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## MEETING SUMMARY

### Alaska Climate Change Adaptation Advisory Group

Meeting #2, July 16, 2008

9:00 AM – 4:00 PM

#### Attendance:

##### Adaptation Advisory Group Members (AAG):

Larry Hartig, Chair	Stan Foo
Elaine Abraham (by phone)	Laura Furgione
John Binkley	Peter Larsen
Taunnie Boothby	Stephanie Madsen
Bruce Botelho	Denise Michels
Capt. Michael Cerne	Bob Pawlowski
Stuart (Terry) Chapin	Buck Sharpton
Patricia Cochran	Jeffrey Short
Billy Connor	Steve Weaver
Jeffrey Demain	Father Thomas Weise

##### Alaska Department of Environmental Conservation (DEC):

Jackie Poston

##### Center for Climate Strategies (CCS):

Ken Colburn	Ira Feldman
Gloria Flora	Mike Fraidenberg ( <i>by phone</i> )
Katie Pasko	Lewis Lem ( <i>by phone</i> )
Colleen Donovan ( <i>by phone</i> )	Nancy Tosta ( <i>by phone</i> )
Kris Ebi ( <i>by phone</i> )	Jason Vogel ( <i>by phone</i> )

##### Others:

Brian Rogers	Sarah Trainor
John Madden	Meera Kohler
Andy Jones	Joan Warren
Eldon Johnson	Eunyoung Hong
Buck Sharpton	Janet Bounds
Amy Holman	

Brian Rogers welcomed all attendees and provided an overview of the meeting structure. He led a round of introductions, including attendees by telephone.

Larry Hartig welcomed the group to this meeting. He emphasized the importance of the Advisory Group members to ensure a successful process. While the process may appear standard, it will be tailored to Alaska's special needs throughout the upcoming year. He noted that the Mitigation Advisory Group meeting the day before went very well.

It is critical that members remain engaged in the process, both at the Advisory Group (AAG) level and at the Technical Working Group (TWG) level. The members have been hand-picked to reflect the diversity of Alaska and the special skills and knowledge that each member will bring. The specific affiliation of individual members is less important than the critical thinking and judgment based on past experience and knowledge.

Commissioner Hartig emphasized that adaptation is critical to the future of Alaska, its culture and people. Environmental change has already impacted many areas of Alaskan life and its economy.

Several state agencies will be supporting the work of the Sub-Cabinet, the Mitigation Working Group and the Adaptation Working Group (AAG). The Departments of Environmental Conservation, Natural Resources, Transportation, Commerce and Economics will all be providing staff support. In addition, John Katz is the liaison to the Governor, and Buck Sharpton is the Vice Chancellor of the University of Alaska, Fairbanks.

Ken Colburn reviewed the stepwise process that the Advisory Group will follow. This process is outlined on the power point presentation, slides 4-5, on the website, [www.akclimatechange.us](http://www.akclimatechange.us). He emphasized that this is a collaborative process, with participation encouraged and expected of all members.

He explained that this meeting will focus on potential state actions for inclusion in the catalog, on a sector, or TWG, basis. The goal is to identify the full range of possible options, which will be reviewed by the responsible TWG. Each facilitator will lead the discussion with contributions by TWG members.

The Baseline Vulnerability Assessment and Impact focus areas require further development and will be finalized at a future meeting so that any relevant input and comments can be incorporated.

Colburn outlined the next steps for the TWGs, as shown on slides 7-8. Each TWG will review and screen the proposed options, Criteria for prioritization will be determined by each TWG, followed by balloting to identify priority policy options. These results will be presented as recommendations to the AAG at its September meeting. Approximately 25-45 options will be selected by the AAG at its September meeting for further development. Note that the entire catalog will be attached to the Final Report, so that all proposals are recorded for potential future action.

After the complete list of priority options is approved by the AAG, each TWG will begin to complete the Policy Option Template as shown on slide 9. This stepwise process will result in completed, 'fleshed-out', Policy Option Descriptions at the end of the process. At each step, the AAG will review and approve the continuation of the work of the TWG on each option.

The facilitator team will provide technical expertise for the process. TWG members will recommend the assumptions used for the basis of any quantification performed, to be reviewed by the AAG. Members of both groups will review any calculations several times.

The goal for this meeting is to review each TWG's policy option catalog and to expand it as necessary. The AAG approved the summary from Meeting 1, with one change:

- ◆ Correct the spelling of Brian Rogers' name.

**General Comments:**

A member reminded the AAG to consult tribal elders, whose baseline knowledge is critical to these efforts.

Members of the AAG are encouraged to send any additional items for catalogs to TWG facilitators and/or members. Any known recent actions and/or current programs and policies should be forwarded to the facilitators for inclusion in the catalog.

Suggestions for general criteria for evaluation and ranking of catalog items will be collected and distributed by CCS staff. However, all members of the AAG and TWGs are asked to use their own experience and knowledge as the primary tool for evaluation. Prioritizing the options for work during this process does not mean that the non-selected options are necessarily bad, but simply not to be pursued at this time. The catalog will be retained for future reference and use.

It is important that all thoughts and suggestions are captured at this stage of the process. Viable concepts will be assigned to the relevant TWGs later.

In response to questions regarding the process Colburn explained that only TWG members will vote on the recommendation of catalog policy options to the AAG. Only AAG members will vote on the acceptance of catalog items for development into straw proposals.

Hartig explained that members should focus on an Alaskan strategy, including policies that impact Alaska, whether at the local, state, federal or international level. It was recognized that some policies will require advocacy at various levels of government, including the UN.

**Other Economic Activities – Unanimously approved to move forward**

Nancy Tosta and Ira Feldman provided an overview the policy option catalog. Tosta began with a review of the TWG's Vulnerabilities, Impacts and Opportunities document, which outlines the overarching areas of review and focus. Specific policy options are cited in the body of this document.

Feldman presented a brief discussion regarding the scope of the TWG's work to date. The emphasis has been in the areas of Oil & Gas and Mining with a focus on Change, as defined by changing environmental conditions and changing behaviors; and Research into new technologies and techniques. Little work has been accomplished to date on the remaining areas of focus.

Members made suggestions for additions to the catalog:

- ◆ More investment should be made in information collection, analysis and data dissemination efforts.
- ◆ Incentives for changes toward climate responsible behavior, other than regulations, should be explored.
- ◆ Job training programs for community level jobs. The current focus is on engineering and other higher education careers. More training is needed for jobs that will remain in the community.
- ◆ Include in 3.3 – Impacts of shipping on fish stocks: invasive species, changes to shipping patterns and the impacts on fisheries
- ◆ Reinstate a fully effective Alaska Coastal Management Program (ACMP)
- ◆ Examine opportunities for new energy generation.
- ◆ Monitor impact of federal legislation and regulation generated by climate change.
- ◆ Adapt engineering design processes to meet changing physical conditions.

- ◆ Review the state policy on boundary change, with a focus on fixed vs. migratory boundaries
- ◆ Address rural transportation routes and safety as physical conditions change
- ◆ Work with state and federal agencies on actual physical changes in mining areas
- ◆ Develop proposed policy options for EA 8 – Energy Demand
- ◆ Examine new opportunities for energy generation

### **Health and Culture – Unanimously approved to move forward**

Kris Ebi and Jason Vogel presented a brief introduction to the policy option catalog, followed by a presentation by TWG member Jeff DeMain,

The TWG has focused on general overarching principles regarding health and culture issues during its first three meetings. There has been good participation from all members, with several members of the public also joining the calls. These principles are:

1. Impact Assessments for adaptation and mitigation policy options in order to ensure that they promote health and culture
2. Monitoring of climate change based impacts using standardized indicators and data systems.
3. Community based monitoring in order to provide a clearing house for coordination of monitoring, service provisions and other activities.
4. Assess the capacity of communities to design and implement programs and activities.
5. Identify or establish a central ombudsman agency to support villages and tribal elders with liaison to state agencies and other support services
6. Education, training and outreach programs to ensure risk awareness of climate change issues.

Several categories of Health and Culture options have been identified and are described in the documents posted on the website.

In addition, this TWG, especially, recommends coordination of efforts with other TWGs, both Adaptation and Mitigation.

#### **General Comments:**

All members were reminded that, culturally, government “interference”, ie. direction, is viewed negatively. All assistance should be offered, not required, by the government.

The TWG should not spend a lot of time on reviewing the links between policy options until the AAG determines the priority policy options for analysis in the fall.

Members made suggestions for additions to the catalog:

- ◆ Assess the fire and respiratory effects of smoke, due to increased fire risks.
- ◆ Review the extent of dependence on snow machines, boats, etc. for access to fish and game resources. This impacts education issues as well as cultural and food source issues.
- ◆ Include assessments of travel distance, cost, physical factors in developing policy options.
- ◆ Evaluate the community and regional capacity to address health, culture and other issues.
- ◆ Identify how to deliver recommendations and implementation plans to communities.

- ◆ Address dust issues, both manmade and natural.
- ◆ Evaluate air quality issues in general, including dust and water.
- ◆ Create SWAT-like teams with the expertise to assist communities. Create a mechanism to provide this service to communities to help solve problems.
- ◆ Ensure linkages to other TWGs' efforts.
- ◆ Community monitoring: track all community comments, utilize traditional knowledge and do not institute limits on lines of communication.
- ◆ Educate people about personal safety issues. Traditional trails and transport windows may not exist, or may not become available at the same time each year. For example, ice may not be as thick as in the past, or may not form a safe depth until later in the year.
- ◆ Review needs for emergency response changes as access to remote areas is impacted. For example, how will ER access sites with no ice road or airstrip?
- ◆ Expand tele-medicine opportunities and services.
- ◆ Investigate the production of local food to augment interrupted supply chains.
- ◆ Identify improvements to conditions resulting from climate changes.
- ◆ Consider health opportunities and safety issues in design of relocated communities.
- ◆ Ensure that relocated communities are storm ready, avoiding projected flood zones.
- ◆ When relocation of villages is necessary, offer to provide "Western" knowledge and expertise to determine the site for the new village, so that it will not have to be relocated again in the near future. For example, using engineering and geologic knowledge to determine the new 'high ground'. Traditional knowledge will be impacted by changes in the land due to climate change.
- ◆ Create guidelines for community relocation as a resource for all villages to access.
- ◆ Improve access to real-time remote sensing data for community and cultural activities.
- ◆ Ensure extreme events are included in Emergency Response Planning.
- ◆ Identify and monitor positive impacts and implications of climate change.
- ◆ Include food security issues in the catalog:
  - The ability to store food, as in ice cellars.
  - Disruptions to food supplies due to transit issues.
  - Changing availability with pricing changes will lead to changes in diet and lifestyle. For example, increasing grain prices lead to a greater dependence on hunting and fishing.
- ◆ Add flooding and drought to the overall categories.
  - Toxin release with water in buildings
  - Mental stress issues related to extreme events
- ◆ Track positive changes resulting from climate change.

### **Natural Systems – Unanimously approved to move forward**

Mike Fraidenberg and Colleen Donovan presented a brief introduction to the policy option catalog. They described two broad sectors to be addressed by this TWG: Ecosystem and Human vulnerabilities. The format used in the catalog for this TWG presentation has been modified to cover the redundancies identified by the TWG in various systems.

The TWG plans to consider both the primary or direct impacts of climate change as well as secondary impacts. For instance, spruce will grow further north, as will certain insect species.

**General Comments:**

A common vocabulary should be developed for all policy options and for implementation. This will facilitate present and future communication on climate change issues. A program such as the Scenarios Network for Alaska Planning (SNAP) can be utilized.

This stakeholder process should be repeated periodically, preferably annually.

Members made suggestions for additions to the catalog:

- ◆ Food Security issues need to be addressed, especially pertaining to agriculture, forest and wildlife:
  - The role and extent of agricultural production and supply chain
  - Examine loss of agricultural lands or road systems to housing
  - Examine the role and extent of fish and wildlife species, territories and levels
- ◆ Repeat data collection and analysis annually to see changes in research results and effects.
- ◆ Determine if decreasing pike and salmon populations are due to climate or management, as these level impact human population and food security.
- ◆ Include revised floodplain boundaries in projected flooding analyses. There are land use implications to loss of floodplain.
- ◆ Investigate and apply for research grants of natural system impacts, including those on economic activity. There are significant funds available, both state and nationally, to investigate impacts due to climate change
- ◆ Examine the impacts of adaptation itself on natural processes
- ◆ Include list of all assumptions used in policy option development, including probabilities. Consider and define assumptions related to:
  - Process
  - Triggers
  - Thresholds
- ◆ Identify 'no regret' options, meaning those options that can be implemented with no or minimal ill effects and risk.
- ◆ Consider incentives for improved fuel efficiency at fisheries. This should be developed in consultation with mitigation proposals.
- ◆ Consider climate change impacts on traditional art and supplies

**Public Infrastructure – Unanimously approved to move forward**

Lewis Lem gave an overview of the categories and topics covered in the PI catalog. The catalog is divided into twelve categories.

**General Comments:**

A member noted that infrastructure refers, not to the item or structure itself, but to the service provided by that physical entity, in this case, to enable and support the economy and culture of Alaska. For example, ports are served by marine, rail and vehicular mechanisms.

Ports without rail service are greatly diminished, even with adequate marine access. If one is disabled, others should be available to replace it. Because of this interdependency, consistent intermodal policies should be developed.

All infrastructure has a useful lifespan that should be defined in the policy options, at least in broad terms of 5, 10, 20 or 50 years.

Use 'Coastal Inundation', 'River Flooding' and 'Coastal Erosion' terms in policy option language instead of 'Sea Level Rise'.

Change 'counties' to 'Boroughs' throughout all documentation.

Members made suggestions for additions to the catalog:

- ◆ Landfills – Separate into two sections: collection and disposal
- ◆ Sewage - Separate into two sections: collection and treatment
- ◆ Water – Separate into source tax and distribution
- ◆ When addressing issues relating to structures, include:
  - Protect
  - Rehab
  - Build new
- ◆ Analyze new infrastructure needs from the perspective of climate change-related economic activities.
- ◆ Utilize NOAA CEIP as a potential coastal impact tool.
- ◆ PI-5 - Electric utility infrastructure includes both public and private utilities. Incorporate the following specific structures into the catalog:
  - Power plants
  - Distribution poles
  - Tank farms
- ◆ Reword PI-5.1 Underground lines should be relocated above ground not underground.
- ◆ Understand and define the design goal, the associated risks and consequences of failure regarding these goals.
- ◆ Include Ice runways in Air Transportation category
- ◆ Change 'Tree planting' term to 'vegetation'.
- ◆ Investigate regional solid waste back haul issues and advantages.
- ◆ Options PI-1.8-1.10 relate to more than thawing permafrost. Include:
  - landslides
  - subsidence of ocean levels
  - isostatic rebound
  - endure many hazards
- ◆ Lower water levels and impact on hydrostatic measures
- ◆ Consider recommendations regarding the non-construction or rebuilding of some traditional infrastructure, based on climate change impacts
- ◆ Determine the appropriate public discount rate
- ◆ Investigate the climate change impact on water supplies, especially drought and water quality, including water-borne disease
- ◆ Assess the risks and probability of forecast use
- ◆ Determine appropriate maintenance policies for infrastructure, including the cost and material impacts
- ◆ Retrospective analysis and monitoring to assess success of efforts and predict future needs and requirements. The use of unmanned aircraft should also be considered.
- ◆ PI-9 - There are not currently any automated weather observations, but are needed now. Efforts to develop such observations should be given a high priority.
- ◆ PI-11 – Include river monitoring for recreational activity and other uses
- ◆ Build incentives for climate-safe locations, both public and private, for current and future infrastructure
- ◆ Assess current levels and future needs for research infrastructure, including monitoring, sensors and labs.

- ◆ Assess wildfire risk at urban interface, especially in light of future development.
- ◆ Incorporate data and research in a standalone section:
  - Research
  - Monitoring
  - Display and information dissemination
  - Statewide GIS – geographic information network
  - Community Planning
- ◆ Consider defense against potential climate change impacts
  - Impact of environmental cleanup as permafrost melts
  - Shutdown and transfer of existing infrastructure, especially with shoreline changes.
- ◆ Establish a regional climate center
- ◆ Include railroads in the policy options
- ◆ Include pipelines in the policy options
- ◆ Develop new codes and regulations for development.
- ◆ Ensure that buildings are environmentally considerate.

## Next Steps

Ken Colburn explained the next steps for the TWGs and the AAG. Each TWG will hold two to three meetings before the September meeting of the AAG, during which they will compile the additions to the catalogs from this meeting of the MAG and evaluate the proposed policy options.

As part of this screening process, Recent Actions and Related Programs and Policies will be included in the catalog. Members will discuss the merits and drawbacks of the options. The goal is for each TWG to identify 6 to 10 priority policy options for recommendation to the AAG in September.

The AAG will complete the prioritization process in September.

## Next Meeting

The next meeting of the AAG will be held on Tuesday, September 23, 2008 in Anchorage. The meeting details will be determined later and posted on the website, as well as circulated to members.

## Public Comment and Announcements

There was no public comment at this meeting.

Ira Feldman, CCS Facilitator, has had an article published.

## General Notes

Optional tours were offered to attendees at lunch and after the meeting.

A tour of the Cold Climate Housing Research Center was given to all interested parties during the lunch break.

After the meeting adjourned, brief presentations were given about:

- ◆ Alaska SAR (Synthetic Aperture Radar Facility) [www.asf.alaska.edu](http://www.asf.alaska.edu)
- ◆ Alaska Volcano Observatory
- ◆ Map Office

- ◆ Mather Library
- ◆ International Arctic Research Center (IARC) - [www.iarc.uaf.edu](http://www.iarc.uaf.edu)
- ◆ Scenarios Network for Alaska Planning (SNAP)