><strong>-1.4</strong></td>
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</tbody>
</table>

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 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:
  – In-person meeting
  – Review status of straw proposals
  – Sub-group presentation of working straw proposals
  – Review TWG suggested updates to the Alaska emissions inventory and projection

Time and Date: November 5, 2008. 10:00 AM – 4:00 PM Alaskan Time

CCMAG Meeting: November 6

Both meetings in Anchorage, AK.

October 1, 2008