Alaska Climate Change
Mitigation Advisory Group

FAW Technical Working Group
Meeting #3
July 30, 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 discussion from CCMAG meeting #2
• Continued Review of the Catalog of State Actions
• 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

• Identify priorities for analysis prior to the third CCMAG meeting on September 22.
  – Finalize Catalog of State Actions and Brief Descriptions.
  – Review and discuss nominal ratings for each potential action.
  – Balloting process to identify top priorities for further analysis.

• CCMAG reviews and approves TWG priorities
• TWG develops straw proposals for policy design
CCMAG Meeting #2 Discussion

• All Options:
  – Education as a key implementation mechanism. To be considered during “Straw Proposal” phase of Process.

• AFW-2:
  – Land clearing mentioned with the idea that younger forests sequester carbon at faster rates. Implemented as part of AFW-2.4
CCMAG Meeting #2 Discussion, Continued

• AFW-8:
  – CCMAG noted importance of greenhouse operations in AK and that energy efficiency may be improved. Now included as a part of AFW-8.2, but may be broken out into separate option.

• AFW-9:
  – AFW-9.1 – “Yard Waste” changed to “MSW”
  – Plastic bag reduction or ban as a potential element of AFW-9.5
  – Discussion of seafood waste as energy feedstock.
FAW Catalog of State Actions

• Includes default nominal ratings.
  – TWG to discuss and modify nominal ratings.
  – TWG to add text for “Other Considerations” as necessary.

• Please see separate Catalog handout.
GHG Inventory & Forecast
Alaska Gross GHG Emissions By Sector, 1990-2020
Agriculture

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

Year


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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 trend of waste management emissions from 1990 to 2020. The graph includes categories such as Uncontrolled LFs, LFGTE LFs, Flared LFs, Industrial LFs, MSW Combustion, Municipal WW, and Industrial WW. The emissions are measured in MMtCO2e.

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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

• 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>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State-Level Forest Flux</strong></td>
<td></td>
</tr>
<tr>
<td>CO$_2$ Flux</td>
<td>4.6</td>
</tr>
<tr>
<td>Non-CO$_2$ Gases from Fire</td>
<td>4.5</td>
</tr>
<tr>
<td>CH$_4$ Flux$^b$</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total State-Level</strong></td>
<td>25</td>
</tr>
<tr>
<td><strong>Flux for Managed Forests</strong>$^c$</td>
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</tr>
<tr>
<td>CO$_2$ Flux</td>
<td>-0.3</td>
</tr>
<tr>
<td>Non-CO$_2$ Gases from Fire</td>
<td>0.0</td>
</tr>
<tr>
<td>CH$_4$ Flux</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Total – Managed Forests</strong></td>
<td>-0.3</td>
</tr>
</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:
  – Final review of nominal ratings and other considerations
  – Establish nominal ratings for Catalog
  – Review TWG suggested updates to the Alaska emissions inventory and projection
  – Discussion of balloting process and instructions for balloting.

Time and Date: August 27, 2008.
10:00 – 11:30 AM Alaskan Time
• Need for another meeting before 8/27?
Public Input, Announcements