



DATE: October 28, 2008
TO: Public Infrastructure (PI) Technical Work Group (TWG) Members
cc: PI Adaptation Advisory Group Members
FROM: Barbara Sheinberg, PI TWG facilitator
SUBJECT: REVISED CATALOG AND MORE

Next meetings

- **Friday, October 31, 2008, 11:00-1:00 pm** (CALL-IN phone number to be identified)
- **Wednesday, November 19, 2008 3:00-5:00 pm**

Between Now and Friday, Oct 31

On the following pages please find an October 28 version of the Public Infrastructure (PI) Technical Work Group (TWG) Catalog of Policy Options. To prepare this version I did two things:

- (1) I have attempted to incorporate the key points relevant to PI that were raised during the ACTEM listening session, at the luncheon, and during our Oct 27 meeting – as well as the direction you gave during the Oct 27 meeting;
- (2) I have ‘lumped’ and consolidated, per our October 27 meeting discussion. I either dropped (probably temporarily?) a lot of the detail in the bullet points or else I have turned the bulleted information into supporting narrative that is now in the policy option.

Each policy option now generally begins with a policy statement, then uses the program and some project/action detail as supporting narrative. My sense is that combining it like this makes for a more cohesive read and explanation. Of course, the key thing is your opinion in this regard.

- **At the end of the October 27 meeting many volunteered to take one or two policy options and improve the language.** On the attached table I have listed your ‘assignments’...plus there were a few policies with no name so I made an assignment. **If you are on the PI TWG you have at least one policy that you are being asked to help improve.** Please turn on track changes or use the ‘comments’ column. Thank you for your assistance.
- **Our objective at the October 31 meeting will be to review the catalog, discuss the policy options, and identify what must be done to move the catalog toward completion.**

(Commissioner Hartig reaffirmed in an evening meeting on October 27 that the goal is to forward no more than 5-8 options to the Adaptation Advisory Group (AAG). For each option

the PI TWG forwards we will develop a 2-4 page narrative that more fully explains why this option rose to the top of our list, its significance etc.)

Good News

The PI TWG and Natural Systems (NS) TWG have met significant fewer times than the other adaptation TWGs. Recognizing this, during our October 27 evening meeting it was determined that the PI and NS TWG will NOT have to have their 5-8 priority options identified by and ready to present to the AAG on November 7.

- **We have been given a month reprieve; a teleconference AAG will likely be scheduled in December for our two TWG to present our recommended options for AAG review.**

Other: Clarification on TWG and AAG roles vis-a-vis balloting.

During an evening meeting of all facilitators, Commissioner Hartig, ADEC and CCSP staff, the issue of who should ballot was discussed. Group direction was that it was correct to have both PI TWG and AAG members' ballot. The purpose of having AAG members that actively participate in the PI TWG meetings and discussion is so that these AAG members can be very conversant with the PI TWG detailed discussion and recommendations. This is to be an open and collaborative process, the more the AAG participate in the technical conversations and meetings, the better. The PI TWG is a bit distinct from other TWG in that we have more members and participation than most, nonetheless the idea of all balloting was encouraged.

It was mentioned that those who have *not* participated in TWG meetings, whether they are AAG or TWG members, may not want to ballot as they have not been involved in the detailed discussions and are not aware of the various considerations that will have preceded balloting. Following is the list of the PI TWG and PI AAG membership.

PI TWG Members

1. Chris Mello, Alaska Energy Authority
2. David Atkinson, International Arctic Research Center, UAF
3. Greg Magee, Village Safe Water, ADEC
4. Herb Schroeder, Alaska Native Science & Eng, UAA
5. John Kreilkamp, CruiseWest
6. John Madden, Alaska DEM&HS, Member IAWG
7. John Warren, Alaska Native Tribal Health Consortium
8. Larry Dietrick, Spill Prevention & Response, ADEC
9. Lawson Brigham, US Arctic Research Commission
10. Mike Black, ADCCED, Member IAWG
11. Mike Coffey, ADOT&PF, Member IAWG
12. Patricia Opheen, U.S. Army Corps of Engineers, Member IAWG
13. Peter Larsen, The Nature Conservancy

14. Tara Jollie, DCRA, ADCCED
15. Vladimir Romanovsky, UAF

AAG PI Members

1. Amy Holman, NOAA, Member IAWG
2. Billy Connor, Alaska University Transport Center, UAF
3. Bob Pawlowski, Denali Commission, Member IAWG
4. Bruce Botelho, Mayor, City and Borough of Juneau
5. Denise Michels, Mayor, City of Nome
6. Mead Treadwell, Arctic Research Commission
7. Meera Kohler, Alaska Village Electric Coop
8. Steve Ivanoff, Kawerak
9. Steve Weaver, Alaska Native Tribal Health Consortium
10. Taunnie Boothby, DCRA, ADCCED

Assignment	Public Infrastructure (Adaptation) TWG POLICY OPTIONS - October 29 version	Comment
Madden Atkinson Romanovsky Warren Dietrick	<p>1. Create clear narrative and visuals that describe and depict the range of impacts that Alaskan regions are currently, and will increasingly experience over time due to climate change. Catalog the natural resource hazards, including primary and derivative (secondary) hazards that will be created or amplified. This data is needed to conduct a vulnerability analysis and to develop new site, design and engineering standards for public infrastructure. Recognize the high degree of regional variation. <i>Will be forwarded to Research Needs WG also.</i></p>	
Atkinson Larsen Kreilkamp	<p>2. Set up a process and platform to regularly provide the narrative and visuals on climate change and related natural resource hazards to local leaders and decision-makers in a format that can be used and is actionable. This is needed for everything from informing and guiding local public works and enterprise-funded projects to locating emergency evacuation routes to local community and facility planning and more. Create on-line mapping capability for multiple audiences including local governments (SNAP program at UAF is working on this).</p>	
Atkinson Romanovsky	<p>3. Monitor, map and disseminate climate change data. Develop and maintain a system for comprehensive surveillance, monitoring, documentation, and dissemination of rates and locations of climate change indicators. Data is desired in real time, though quality control needs are recognized. Desired data includes, but is not limited to, higher temporal and spatial resolution of sea and river ice forecasts to enhance sea and river barge traffic and safety of winter travel in roadless areas, current floodplain maps, and current detailed mapping of the offshore environment. The latter is needed because models used to predict flooding and wave activity during storms depend on detailed measure of water depths and the form of the underwater environment. <i>Will be forwarded to Research Needs WG also.</i></p>	
Madden Atkinson Romanovsky Warren Dietrick	<p>4. Conduct a systematic vulnerability analysis of the risks to public infrastructure from the hazards occurring and expected from climate change. This should include critical facilities that may be privately owned, such as power stations, hospitals, etc, as well as important cultural resources such as clan houses and museums. Identify facilities at high risk. Implement strict maintenance regulations for existing infrastructure in acute hazard and vulnerable zones. <i>(Note: you will recall that there are bulleted lists of specific infrastructure concerns - e.g. seawalls, piers, airstrips, bridges, roads, water systems etc. -</i></p>	

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	<i>but these have been removed for now to focus on higher-level policy options).</i>	
Opheen Madden	<p>5. Maximize the life of and investment in existing public infrastructure that is at risk by taking steps to ensure continued access to it and use as well as increased resilience in the face of changing climate conditions. Protect existing infrastructure that is currently threatened by following a process to mitigate, retrofit, stabilize, prepare emergency plans, and enhance viability.</p>	
Opheen Warren	<p>6. Site, design, build and maintain future public infrastructure in ways that anticipate expected future conditions. New public infrastructure must be sited, designed, engineered, built and maintained using standards, codes and maintenance practices that address climate change conditions. Modify standards and codes for infrastructure siting, design and engineering to prevent or reduce impacts from the hazards associated with climate change. Do the same for maintenance and inspection practices. Develop probabilistic design tools for public infrastructure systems. Include any needed changes in criteria for placement of mechanical and electrical equipment. Institute policies and zoning to site new public infrastructure and critical facilities away from vulnerable areas and high risk zones. <i>Will be forwarded to Research Needs WG also.</i></p>	
Atkinson Romanovsky	<p>7. Educational curricula must address climate change’s planning and engineering needs. Develop university, community college, vocational-technical, and community-based education programs and curriculum on planning, design, engineering, construction and hazard mitigation standards and techniques that address climate change and related hazards.</p>	
Magee Black Pawlowski	<p>8. Tribal, local, state and federal governments must coordinate and act in concert to address impacts of climate change on public infrastructure. There should be a single, cabinet-level review that is one-step and ensures public infrastructure and building investment decisions have taken climate change into account. This will ensure investment decisions are consistent and compatible. (It is reported that the COE, Denali Commission, ADEC, others are discussing a concept like this now.) Public infrastructure investment decisions of tribal, local, state and federal governments should be included. Recognize that different strategies and approaches may apply in large municipal, small municipal and rural communities.</p>	
Magee	<p>9. Investigate and address current and potential future public</p>	

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Warren	<p>health risks and impacts due to contamination of public drinking water and surface water from climate change related storm surge, coastal inundation or erosion of dumps, landfills and sewage lagoons. <i>Also relevant to Health & Culture TWG.</i></p>	
Magee Larsen Coffey	<p>10. Develop a suite of low-technology, soft structural/bio-engineered construction, and best management techniques for Alaska’s rural areas to mitigate, prevent and avoid impacts from climate change related hazards. Look to protect natural coastlines, riverfronts, improve drainage, and reduce storm water retention through use of vegetative solutions; building on skids; better use of natural swales, wetlands and reduced paving; use of soft protection options such as dune restoration and creation, wetland restoration, and periodic beach nourishment, and more. Approaches that reduce required energy and have less technical maintenance requirements are more sustainable.</p>	
Magee Jollie Schroeder	<p>11. Integrate climate change considerations into planning for emergencies, new public infrastructure, community land use and facilities. Efficient and effective community planning will integrate emergency and disaster, land use, transportation and facility planning. Comprehensive community planning such as this is needed to ensure infrastructure investment and siting efforts do not occur in isolation or without the benefit of updated hazard mapping and vulnerability analysis. Do not site public infrastructure and critical facilities in high risk areas identified in the vulnerability analysis. To ensure climate change considerations and related hazards and vulnerabilities are considered development of a prototype Community Adaptation Plan has been suggested for use by communities. <i>(Note: there are several bullet points on considerations for each type of planning effort, but these have been removed for now to focus on higher-level options).</i></p>	
Coffey Black	<p>12. Develop a rational benefit/cost formula for determining priority public investments to prevent or reduce impacts to public infrastructure from climate change. A system for determining what new infrastructure investments are appropriate, and where, as well as how much risk the public should take on, is needed. The state needs a decision-making process and criteria to determine whether public funds should be spent and repairs made to public infrastructure and buildings, or, if relocation of the infrastructure or building is more appropriate. Should there be a hierarchy of the types of public infrastructure to protect</p>	

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	or relocate first, for example public drinking water and sanitation?	
Brigham Kreilkamp	<p>13. Identify public infrastructure and related needs due to increased ice free periods in the Arctic Ocean and Beaufort Sea and increased transshipment and commercial use. Evaluate the potential opportunities, risks, and needs associated with reduced sea ice and new shipping lanes opening up in the Arctic Ocean and Bering Sea. Consider establishing a container port facility in Nome, Barrow or Prudhoe Bay, linked by rail, to the continental interior. Without this, opportunities associated with increased arctic shipping will not be realized by Alaska. Monitor shipping lanes through the Arctic Ocean and Bering Sea for ice melt, glacier melt, and related navigation problems. Sea ice will impact offshore resource development and marine supply to coastal villages. This is of special importance for the Bering, Chukchi and Southern Beaufort Seas. Address national security concerns associated with new shipping lanes in the Arctic Ocean and Bering Sea. <i>Also relevant to EA TWG.</i></p>	
Brigham Kreilkamp	<p>14. There are and will be new navigational hazards due to inundated underwater structures. Develop operational protocols that specify disclosure requirements for this coastal hazard. Develop retreat strategies for the management of existing structures or conditions that may become submerged hazards to navigation or public health (e.g. effluent outfalls, water intakes, septic fields, rock walls, docks, and piers).</p>	
Coffey Warren	<p>15. Research and development on new transportation modes is needed. Provide incentives for the development of new modes of transportation that can travel across the altered rural landscape. Provide incentives for the development of and purchase of nautical vessels capable of navigating rivers during times of low water flow and flooding events. Provide rural public transportation across new and existing rural transportation routes to more efficiently move people and freight across the altered rural landscape. <i>May also be relevant to EA TWG.</i></p>	