Brief Description of Catalog Actions and Options
Health and Culture Technical Working Group

July 16, 2008

HC-1. Overarching Issues

1.1 Require Health Impact Assessments be conducted for adaptation and mitigation options to ensure that they promote population health

Options considered to prepare for and respond to climate change may have considerable health and culture consequences for residents of Alaska. Therefore, a mechanism is needed to assess the public health consequences of proposed mitigation and adaptation policies and measures prior to their adoption. Health Impact Assessments (HIAs) are a proven approach to ensuring that potential public health concerns are identified and addressed before they become a problem. A HIA can be conducted if a proposed policy is expected to have a health-related, culture-related, and/or fiscal impact.

1.2 Develop uniform indicators, data systems, and community monitoring programs to monitor climate change-related health and culture impacts

A program will be established to develop uniform indicators, metrics and data systems to monitor climate change-related health impacts. These data can be used to determine thresholds for action, as well as for evaluation of efficacy of actions, alignment of results with expectations, and cost-effectiveness of selected actions. Data, and the standards for data collection, will be shared between all levels of government, and across appropriate departments.

1.3 Establish community-based monitoring networks

1.4 Conduct an assessment of the capacity of communities to design and implement programs and activities to prepare for the health and culture risks of climate change

The capacity of communities to prepare for and effectively respond to the risks of climate change is uneven. An assessment will be conducted of a representative sample of communities to determine their ability to design, implement, and monitor programs and activities needed to address local risks, including training needs, administrative flexibility, and the consequences of funding allocations. The assessment will identify actions to address gaps in adaptive capacity.

1.5 Identify a central ombudsman agency to support rural communities

1.6 Develop education, training, and outreach programs to increase awareness of the health and culture risks of climate change

HC-2. Waterborne Diseases

2.1 Assess the feasibility of developing a syndromic surveillance program to identify outbreaks of waterborne diseases

An assessment will be conducted of the feasibility of developing a statewide syndromic surveillance program to identify outbreaks of waterborne diseases, based on purchase of over-the-counter products designed to alleviate diarrheal diseases. Such a system would require cooperation of selected pharmacies, and would require additional capacity at the Department of Health to analyze and verify the submitted data.

2.2 Develop public educational programs on the risks of and appropriate behaviors to reduce waterborne diseases

Educational programs will be developed to increase awareness of the risks of waterborne diseases. Innovative delivery systems will be developed to ensure that diverse populations understand how to identify and appropriately respond to risks of waterborne diseases. Education efforts should include school children and other populations at higher risk for more severe waterborne disease, focusing on prevention techniques.

2.3 Strengthen watershed contamination protection laws

Increases in the frequency and intensity of precipitation events can increase the probability of pathogens entering watersheds. To address this risk, watershed contamination protection laws will be strengthened to protect drinking water supplies.

2.4 Strengthen at-risk sanitation infrastructure

2.5 Strengthen water treatment systems to identify and manage new pathogens

An assessment will be conducted of water treatment systems to ensure they have the capacity to identify and effectively manage introduction of new pathogens.

HC-3. Vectorborne Diseases

3.1 Augment surveillance and control programs for vectorborne diseases that are likely to be introduced, or become more common or widespread

Existing surveillance and control programs will be modified for vectorborne diseases that are likely to become more common or widespread, to take into account how climate change could increase their geographic range or incidence. Guidance will be developed for local

municipalities in designing programs to monitor for the appearance of vectorborne diseases following floods and storms.

3.2 Develop public educational programs on the risks of vectorborne diseases

Educational programs will be developed to increase awareness of the risks of vectorborne diseases. Innovative delivery systems will be developed to ensure that diverse populations understand how to identify and appropriately respond to risks of vectorborne diseases. Education efforts will develop specific programs to target those most at-risk, focusing on prevention techniques.

3.3 Conduct a capacity needs assessment of regions at greatest current and future risk of vectorborne diseases

A capacity needs assessment will be conducted to determine regions and populations at the greatest risk, both today and under future climatic conditions.

HC-4. Food Security and Foodborne Diseases

4.1 Develop syndromic surveillance programs to identify outbreaks of foodborne diseases

4.2 Develop public educational programs on the risks of and appropriate responses to control foodborne diseases

4.3 Strengthen programs to address food security for subsistence fishing

4.4 Conduct a capacity needs assessment of regions at greatest current and future risk for food security and foodborne diseases

HC-5. Flooding

5.1 Develop flooding early warning systems where possible

5.2 Develop public educational programs on the risks of and appropriate responses to flooding

HC-6. Thermal Extremes

6.1 Develop educational programs regarding the risks of and effective responses to cold extremes

Educational programs will be developed to help people better understand their sensitivity to low temperatures and the appropriate responses, as well as programs to inform care givers, pharmacists, churches, and other who work with vulnerable groups of the risks of and effective responses to cold stress.

6.2 Create and designate "Warm Emergency Shelters", including systems for transporting elders and others to those centers without easy access to transportation

Warm Emergency Shelters will be created for use during cold events by those without adequate access to heating. A system will be developed to transport those without easy access to transportation.

6.3 Develop statewide or other protocols for emergency deliveries of fuel

An assessment will be conducted of options for providing emergency deliveries of fuel during cold events.

6.4 Develop educational programs about new and increased risks of thinner sea, lake, and river ice

Thinning sea, lake, and river ice is hazardous, and can be difficult to identify. Educational programs will be developed by those experienced in identifying likely adverse conditions.

6.5 Improve, as needed, rescue and health response capabilities

A capacity needs assessment will be conducted of rescue and health response capabilities to determine if additional resources or plans are needed.

6.6 Develop heatwave early warning systems, focusing on effective response actions

Heatwave early warning systems have been shown to reduce mortality, particularly when the needs of the most vulnerable are addressed. These systems require identification of the weather conditions that lead to increased mortality, as well as effective responses. Heatwave early warning systems will be developed and implemented for large cities in southern Alaska.

6.7 Create and designate "Cool Community Centers" for people who do not have access to air conditioning, including systems for transporting elders and others to those centers without easy access to transportation

Cool Community Centers will be created for use during heatwaves by those without access to air conditioning. A system will be developed to transport those without easy access to transportation.

6.8 Develop educational programs regarding the risks of and effective responses to heatwaves

Educational programs will be developed to help people better understand their sensitivity to high temperatures and the appropriate responses, as well as programs to inform care givers, pharmacists, churches, and other who work with vulnerable groups of the risks of and effective responses to heatwaves.

6.9 Increase the medical response capacity for heat stress, particularly in rural areas

Educational programs will be developed to ensure that health care providers are aware of the signs and symptoms of heat stress, and have the materials needed to communicate the risks of heat to their patients.

HC-7. Wildfires

7.1 Develop educational programs on how to avoid injuries and death due to wildfires

Wildfires may increase in frequency and intensity under a changing climate, due to increasing temperatures and changing soil moisture, and as a consequence of ecological disturbances due to climate change. Educational programs will be developed for all ages on the risks of wildfires, and actions to take to avoid injuries.

7.2 Develop evacuation response plans with key stakeholder involvement

In conjunction with all relevant agencies and community representatives, evacuation response plans will be developed for regions at risk of wildfires.

7.3 Assess the composition of emergency fire-fighting crews to ensure sufficient local capacity for fires

A capacity needs assessment will be conducted of the ability of local emergency fire-fighting crews to respond in the case of a wildfire.

HC-8. Toxic Exposures

8.1 Conduct an assessment of areas at greatest risk

Melting permafrost and leaks from previously frozen landfills can lead to exposures to toxic substances. An assessment will be conducted of the regions and populations at greatest risk.

8.2 Advocate for prompt action by responsible parties to clean-up toxic sites, and to minimize the spread of toxic chemicals before clean-up

Advocacy campaigns will be developed to encourage responsible parties to clean-up toxic sites, and the minimize the spread of toxic chemicals before clean-up.

8.3 Develop public educations programs on the risks, and avoidance of, toxic exposures

Educational materials will be developed on the risks of toxic chemicals and actions that can be taken to reduce exposure.

HC-9. Mental Stress

9.1 Develop a mental health plan in collaboration with appropriate state and local health professionals for communities expected to experience major impacts or dislocation

There can be considerable mental health impacts following an evacuation or extreme weather event. A mental health plan will be developed in collaboration with all relevant agencies, groups, and community representatives to ensure that there will be sufficient capacity to deal with any problems that may arise.

9.2 Conduct a capacity needs assessment for mental health counseling after major evacuations or extreme weather events

A capacity needs assessment will be conducted for mental health councilors to ensure that they have adequate resources to maintain care for current and new clients after major evacuations or extreme weather events.

9.3 Provide support for rural communities to navigate the rules and mandates of multiple bureaucracies that must be engaged to deal with flooding, community relocation, infrastructure development, and other issues.

Often there are difficulties and contradictions in bureaucratic rules governing rural community planning and emergency response. For example, DOT can't build an airstrip unless a community has a post office, but you need an airstrip to supply the rebuilding of a community. A land swap with USFWS or other government agencies to facilitate community relocation requires a lengthy and expensive EIS process which is almost impossible to accomplish by many communities, especially in the aftermath of a disaster.

HC-10. Health Care and Emergency Response Systems

10.1 Conduct a capacity needs assessment for health care after major evacuations or extreme weather events

A capacity needs assessment will be conducted for various levels of health care providers to ensure that they have adequate resources to maintain health care after major evacuations or extreme weather events.

10.2 Develop emergency response plans with the flexibility to incorporate future climate change risks

Provide appropriate training to emergency responders at all levels and locations that will assist them in making correct choices and in coordinating effectively with other units within the emergency medical system. Ensure that periodically tests are conducted of the emergency response system.

HC-11. Traditional Knowledge, Ways of Knowing, and Subsistence Culture

11.1 Convene elders, scientists, health professionals and others to discuss current and projected changes in the climate and the impacts of these changes on culture and subsistence, including new subsistence opportunities and ways to reduce health risks in a warming climate.

Changes in the environment are affecting many aspects of Alaskan Native culture and the subsistence way of life. Engaging affected communities as well as experts in a dialog about the effects of these changes can produce a more thorough understanding of the impacts. New subsistence opportunities should be explored as well as negative impacts to existing subsistence activities.

11.2 Provide ongoing information to elders and others about measured and projected changes.

Create a process to continuously provide communities information about current climate changes and new information about projected climate changes. Providing such information should include active outreach and feedback, not just passively providing information.

11.3 Research and, as appropriate, convene representative ice cellar users to examine alternatives to ice cellars (e.g. drying, community freezers, or other preserving strategies).

Many ice cellars are thawing, which is problematic for the storage of subsistence foods, especially in non-urban areas. Other food preservation strategies or technologies may be necessary to ensure the ability to store foods year round for subsistence living. New research may be necessary, but it may be important to engage in a discussion among ice cellar users as to what constitutes an acceptable alternative.

11.4 Explore new social subsistence activities (e.g., clamming or collecting driftwood after storm surges) that can maintain community socialization despite increasing difficulties with traditional subsistence activities (e.g., ice fishing in many locations).

Placeholder text

11.5 Develop new sources of cash for Native communities to support the increasing cost of the larger boats and greater fuel needed to hunt for marine mammals further offshore and in rougher waters.

Dangerous travel conditions for marine mammal hunters translates into hunting parties consisting of more boats, bigger boats with bigger engines and a lot more fuel use (now at $9/gal in many communities). The receding ice pack requires marine mammal hunters to go much further offshore in much rougher waters. Thus for safety sake (and support in case of emergencies) we have more boats that cost a lot more to purchase and maintain, i.e., an increased demand for cash to pay for continuation of subsistence activities.

HC-12. Archaeology and History

12.1 Complete an assessment of artifact locations most at risk.

There is not currently a good catalog of historical sites at risk from climate events such as coastal erosion. Compiling a list of vulnerable sites is an important first step toward implementing other policy options under this heading.

12.2 Convene archeologists, Native elders and others to discuss how best to respond to artifacts at risk.

Engaging Alaskan Natives as well as archaeologists will ensure that cultural norms are respected while applying modern techniques to the preservation of historical artifacts.

12.3 Develop a plan to address how to maximize protection and recovery of the artifacts most at risk.

Because there are so many historical sites, developing a plan to maximize the protection, recovery, or preservation of historical artifacts will ensure that limited resources are used for the maximum possible level of protection.

12.4 Secure funding at the federal, state, foundation and corporate levels to protect and recover these artifacts.

A strategy to secure further funding to support the protection, recovery, or preservation of historical artifacts will increase the number of sites and artifacts that can be protected.

12.5 Complete a statewide assessment of the grave sites most at risk.

Grave sites face damage from coastal and shoreline erosion and thawing permafrost. An assessment of such sites statewide will improve our knowledge base about where such site exist and how vulnerable they are.

12.6 Convene a respectful discussion about grave sites and explore best practices.

Engaging Native Alaskans as well as experts on grave sites will ensure that cultural norms are respected while applying modern techniques to protect, relocate, or otherwise manage grave sites at risk.

12.7 Provide assistance for relocation of existing graves.

Some grave site will need to be relocated. This will require technical, logistical, financial, and other assistance.

12.8 Assist in identifying and opening new grave sites.

Because many existing grave sites are at risk, new sites need to be identified that will not exacerbate the problem as permafrost continues to thaw or coastal and shoreline erosion continues.

HC-13. Diminishment or Change of Subsistence Diet

13.1 Convene hunters, fishers, gatherers, scientists and managers to discuss current and projected changes in the climate and the impacts of these changes on subsistence, including new subsistence opportunities and ways to reduce health risks in a warming climate.

Changes in the environment are affecting the temporal and spatial availability of species traditionally used in a subsistence diet. Engaging affected communities as well as experts in a dialog about the effects of these changes can produce a more thorough understanding of the dietary impacts. New subsistence opportunities should be explored as well as negative impacts to existing subsistence activities as a means of expanding or supplementing traditional subsistence foods.

13.2 Provide public education regarding projected impacts of climate change on hunting, fishing, and gathering opportunities and about new subsistence food opportunities (such as salmon in Northern Alaska), and safe food handling practices in warmer environments.

Create an educational campaign or other process to provide individuals and communities that rely on a subsistence diet information about current and projected changes in traditional food availability and new subsistence food opportunities. Providing such information should include active outreach and feedback, not just passively providing information.

13.3 Modify hunting and fishing seasons and other regulations to reflect changes in wildlife and fish locations and timing.

Because climate change is modifying animals' migratory patterns and spatial distribution, hunting and fishing seasons may need to be altered to enable continued use of wildlife populations for subsistence purposes.

13.4 Provide more testing of subsistence foods such as shellfish to promote consumption confidence.

Testing of disease prone food sources, such as shellfish and walrus, can reduce avoidance of traditional subsistence foods and prevent a shift to consuming less nutritious foods.

13.5 Create a citizen-based reporting system to document, potentially on-line, changes observed in fish and animal numbers, locations, and conditions as well as berry and other gathered food conditions.

Providing a node for the centralization and diffusion of knowledge can help people engaged in a traditional subsistence way of life to adapt to changing conditions quicker by facilitating collective learning and providing a source for communicating about changes in observed fish and animal behavior and location as well as gathered food conditions.

HC-14. Winter Sports and Recreation

14.1 Provide more public education regarding where good skiing and snow machining conditions exist and where/when unsafe conditions exist.

With changing temperature and precipitation patterns, snow conditions will change. Providing information on those conditions may help maintain Alaskan's quality of life, continue to provide exercise opportunities, and prevent injuries and deaths from avalanche conditions.

14.2 Relocate snow-based activities, events and trails to higher elevations which may require government land conveyances or new permits.

Reduction in current snow-based activities, such as cross country skiing in low elevation populations centers such as Anchorage and the Kenai Peninsula, may merit relocating such activities to higher elevations. To accomplish this, changes in local land planning, government land conveyance, and permitting processes may be needed.

14.3 Modify school skiing race seasons.

Skiing race seasons may need to shift in accordance with shifts in snow availability.

HC-15. Summer Sports and Recreation

15.1 Extend visitor seasons for government supervised or maintained opportunities, campgrounds, etc (e.g. McNeil River and Round Island).

Due to potentially longer snow-free and ice-free seasons, it may be appropriate to expand summer recreation opportunities at government campgrounds and other facilities.

15.2 Provide public education regarding summer smoke exposure, new insects, heat stress and other risks to reduce health impacts.

Public education about the potentially negative side effects of higher temperatures, wildfires, new insects, and other risks may help moderate those risks by providing the public with timely information about minimizing those risks, warning the public when unsafe conditions exist, and suggesting alternative, less risky activities.

15.3 Revise interpretive signs on public lands to reflect changes due to climate.

Climate change is causing a variety of changes to the natural environment. Some interpretive signage will need to be revised to reflect changes in the environment and new interpretive signage could be added to provide information to the public about how changes in climate are driving changes in the environment.

HC-16. Energy Demand

16.1 Modify the built environment in locations in Alaska most at risk, to promote reduced heat creation and exposure, including white roofs, more trees, and less asphalt.

Heat in urban areas can be offset by using different construction techniques – in particular, increasing the reflectivity of surfaces in the urban environment. This can be as simple as painting dark colored surfaces white or as complex as replacing asphalt surfaces with alternatives that absorb less solar radiation. Furthermore, increasing vegetation, such as trees, in urban areas, performs the same function.

16.2 Promulgate new regulations requiring or providing incentives for heat reduction strategies such as using green or white roofs, improving building insulation, etc

Government can consider new elements to the building code or other regulations to decrease energy demand, the cost of energy for the average household, and reduce the heat island effect of urban areas. Alternatively, government can offer incentives and subsidies instead of promulgating regulations.

16.3 Develop statewide or other protocols for needed emergency deliveries of fuel.

When normal fuel delivery is impossible due to environmental conditions or infrastructure damage, it is important to have management plans for the delivery of emergency supplies of fuel. Developing such management plans in advance of an emergency can increase the speed of emergency fuel delivery and consequently reduce the human health hazard.

16.4 Create and designate "warm emergency shelters", including a system for transporting elders and others.

When environmental conditions, infrastructure failure, or fuel shortages cause cold-related emergencies, designating large buildings as “warm emergency centers” with backup fuel systems can provide a location for community members to gather to avoid cold hazards. Management plans for transporting vulnerable populations to such warming centers is an important part of a comprehensive emergency management plan for a community.

16.5 Provide public education on cold-based safety measures.

There are many actions that individuals, families, and communities can take to reduce their vulnerability to cold-related emergencies. A public information campaign designed to encourage

safety at all of these levels can play an important role in preventing human health hazard from cold-related emergencies.

HC-17. Gardening

17.1 Provide public education about new gardening opportunities and also about new pests and control measures, to minimize, if possible, their spread.

With longer growing seasons and higher temperatures, new crops may be possible to grow in many areas of Alaska. On the other hand, new pests and noxious weeds may also find the changed Alaskan climate to be favorable to them. Public education about all of these possibilities, any observed changes, and projected problems can help Alaskans to take advantage of or, when possible, to minimize the negative consequences of climate change on their gardening.

17.2 Provide additional testing and monitoring of incoming plants and Alaska garden specimens.

A program to test and monitor imported plants can prevent the spread of noxious weeds as well as new garden pests such as European black slug and aphids.

17.3 Provide specific eradication efforts, as appropriate.

When new pests or noxious weeds are detected, a rapid response program to eradicate the pest before it becomes established may significantly reduce the negative consequences of new pest infestations.