

Implementation Plan – Strategic Recommendations | Updated September 17, 2014

The state of Alaska should:

Strategic Recommendation #1 – Address the response infrastructure gap in Alaska’s Arctic

- 1 (a) Develop the capacity for strategic planning of and investment in port development, such as through an Alaska port authority, which could also liaise with AIDEA to facilitate public-private partnerships and investment.
- 1 (b) Add capacity within the Governor’s office to address Arctic maritime issues.
- 1 (c) Improve and support, invest in and complete communications and terrestrial mapping, nautical charting, navigational infrastructure, hydrography and bathymetry.
- 1 (d) Expand development of appropriately integrated systems to monitor and communicate Arctic marine, terrestrial, and air information.
- 1 (e): Facilitate and secure public and private investment in support of critical aviation and maritime response infrastructure and economic development, to include consideration of direct state funding and/or public-private partnerships that address development of communications, a deep draft port(s), icebreaker(s), logistics hubs, rail, road, and a WX C-130 size aircraft hangar(s).
- 1 (f) Expand and support the Department of Environmental Conservation’s effort to involve communities and stakeholders through Subarea Planning and provide local response training, to maintain local spill response equipment to ensure timely, effective, and safe response.
- 1 (g) Strengthen partnerships with Oil Spill Response Organizations (OSROs) to develop expertise in open water, broken ice, near shore, and sensitive area protection, and be able to meet contingency plan requirements and operate effectively in the Arctic.
- 1 (h) Ensure a sustainable oil and hazardous substance response funding mechanism.
- 1 (i) Foster and strengthen international partnerships with other Arctic Nations, establishing bilateral partnerships with, in particular, Canada and Russia, to address emerging challenges in the Arctic.

Strategic Recommendation #2 – Strengthen an Alaska Arctic science and research agenda

- 2 (a) Ensure state funding to, and partnership with, the University of Alaska for Arctic research that aligns with state priorities and leverages the University’s exceptional facilities and academic capacity.
- 2 (b) Increase collaboration at the local, state, and federal levels to address arctic science and research and empower local stakeholders to identify regional priorities through an NSSI-like effort with an expanded geographic scope for the entire Arctic region, without compromising current mission of effectiveness.
- 2 (c) Strengthen efforts to incorporate local and traditional knowledge into research and science and use this collective knowledge to inform management decisions.

Strategic Recommendation #3 – Support healthy communities

- 3 (a): Foster the delivery of reliable and affordable in-home water, sewer, and sanitation services in all rural communities.
- 3 (b): Conduct a synthesis study of existing Arctic region economic and infrastructure assessments and planning processes that integrate local, regional, state and federal planning efforts.
- 3 (c) Evaluate and respond to risks from climate change related to erosion to community infrastructure and services and support community efforts to adapt and relocate when necessary.
- 3 (d): Support long term strategic planning efforts that empower local stakeholders to identify and provide input on regional priorities that support and mitigate the risk, and take advantage of the opportunities created, from human activity and assess cumulative impacts thereof.
- 3 (e) Reduce power and heating costs in rural Alaskan Arctic communities.
- 3 (f): Develop and support education of the public and outreach efforts that enhance the understanding of the conservation of Arctic biodiversity and sustainable use of biological resources.
- 3 (g): Develop a mechanism for revenue sharing from resource extraction for impacted communities, where lacking, for immediate impacts as well as needs beyond the life of non-renewable resources.
- 3 (h) Promote the food security of Arctic peoples and communities.
- 3 (i) Lead collaborative efforts between multiple levels of government to achieve greater access, coordination and predictable regulatory standards to ensure permitting certainty and robust environmental protection.
- 3 (j) Create workforce development program to prepare Arctic residents to participate in all aspects and phases of Arctic development.

Strategic Recommendation #4 – Promote economic development – that responds to culture, society and the environment – of Alaska’s Arctic resources

- 4 (a) Update hydrocarbon and mineral resource mapping and estimates in the Alaskan Arctic.

Potential topics around which new recommendations could be formed:

- Small business development
- Access to capital – in and outside the state
- Onshore development
- Offshore development
- Fostering entrepreneurship

Strategic Recommendation #1
Address the response infrastructure gap in Alaska's Arctic

<p>Recommendation: 1(a) Develop the capacity for strategic planning of and investment in port development, such as through an Alaska port authority, which could also liaise with AIDEA to facilitate public-private partnerships and investment.</p>	
<p>Status: Create entirely new effort</p>	<p>Timeline for Action: Medium Term</p>
<p>Justification: Arctic port(s) development was identified several years ago by state and federal policymakers as one of the most critical pieces needed to support the quickly developing Arctic. For instance, the Coast Guard has no full-time assets beyond Dutch Harbor, a considerable distance from the Bering Strait, let alone Barrow. The construction of one or more deep draft ports along Alaska’s coastline would assist in ensuring maritime safety, increasing economic development, and maintaining Arctic domain awareness. However, in an environment of fiscal constraint felt by both state and federal governments, port development will not occur without public and private sector investment, including commitments by user groups to utilize these assets.</p>	
<p>Lead and Partners: <i>Primary</i> – Department of Transportation & Public Facilities <u>Supportive</u> <i>State</i> – AIDEA <i>Federal</i> – USACE, USCG, NOAA, DOT, DOD, USNORTHCOM <i>Other</i> – Alaska Native Regional and Village Corporations; private sector companies, local municipalities</p>	<p>Resources needed: <i>Fiscal</i> – Continued funding will be needed for planning and permitting; anticipate a multi-year investment in construction costs, and possible maintenance and operations depending on ownership. <i>Leveraged</i> – This will depend on land ownership and the form of public-private partnership that develops, but it can be assumed that all parties will have an interest in pooling resources.</p>
<p>How will it get done: DOT&PF has taken the initiative in supporting the Deep Draft Port Study, which provides a valuable assessment of the issue. Working closely with the Corps of Engineers, DOT&PF will need to settle on a final location (or pursue multiple locations) for a deep draft port, work with landowners to develop and design the port while incorporating input from user groups, ensure community and regional outreach and public education; and work to secure investment. Investment could be facilitated through AIDEA or under the rubric of something like an Alaska arctic port authority.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Request an update from DOT&PF and USACE on the status and future plans for Arctic port development. 2. Request from AIDEA the development of funding scenarios to determine the best return on state investment. 3. Participate in any working groups that involve potential project partners to develop a strategic plan for port development. 	
<p>Evaluation: Success will be evaluated based on a) whether the strategy leads to the development of a deep draft port; 2) whether a port is economic over its lifespan; and 3) whether the port leads to an increased number of investment opportunities, resource development, new firms entering Alaska and a more favorable business climate.</p>	

Recommendation: 1(b) Add capacity within the Governor’s office to address Arctic maritime issues.	
Status: Create entirely new effort	Timeline for Action: Medium Term
<p>Justification: With the rate of change and increasing activity in Arctic waters, the Governor and cabinet would benefit from specialized knowledge and policy expertise related to international, national and local waterways management and legal regimes. The U.S. counts on the Coast Guard, among others, for similar contributions, and strengthening the capacity of the Governor’s office to liaise directly with the Coast Guard and other federal agencies would ensure a direct feedback loop between state of Alaska knowledge and federal decision-making. Additionally, it is important to recognize that maritime traffic – goods delivered to Alaska via Washington ports; community goods and fuel resupply along the coast; Bering Strait traffic; academic and government research vessels; and trans-Arctic shipping – directly impact Alaska’s economy and community health. The implications of international efforts that come out of Arctic Council policy-shaping documents, or International Maritime Organization negotiations about the Polar Code are significant for Alaska.</p>	
<p>Lead and Partners: <i>Primary</i> – Governor’s office</p> <p><u>Supportive</u> <i>State</i> – Alaska State Legislature; local government; Department of Environmental Conservation <i>National</i> – U.S. Coast Guard; State Department; Maritime Administration <i>Other</i> – International Maritime Organization; Arctic Council</p>	<p>Resources needed: <i>Fiscal</i> – possible increase in administrative support; anticipate significant travel budget for national and international policy discussions. <i>Leveraged</i> – State agencies and local government will be able to contribute valuable on the ground expertise to this position.</p>
<p>How will it get done: The Governor’s office has the capacity to specifically respond to Arctic-related matters and climate change through Commissioners and Deputy Commissioners who focus part of their portfolios on these important issues. Increasing capacity specifically on arctic maritime issues would ensure the delivery of concrete policy recommendations and provide to others state of Alaska’s priorities and perspectives on maritime issues. Individual(s) with a maritime portfolio should coordinate activities with the Governor’s Arctic specialist who, in turn, will focus on non-maritime issues.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Develop a scope of work, including goals and desired outcomes, for an Arctic maritime portfolio 2. Work with Governor’s office to identify capacity for an Arctic maritime portfolio and accompanying budget 3. Request that the portfolio holder(s) have the ability to act as a liaison between industry, the public and private sectors, as well as indigenous organizations 	
<p>Evaluation: Success will be determined by 1) expansion of the Governor’s office portfolio to include maritime issues; 2) the ability of the Governor’s office to coordinate and streamline state of Alaska policy statements and positions related to Arctic maritime issues and intermodal transportation infrastructure development; and 3) deliver local and sub-national input into federal and international negotiations.</p>	

<p>Recommendation: 1(c) Improve and support, invest in and complete communications and terrestrial mapping, nautical charting, navigational infrastructure, hydrography and bathymetry.</p>	
<p>Status: Support current efforts</p>	<p>Timeline for Action: Long term</p>
<p>Justification: Nautical charting and terrestrial mapping of the American Arctic, to the extent that it's been done, began in the 1800s with what today is considered outdated technology, and Alaska's western and northern coasts haven't been mapped since 1960, both factors that result in a lack of confidence by communities and industry alike. Even today, Alaska's coastline mapping is occurring at 1% annually versus 5% in the rest of the United States. NOAA currently estimates that it will take 25 years just to survey their high priority areas that affect marine transportation. For the state of Alaska – with a commitment to enhancing safety, environmental protection and economic development – this is simply unacceptable. While the state does not have sole jurisdictional authority over the Arctic area, nor does it have a desire to supplant federal responsibilities, this is a good opportunity to partner for mutual benefit.</p>	
<p>Lead and Partners: <i>Primary</i> – Alaska State Geospatial Council <u>Supportive</u> <i>State</i> – DOT&PF, DEC and DNR <i>Federal</i> – U.S. Coast Guard, Maritime Administration, USGS, NOAA <i>Other</i> – Marine Exchange of Alaska, Alaska Ocean Observing System; Alaska Marine Pilots</p>	<p>Resources needed: <i>Fiscal</i> – The state of Alaska should anticipate increased leadership as a facilitator of multi-agency cooperation; there is also the possibility of co-investment in this area, with the state contributing funding to ensure this priority is address. <i>Leveraged</i> – Statewide Digital Mapping Initiative; UAF's Geographic Information Network of Alaska and the <i>Sikuliaq</i> research vessel.</p>
<p>How will it get done: DNR has been the lead on mapping efforts in the state, and has done much of its work in collaboration with state and federal agencies. The Governor recently created the Alaska Geospatial Council whose top priority is to figure out where to store data, how to manage it and make it available for users. Hydrography is well underway through the Hydrography Working Group, under the auspices of the Alaska Climate Change Executive Roundtable, and the Alaska Geospatial Council. The state of Alaska's DOT&PF can take a proactive role in articulating the top priorities and establishing priorities within the region, assisting NOAA where necessary to establish a geospatial foundation and ensure marine domain awareness. For instance, the state of Alaska could provide or assist in funding an increase of aerial and satellite imagery. DOT&PF should also be working closely with the Office of Coast Survey (Coast Pilot) to update hydrographic priorities, including navigation of the Bering Sea and Arctic approach waters, and USGS for terrestrial priorities.</p>	
<p>Legislative Actions: 1. Encourage federal agencies to work with and incorporate state, local and traditional knowledge holders. 2. Consider state co-investment in mapping, charting, hydrography and bathymetry 3. Continue statewide mapping efforts initiated by DOT&PF</p>	
<p>Evaluation: Success will be measured by 1) increasing the percentage of mapping and charting complete and 2) enhanced user confidence.</p>	

<p>Recommendation: 1(d) Expand development of appropriately integrated systems to monitor and communicate Arctic marine, terrestrial, and air information.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Short Term</p>
<p>Justification: Integrated systems are necessary and paramount to ensure effective communication, situational awareness, and safety in the Alaskan Arctic. There are multiple domains – land, water, and space – that span both state and federal jurisdiction. There are two complementary types of marine information important to the future of the Alaskan Arctic. The first has to do with maintaining operational awareness of maritime activity, and especially vessel tracking, but also transmission of information on ice and water, ship’s speed, and closed or sensitive areas for navigation. The primary asset that delivers increased maritime domain awareness is Automated Identification Systems, supplemented by Long Range Tracking Systems. AIS is a piece of navigational equipment carried – by regulation or voluntarily – aboard many vessels, and which transmits vessel information regularly. However, AIS receivers can only see so far offshore, and there will always be portions of Alaska without AIS coverage. In those cases of remote operations, it is necessary to use several different forms of satellite tracking. The expanded capacity of automated integration systems (AIS) will allow a strengthened emergency response capability and ensure safe maritime transportation. Secondly, there is an increased need for environmental awareness that provides decision-makers with a better understanding of coastal hazard mitigation, ecosystem and climate trends, and monitoring water quality. Data management related to these areas of interest is also a significant concern.</p>	
<p>Lead and Partners: <i>Primary</i> – Marine Exchange of Alaska, and Alaska Ocean Observing System</p> <p><u>Supportive</u> <i>State</i> – DEC and DF&G; Alaska State Troopers; Alaska National Guard; DCCED, DMBA <i>Federal</i> – U.S. Coast Guard, BOEM and NOAA <i>Other</i> – Marine Exchange of Alaska; Alaska Ocean Observing System; local government, subsistence users, Alaska Native organizations, industry groups</p>	<p>Resources needed: <i>Fiscal</i> – Investment needs are currently unclear, and will depend on 1) capacity to increase basic infrastructure and 2) need for increased data management.</p> <p><i>Leveraged</i> – Both MXAK and AOOS have structures that allow outside investment, whether through members or user groups.</p>
<p>How will it get done: The Marine Exchange of Alaska has a sustainable organizational and methodological framework that aligns well with state of Alaska priorities. Continued state investment and attention to growth opportunities will deliver results. Similarly, the Alaska Ocean Observing System is providing a valuable service, in cooperation with a broad and diverse group of participating agencies and organizations. In each case the state of Alaska has an opportunity to increase engagement and provide additional input.</p>	
<p>Legislative Actions –</p> <ol style="list-style-type: none"> 1. Compile and review state agency maritime traffic and environmental data and collection processes, as well as data sharing to better understand cost-benefit relative to Arctic priorities 2. Consider future legislation that responds to any identified gaps in current capacity or prioritization of expansion 3. Strengthen support for the Marine Exchange of Alaska and Alaska Ocean Observing System. 4. Track and intervene if necessary on the possible closure of the NOAA weather station in the Aleutians. 5. Assess the mitigation strategies from the Aleutian Islands Risk Assessment Project for application to Great Circle Route vessel traffic. 	
<p>Evaluation: Success will be evaluated based on 1) increase in data collection <u>and</u> use; 2) increase in resource manager and mariner confidence in data available; 3) increase in industry participation.</p>	

<p>Recommendation: 1(e) Facilitate and secure public and private investment in support of critical aviation and maritime response infrastructure and economic development, to include consideration of direct state funding and/or public-private partnerships that address development of communications, a deep draft port(s), icebreaker(s), logistics hubs, rail, road, and a WX C-130 size aircraft hangar(s).</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Medium Term</p>
<p>Justification: The Arctic Council’s <i>Arctic Marine Shipping Assessment</i> (2009) and the CMTS <i>U.S. Arctic Marine Transportation System: Overview and Priorities for Action 2013</i> identify and recommend addressing the infrastructure gap related to Arctic marine transportation. More recently, and perhaps importantly, the eight Arctic nations have signed agreements, facilitated by and convened under the auspices of the Arctic Council, that respond to search and rescue activities, as well as oil spill response. Both reference as obligations of each nation minimum infrastructure and response capacity. Finally, as Alaska communities bear the brunt of risk associated with increased marine activity, whether it is shipping through the Bering Strait or offshore development in Russia or the U.S. Clearly, the U.S. has a responsibility in this area, and Alaska can play an active role both in the interests of human safety and facilitating economic development. Strengthened response capacity provides a good argument for offshore resource development; and, with nearly 90% of Alaska’s population living on or near the coastline, depending on access to safe and affordable marine transportation, this should be a fundamental priority for the state of Alaska and the nation.</p>	
<p>Lead and Partners: <u>Primary</u> – DOT&PF <u>Supportive</u> <i>State</i> – AIDEA, Alaska National Guard, DEC <i>Federal</i> – U.S. Coast Guard, DOT, CMTS, DHS <i>Other</i> – Marine Exchange of Alaska, UAF</p>	<p>Resources needed: <i>Fiscal</i> – This has the single highest potential for state investment and should be approached strategically, considering a phased or scaled approach. <i>Leveraged</i> – The federal government has the lead in much of this, as an obligation as an Arctic nation and in the national interest, and should be pressured to fund appropriately its priorities.</p>
<p>How will it get done: The Alaska State Legislature has made significant headway to begin addressing this issue through AIDEA investment. That will need to be carefully coordinated with DEC and DHS, as well as with federal partners, to ensure successful implementation.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Convene committee review of status and plans for port, hangar, communications and other Arctic infrastructure projects 2. Encourage AIDEA’s careful selection of priority investments, including as they relate to economic development opportunities and/or human safety and environmental protection 3. Facilitate streamlined regulatory or permitting processes that navigate local, state and federal processes and recognize that authority and jurisdiction may be different for each project 4. Demand federal action to ensure national security and interest, as well as stewardship of the Arctic region 	
<p>Evaluation: Success will be measured by 1) increased number of response assets placed in the Arctic region; 2) expanded port infrastructure; 3) increase in cached search and rescue, and oil spill response, supplies and equipment; and 4) increased public confidence in maritime operations and the ability of an Arctic nation and state to respond.</p>	

<p>Recommendation: 1(f) Expand and support the Department of Environmental Conservation’s effort to involve communities and stakeholders through Subarea Planning and provide local response training, to maintain local spill response equipment to ensure timely, effective, and safe response.</p>	
<p>Status: Expand current efforts</p>	<p>Timeline for Action: Short term</p>
<p>Justification: The state of Alaska has an existing spill response system through DEC’s Spill Prevention and Response division. SPAR coordinates its activities with USCG and the EPA through the Regional Response Team, which organizes oil spill planning, prevention and response for the entire state both onshore and offshore. The polluter pays principle places the burden to respond on industry and there is in fact no OSRO in the state that has the capacity to respond to an offshore event. Much of what the state is able to do is represented within the Unified Plan, which is divided by sub-area plans for different regions and recognizes that state assets are limited and geared toward small incidents. Sub-area planning is the most direct path for the application and integration of local and traditional knowledge as part of broad stakeholder engagement. Communities interested in having a role in spill response can do so through the sub-area planning that takes place, ensuring that responders have as much of the data available to them as possible, as well as an understanding of stakeholder priorities. With increased activity along Alaska’s coast and through the Bering Strait, both in support of offshore development but more importantly trans-Arctic shipping, Alaskan communities are understandably concerned and ready to be active participants in the discussion. Their early engagement should result in better risk communication and mitigation, protection of the environment and food resources, and human safety.</p>	
<p>Lead and Partners: <i>Primary</i> – Department of Environmental Conservation Division of Spill Prevention and Response <u>Supportive</u> <i>State</i> – Division of Homeland Security, Emergency Management, Alaska National Guard <i>National</i> – U.S. Coast Guard, EPA, DoD <i>Other</i> – OSROs, Alaska Native organizations and companies</p>	<p>Resources needed: <i>Fiscal</i> – Current funding is adequate for planning purposes and increased funding would be needed to ensure required equipment is in place and sustained and that there is capacity to respond to an event. <i>Leveraged</i> – Spill response training would be handled not by DEC but by OSROs, therefore DEC can build upon existing capacity at that level and leverage USCG and DoD responsibilities.</p>
<p>How will it get done: The state of Alaska has a functioning and effective spill response planning and response program. Local communities often are unaware, or don’t understand the importance, of sub-area planning as a component of this process. DEC can begin a more robust public education and awareness campaign that encourages increased stakeholder engagement.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Invite testimony from the State Department and U.S. Coast Guard on the Arctic Council’s <i>Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic</i>, and assess its impact on state of Alaska resources 2. DEC and regional response teams can conduct town hall meetings for their constituents to inform them of sub-area planning 	
<p>Evaluation: Success should be evaluated by 1) increased public participation in sub-area planning, 2) increased public confidence in the state of Alaska’s oil spill planning, preparedness and response and 3) increased local training opportunities provided by OSROs.</p>	

<p>Recommendation: 1(g) Strengthen partnerships with Oil Spill Response Organizations (OSROs) to develop expertise in open water, broken ice, near shore, and sensitive area protection, and be able to meet contingency plan requirements and operate effectively in the Arctic.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Short term</p>
<p>Justification: Oil Spill Response Organizations (OSROs) are membership based nonprofit organizations that fulfill compliance obligations for companies operating – exploration, production, processing, and shipping activities – on land and in or near the US maritime environment. Their sole purpose is to provide oil spill response capacity to those companies, thereby reducing liabilities and responding to state of Alaska and U.S. environmental regulations. Their response is determined by the needs of their membership base and generally speaking no OSRO has the capacity to respond to an offshore incident. Therefore, Alaska Clean Seas, which provides services to all major oil companies on Alaska’s North Slope is relatively well-resourced compared to Chadux, whose membership is comprised of a variety of smaller marine operators along Alaska’s western coast and in the Aleutians. This is important to understand when thinking about effective response. OSRO capacity is contingent upon the types of activities occurring and with no production in open water yet, there is no OSRO with the ability to adequately respond to that type of event. For example, Shell was required to bring all its response capacity to the Arctic for their exploration work. Similarly, vessels in innocent passage (not visiting a U.S. port) are not required to comply with State of federal laws and be a member of a local OSRO or have their own response capacity. It is OSROs that are the primary responders to an oil spill in the Alaskan Arctic, with the state of Alaska, and EPA (land-based spill) or USCG (water-based spill) acting as incident commanders. State of Alaska assets are limited to cached equipment and supplies geared toward small incidents. OSROs also maintain a contingent of local responders and regularly conduct exercises and trainings depending on resources available or identified needs.</p>	
<p>Lead and Partners: <i>Primary</i> – Department of Environmental Conservation Division of Spill Prevention and Response <u>Supportive</u> <i>State</i> – Alaska National Guard, Division of Homeland Security, Emergency Management, local governments <i>National</i> – U.S. Coast Guard, EPA, DoD <i>Other</i> – OSROs, Alaska Native organizations or companies</p>	<p>Resources needed: <i>Fiscal</i> – Participation in OSROs as a member would incur a membership fee, which should be considered an additional investment in oil spill response capacity. Assets staging by DEC would also require increased funding. <i>Leveraged</i> – Current and potential OSRO membership, Coast Guard activities and increased attention to the Arctic.</p>
<p>How will it get done: In addition to continuing to support the Department of Environmental Conservation’s ongoing communication with the U.S. Coast Guard in reviewing alternative compliance programs development and applications, the state of Alaska should consider new ways of interacting with OSROs. If the state were to join an OSRO, for instance, this could provide for a more equitable distribution of resources and ensure increased response capacity in specific regions of concern (i.e.; the Aleutians and Bering Strait). As a member, the state would move beyond regulation of OSROs to partnership, developing a more strategic relationship that should result in spill response capability.</p>	
<p>Legislative Actions –</p> <ol style="list-style-type: none"> 1. Explore current database availability and functionality as they relate to effective emergency response, such as concentration of sea ice, locations of ports, and vulnerable environmental resources (AMATII, Arctic Portal, Arctic ERMA, AOOS, Marine Exchange of Alaska) 2. Ask the Attorney General for an opinion about the state of Alaska joining OSROs as a member 	

Evaluation:

Success will be measured by the increased capacity of OSROs to respond to a potential or real oil spill, as well as in public confidence in oil spill planning, prevention and response.

Recommendation: 1(h) Ensure a sustainable oil and hazardous substance response funding mechanism.	
Status: Expand on current efforts	Timeline for Action: Short term
<p>Justification: The state’s efforts to plan for and prevent oil spills in Alaska are largely paid for by the Oil and Hazardous Substance Release Prevention and Response Fund. This fund was formed in 1986 by the Alaska State Legislature using a five-cent surcharge on each barrel of crude oil produced. The fund was subsequently broken into two accounts: Response and Prevention. Four-cents of the surcharge feed the Prevention account and one-cent feeds the Response account. When the balance of the Response account is greater than \$50 million the state suspends collection of the one-cent surcharge on crude. By law, the Response account must be maintained at \$50 million and occasionally the one-cent surcharge is reactivated. The Response account can be accessed by the Governor or DEC Commissioner with notice given to the legislature and used to assist the state when it responds to the exigencies of a spill. To replenish this account, the state seeks recovery of its expenditures from the responsible party and deposits the funds back into the account. If this cost recovery is not sufficient, and to ensure the account stays at \$50 million, the state can reinstate the one-cent surcharge. The Prevention account is also an important resource for the state and is used to fund the operating expenses of DEC’s SPAR Division, including the Industry Preparedness Program and other prevention activities. The four-cent surcharge on crude oil production that generates the funds appropriated by the legislature into the Prevention account has been adequate to fund the SPAR operating budget in the past (approximately \$15 million/year). Now however, as oil production in the state declines, the amount collected via the surcharge is no longer adequate. In fact, using a best-case scenario, DEC predicts that in FY15 there will be less than \$150,000 in the Prevention account. The state of Alaska must decide, and soon, whether or not as a public policy the state needs to find another mechanism that will guarantee the sustainability of the state’s prevention, preparedness, and response work.</p>	
<p>Lead and Partners: <i>Primary</i> – Governor’s office</p> <p><u>Supportive</u> <i>State</i> – Alaska State Legislature, Governor <i>National</i> – U.S. Coast Guard <i>Other</i> – industry</p>	<p>Resources needed:</p> <p><i>Fiscal</i> – Increase the current tax, or consider alternative funding mechanisms, and fully fund this account.</p> <p><i>Leveraged</i> – Industry or other contributions to the account.</p>
<p>How will it get done: The Governor should make this a priority – both in the interests of expanding spill response capabilities and as a justification for increased resource development activities – and provide a suggested alternative or increase to the current tax structure, and related increase in funding to the SPAR program and Fund. The Alaska State Legislature should respond accordingly and take up the funding request in its budget discussions.</p>	
<p>Legislative Action:</p> <ol style="list-style-type: none"> 1. Conduct review of similarly structured and successful programs in the nation and around the world to look for best practices 2. Consider bill to either increase the current tax or provide a reliable alternative to fully funding the account and program 3. Increase spending to the program and fund, as necessary, after reviewing DEC requests and receiving input from constituents 	
<p>Evaluation: Success will be measured by having a mechanism in place with a pool of funds from which to draw from, if an event requires a response.</p>	

<p>Recommendation: 1(i) Foster and strengthen international partnerships with other Arctic nations, establishing bilateral partnerships with, in particular, Canada and Russia, to address emerging challenges in the Arctic.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Short Term</p>
<p>Justification: Alaska has been an active participant in international Arctic relations throughout its history. This has occurred through business activities (CH2M Hill’s Sakhalin project comes to mind, or Teck’s investment in Red Dog), environmental issues (DEC’s active communication with Canadian territories and provinces), policy (through the Northern Forum, for a time) and as part of the US delegation to the Arctic Council, where Alaska contributes its knowledge and expertise to projects of the Working Groups or Task Forces. While international relations are the domain of the U.S. government and State Department, Alaska’s strategic location as part of the Arctic necessitates a good working relationship with its neighbors. Especially important will be how Arctic shipping through the Bering Strait, and offshore development in Russia and Canadian waters, have an impact on Alaska’s environment and communities. The ability to ensure safe operations and to mitigate risk will be the thrust of the two bilateral relationships, which may be expanded to account for a sharing of best practices and joint infrastructure development.</p>	
<p>Lead and Partners: <i>Primary</i> – Office of International Trade, State of Alaska <u>Supportive</u> <i>State</i> – DCCED, DEC, DF&G, DNR, DMVA <i>National</i> – US Department of State, US Coast Guard, DoD, NOAA, NPS <i>Other</i> – Northern Forum, University of the Arctic, PNWER, World Trade Center, ICC, AIA, AAC, GCI, AK Chamber of Commerce, Kawerak, Alaska Nanuuq Commission</p>	<p>Resources needed: <i>Fiscal</i> – Potentially some additional travel funding, but basic communications are fairly cost-neutral. <i>Leveraged</i> – There are a number of international forums for dialogue whereby state of Alaska participation could guarantee additional relationship-building. Further, through federal programs, the state could develop partnerships in these areas.</p>
<p>How will it get done: The Governor’s office should engage in a campaign to strengthen, renew or initiate the state’s international partnerships. The scale at which this is done depends on resources available and alignment of interests, but fact-finding missions to both Canada and Russia could assist in this. Additionally, Alaska might benefit from participation in or attendance at – and follow up from – Arctic Council activities; and international Arctic conferences such as Arctic Frontiers (Norway), Arctic Circle (Iceland), and the Arctic: Territory of Dialogue (Russia). The state of Alaska might also consider reengaging with the Northern Forum, at a level outside full membership.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Convene hearing related to current bilateral or international relationships, with testimony from all state agencies and associated organizations. 2. Assess current capacity of state agencies or the Governor’s office to engage internationally, and expand as necessary. 3. Invite testimony from Arctic Council Permanent Participants, or Northern Forum members, to better understand the value that relationship might bring. 	
<p>Evaluation: Success will be measured in 1) increase in international engagements by state officials; 2) increase in public awareness of or confidence in bilateral working relationships; 3) increase in knowledge about Russian and Canadian activities and infrastructure in the Arctic.</p>	

Strategic Recommendation #2
Strengthen an Alaska Arctic science and research agenda

<p>Recommendation: 2(a) Ensure state funding to, and partnership with, the University of Alaska for Arctic research that aligns with state priorities and leverages the University’s exceptional facilities and academic capacity.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Short Term</p>
<p>Justification: Of primary importance here is the ability of the state of Alaska to articulate clear research goals that are consistent with the state’s interests. The greater degree to which science and research have an understanding and can respond to the needs of user groups, the stronger the relationship and the more consistent the funding. The variability of annual funding is a challenge for the University system and leads to erratic or at least irregular research being conducted. Increased alignment between state priorities and University research capacity should not be seen as impacting the independence of the University or research conducted. In point of fact, it simply increases the usability of the information produced and the efficacy of or return on investment. The state of Alaska has the opportunity here to define what kind of leadership role in the Arctic it wants to have. The capacity of the University system is directly related to the state’s ability to project competency and competitive advantage in a crowded field.</p>	
<p>Lead and Partners: <i>Primary</i> – Governor’s office</p> <p><u>Supportive</u> <i>State</i> – DEC, DNR, SCoR, DF&G, local governments <i>Federal</i> – IARPC, USARC, NOAA, DOI, NSF, DHS, DHHS, NPRB, NSSI <i>Other</i> – private sector R&D, environmental nongovernmental organizations, University of the Arctic, Univ of Alaska and branch campuses</p>	<p>Resources needed: <i>Fiscal</i> – Funding commensurate with desired outcome; increased funding for specific research projects or studies or agency staff for project management of investments. <i>Leveraged</i> – Federal efforts through NSF, USARC, IARPC, Polar Research Board and the NPRB would be valuable and partnership might result in increased inclusion of state expertise.</p>
<p>How will it get done: The Governor’s office will have to take a direct role in prioritizing efforts and identifying acceptable funding levels. At the same time, state agencies should consider additional roles related to assessment and monitoring activities and identifying new efforts that are complementary to ongoing research. The State Committee for Research should consider an arm directly related to Arctic science and research.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Assess current state efforts towards an Arctic science and research agenda. 2. Invite testimony from IARPC, NSF, USARC, NOAA and DOI on research priorities in the Arctic. 3. Convene committee hearings related to applied research opportunities and business development thereby. 4. Conduct review of state priorities that would benefit from University research. 	
<p>Evaluation: Success will be measured by evaluating 1) development of a state research agenda; 2) the extent to which collaboration is taking place; 3) incorporation of University research in future decision-making by state agencies or policy makers; 4) confidence amongst lawmakers that funding is achieving outcomes.</p>	

Recommendation: 2(b) Increase collaboration at the local, state, and federal levels to address arctic science and research and empower local stakeholders to identify regional priorities through an NSSI-like effort with an expanded geographic scope for the entire Arctic region, without compromising current mission of effectiveness.	
Status: Expand on current efforts	Timeline for Action: Short Term
Justification: Coordination and prioritization of research activities must be improved. Federal interagency efforts in this sphere are already substantial and a number of them include state agency participation. The federal government has called for a review of interagency activities in the Arctic in order to identify and address overlapping missions and reduce duplication of effort, which should include evaluation of state and local engagement. The state of Alaska has an increasingly important role to play in the review and in the crafting of recommendations for how to more wisely use limited capacity to address Arctic science and research requirements. Alaska should pursue strategies to broaden and strengthen the influence of its agencies, its academic experts, and its local governments and associations. Of significant concern to Alaska is the amount and quality of Alaskan participation in scientific research and federal decision-making, as well as the geographic scope of that coordination through NSSI. The mission of the NSSI is to improve scientific and regulatory understanding of terrestrial, aquatic and marine ecosystems on the North Slope of Alaska. This intergovernmental organization has provided an open forum for discussing resource development activities, climate change, monitoring needs, best practices and other research and inventory issues but is limited to the North Slope and should be expanded for more a comprehensive understanding of the Alaskan Arctic region.	
Lead and Partners: <i>Primary</i> – Department of Natural Resources <u>Supportive</u> <i>State</i> – DF&G, DEC <i>Federal</i> – North Slope Science Initiative, BLM, BOEM, NOAA <i>Other</i> – Alaska Native organizations and co-management groups; NWAB; North Slope Borough	Resources needed: <i>Fiscal</i> – This will depend on scale of support or expansion of the program, but will at the very least increase staff time and travel budgets. <i>Leveraged</i> – Federal agencies committed to a more integrated management of the Arctic and who have identified the State of Alaska and Alaska Natives as partners in stewardship of that region, and for whom federal resources should be expended.
How will it get done: The State of Alaska should not only continue active participation in the NSSI but also a) explore expanding the scope of participation and work for the group; b) consider creating a similarly structured entity for the Northwest Arctic and Bering Straits region, as well as one for the Aleutians and Western Alaska; or c) consider the creation of a similarly structured organization whose scope would include the whole of Alaska’s Arctic region.	
Legislative Actions: 1. Identify common research goals and outcomes by Alaska subregion that can inform the development of a state research agenda 2. Increase efforts to incorporate local and municipal level perspectives in state-federal planning bodies 3. Urge the amendment of Section 348 of the Energy Policy Act of 2005 to require that at least two members on the NSSI’s Science Technical Advisory Panel (STAP) be Alaskans from state agencies, at least three members be Alaskans from the Alaska university system, and at least two members be Alaskans from local government entities.	
Evaluation: Success will be measured by evaluating 1) an increase in engagement opportunities for local, state and federal agency land and resource managers, leading to 2) the development of greater cooperation and partnership that 3) results in streamlining of regulatory processes for more efficiency.	

Recommendation: 2(c) Strengthen efforts to incorporate local and traditional knowledge into research and science and use this collective knowledge to inform management decisions.	
Status: Expand on current efforts	Timeline for Action: Short Term
<p>Justification: In 2012 the ANWTF noted that “the local and traditional knowledge gathered by Alaska’s indigenous peoples over thousands of years is critically important to a fuller understanding of our northern ecosystems and the multitude of marine and land-based resources within them.” The NWTF went on to recommend that “the local and traditional knowledge of the state’s indigenous inhabitants be incorporated into all relevant areas of study” in the Arctic. Alaska laws do require public notice and comment periods related to agency decisions on permits, authorizations and area management plans, but many representatives from local governments and Alaska Native organizations have voiced discontent with the lack of specific reference to traditional knowledge and tribal consultation in that body of law. While the goal of using traditional knowledge in conjunction with conventional research is of considerable importance, there also exists a pressing need for increased investigation into precisely how to effectively and meaningfully do so. In <i>Traditional Knowledge and the Arctic Environment</i>, published by the Pew Charitable Trusts U.S. Arctic Program in August 2013, the authors assert that it is time to assess the use of traditional knowledge to date and ask, “What can be done to make better use of what traditional knowledge has to offer while respecting the time, patience, and expertise of its holders?” This question, and the extent to which state agencies and the university have embraced the incorporation of traditional knowledge, remains challenging.</p>	
<p>Lead and Partners: <i>Primary</i> – DEC</p> <p><u>Supportive</u> <i>State</i> – DF&G, DNR, local government <i>Federal</i> – DOI, BOEM, State Department, NPRB <i>Other</i> – University of Alaska, UArctic, Arctic Council, co-management groups, NSSI, Alaska Eskimo Whaling Commission</p>	<p>Resources needed: <i>Fiscal</i> – Formalization of the practice of engaging local and traditional knowledge holders beyond the current public comment processes would require greater staff and travel budgets for state agencies. <i>Leveraged</i> – Existing interagency efforts provide good opportunities for addressing this topic without a significant increase in funding by the state.</p>
<p>How will it get done: The Governor’s office will have to make this a priority, at some level, in order to facilitate implementation. The state does have public processes that draw on and invite local and traditional knowledge, but discontent from Alaska’s Arctic communities would indicate that the state is simply not doing enough. The Governor should direct state agencies to be proactive in identifying a solution that meets public demand while maintaining effective stakeholder engagement practices in making resource management decisions.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Establish a working group, with members of local government, state agencies, and the university to identify and assess current state practices, producing a report and list of recommendation 2. Invite to committee hearings the testimony of local and traditional knowledge holders 	
<p>Evaluation: Success will be measured in an increase in public confidence in management decisions, and their responsiveness to local and traditional knowledge; an increase in traditional knowledge represented in and co-producing scientific research; the development of standards of use; and an increase in conflict avoidance.</p>	

**Strategic Recommendation #3 –
Support Healthy Communities**

<p>Recommendation: 3(a) Foster the delivery of reliable and affordable in-home water, sewer, and sanitation services in all rural communities.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Short term</p>
<p>Justification: The U.S. Arctic Research Commission has estimated that it would cost \$300 million to provide running water and sewer to all unserved homes and an additional \$427 million to upgrade and replace aging infrastructure at high risk of failure. In response to this unmet need, the state of Alaska’s Department of Environmental Conservation has launched an Alaska Water and Sewer Challenge, in part because this issue is one impacting human health across the state and in the Arctic. In all eight Arctic nations, where distance and geography mean remote communities and often difficult living conditions, governments are working to find effective and affordable solutions. The state of Alaska is well-positioned to take a leadership role in the circumpolar region as innovative and results-driven.</p>	
<p>Lead and Partners: <i>Primary</i> – Department of Environmental Conservation</p> <p><u>Supportive</u> <i>State</i> – Alaska State Legislature, Alaska Housing Finance Corporation, Dept of Commerce, DHSS <i>Federal</i> – Environmental Protection Agency (EPA), Bureau of Indian Affairs (BIA), HUD, Denali Commission; Indian Health Service, USDA, CDC <i>Other</i> – RurAL CAP, engineering companies, utilities, ANTHC</p>	<p>Resources needed:</p> <p><i>Fiscal</i> – Increase funding for DEC Water and Sewer Challenge and plan for future funding of implementation, either as part of a pilot project, public-private partnerships, or international collaborations.</p> <p><i>Leveraged</i> – Support efforts of the Alaska Rural Water and Sanitation Working Group</p>
<p>How will it get done: DEC, as lead state agency, will coordinate state actions, working with other agencies, including federal agencies, to drive this effort. This recommendation impacts the future state of the Alaskan Arctic, but also all Alaskan rural communities; the Commission is mindful of this but encourages DEC to consider drawing on best practices from around the Arctic to deliver new approaches to the Alaskan Arctic. A downscaled, regional approach that includes an Arctic region might provide clearer insight into Arctic-specific needs and solutions.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Conduct or support current efforts conducting a needs assessment 2. Work with DEC to identify communities of highest priority relative to scale of need 3. Invest appropriately in technology, process or infrastructure 4. Facilitate coordination of state and federal agencies, the university, private sector, non-governmental organizations, and international partners 5. Evaluation long-term costs of proposed projects related to water, sewer, and sanitation 	
<p>Evaluation: Success can be evaluated by assessing 1) whether the overall sanitation and related health effects have improved in communities where solutions have been applied, relative to communities where they have not; 2) community members’ opinions about whether needs are better met with new or redesigned infrastructure or technology; and 3) the associated capital, operations and maintenance costs have been reduced.</p>	

<p>Recommendation: 3(b) Conduct a synthesis study of existing Arctic region economic and infrastructure assessments and planning processes that integrate local, regional, state and federal planning efforts.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Short Term</p>
<p>Justification: Local governments across Alaska spend a lot of time and effort developing Comprehensive Economic Development Strategies, as well as other valuable planning documents (e.g. AMATII study). In order to better integrate these individual plans and to contribute to regional strategies in the Alaskan Arctic, the state should encourage more robust and comprehensive planning that responds to regional challenges and opportunities. Important to this effort will be to assess and support new infrastructure that may advance resource development opportunities including oil, gas, mining, transportation, emerging technologies, fisheries. A more coordinated planning strategy will effectively leverage limited resources, avoid duplication of efforts, and deliver socio-economic benefits to Alaskans.</p>	
<p>Lead and Partners: <i>Primary</i> – Department of Commerce, Community & Economic Development <u>Supportive</u> <i>State</i> – Department of Transportation & Public Facilities; Alaska Housing Finance Corporation; Alaska Industrial Development & Export Authority; city and borough governments <i>Federal</i> – Economic Development Administration; Department of Interior; Department of Energy, Denali Commission, Corps of Engineers <i>Other</i> – Alaska Native tribes, corporations, and organizations; private sector companies; ARDORs</p>	<p>Resources needed: <i>Fiscal</i> – Competitive grant to DCCED for agency staff to review and compile a region or sub-regional plan; anticipate and plan for future needs related to planning efforts. <i>Leveraged</i> – Fortunately there are existing studies and reports, CEDS, and transportation plans that can be used to assist in this effort. At the same time, with federal attention on integrated arctic management, there may be an opportunity for increased federal funding through EDA or Arctic initiatives undertaken during the U.S. Chairmanship of the Arctic Council.</p>
<p>How will it get done: DCCED has a well-established history of economic development planning. As the lead agency, it will be responsible for identifying current efforts and organizing a structure for producing region-wide plans. AEA’s regional energy planning, DEC’s sub-area planning, or DNR’s North Slope Plan for state lands and resources (underdevelopment) might provide good examples. DCCED will also coordinate with other state agencies and the federal government to incorporate and leverage funding and interest.</p>	
<p>Legislative Actions –</p> <ol style="list-style-type: none"> 1. Request that DCCED assess previous work and current planning efforts 2. Review framework for region-wide comprehensive plan and identify what can be accomplished with current budget 3. Fund, as necessary, the work necessary to complete the assessment and planning effort 4. Review and revise, as necessary, corresponding permitting processes to ensure agility and flexibility to respond to identified needs 	
<p>Evaluation: Success can be evaluated through metrics that include 1) reduction in duplication and increased engagement between agencies, communities and organizations; 2) increased clarity relative to community and region-wide needs, including development of projects; and 3) ultimately, stabilized and/or growing economic performance.</p>	

<p>Recommendation: 3(c) Evaluate and respond to risks from climate change related to erosion to community infrastructure and services and support community efforts to adapt and relocate when necessary.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Medium Term</p>
<p>Justification: Alaska has been on the front lines of climate change for nearly a decade, as work conducted by the Climate Change Sub-Cabinet will demonstrate. With the Arctic experiencing change at twice the global average, Alaska’s communities and peoples are faced with new and significant challenges and the need to immediately take action is clear. Between the space where villages are faced with relocation and survival, and resource or port development is considered to advance economic opportunity, must be timely and innovative solutions, as well as strategic investment. The Climate Change Sub-Cabinet Immediate Action Work Group identified six communities most imperiled by climate change and in need of immediate action: Shishmaref, Newtok, Kivalina, Koyukuk, Unalakleet, and Shaktoolik. The state and nation have an obligation to move focus at the local level on adaptation measures that help communities better understand risk and respond appropriately. Two elements are central to this effort: the building of human and organizational capacity to adequately move forward and built infrastructure investments that relocate or stabilize existing structures. Ensuring a direct response to the state's most vulnerable resources – its people – during a period of climatic uncertainty and variability, will be of paramount importance.</p>	
<p>Lead and Partners: <u>Primary</u> – Department of Commerce, Community and Economic Development (Division of Community and Regional Affairs) <u>Supportive</u> <i>State</i> – DEC, AIDEA, Alaska Housing Finance Corporation, local governments, DNR/DGGS, DOT/PF, DMVA <i>Federal</i> – Denali Commission, USACE, DOI, FEMA <i>Other</i> – RurAL CAP, Alaska Native regional nonprofits, Cold Climate Housing Research Center</p>	<p>Resources needed: <i>Fiscal</i> – This will require increased capital spending, either for village relocation, erosion mitigation or structure stabilization. <i>Leveraged</i> – Federal agencies will have a primary role, often, in funding and facilitating the response to climate associated risk.</p>
<p>How will it get done: DCCED’s Risk MAP program is a good start to identifying and prioritizing risk, though as a FEMA-funded project it is very specific in the communities it can include. DNR/DGGS has a Climate and Cryosphere Hazards Program (CCHP) that was developed to asses geologic hazards associated with climate variability and change and to publish information that can be used for forecasting and proactive planning, hazard mitigation, and emergency response in high-risk communities and developing areas. DEC can provide a lot of expertise on the topic, and both can work with federal agencies to assess future investment needs. However, if action is to occur it will need to be driven by the Governor, legislature and/or federal government. Associated costs of response are too high to address alone or without commitment from the highest levels. There are communities, such as Newtok, that have plans in place and are waiting for funds to make a move happen.</p>	
<p>Legislative Actions –</p> <ol style="list-style-type: none"> 1. Expand DCCED Risk MAP program 2. Encourage cross-agency collaboration, perhaps through a reconvening of the Climate Change Sub-Cabinet 3. Convene committee hearings with public testimony by local communities, and tribal and local government 4. Request an annual report to Legislature on those communities of imminent concern to monitor progress as well as fiscal needs 5. Partner with communities who are ready to take action now 6. Request that federal agencies designate a single coordinating agency, and identify a designated funding stream, that will be responsive to climate change impacts requiring community relocation 	

Evaluation:

Success will be measured by 1) relocation of highest priority communities; 2) risk mitigation measures implemented in the next level of prioritization; and 3) state-federal investment leveraged effectively for greatest efficiency of effort.

<p>Recommendation: 3(d) Support long term strategic planning efforts that empower local stakeholders to identify and provide input on regional priorities that support and mitigate the risk, and take advantage of the opportunities created, from human activity and assess cumulative impacts thereof.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Short term</p>
<p>Justification: To address complex issues, processes must be strengthened or developed whereby local communities have the opportunity to contribute knowledge, prioritize challenges and opportunities, and assist in the development of approaches or solutions. This needs to be done in collaboration with state and federal officials, who in concert with local subject matter experts explore and evaluate long-term scenarios and objectives. To the extent that this is related to a research and science agenda, it is important to recognize that these provide a baseline assessment of current conditions, have the ability to track and assess cumulative impacts of human activity on an ecosystem, and ultimately assist land and resource managers with making better decisions. Further support should be given to research and development of new technologies, as well as the use of best practices to, for example reduce the risk of hazardous releases in the Arctic. There is mutual benefit to such collaboration as local communities then have the opportunity to meaningfully participate in decision-making processes, including to set and engage in a research agenda; and state and federal agencies, and the scientific community, derive value from local and traditional knowledge.</p>	
<p>Lead and Partners: <i>Primary</i> – Department of Environmental Conservation</p> <p><u>Supportive</u> <i>State</i> – DNR, DHHS, local governments <i>Federal</i> – CDC, NOAA, BOEM, BLM, NSSI <i>Other</i> – University of Alaska; tribal organizations, co-management groups</p>	<p>Resources needed: <i>Fiscal</i> – None or little initially.</p> <p><i>Leveraged</i> – Existing structures provide an opportunity to reorient discussions toward inclusive strategic planning, both at the state and federal level. Additionally, inter-regional local government interaction can provide important guidance and engagement opportunities.</p>
<p>How will it get done: The state of Alaska will evaluate state agency efforts at collaboration, as well the impact of state-federal or state-local interaction, and produce a recommendation either for best practice or potential pilot model. Additionally, the state will engage with IASC and/or the Alaska State Committee on Research, or ARCUS to determine the best approach for assessing and mobilizing the scientific community. The Health Impact Assessment, NSSI Scenario Planning, DNR area and management plans, and Northwest Arctic Borough Planning Commission all have established processes and information that can be built upon.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Evaluate the membership of the Alaska State Committee on Research and consider adding legislative members 2. Invite Governor’s office to present in committee about current strategic planning and inter-agency activities 3. Consult with local governments to determine effectiveness of current programs and/or opportunities for increased stakeholder engagement beyond legislative process. 	
<p>Evaluation: Success will be measured by 1) development of a strategic plan related to environmental change and assessment; 2) increase in the extent to which local communities have been involved and see their input reflected in the outcomes; and 3) legislature more informed about cumulative impacts of human activity in the Arctic.</p>	

Recommendation: 3(e) Reduce power and heating costs in rural Alaskan Arctic communities.	
Status: Expand on current efforts	Timeline for Action: Short Term 2015
<p>Justification: Economic stability and economic opportunities have a profound effect on the social stability and characteristics of a community. In the Arctic, energy prices have an outsized and interconnected effect on these two issue areas. The communities that derive their power from stand-alone grids have, to a large degree, similar negative economic outlooks. Arctic communities simultaneously suffer from joblessness and decreasing amounts of public support. High energy costs discourage private investment, which in turn creates high unemployment and social dependence. While not solely an Arctic issue, addressing the energy needs of Arctic communities is a critical and fundamental first step to supporting their economic and social well-being. Applied and basic research is an underutilized or undeveloped resource that Alaskans need to be able to count on to develop new solutions to the challenge of remote power and heat, through identification of emerging energy technologies, increased efficiencies, or leveraged resource development infrastructure. Communities have a practical capacity that can be leveraged, such as the wind energy program in Kotzebue. Emphasis should be on cold-weather design and engineering, exploration of local and/or renewable sources, and integrated systems; as well as to investigate alternative approaches that are less costly to build, operate and maintain housing and utilities in Arctic communities. Diversifying energy sources and supporting innovation that translates to practical application will help promote the development and maintenance of affordable and safe housing, including working with interested parties within the United States and other Arctic nations to investigate alternative approaches that are less costly to build, operate and maintain housing and utilities in Arctic communities.</p>	
<p>Lead and Partners: <i>Primary</i> – Alaska Energy Authority</p> <p><u>Supportive</u> <i>State</i> – DCCED, AHFC <i>Federal</i> – NREL, DOE, BOEM, DOI, Denali Commission; Association of Alaska Housing Authorities <i>Other</i> – Alaska Center for Energy and Power; Cold Climate Housing Research Center; Renewable Energy Alaska Project</p>	<p>Resources needed: <i>Fiscal</i> – Sustain and/or increase investment in the emerging energy technology fund, renewable energy fund, as well as others. <i>Leveraged</i> – NREL’s Rural Community Renewable Energy program and micro-grid activities provide a strong framework for partnership. Additionally, Alaska has critical assets in the form of ACEP, CCHRC and REAP, all of whom provide subject matter expertise beyond the capacity of state agencies.</p>
<p>How will it get done: The Alaska Energy Authority has a very broad, and under-resourced, mandate to address the energy needs of Alaskan communities. To that end, AEA should convene a working group that will examine the research capacity of the university, private sector, and within the local community, and leverage that public-private network for research and development of new energy technologies that expands the diversity of available energy supply sources that can provide additional benefits to end users. At the same time, AEA should consider something like DEC’s Sewer and Water challenge, in the form of an X-prize competition that would stimulate real-world applications of research to an Arctic environment.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Evaluate the 2010 state energy policy for return on investment and a review of goals and objectives met. 2. Committee hearings should invite energy researchers to present on new and emerging energy technologies and processes. 3. Encourage the Alaska Energy Authority to strengthen university, agency and private sector collaboration in planning and program implementation, as well as training and education for local communities. 4. Consider funding an X-prize energy competition. 	

Evaluation:

Success will ultimately be measured in the direct and indirect reduction of the cost of heating and power costs in the Alaskan Arctic. However, in the medium term, this effort should be evaluated by 1) an increase in university, state agency, and private sector collaboration; 2) an increase in applied research, perhaps as collaborations between companies and the university; and 3) an increase in these priorities being included and emphasized in federal research proposals.

<p>Recommendation: 3(f) Develop and support education of the public and outreach efforts that enhance the understanding of the conservation of Arctic biodiversity and sustainable use of biological resources.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Short Term</p>
<p>Justification: Alaskans depend on healthy ecosystems, on access to and the ability to harvest natural living resources like fisheries or wildlife. For some, this may be recreational, others an economic necessity, and for Alaska Natives a cultural priority. Alaskans have an obligation, too, to ensure these resources for use by future generations. However, the systems upon which Alaskans depend are often not completely understood, especially as they relate to biodiversity or ecosystem health. A baseline assessment of these, as well as a tracking of trends and patterns in the face of change, determines the resource availability and use, and Alaskans’ understanding of both. To make informed decisions about these resources, public awareness is important and critical. Increased public education and outreach efforts should lead to a more informed public who is interested in and knowledgeable about the biodiversity of a healthy ecosystem, as well as threats to that health. Public awareness should include species, habitats, ecosystem structure, processes, functions and stressors. At the same time, education programs should address the interplay between humans and ecosystems, the dynamism in naturally occurring processes and those that fall outside natural variability.</p>	
<p>Lead and Partners: <i>Primary</i> – Department of Fish & Game <u>Supportive</u> <i>State</i> – DNR, DEC, Board of Fisheries, Board of Game, local governments <i>National</i> – NOAA, DOI, NPRB, NMFS <i>Other</i> – NPFMC, CAFF, NSSI, AOOS</p>	<p>Resources needed: <i>Fiscal</i> – The most effective way for this to take place would be through a grant competition open to eligible applicants. <i>Leveraged</i> – There are multiple national and international efforts underway, so process should focus on highlighting current practices and research.</p>
<p>How will it get done: DEC should include a request to the legislature in the next budget cycle or otherwise identify a funding and organizational mechanism for this to occur. The grant competition should prioritize grantee knowledge of and responsiveness to not only Alaskan experts and expertise, but international fora such as the Arctic Council’s CAFF working group. Additionally, the successful grantee should have strong relationships with local government and industry partners who can contribute their science and research as well as stakeholder engagement.</p>	
<p>Legislative Action:</p> <ol style="list-style-type: none"> 1. Review of locally-driven subsistence mapping projects through invited testimony, including related testimony from local stakeholders and research institutions 2. Consideration of DF&G budget request for grant competition 	
<p>Evaluation: Success will be measured through an increase in public awareness of these issues, possibly through a poll for current state of knowledge, which could be updated every year. This would be the responsibility of the successful grantee in a report to the Legislature.</p>	

<p>Recommendation: 3(g) Develop a mechanism for revenue sharing from resource extraction for impacted communities, where lacking, for immediate impacts as well as needs beyond the life of non-renewable resources.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Medium Term</p>
<p>Justification: As the state of Alaska advocates for additional development opportunities onshore and offshore in the Alaskan Arctic and seeks more advanced capabilities for emergency preparedness and response, there must also be due consideration given to how communities impacted by that development will benefit. With declining North Slope oil production, industry access to federal land and Outer Continental Shelf (OCS) waters is critical to future exploration and development success, and ultimately to Alaska’s economic stability. Those Alaskans nearest that activity have an opportunity to support development directly by providing services, considering job opportunities and even equity investment in projects. However, state revenue sharing does not have the flexibility to direct revenue from a specific project to benefit a specific community near that project. At the same time, communities are hopeful that project development might also mean investment in schools, roads, utilities, with tangible socio-economic benefits. This will be challenging but important in how the state sets its priorities. A complicating factor will be the opportunity for federal revenue-sharing, and whether that is directed at local government, state government or Alaska Native organizations. The state of Alaska should continue to be a vocal proponent of federal revenue sharing.</p>	
<p>Lead and Partners: <i>Primary</i> – DCCED Division of Community and Regional Affairs</p> <p><u>Supportive</u> <i>State</i> – DNR, AIDEA, local governments <i>National</i> – EDA, BOEM, Congress <i>Other</i> – Alaska Native corporations and organizations, AML, ARDORS</p>	<p>Resources needed: <i>Fiscal</i> – No additional resources are necessary at this time, or in implementation, depending on the scenario.</p> <p><i>Leveraged</i> – Current state practices, AIDEA’s ability for public private partnerships, local government, industry stakeholder engagement, and federal efforts can all be utilized to offset review and analysis, and possibly implementation.</p>
<p>How will it get done: DCRA will review successful best practices for impact benefit agreements, which have traditionally been executed between a company and indigenous government, and also review the fine process for violations to see if those resources are coming back to communities. Based on this analysis, and after considering the current state revenue sharing mechanism as well as other options, DCRA will make a recommendation to the Governor’s office and/or State Legislature. It is envisioned that scenarios include 1) creation of mechanism within current statute to direct benefit to impacted community; 2) encourage the state of Alaska to act as facilitator between industry and community; 3) create within AIDEA the ability to negotiate revenue sharing, possibly in the form of infrastructure investment; and 4) work outside the state structure to implement.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Review of DCRA proposal and consideration of recommendations therein 2. Conduct hearing on offshore development to assess opportunity and risk, as well as to ascertain federal response to both. 3. Initiate a community savings account and process to anticipate and fund future needs 	
<p>Evaluation: Success will be measured by 1) the state’s ability to create a funding stream from Arctic development that supports the socio-economic needs of impacted communities and 2) an increased ability for a community to respond to the question “who benefits?” with “we do.”</p>	

Recommendation: 3(h) Promote the food security of Arctic peoples and communities.	
Status: Expand on current efforts	Timeline for Action: Short Term
<p>Justification: Increased change taking place in the Arctic, as well as weather variability, changing ice freezing patterns, more frequent and intense storms, and higher temperatures combine to make access to food resources uncertain. At the same time, an increase in toxins, emerging diseases, altered migration routes, and decreased sea ice extent and stability produce an unpredictability to long established hunting, fishing and gathering harvest patterns. This, in communities that are paying some of the highest energy and food prices in the world. Food security, however, must be considered as more than ensuring communities are free from hunger, or ensuring affordability and accessibility. In the Arctic, for indigenous peoples, food security is a fundamental priority that extends to cultural as well as environmental or economic health. While economic and resource development activities will address one portion of socio-economic concerns, they cannot displace cultural dependence on the living resources of the region. With this in mind, future development will need to respond to local concerns for food safety and ecosystem health, keeping in mind the social license of the people who live there. Greater awareness of the cultural context that food security demands will be important.</p>	
<p>Lead and Partners: <i>Primary</i> – Department of Fish and Game</p> <p><u>Supportive</u> <i>State</i> – DNR, DCCED, DHSS, local government <i>National</i> – NOAA, NPS, FWS <i>Other</i> – Arctic Council; Inuit Circumpolar Council; Alaska Native tribes, corporations and organizations; University of Alaska</p>	<p>Resources needed: <i>Fiscal</i> – None.</p> <p><i>Leveraged</i> – Increased cooperation and communication between state and federal agencies, local government and Alaska Native organizations should result in effective promotion of food security without additional resources being needed.</p>
<p>How will it get done: DF&G has existing protocols in place to address food security concerns and has decades of experience ensuring the sustainable yield of living natural resources. It can provide a leadership role in increasing collaboration between agencies and organizations with concern for and management of fisheries. The state will facilitate efforts ensure subsistence activities are supported for arctic residents.</p>	
<p>Legislative Actions –</p> <ol style="list-style-type: none"> 1. Invite regular testimony in committee hearings to assess the sustainable management of local marine and terrestrial subsistence animals, fisheries, and flora. 2. Consider a food security policy as it relates to the cultural health of indigenous peoples as well as the well-being of all Alaskans. 3. Explore solutions to current limitations on serving locally harvested food in schools and other public service buildings, e.g. hospitals etc. 4. Support DF&G programs that support access to and harvesting of subsistence foods and with the participation of local and indigenous peoples, continue to support the development of a cohesive and comprehensive Arctic wildlife policy, including the identification and assessment of climate-related impacts and threats at the community level. 	
<p>Evaluation: Success will be measured by increased attention to and agency response to food security concerns.</p>	

<p>Recommendation: 3(i) Lead collaborative efforts between multiple levels of government to achieve greater access, coordination and predictable regulatory standards to ensure permitting certainty and robust environmental protection.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Long Term</p>
<p>Justification: Alaska has some of the most sophisticated interagency coordination and permitting processes in the country, with the expertise, experience and commitment to safely to develop the Alaskan Arctic’s vast resources. Our federal partners need to improve coordination between their agencies, and should look to the state’s system as a possible model.</p>	
<p>Lead and Partners: <i>Primary</i> – DNR, Office of Project Management & Permitting <u>Supportive</u> <i>State</i> – DEC; Department of Law <i>Federal</i> – DOI, Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska; EPA; Corps of Engineers; BOEM; BSEE <i>Other</i> – Local governments; private sector industry; Alaska Native tribes, corporations, and organizations; Trade groups; Environmental groups</p>	<p>Resources needed: <i>Fiscal</i> – Department of Natural Resources staff would be funded to lead interagency coordination. <i>Leveraged</i> – There is an existing federal interagency group looking at permitting and with integrated arctic management priorities, there may be additional federal funds to put toward facilitating greater coordination.</p>
<p>How will it get done: For over 50 years state agencies, including the Department of Environmental Conservation, the Department of Natural Resources, the Department of Fish and Game and the Department of Transportation and Public Facilities have provided thorough environmental oversight for exploration and development activities in the Arctic. The state of Alaska leads and participates with federal agencies in several collaborative working groups on permitting. As the lead agency, DNR should draw on history and previous experience, to continue to lead federal agencies in a collaborative work group, such as the Regional Interagency Working Group, to discuss increased resource development activity in the Arctic and support efficient processes that respect environmental concerns.</p>	
<p>Legislative Actions:</p> <ol style="list-style-type: none"> 1. Request DNR to lead interagency work group meetings on permitting and regulatory standards. 2. Request DNR interagency work group look at ways to increase coordination between universities, research institutions, industries, trade groups, local communities, tribes, regions and, when appropriate, neighboring Arctic nations, to identify future needed baseline data collection, research and monitoring and to enhance sharing and accessibility of scientific data to better inform state and federal permitting and protect the environment. 3. Review and revise as necessary the current permitting process so that it allows sufficient time for meaningful community participation and input. 4. Provide funding for local governments and boroughs to be involved in working group meetings 	
<p>Evaluation: Success should be measured by 1) decreased time for permitting and regulatory applications to be reviewed, 2) local communities feel as though they have an opportunity to provide meaningful input, and 3) greater interest from industries looking to invest in Alaska, i.e. foster a competitive investment environment.</p>	

<p>Recommendation: 3(j) Create workforce development program to prepare Arctic residents to participate in all aspects and phases of Arctic development.</p>	
<p>Status: Expand on current efforts</p>	<p>Timeline for Action: Medium Term</p>
<p>Justification: Emerging resource development opportunities and the opening of maritime routes will create increased demand for workers in trades such as construction of industrial infrastructure, equipment operations, carpentry and architecture for new structures and housing, food and tourism services, scientific research, as well as other entrepreneurial pursuits that build from new activities. Many of these activities demand skilled labor and/or postsecondary education including, for example, education for entrepreneurship that capitalizes on an individual’s ability to turn ideas into action. Ongoing public investment in construction, infrastructure, and resource development projects in Alaska will require active attention to providing training and education resources. Qualifications for employment are often as straightforward as having a driver’s license or clean drug and criminal record, though rural Alaska suffers from unemployment rates far above national and state averages and Alaska Native unemployment rates are over 25 percent. The largest job growth is forecasted to be health care and social assistance, mining, construction, and the leisure and hospitality sector, all above the 12 percent for all industries combined (2010-2020). Consideration should be given to all aspects of development projects, including research, monitoring, regulatory oversight, project development, construction, operation, remediation, and reclamation, as well as ice navigation, marine mammal observation, spill response, SAR, pilotage, and engineering.</p>	
<p>Lead and Partners: <i>Primary</i> – Alaska Department of Labor and Workforce Development (DLWD) <u>Supportive</u> <i>State</i> – Alaska Workforce Investment Board (AWIB); Division of Teaching & Learning Support, Career Technical Education; DLWD, Alaska’s Institute of Technology, Alaska Technical Center (Kotz) <i>Federal</i> – U.S. Coast Guard, Dept. of Labor, EDA <i>Other</i> – Alaska Process Industry Careers Consortium (APICC); Alaska Marine Pilots; Alaska Native tribes, corporations, and organizations; University of Alaska and its branch campuses; Iñisaġvik Tribal College; private sector mentorships and apprenticeship programs</p>	<p>Resources needed: <i>Fiscal</i> – Fund DLWD/AWIB agency staff to develop targeted workforce development plan for the northern region. <i>Leveraged</i> – Federal resources should be applied to Arctic workforce development as an emerging field of study. Additionally, there are numerous programs that could incorporate or co-develop an Arctic training and workforce program.</p>
<p>How will it get done: The state of Alaska has many resources already focused on workforce development – AWIB, DEED, CTE, AVTEC, ATC. Job and workforce planning will have to incorporate innovative ideas that are applicable to the Arctic and its unique set of challenges - the current <i>Alaska Integrated Workforce Development Plan</i> mentions “arctic” once, in relation to offshore oil fields. AWIB has a history of working with industries to develop targeted workforce development plans, see Construction Workforce Development Plan and Alaska Health Workforce Coalition Plan for examples, and continued work could focus on industries important to the Arctic.</p>	
<p>Legislative Actions –</p> <ol style="list-style-type: none"> 1. Request that AWIB implement plans already in place, as well as assess current job market for gaps, emerging job markets, such a renewable energy and energy efficiency subsectors, and form strategies and priorities for an Arctic Workforce Development Plan that connects the dots between regional plans. 2. Request that AWIB convene a working group to look at education programs that support entrepreneurship all the way from primary school thru postsecondary education promoting skills that foster creativity, initiative, innovation as well as specialized knowledge about business development. 3. Fund, as needed, the work necessary to complete implementation, recurring assessments and updates to develop plan(s). 	

4. Evaluate current workforce development strategies for effectiveness in rural Alaska.

Evaluation:

Success will be evaluated by lower unemployment rates and increases in the percentage of Alaskans filling available jobs (versus a seasonal workforce that commutes from out of state) and increase in local entrepreneurs establishing a social or commercial activity .

Strategic Recommendation #4 –

Promote economic development – that responds to culture, society and the environment – of Alaska’s Arctic resources

Recommendation: 4(a) Update hydrocarbon and mineral resource mapping and estimates in the Alaskan Arctic.	
Status: Support current efforts	Timeline for Action: Long Term
Justification: DNR’s Division of Geological and Geophysical Surveys has the statutory authority to “conduct geological and geophysical surveys to determine the potential of Alaskan land for production of metals, minerals, fuels, and geothermal resources...” (Alaska Statutes Sec. 41.08.020). The USGS estimates that the circumpolar Arctic region could hold about 13% of the world’s undiscovered oil reserves. While this certainly can make the Alaska attractive for investment, other formidable challenges such as distance and geography could be alleviated, in part, through greater certainty from mapping.	
<p>Lead and Partners: <i>Primary</i> – Alaska Geospatial Council, via Department of National Resources, Dept. of Geological and Geophysical Surveys</p> <p><u>Supportive</u> <i>State</i> – Univ of Alaska, Department of Mining and Geological Engineering; DNR Division of Mining, Land, and Water; Geographic Information Network of Alaska (GINA) <i>Federal</i> – Dept of Interior, USGS; EPA; Arctic Environmental Response Management Application (ERMA) <i>Other</i> – private sector companies; Alaska Native tribes, corporations, organizations; Alaska Miners Association</p>	<p>Resources needed: <i>Fiscal</i> – Legislative grant to DNR for agency staff to review current work and develop plan to address most pressing needs and high potential locations. As the Alaska Geospatial Council has been established, this coordinating body should be funded adequately to collect elevation data for the entire state.</p> <p><i>Leveraged</i> – GINA can be used as the existing mechanism for sharing and Arctic ERMA may use topographic data to help facilitate coordinated emergency responses across the state. Existing interagency mechanisms are established and should be used efficiently. Federal agencies have much to gain from any mapping data and should contribute funds accordingly.</p>
How will it get done: DNR has a well-established history of mineral and natural resource mapping and the recently formed Alaska Geospatial Council is expected to consider the Arctic as a high priority. See the Airborne Geophysical/Geological Mineral Inventory as an example that has already identified 40 million acres of state land with high potential for mineral deposits. However, the state has only mapped about an eighth of those 40 million acres (as of February 2013). As the lead agency, it will be responsible for identifying current efforts and organizing a plan to coordinate various efforts by other entities with an eye toward prioritizing high potential areas, as well as initial assessments for unmapped areas.	
<p>Legislative Actions –</p> <ol style="list-style-type: none"> 1. Request that DNR assess previous work and current mapping efforts and strategically plan for immediate needs and long term investments 2. Fund, as needed, the work necessary to complete the assessment and planning 3. Evaluate the effectiveness of current strategy for mapping and explore collaborative investment to meet goal of updating hydrocarbon and mineral resource mapping and to refresh existing (but often incomplete) imagery. 4. Review and revise, as necessary, the process for long term data storage, management, and promoting the shared use of data. 5. Increase as needed the funding to DNR to complete mapping the state. 	
<p>Evaluation: Success will be evaluated by 1) the percentage of Alaska mapped for hydrocarbon and mineral resources estimates and 2) the extent to which this data is openly accessible to, and used by, the public.</p>	