



Alaska Climate Change Strategy

Photo: J. Hardesty

Economic Activities Technical Working Group of the Alaska Climate Change Adaptation Advisory Group

Meeting #1: June 16, 2008, 12-2PM

Governor's Climate Change Sub-Cabinet
Center for Climate Strategies



Call Agenda

- Welcome and introductions
- Part 1: Structure/roles/processes
- Part 2: Climate change impact/vulnerability/opportunity review
- Part 3: Catalog of state adaptation actions/policies
- Public input
- Next steps for TWG

Welcome and Introductions

- Alaska Climate Change Adaptation Advisory Group members
- Economic Activities (EA) Technical Working Group (TWG) members
- Center for Climate Strategies EA TWG Facilitation Team
- Members of the Public

Part 1:

Structure, Roles, and Processes



Overview of Alaska Climate Change Efforts Under Admin Order #238

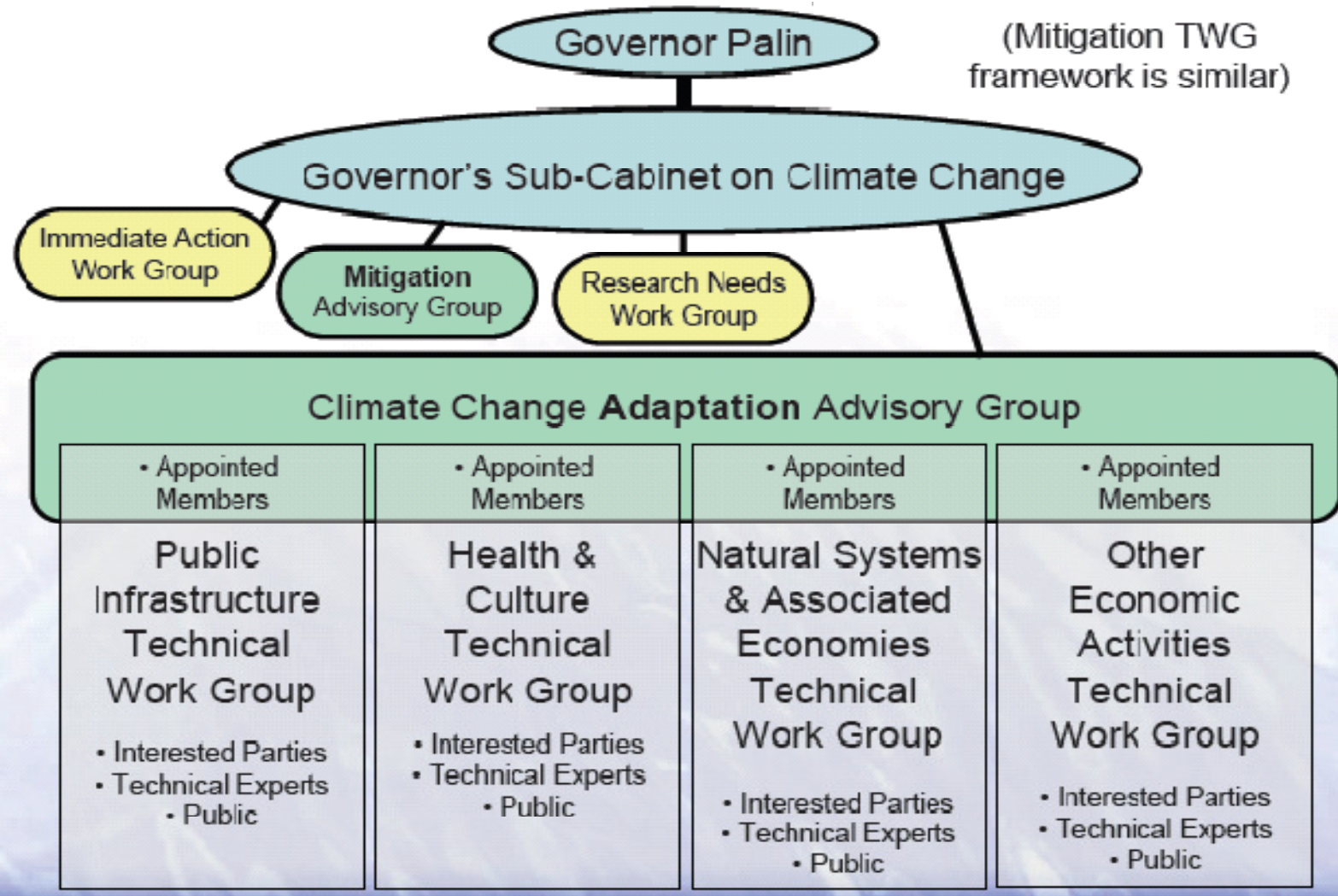
- A Climate Change Sub-Cabinet (CCSC) was convened by Governor Palin to provide advice to the Office of the Governor
- The CCSC oversees and coordinates the process of responding to Administrative Order No. 238
- The CCSC established a Mitigation Advisory Group (MAG) and an Adaptation Advisory Group (AAG)
- The AGs make recommendations on policy options and activities for mitigation and adaptation to the CCSC
- The AGs provides guidance to and receive input from the Technical Working Groups (TWG)

Members of the AAG

* = member of the EA TWG

Name	Title, Affiliation (Location)
Elaine Abraham	Alaska Native Elder, RN, BA/Human Development, & M.A.T in Bilingual Multi-Cultural Education (Yakutat)
* John Binkley	President, Alaska Cruise Association; and Chair, AK Railroad Corporation (Fairbanks)
Taunnie Boothby	Planner & State Coordinator, Floodplain Mgmt Programs, DCRA, DCCED (Anchorage)
Bruce Botelho	Mayor (Juneau)
Michael Cerne	Chief, Planning and Force Readiness, USCG (Anchorage)
Terry Chapin	Professor, Ecology, UAF (Fairbanks)
Patricia Cochran	Chair, Inuit Circumpolar Council (Anchorage)
Billy Connor	Director, AK University Transport Center, UAF (Fairbanks)
Jeffrey Demain	Medical Dr. & Founder, Allergy, Asthma, and Immunology Center of AK (Anchorage)
Bryce Edgmon	State Legislator, Western Alaska House District 37 (Dillingham)
* Laura Furgione	Director, NWS Alaska Region, NOAA (Anchorage)
* Stan Foo	Manager, Barrick Gold Corp (Donlin Creek)
* Richard Glenn	V.P., ASRC; and whaling captain (Barrow)
Larry Hinzman	Director, International Arctic Research Center, UAF (Fairbanks)
Steve Ivanoff	Planner, Transportation, Kawerak (Unalakleet)
* Peter Larsen	Sr. Policy Advisor, Climate Change, The Nature Conservancy (Anchorage)
Stephanie Madsen	Director, At-Sea Processors (Juneau)
Denise Michels	Mayor (Nome)
Tony Nakazawa	Professor, Economics, Natural Resources and Agricultural Sciences, UAF (Fairbanks)
Bob Pawlowski	Dir, Alaska Fisheries Development Foundation; member Alaska Climate Impact Assessment Commission, Immediate Action Workgroup (Juneau)
Buck Sharpton	Vice Chancellor Research, UAF (Fairbanks)
Jeff Short	Research Chemist, NMFS, NOAA (Juneau)
* Orson Smith	Chair, Civil Engineering, UAA (Anchorage)
Bill Streever	Mgr, Marine Mammal Program, British Petroleum AK (Anchorage)
* Dale Summerlin	V.P., Health, Safety, Environment, ConocoPhillips (Anchorage)
Mead Treadwell	Chair, Arctic Research Commission (Anchorage)
Fran Ulmer	Chancellor, UAA (Anchorage)
Steve Weaver	Chief Engineer, Alaska Native Tribal Health Consortium (Anchorage)
Thomas Weise	Rector, Catholic Cathedral (Juneau)

Technical Work Groups for Adaptation Advisory Group



AAG and TWGs

- Adaptation Advisory Group (AAG)
 - Review existing and planned state actions
 - Identify 30-40 potential options for design and priorities for analysis
 - Recommend actions to achieve the Administrative Order goals
- Technical Working Groups (TWGs)
 - Review vulnerabilities, impacts, and opportunities,
 - Analysis, review and early ranking of options
 - Develop initial straw proposals for activities and policies
 - Input to and review of AAG recommendations and reports
- TWG process is fully integrated with the AAG
 - TWGs serve in an advisory role to AAG
 - AAG members serve on the TWGs

AAG TWG Focus Areas

- **Public Infrastructure**
 - the physical impacts of climate change on the built environment and transportation options
- **Health and Culture**
 - Human health, cultural, recreational and quality of life impacts of climate change
- **Natural Systems**
 - Impacts of climate change on biodiversity, ecosystem health and associated human economic activities
- **Other Economic Activities**
 - **Impacts of climate change on aspects of the economy that are not directly dependent on living ecosystems**

EA TWG Focus Areas

- Oil & Gas
- Mining
- Tourism/Recreation
- Ocean Transportation
- Rural Non-Road Ground Transportation
- Boundaries and Ownership
- Energy Demand – Costs to Businesses
- Other Business Impacts (e.g., insurance)

AAG Technical Working Group Roles

- Review and improve the vulnerability and impact assessment
- Identify potential state actions for a catalog
- Identify potential priorities for analysis
- Develop straw proposals for adaptation actions (costs, timing, geographic area, etc.)
- Assist with analysis and review of options and development of alternatives
- Provide recommendations to the AAG
- Assist with review of AAG final report to the CCSC
- Solicit and respond to public input

Timing

- AAG meetings (every two months approximately).
 - Meeting 1 - May 16 in Anchorage
 - Meeting 2 - July 16 in Fairbanks
 - Meeting 3 - September 23 TBD
 - Meeting 4 - November 7 TBD
 - Meeting 5 - February 6 in Anchorage (may be a weeklong Forum)
 - Meeting 6 - March 20 (tentative) TBD
 - Meeting 7 - April 30 (tentative, if needed) TBD
- TWG calls
 - Regularly scheduled
 - Two 2 hour calls between AAG meetings
- Final Product of AAG –
 - Report to Sub-Cabinet in April 2009
- See Orientation Document for process and timing on:
http://www.akclimatechange.us/Economic_Activities.cfm

Final Report from AAG to CCSC

- Executive Summary
- Background, Purpose, & Goals
- Alaska Vulnerability Assessment (NCEP)
- AAG Recommendations and Results
 - Public Infrastructure
 - Health & Culture
 - Natural Systems & Associated Economies
 - Other Economic Activities
- Appendices

Stepwise Planning Process for Adaptation

- **Develop/revise baseline vulnerability assessment and impact focus areas**
- **Identify a full range of possible actions ("catalog") and programs already in place**
- Identify initial priorities for analysis & development
- Develop straw proposals
- Evaluate (and quantify to the extent possible) costs and benefits
- Evaluate feasibility issues; associated issues; linkages
- Develop alternatives if needed to enhance consensus
- Iterate to final agreement
- Finalize and report recommendations

Red font indicates work to be done by July 16th for AAG Meeting

Key Components of the Process

- Comprehensive
- Stepwise
- Fact based
- Transparent
- Inclusive
- Collaborative
- Consensus driven



Coverage Of Issues



- All impacts related to human health, culture, recreation, and quality of life
- All conceivable adaptation policy responses
- All potential implementation mechanisms
- Short and long term actions

Ground Rules

- Supportive of the process
- Attendance at meetings
- Equal footing
- Maintain currency with the information
- No backsliding
- Do not represent the AAG or TWG
- Make objective contributions

Part 2:

Climate Change Effects, Vulnerabilities, Impacts, and Opportunities in Alaska



Effects of Climate Change in Alaska

- Shorter winters
- Longer and warmer Arctic summers
- Sea level rise
- Coastal erosion
- Thawing permafrost
- Retreating sea ice/glaciers
- Increased forest fires



Examples of Vulnerabilities, Impacts, and Opportunities

- Reduced operation windows for gas and oil exploration during winter (permafrost thaw)
- Pipeline damage (permafrost thaw)
- Economic activities curtailed due to polar bear denning on land (less ice)
- Waste pits breached (sea level rise)
- Stability and seepage issues for tailings dams (permafrost thaw)
- New shipping lanes (less ice)
- Navigation issues (melting glaciers)
- New tourism possibilities (less ice, higher temperatures)

Example: Oil and Gas Impacts, Vulnerabilities, Opportunities

- **Current Onshore Operations:**
 - reduced operation windows for exploration and development during winter (e.g., between 1970 and 2002, the number of days tundra travel was allowed declined by 50% -- the number increased subsequently due to new standards but is still lower than in the 1970s);
 - reduced efficiency of gas compression and reinjection during warmer months, resulting in reduced production;
 - impacts on seismic and other activities because of animal behavior and distribution changes (e.g., more polar bears denning on land).
- **Potential Future Onshore Operations:**
 - more reduced ice road, tundra ice travel, and ice platform opportunities;
 - reduced efficiency of gas compression (this issue could be reduced or eliminated once a gas pipeline is constructed);
 - increased rate and amount of animal behavior changes impacting oil and gas activities (e.g., more walruses and polar bears on land);
 - changes in permafrost could result in flooding of gravel pads and the migration of contaminants into the environment.

Example Ocean Transportation Vulnerabilities, Impacts, and Opportunities

- **Current ocean transportation:**
 - Opening up summer shipping lanes and opportunities (a 10% decline in sea ice per decade since the 1970s); some increase in traffic already observed, including cruise and recreational traffic;
 - Offshore oil and gas exploratory traffic may increase in previously ice-covered ocean areas;
 - Rapidly melting glaciers causing navigation problems (such as Columbia Glacier during the first part of its retreat);
 - More activities resulting in higher risk of marine accidents and oil/fuel spills in Bering Sea, Chukchi Sea, and Arctic Ocean.
- **Potential Future ocean transportation:**
 - Even greater opening of Arctic Ocean and Bering Sea for longer periods for shipping and marine activities;
 - increased navigation and safety issues and concerns.



EA TWG Task:
*Review and Expand List of Impacts,
Vulnerabilities, Opportunities*

**Draft of initial list to be posted at:
http://www.akclimatechange.us/Economic_Activities.cfm**

Part 3:

Catalog of State Adaptation Activities/Policies

Focus on policy options and actions that will help Alaska adapt, economically, to new conditions from climate change: proactively minimize economic hardship, maximize opportunities and cushion inevitable shifts

Catalog of State Adaptation Actions/Policies

- Adaptation actions are local, while mitigation actions are global
- Actions considered by a wide variety of US states provide a starting means to consider Alaska actions
- Preliminary Alaska analyses and needs for adaptation have also been conducted and assessed
- Many actions provide GHG reductions coincidentally or as a co-benefit
- Adaptation activities cover all economic sectors and a wide variety of implementation mechanisms

See Draft Initial Catalog in Separate File on the Website

http://www.akclimatechange.us/Economic_Activities.cfm



Catalog of Alaska Adaptation Actions/Policies

- Initial list developed by National Commission on Energy Policy, other states, and Center for Climate Strategies
- Existing, planned and proposed state level actions
- Wide variety of impacts and implementation mechanisms
- AAG and TWG's will add new potential actions
- Starting place for identification of AAG priorities

EA TWG Task:

Review, expand and present to the
AAG a Catalog of Alaska Adaptation
Actions/ Policies



Future Discussion: Select Adaptation Actions/Policies Based on the Following Criteria

- Benefits and Effectiveness
- Costs
- Feasibility
- System Vulnerability – timing, certainty, capacity, economic and social significance

(Exactly how these will be used is still being discussed)

Future Discussion: Develop Action/Policy Options in Detail



Policy Description:

Policy Design:

- **Goals:**
- **Timing:**
- **Coverage of Parties:**

Implementation Methods:

Related Policies/Programs in Place:

Estimated GHG Savings and Costs per tCO₂e:

- **Data Sources:**
- **Quantification Methods:**
- **Key Assumptions:**

Key Uncertainties:

Additional Benefits and Costs:

Feasibility Issues:

Status of Group Approval:

Level of Group Support:

Barriers to Consensus:

Questions?



Public Input?

EA TWG Next Steps

- Between now and next call (July 27, 8-10AM)
 - Review and revise climate change impact and vulnerability assessment
 - Review the catalog of adaptation actions and policies – modify, add, delete
- Present above at July 16th AAG meeting