



**Brief Description of Catalog Actions and Options
Other Economic Activities (EA) Technical Work Group (TWG)
Draft: *July 14, 2008 - Revised***

(These descriptions will be developed in more detail as the TWG considers priorities.)

EA -1 Oil and Gas

EA-1.1 Expand research on construction techniques and in-season monitoring.

Based on the potential reduced operations for ice road travel, conduct research to understand appropriate construction techniques and conduct in-season monitoring to ensure adequacy of those techniques.

EA-1.2 Develop long range infrastructure development and maintenance plan

This option would outline a long range plan to consider oil and gas infrastructure development in a changing climate. Aspects of infrastructure to be considered may include roads, man-made shoreline, and other oil and gas facilities. This action may be addressed by both public and private sectors. Consider the potential addition of thermopiles and increased depth of burial for new piles. If pile jacking/settling increases, increased maintenance on these structures will be required.

EA-1.3 Insulate ice pads for extended use

EA-1.4 Develop sea level rise adaptation public policy, guidance for preventive and mitigative measures, and knowledge of who pays for what

EA-1.5 Explore use of modeling to project new species ranges; confirm with on-the-ground knowledge.

EA-1.6 Consider additional stresses on marine species and use sea ice modeling to plan for and respond to future spill potential.

EA-1.7 Use R&D funds to develop new techniques to clean up spills in icy waters.

EA-1.8 Consider how pipeline operations affect state revenues and manage potential disruptions to this and examine polices to continue oil and gas flows

Given that Alaska pays 25% of the cost of operating the pipeline through tariffs, consider how potential changes in costs of operation may affect state revenue.

EA-1.9 Model coastal erosion to establish criteria for pipeline coastal transition set-backs and burial depths.

EA-1.10 Consider use of thermosyphons to maintain frozen permafrost

This option is to mitigate the impact of thawing permafrost as it may affect buried or above-ground pipelines

EA-1.11 Prioritize coastal remediation in places that pose the greatest threat to humans

EA-1.12 Monitor climate trends and downscale models to establish engineering environmental design criteria

EA-1.13 Provide resources for good Digital Elevation Model (DEM) and GIS data, and current and high resolution imagery to establish a more robust information infrastructure to plan and adapt

These data should be linked to University of Alaska-Fairbanks's imagery data. The data should be as close to real-time as possible, and should include permafrost, temperature, and sea level trends. This option would apply to many sectors.

EA-2 Mining

EA-2.1 Research opportunities for best reclamation practices for changing site conditions

Consider longer growing season to establish revegetation to stabilize reclaimed areas.

EA-2.2 Consider how operating practices may change based on changed environmental conditions and criteria

Operators and regulators will need to consider practices to achieve desired future environmental conditions based on environmental protection objectives established in state regulations. The State's Large Mine Permitting Team (LMPT) under ADNR direction should work with mine operators.

EA-2.3 Research new methods for responding to changed conditions and conduct education for operators on these methods

ADNR place mine permitting staff and LMPT should be involved in facilitating these training opportunities.

EA-2.4 Provide sufficient/increased technically trained staff (e.g., ADNR) to monitor active placer mines and large hardrock and reclamation and closure progress.

ADNR and LMPT should work with miners on best, cost effective methods to monitor changes and develop flexible strategies to address the conditions reasonably expected to occur with climate change. Existing vacancies need to be filled; qualified technical personnel need to be recruited; competitive markets for technical staff warrants addressing compensation issues.

EA-2.5 Encourage research and engineering applications for tailings storage in Arctic/Subarctic climates at UAF school of Mines & Engineering

Opportunity for cooperative efforts by industry, government and university to address these challenges

EA-2.6 Review current regulations and compliance criteria for managing tailing dams and disposal sites and determine if changes are necessary

LMPT and industry should review. Current regulations and criteria for protecting land, air and waters should be maintained. Each project will have unique challenges based on the site conditions; Regulations should address compliance criteria, but not how to comply; cooperative efforts between mine operators and LMPT regulators should be encouraged to find cost effective solutions. Compliance criteria could include monitoring of permafrost or related ground conditions at specific sites

EA-2.7 Encourage research for design and application of new liner materials

Could be public action to stimulate research; This could be an action by operators to better achieve compliance; opportunity for cooperative efforts between industry, state and UA.

EA-2.8 Examine and research techniques for construction that will be responsive and useful in a warmed environment

This option includes both available techniques and potential development of new techniques and is applicable to other aspects of construction in Alaska.

EA- 3 Ocean Transportation

EA-3.1 Increase Coast Guard, rescue, navigation and information assistance

EA-3.2 Finance and build basic shipping infrastructure

EA-3.3 Develop an understanding of inventories of fish stocks that may be related to shipping changes and implement reliable regulations and limitations on harvests as needed.

EA-3.4 Increase construction of port, fueling and perhaps housing facilities at strategic locations to handle increased ocean transport

EA-3.5 Monitor impacts of shipping on environment, hunting, fishing and communities

EA-3.6 Ensure oil spill response and clean up capabilities

EA-3.7 Examine need for new standards and regulations

EA -4 Rural Non-Road Ground Transportation

No options currently identified

EA-5 Other Economic Sectors

EA-5.1 Establish federal “all perils” insurance guarantee program

EA-5.2 Reward climate protection at residential and commercial properties

EA-5.3 Encourage private insurers, as investors, and the state pension funds to consider climate impact prevention in the prudent investment of portfolios

EA-5.4 Explore potential of insurance industry to contribute to funding as beneficiaries of reduced risk

EA-5.5 Identify incentives for private investment in creating ‘climate safe’ development

EA-5.6 Anticipate and address increased insurance costs

EA-5.7 Encourage private insurers to invest in climate science as a ‘present value of avoided future costs’ strategy

EA-5.8 Consider future income for selling carbon credits and offsets

EA-5.9 Assess permit needs for safe drinking water and sanitation in villages

EA-5.10 Consider prescribed fire as an approach for wildfire control

EA-5.11 Explore, install, permit new wind, geothermal, solar, and other renewable energy projects

EA-5.12 Explore possibilities for new hydroelectricity sources

EA-6 Tourism and Recreation

EA-6.1 Develop economic analysis of potential rise or decline of tourism and impact on state revenues

EA-6.2 Consider allowing use of higher elevation lands for skiing based on changes to snow

EA-6.3 Study cost of snow production

EA-6.4 Explore alternative winter tourism options, considering the benefits of warmer, but sub-freezing temperatures, for selected locations

EA-6.5 Address road, airport, bridge maintenance needs to support tourism

EA-6.6 Consider extension of services and marketing for a longer summer season

EA-6.7 Develop permit and other changed itinerary requirements

EA-6.8 Address tourist health issues from smoke

EA-6.9 Locate/re-locate visitor centers

EA-6.10 Expand cruise tourism into Arctic Ocean

EA-7 Boundaries and Ownership

EA-7.1 Advocate for Law of Sea Convention Treaty provisions

The Law of the Sea Convention provides nations a basis to extend their sea floor resource rights beyond the foot of the continental slope if they meet certain geological criteria backed up by scientific data. The U.S. has not yet ratified this treaty.

EA-7.2 Conduct field research re: Outer Continental Shelf

EA-7.3 Improve mapping and surveying to accurately and efficiently establish boundaries and address boundary disputes as needed

EA-7.4 Establish new boundaries to manage river erosion and property impacts

EA-7.5 Reinstate a fully effective Alaska Coastal Zone Management program to reduce unwise investments along the coast

State government should reinstate a fully effective Alaska Coastal Zone Management program to reduce unwise developments along the coast by placing long-term planning responsibility on local and regional governments with forceful State oversight. State policies for coastal zone management should be adapted to be compatible with the National Flood Insurance Program and related FEMA guidelines

EA-8 Energy Demand

No options currently identified

EA-9 Evolving Alaska's Jobs and Economy

EA-9.1 Conduct long and short term jobs analysis to identify which sectors/occupations will be positively/negatively impacted, with an eye towards job creation opportunities

EA-9.2 Re-tool education and job training programs for new workforce to take advantage of green economy growth

EA-9.3 Make Alaska a world leader in the climate adaptation field: engineering and design services, climate-sensitive infrastructure systems, etc.

EA-9.4 Promote activities that will promote climate change adaptation and the responsible use of state resources through education and outreach

State's ability to conduct adaptive activities may be dependent on continued use of state's resources responsibly. Need to train human resources – promote these capabilities through universities.

EA-10 Information Collection and Dissemination

EA-10.1 Invest in monitoring and data dissemination programs to enhance information available for safe and efficient resource development

State government and private enterprises should invest in monitoring and data dissemination programs to enhance information available for safe and efficient resource development, such as Arctic Observing Network (AOS), Alaska Ocean Observing System (AOOS), Alaska Road Weather Information System (RWIS), Geographic Information Network for Alaska (GINA), Alaska Engineering Design Information System (AEDIS)

EA-10.2 Allocate a portion of major public works investments toward monitoring, data dissemination, and analysis of climate and other environmental data

State government should allocate a portion of major public works investments toward monitoring, data dissemination, and analysis of climate and other environmental data, e.g., “1% for climate change” or specify monitoring instrumentation as part of each project to contribute to one of the above data collection and dissemination systems

EA-10.3 Continue to refine the “Cost of Climate Change” study recently completed by the UAA Institute for Social and Economic Research

State government should continue to refine the “Cost of Climate Change study recently completed by the UAA Institute for Social and Economic Research as a predictive tool for tangible climate change impacts on major infrastructure, public and commercial