

02/04/14

Presentation:
Alaska
Arctic
Policy
Commission

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Arctic Policy
Commission</SUBJECT><COMM>SWTR28</COMM></TARGET>

Alaska Arctic Policy Commission
Senate World Trade and House Economic
Dev., Trade & Tourism Committees
Juneau, Alaska | February 4, 2014



Russian
Arctic

2,089,000

European
Arctic

1,280,000

American
Arctic

827,000

Arctic Council Chair



US National Strategy for the Arctic Region

2009

1. Increase our understanding of the Arctic region and its potential for economic development and scientific research.

2. Strengthen our leadership in the Arctic region and our ability to respond to challenges and opportunities.

3. Promote the responsible and sustainable development of the Arctic region.

4. Enhance our ability to respond to natural resource management and environmental protection in the Arctic region.

5. Increase our ability to respond to security and defense challenges in the Arctic region.

6. Increase our ability to respond to human health and safety challenges in the Arctic region.

7. Increase our ability to respond to climate change and environmental protection challenges in the Arctic region.

8. Increase our ability to respond to Arctic region governance and international law challenges.

9. Increase our ability to respond to Arctic region infrastructure and transportation challenges.

10. Increase our ability to respond to Arctic region education and workforce development challenges.



Bering Strait

STRATEGIC RECOMMENDATIONS
Support Operations Search and Rescue (OSR) Patrols

• Encourage and advocate for more adequate funding so that the U.S. Coast Guard can carry out its assigned and emerging duties in the U.S. maritime Arctic under its responsibility to monitor all activities throughout Alaska.

Port Clarence

Nome

Anchorage

Jungau

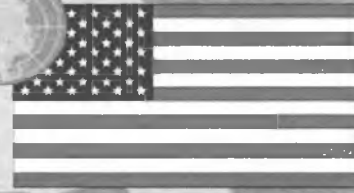
DC Giving More Attention to the Arctic



2013 to 2015



2015 to 2017



US National Strategy for the Arctic Region

Guiding Principles:

- Safeguard peace and stability
- Make decisions using best available information
- Pursue innovative arrangements
- Consult and coordinate with Alaska Natives

Three lines of effort:

- Advance United States Security Interests
- Pursue Responsible Arctic Region Stewardship
- Strengthen International Cooperation

Role of the AAPC in this process: Providing Alaskan expertise, highlighting priorities and emerging challenges, raising Awareness in Lower 48 about Arctic

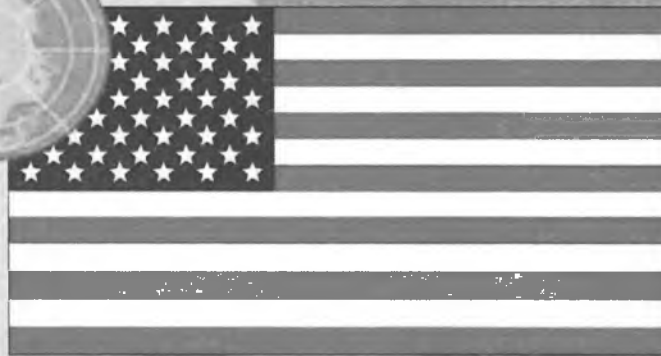
January 30, 2014 -- NSAR Implementation Plan Released

Arctic Council Chair

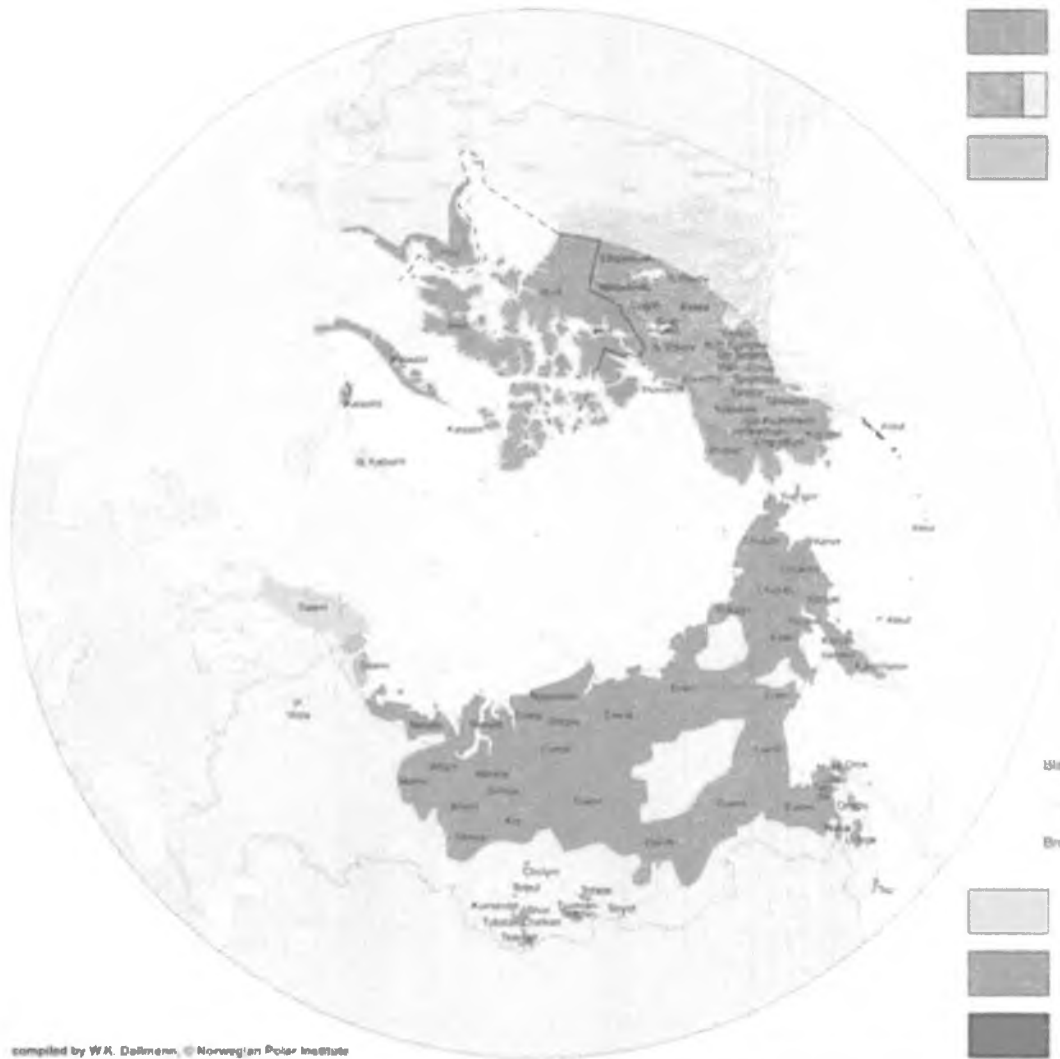
2013 to 2015



2015 to 2017



Strategy for the Arctic Region



-  Inuit Circumpolar Conference (ICC)
-  Arctic Athabaskan Council (AAC)
dark area of potential member communities (north of 60°)
light and dark Athabaskan cultural area
-  Gwich'in Council International (GCI)

Permanent Participants of the Arctic Council

Permanent participation is equally open to other Arctic organizations of indigenous peoples with majority Arctic indigenous constituency, representing

- a a single indigenous people resident in more than one Arctic State; or
- b more than one Arctic indigenous people resident in a single Arctic State

- Black indigenous peoples represented by the Permanent Participants
- Other indigenous peoples living in Arctic Council member countries (for USA only Alaska)
- Brown Potential member groups of the AAC. The AAC represents selected communities not peoples.

-  Saami Council (SC)
-  Russian Association of Indigenous Peoples of the North (RAIPON)
-  Aleut International Association (AIA)

compiled by W.A. Dalén, Norwegian Polar Institute



Arctic Council Membership

Alaska Arctic Policy Commission

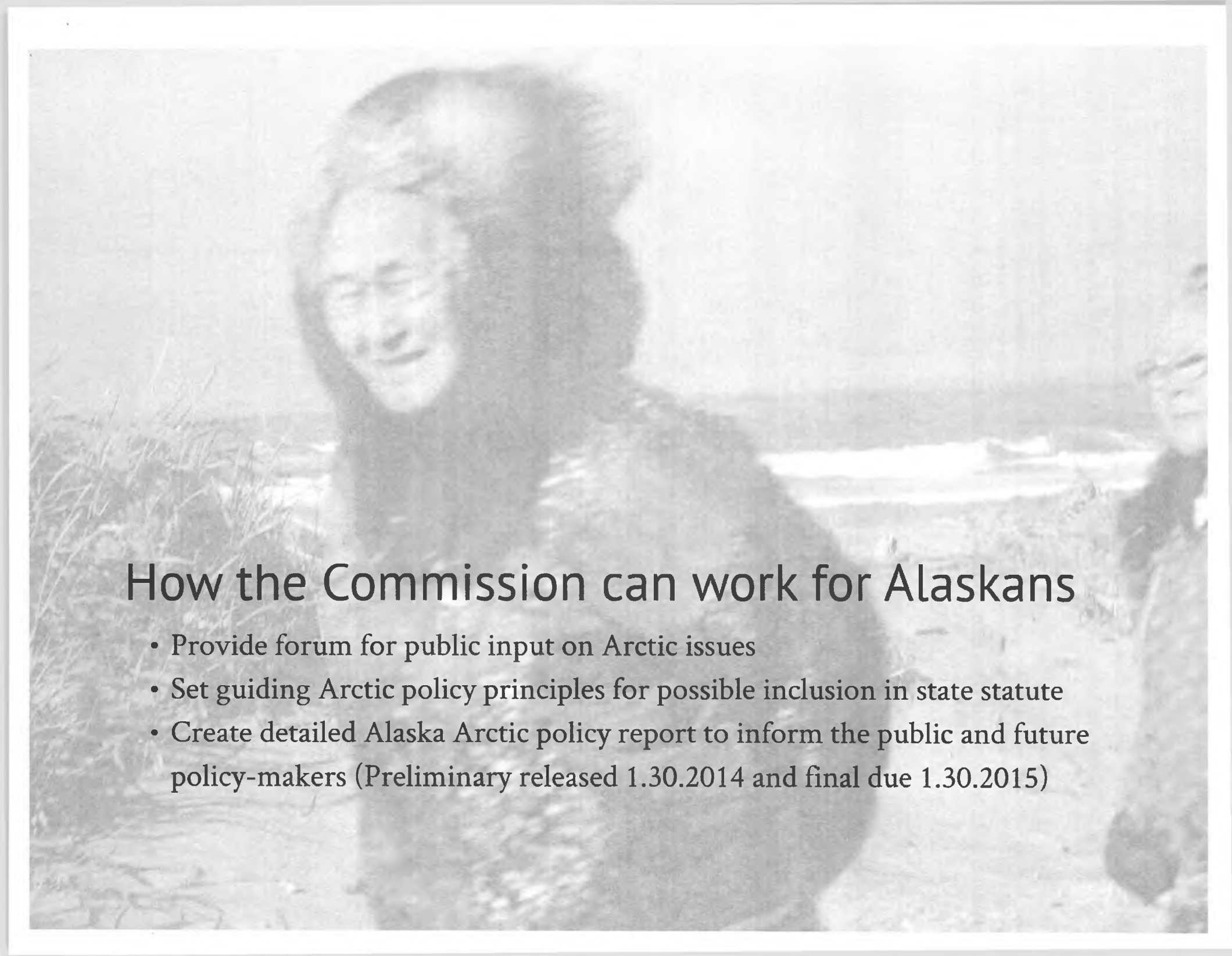
26-member Commission formed within the Alaska Legislature in April 2012:

5 Senators and 5 Representatives

1 Executive branch member appointed by the Governor

15 Members appointed jointly by the President and the Speaker:

- Federal government
- A tribal entity
- Mining industry
- Oil & gas industry
- An Alaskan university or college
- Fisheries
- A local government
- A coastal community
- An int'l Arctic organization
- A conservation group
- Marine transportation industry
- A Native corporation
- Marine pilots



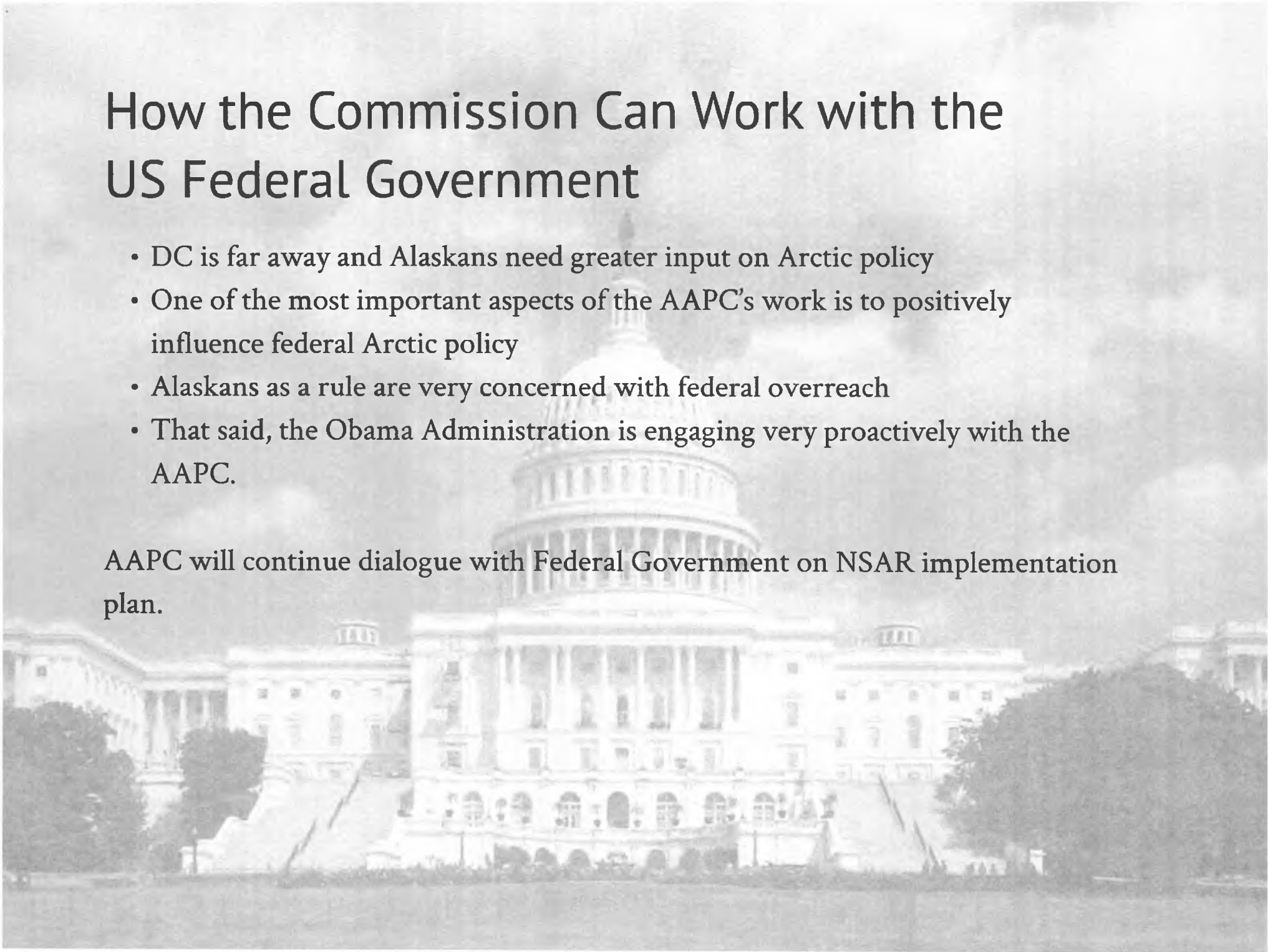
How the Commission can work for Alaskans

- Provide forum for public input on Arctic issues
- Set guiding Arctic policy principles for possible inclusion in state statute
- Create detailed Alaska Arctic policy report to inform the public and future policy-makers (Preliminary released 1.30.2014 and final due 1.30.2015)

How the Commission Can Work with the US Federal Government

- DC is far away and Alaskans need greater input on Arctic policy
- One of the most important aspects of the AAPC's work is to positively influence federal Arctic policy
- Alaskans as a rule are very concerned with federal overreach
- That said, the Obama Administration is engaging very proactively with the AAPC.

AAPC will continue dialogue with Federal Government on NSAR implementation plan.



AAPC Letter of Intent

Sent to State Department and White House on 6.28.13

Early letter from AAPC was necessary due to the recent flood of federal Arctic policies and strategies


KEY ASSUMPTIONS:

- State Leadership and Experience Valuable
- Need for Federal/State/Local collaboration
- Need for International Engagement and Governance

EIGHT AREAS OF CONSIDERATION:

- Indigenous Perspectives and Priorities
- Governance
- Oil, Gas, and Mineral Exploration and Development
- Science and Research
- Energy
- Planning & Infrastructure
- Security & Marine Transportation
- Fisheries


AAPC Vision Statements




Values community
sustainability and
thriving cultures



Ensures public safety
and security



Advances economic
development and a
healthy environment



Incorporates transparency
and inclusion into
decision making



An aerial photograph of an offshore oil rig in the ocean. The rig is a large, dark structure with a central tower and various platforms. The surrounding water is a light, hazy blue, and the rig's shadow is visible on the surface.

Strategic Recommendations

Chosen based on high-impact and reasonable effort to implement

16 Strategic Recommendations in these areas:

- Governance and Indigenous Perspectives
- Science and Research
- Planning and Infrastructure
- Oil, Gas, and Mineral Resources
- Security and Defense
- Marine Transportation
- Response Operations: Search and Rescue/Oil Pollution
- Energy and Power
- Fisheries and Wildlife

We'll highlight some specific Recommendations later in the presentation



Barrow

AAPC MEETING, JUNE 12 - 13

Arctic residents stressed the importance of:

- Governance begins at the local level
- Economic development should benefit communities nearest the impact, and include community revenue-sharing
- Food security is a priority
- Research should focus on people and their needs
- Onshore (ANWR, etc.) should be drilled before offshore areas

STRATEGIC RECOMMENDATIONS:

Oil, Gas, and Mineral Resources

- Implement regional planning efforts that allow local stakeholders to identify and communicate priorities such as education, infrastructure, and development, to state and federal agencies.
- Develop a mechanism for revenue sharing from resource extraction for impacted communities, developing perpetual trust funds (where lacking) to finance community needs beyond the life of non-renewable resources.

A black and white photograph of a coastal town, likely Dutch Harbor, with mountains in the background and a field of plants in the foreground. The text is overlaid on the left side of the image.

Unalaska

AAPC MEETING AUGUST 28-29

Dutch Harbor:

- Largest port by seafood volume in US
- Alaska's only true Arctic deep-water port
- Issues related to increased port traffic
- Environmental impact
- Infrastructure needs
- Foreign vessels

STRATEGIC RECOMMENDATIONS:

Marine Transportation

- Encourage development of appropriately integrated systems to monitor and communicate Arctic marine information, and continue state and federal support for programs such as the Alaska Marine Exchange.

Adak

- Westernmost municipality in the United States
- Former location of the Adak Army Base and Adak Naval Operation Base

STRATEGIC RECOMMENDATIONS:

Planning and Infrastructure

- Conduct a comprehensive Arctic region economic and infrastructure assessment and planning process that integrates local, regional, state and federal planning efforts.



Bethel

- Main port on the Kuskokwim and hub for 56 villages in the Yukon-Kuskokwim Delta
- Mostly Yupik population of about 6000

STRATEGIC RECOMMENDATIONS:

Energy and Power

- Develop stable long-term funding mechanisms for state weatherization and energy efficiency programs while continuing robust efforts to find long-term energy solutions.

Nome

Alaska Dept. of Transportation/US Army Corps of Engineers study is seeking the best location for Alaska Arctic Port. An initial feasibility study is directed at a dual-system for Nome and Port Clarence area.

STRATEGIC RECOMMENDATIONS:

Response Operations: Search and Rescue/Oil Pollution

- 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, and a WX C-130 size aircraft hangar(s).
- Expand and support the Department of Environmental Conservation's effort to involve communities through Sub-area Planning and provide local training to maintain limited supplies of oil spill response equipment and to ensure timely, effective and safe response and spill containment.



Bering Strait

STRATEGIC RECOMMENDATIONS:

Response Operations: Search and Rescue/Oil Pollution

- Encourage and advocate for more adequate funding so that the U.S. Coast Guard can carry out its assigned and emerging duties in the U.S. maritime Arctic without compromising its capacity to conduct all missions throughout Alaska.

Port Clarence

Nome

Fairbanks

AAPC MEETING OCTOBER 22-23, 2013

- Hosted by University of Alaska Fairbanks, a center for Arctic research
- Meeting aligning with the Alaska Federation of Natives Annual Convention, October 24-26

STRATEGIC RECOMMENDATIONS:

Science and Research

- Increase 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.
- State agencies should consider adapting successful models – such as the Alaska Department of Environmental Conservation and Yukon-Koyukuk Tribal Communications Protocol – to development agreements with local governments and tribes regarding the use of traditional knowledge and culturally sensitive practices in research and permitting programs.

Photo Credit: Kenneth Tape

A black and white photograph of a city skyline, likely Anchorage, Alaska, with a large mountain in the background. The city buildings are visible in the lower half of the image, and the mountain dominates the upper half. The text is overlaid on the left side of the image.

Anchorage

AAPC MEETING, DECEMBER 9-10

- Review of Preliminary Report
- Emphasized that the Preliminary Report is an evolving document
- Report highlights areas where the Commission may need to focus more attention in 2014, such as National Arctic security and Response Operations.
- Vision and Policy Statements and Strategic Recommendations Work Sessions

STRATEGIC RECOMMENDATIONS:

- National Arctic security and Response Operations are two areas where given the complexity and importance of the issues even more attention and work is needed in 2014.

Challenges in Alaska's Arctic

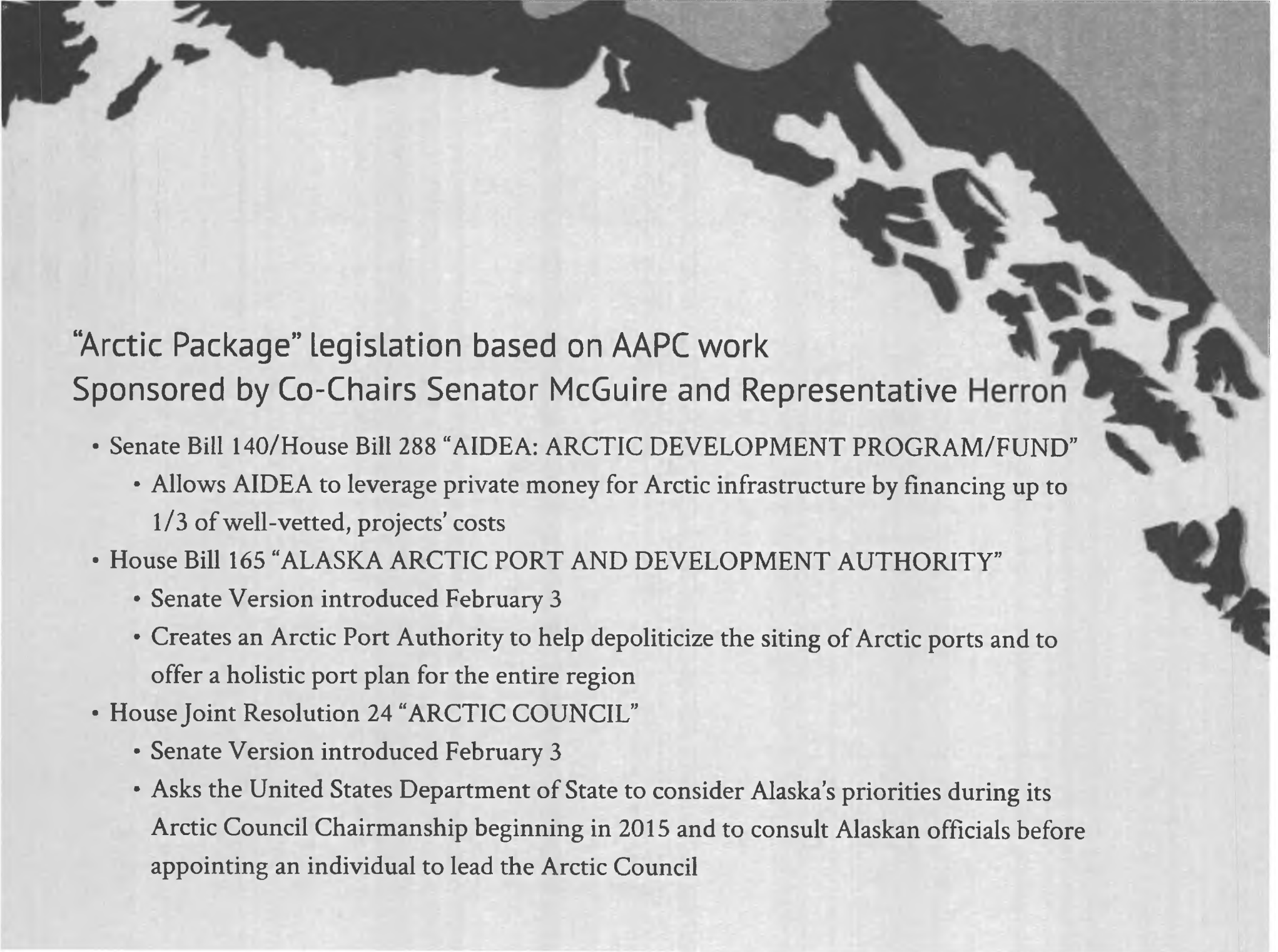
- Huge differences between resource wealth and community prosperity
- Isolated, remote communities
- Lack of infrastructure – energy, transportation, telecommunications, etc.
- Many layers of ownership of land and resources
- Increasingly active Arctic – search for role, way to mitigate risk, and manage expectations

Role of Policy Commission

- Released Draft Alaska Arctic policy report January 30, 2014:
- Including policy statements that provide framework for State of Alaska strategy in the Arctic
- Inform local, state and federal policy makers
- Continue coordination with federal government
- Conduct outreach and education activities to raise the profile of the Arctic both within Alaska, nationally and internationally
- Work on final draft report due Jan. 30, 2015

"Arctic Package" legislation based on APC work
Sponsored by Co-Chairs Senator McGuire and Representative Herron

- Senate Bill 1 (SB1) Hous. Bill 246 (HB246) ARCTIC DEVELOPMENT PROGRAM FINDER
- Alaska ARCTIC Act to create a private policy for Arctic infrastructure financing to 30% of total annual gross state revenue
- House Bill 100 "ALASKA ARCTIC PORT AND DEVELOPMENT AUTHORITY"
- Senate Version introduced February 11
- Creation of Arctic Port Authority to help improve the state of Alaska ports and to offer a robust port plan for the entire region
- House Joint Resolution 24 "ARCTIC COUNCIL"
- Senate Version introduced February 11
- Ask the United States Department of State to consider Alaska's priorities during its Arctic Council Chairmanship beginning in 2015 and to appoint Alaskan officials before appointing an individual to lead the Arctic Council



“Arctic Package” legislation based on AAPC work
Sponsored by Co-Chairs Senator McGuire and Representative Herron

- Senate Bill 140/House Bill 288 “AIDEA: ARCTIC DEVELOPMENT PROGRAM/FUND”
 - Allows AIDEA to leverage private money for Arctic infrastructure by financing up to 1/3 of well-vetted, projects’ costs
- House Bill 165 “ALASKA ARCTIC PORT AND DEVELOPMENT AUTHORITY”
 - Senate Version introduced February 3
 - Creates an Arctic Port Authority to help depoliticize the siting of Arctic ports and to offer a holistic port plan for the entire region
- House Joint Resolution 24 “ARCTIC COUNCIL”
 - Senate Version introduced February 3
 - Asks the United States Department of State to consider Alaska’s priorities during its Arctic Council Chairmanship beginning in 2015 and to consult Alaskan officials before appointing an individual to lead the Arctic Council

Alaska Arctic Policy Commission
Senate World Trade and House Economic
Dev., Trade & Tourism Committees
Juneau, Alaska | February 4, 2014





Preliminary Report
to the Alaska State Legislature

Executive Summary



Alaska Arctic Policy Commission

Co-Chair: Senator Lesil McGuire, Anchorage, 907.465.2995

Co-Chair: Representative Bob Herron, Bethel, 907.465.4942

January 30, 2014

Dear Alaskans,

Alaska is America's Arctic, and the Arctic is changing. All eyes are on this vast, bountiful, and sparsely populated region – this creates new opportunities, and new challenges for Alaska. Across the Arctic and around the world, we have articulated a vision of this region as a vibrant place of activity and possibility. To envision these emerging opportunities is a good start, now we must help bring them to life for the benefit of Alaska and America.

Alaskans must boldly lead the United States in forming a strategy for its Arctic that realizes the state's prominent role in Arctic decision making. Alaskans have a shared responsibility to understand the issues at stake, including the perspectives and priorities of Arctic residents, and to set a clear course for leadership now and into the future.

Planting a flag in the Arctic is like planting a flag on the moon. It is an important symbolic message telling us to push boundaries and move with purpose toward Arctic endeavors. If we can conceive of the Arctic in a new way, a way that mirrors the reality and the way it ought to be—a place of unsurpassed beauty, culture and opportunity—then that is what the Arctic shall be.

Our timely report is consistent with the interest and commitment that our neighbors in the circumpolar north have shown in developing Arctic policies for their homelands. In addition, it coincides with the warranted but past due attention that the United States has given the topic in the last twelve months.

It is our job as Alaskans to seize these new opportunities, while at the same time overcoming new challenges and obstacles. We have trekked far and wide to ensure we received input from Alaskans around our state including Juneau, Barrow, Unalaska, Fairbanks and Anchorage in 2013, with visits to other locations planned in 2014.

2014 is the Year of the Arctic for the Alaska Legislature. There is a need to make sure Alaska is in the captain's seat as arctic decisions are made that will affect all Alaskans today and for hundreds of years to come.

If we act now, we have an opportunity to set the heading. The United States will be Chair of the Arctic Council in two years and it is imperative for Alaskans to develop and pursue our own Arctic vision. We must strive to be the navigator of the Arctic policy vessel.

This monumental undertaking of shaping an Arctic policy cannot be understated. It is easy for vision and leadership to be lost in the complexity of the task. However, we are not lost if we know where we have been, where we are, and where we are headed. This Preliminary Report acknowledges the first, provides a brief overview of the second, and begins to lay out clear guidelines and direction for the third.

To the legislators reading this, we ask you to take the time during this busy legislative session to provide critical and constructive feedback. Your input will help ensure that the Commission has the information it needs to draft what will become a determining and significant policy and implementation plan that shapes Alaska's future and benefits Arctic residents, citizens of the United States, and visitors who share its waters and land.

As fellow Alaskans, we know you recognize that with increasing activity in the region comes both risk and opportunity. We cannot let the perceptions of others determine Alaska's future. The Alaska Arctic Policy Commission is proud to provide this Preliminary Report of the findings and recommendations we have reached over this past year. We hope that you will view this Preliminary Report as a guide for maximizing opportunities and overcoming challenges that come with accepting our role as America's Arctic state.

Our fellow Commissioners, and many other Alaskans who have provided input, deserve our gratitude for their hard work and patience as together we have crafted this document. We look forward to 2014 when we will be gathering more public input, finalizing this report, seeking your "Arctic" appreciation, and producing a strategy for the implementation of Alaska's Arctic policy.

Sincerely,



Representative Bob Herron

Sincerely,



Senator Lesil McGuire

Alaska Arctic Policy Commission



Senator Lesil McGuire
Anchorage
Commission Co-Chair



Representative Bob Herron
South Bering Sea
Commission Co-Chair



Senator Lyman Hoffman
Bethel



Senator Gary Stevens
Kodiak



Senator Cathy Giessel
Anchorage



Senator Donny Olson
Golovin



Representative Alan Austerman
Kodiak



Representative Beth Kerttula
Juneau



Representative Mark Neuman
Big Lake



Representative Bryce Edgmon
Dillingham



Nils Andreassen
Institute of the North
Executive Director
International Arctic
Organization Representative



Dr. Lawson Brigham
Distinguished Professor
University of Alaska
Fairbanks
University Representative



Peter Garay
American Pilots
Association Delegate
Marine Pilots Representative



Chris Hladick
Unalaska City Manager
Local Government
Representative



Layla Hughes
*Conservation Group
 Representative*



Mayor Reggie Joule
*The Native Village of Kotzebue
 Kotzebue IRA
 Tribal Entity Representative*



Stephanie Madsen
*Executive Director
 At-Sea Processors Association
 Fisheries Representative*



Denise Michels
*City of Nome Mayor
 Coastal Community
 Representative*



Liz Qaulluq Moore
*Senior Director, Community &
 Government Affairs
 NANA Regional Corporation
 ANCSA Corporation Representative*



Stefanie Moreland
*Special Assistant to Governor
 Sean Parnell
 Governor's appointee*



Lisa Pekich
*Director of Village Outreach
 ConocoPhillips Alaska
 Oil & Gas Industry
 Representative*



Pat Pourchot
*Special Assistant to the
 Secretary of the Interior
 Federal Government
 Representative*



Steve Scalzo
*Foss Marine Holdings COO
 Marine Transportation &
 Logistics Representative*



Stephen Trimble
*President
 Trimble Strategies
 Mining Industry Representative*



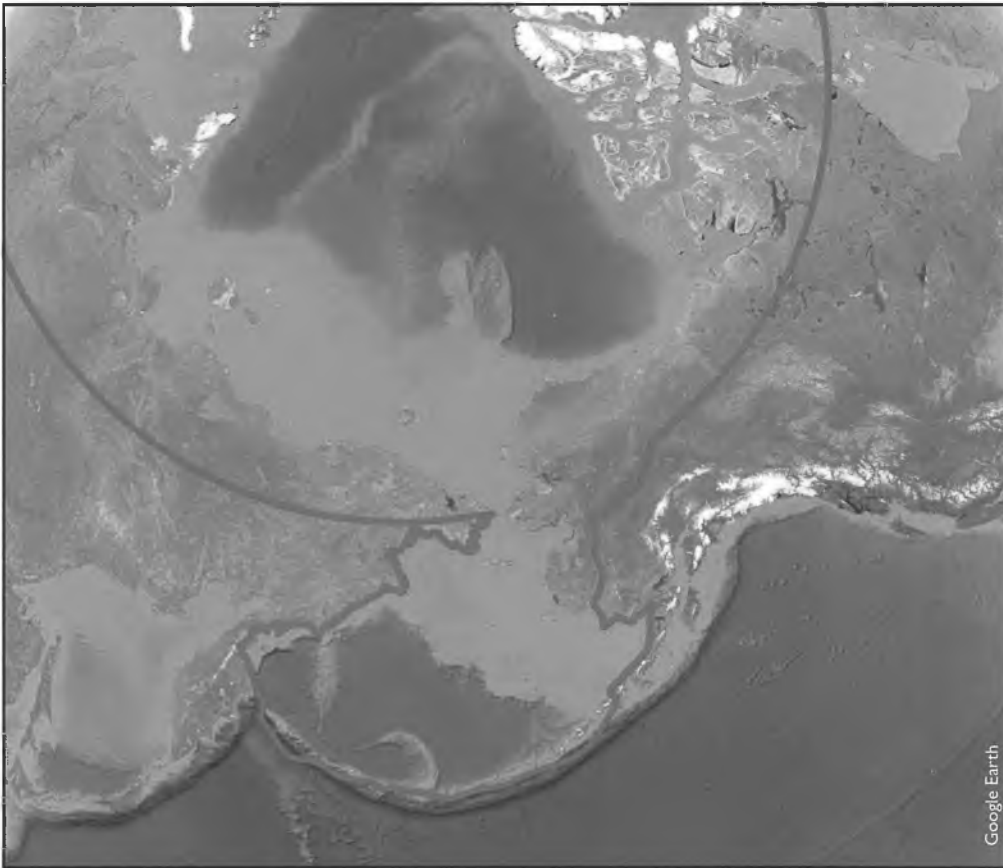
Jake Adams
*Board Member
 Arctic Slope Regional
 Corporation*



Kris Norosz
*Government Affairs Director
 Icicle Seafoods, Inc.*

We would also like to specifically thank these individuals for their input and guidance: Lt. Governor Mead Treadwell; USARC Chair Fran Ulmer; US Coast Guard District 17 Rear Admiral Thomas P. Ostebo; US Coast Guard Arctic Planning/Coordination James Robinson; Arctic Circle Co-founder Alice Rogoff; former Alaska Senate President Drue Pearce; and former Department of Natural Resources Commissioner Dan Sullivan.

Arctic Boundary as defined by the Arctic Research and Policy Act (ARPA)



All United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering and Chukchi Seas; and the Aleutian chain.

The Aleutian chain boundary is demarcated by the 'Contiguous zone' limit of 24-nautical miles.

Northern Hemisphere by Coven's and Mortier (1741)



This map was originally drawn by Guillaume de L'Isle in 1714 and updated by Coven's and Mortier in 1741. This map shows North America at the height of the Colonial period. Alaska does not appear as it was not explored by the Europeans at the time.

Note: California is drawn connected to the mainland with a dotted line—indicating that the European map publishers were not yet prepared to give up on the idea that California was an island.

As befits De Lisle's scientific approach to cartography much of the unexplored northwest of America remains blank.

Introduction

In years to come, Alaskans may ask how citizens of the state - and their government - are working to deal with massive changes coming to the Arctic region. This report of the Alaska Arctic Policy Commission shows that Alaska's leaders are working to understand the local, national, and global impact of an actively changing Arctic. Alaskans are on the forefront of new exploration and use of Arctic resources, and of new circumpolar cooperation.

Alaskans continue to dream big about the possibilities that come with an accessible Arctic, building on the vision and hard work of peoples who have lived here for thousands of years and many more who have contributed to exploring and pioneering in the region. The cultural traditions, beliefs, and practices that have sustained us must themselves be sustained. Alaska's leaders are working to make sure that happens.

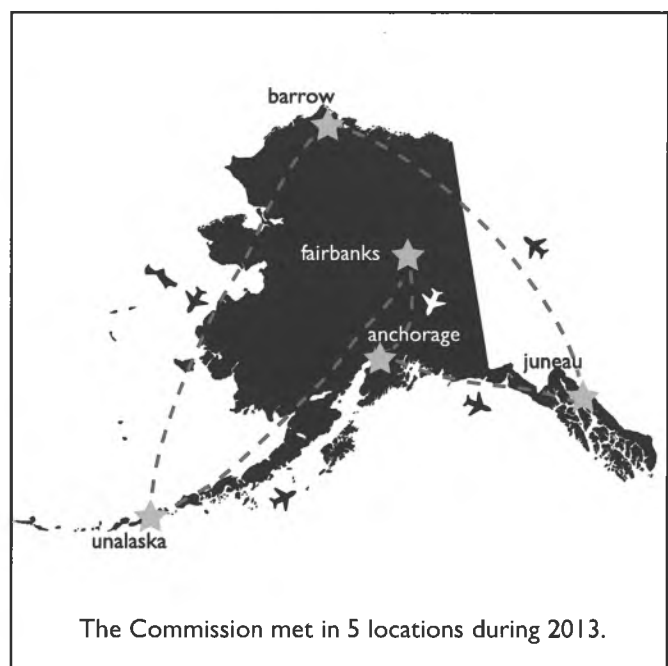
Leaders in Norway, Denmark, Sweden, Finland, Iceland, Russia and Canada - and even non-Arctic nations like Singapore and China - all see the value of the Arctic. Meanwhile, many Americans still do not realize that the United States is an Arctic nation. Providing relevant information about the reality of the emerging Arctic, understanding and communicating the critical issues that affect this frontier, and instilling confidence in the promise of safety and prosperity is essential as Alaska and America move forward to ensure both.



The Alaska Arctic Policy Commission

In April 2012, the Alaska State Legislature established the Alaska Arctic Policy Commission to “develop an Arctic policy for the state and produce a strategy for the implementation of an Arctic policy.” To accomplish these objectives the Commission has conducted a baseline review of the Alaskan Arctic by evaluating strengths, gaps and opportunities, and produced this *Preliminary Report* to the Alaska Legislature. The *Preliminary Report* sets forth a proposed Arctic policy and recommendations, from which Alaska's perspectives and priorities can be better understood by the many decision makers playing active roles in a rapidly changing Arctic.

As highlighted in the Commission's Letter of Intent to Secretary Kerry and National Security Advisor Rice (June 28, 2013), the Commission operated under the “conviction that the state is an active and willing leader and partner in Arctic decision making, bringing expertise and resources to the table.” Furthermore, the Commission remains “committed to producing a vision for Alaska's Arctic that stands the test of time; delivering policy statements that capture not only the opportunity of the Arctic but also the need to mitigate the challenges; and completing a final product that elevates the priorities and perspectives of Alaskans to a national and international stage.”





Agnew+Beck Consulting

The Commission has considered a broad diversity of perspectives, drawing from a wealth of expertise within Alaska, while considering the national and international context of ongoing Arctic initiatives. The *Preliminary Report* includes a “State of Alaska’s Arctic” chapter that summarizes the Commission’s findings and which serves as the basis for its recommendations. The *Preliminary Report* should be considered a draft, with public comment and additional work to be completed throughout 2014 and incorporated into the Final Report.

The Alaskan Arctic

Alaska is the sole reason the U.S. is an Arctic nation. Alaska holds 56% of U.S. coastline, and is 1/5 the size of the entire U.S. with 61.8% of its lands under the control of the Federal Government. Approximately 53,000 people out of Alaska’s total population of 740,000 live in the Arctic region, which has a diverse and fragile ecosystem with considerable natural resource potential. Indigenous peoples have occupied the Alaskan Arctic for thousands of years and today account for about 70% of the total population in mainland areas bordering the Bering, Chukchi, and Beaufort Seas. Local, state, federal and tribal governments; Alaska Native Corporations; and industry have been active in the region for decades.

Increased Global Attention

The U.S. government and policymakers around the world have recently shown increased interest in the Arctic. A record number of non-Arctic nations were granted observer status at the 2013 Arctic Council Ministerial meeting and many of these nations have developed Arctic Strategies in recent years. This interest is due in large part

to significant changes experienced by the region in the last decade, particularly environmental changes such as rapid loss of summer sea ice and melting permafrost. With these developments come a series of new challenges and opportunities with respect to the health, economics, and cultures of Arctic inhabitants; environmental impacts; access to natural resources; commercial shipping and tourism; and security.

Seeking Cohesive Policy in the U.S.

Alaska and U.S. domestic Arctic policy must be coordinated and aligned to achieve key objectives for the benefit of Alaskans and the nation. U.S. international Arctic policy should be a direct extension of sound domestic policy that has meaningful input from, and is endorsed by, Alaskans.

The Alaska Arctic Policy Commission was formed partially in response to efforts by the U.S. government to refine its Arctic policy. It is imperative that U.S. policy for the Arctic reflects the values and interests of Alaskans. The need for Alaska to influence national Arctic policy is about more than informed decision making. A top-down approach to U.S. Arctic policy that fails to build on the substantial knowledge (both traditional and scientific) and expertise of Alaskans would be counterproductive, inefficient, and lack legitimacy in the eyes of Alaskans.

Scope of Issues Addressed by the Commission

For the purposes of its work, the Commission applied the geographic definition of the U.S. Arctic set out in the Arctic Research and Policy Act (ARPA), henceforth called the Alaskan Arctic – from the Aleutians to the Canadian border, west and north of the Porcupine, Yukon and Kuskokwim



rivers. The Commission acknowledges that there are other ways to define the Arctic. For example, some definitions focus on the physical properties of the area, specifically the Arctic cryosphere (i.e., permafrost, sea ice, etc.), and others focus on geopolitical boundaries.

The Commission realizes that many issues facing the ARPA geographic area are similar to, or intertwined with, developments in other regions of Alaska. In fact, much of the dialogue around Arctic issues has relevance to geographic areas of Alaska found outside the “Alaskan Arctic” area as defined by the ARPA.

Although the challenges and opportunities of the Alaskan Arctic region cannot truly be separated from those of the state as a whole, the Commission has focused on those issues specific or unique to the Arctic region. The

Commission did not wholly avoid statewide issues, but when those issues were addressed, they were examined based on how they related to the Arctic region in particular. Using the ARPA-delineated Arctic region also ensured that the Commission’s work product would be in a form that is helpful to U.S. federal agencies, which draw a distinction between federal policy for the Alaskan Arctic and the rest of Alaska. The Commission recognizes that, especially from a national and international perspective, it is often necessary and beneficial for Alaska as a whole to be included in Arctic discussions.

Alaska's Arctic Policy

The Alaskan Arctic Vision Statement

The Alaska Arctic Policy Commission respectfully submits to the 28th Alaska State Legislature for careful consideration this draft policy statement to establish an Arctic Policy for the state of Alaska.

Alaskans recognize the need for a higher level of attention to and deeper understanding of the “emerging Arctic.” Increasing activity, change and opportunity globalization and resource development, a sensitive environment and rich and diverse cultures are now framing the Arctic.

Therefore, the state of Alaska envisions an Arctic that:

- Values Community Sustainability and Thriving Cultures
Alaska will continue to value and strengthen the sustainability of communities and respect and integrate Arctic peoples' cultures and knowledge.



- Advances Economic Development and a Healthy Environment
Alaska will continue its commitment to economically vibrant communities sustained by development activities that recognize the need and our responsibility for a healthy environment.
- Ensures Public Safety and Security
Alaska will provide a safe and secure Arctic for individuals and communities, and coordinate with federal agencies on national defense obligations to enhance Alaska security.
- Incorporates Transparency and Inclusion into Decision Making
Alaska will collaborate with other levels of government, industry, non-governmental organizations, and tribes to achieve transparent and inclusive Arctic decision making that results in more informed, sustainable and beneficial outcomes.





Agnew::Beck Consulting

Therefore, it is the policy of the state of Alaska, as it relates to the Arctic, to:

- Recognize and respect the values and perspectives of the region's indigenous peoples, their cultures, and traditional ways of living.
- Sustain current and develop new approaches for responding to a changing climate that increase community resilience, adaptability and sustainability, as well as promote health and social well-being.
- Manage Arctic fisheries and wildlife for abundance and sustained yield using a science-based, ecosystem approach that integrates local and traditional knowledge.
- Build capacity to conduct science and research and advance innovation and technology, consistent with emerging risk and opportunity in the Arctic, as part of a state-led collaborative effort.
- Ensure that impacted communities receive direct and indirect benefits from economic development activities, including employment and training opportunities that might come with new and different careers.
- Strengthen disaster prevention and emergency response capability by coordinating the necessary levels of public and private investment for infrastructure and equipment.
- Collaborate with industry, local government, and federal agencies, and consult with Arctic residents, to improve the efficiency of permitting and regulatory processes, as well as to foster a positive investment climate.
- Strengthen cross-border relationships with Canada and Russia and support international Arctic cooperation.
- Pursue opportunities to meaningfully participate as a partner in development of federal and international Arctic policies and incorporate state and local government knowledge and expertise.
- Employ integrated, strategic planning and consult with Arctic residents for scientific, local and traditional knowledge to meaningfully enhance Arctic decision making.
- Attract Arctic investment with a competitive business environment supported by strategic investment in Arctic communications, energy, maritime, and aviation infrastructure.
- Establish, support and maintain national, state, community and personal security and safety.

Strategic Recommendations

Commissioners have identified the following “strategic recommendations” as important for priority consideration given their potential scale of impact—responding to significant gaps and/or opportunities—and the degree to which their implementation is complex or difficult.

These have been selected as recommendations that would benefit from the attention of the 28th Alaska State Legislature with the hope that action might come sooner than later. *Note: The recommendations are grouped by section and are in the order that they appear in this report. Strategies for implementation of recommendations will be further developed in 2014, prior to the final report’s delivery in 2015.*

Governance and Indigenous Perspectives

- Continue to pursue, and actively expand, all avenues of participation in the Arctic Council, including involvement in Working Groups and by building partnerships with Permanent Participants.
- Develop, where lacking, and build upon existing programs to improve transparency and community/local



inclusion in decision making through state coordination of multi-agency permits, state and federal coordination of permits and plans, and meaningful involvement of regional stakeholders in development activities or plans that affect them.

Science and Research

- Increase 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.
- State agencies should consider adapting successful models—such as the Alaska Department of Environmental Conservation and Yukon-Koyukuk Tribal Communications Protocol—to development agreements with local governments and tribes regarding the use of traditional knowledge and culturally sensitive practices in research and permitting programs.





Planning and Infrastructure

- Conduct a comprehensive Arctic region economic and infrastructure assessment and planning process that integrates local, regional, state and federal planning efforts.
- Encourage the development of an inter-agency and inter-governmental working group tasked with working with multiple levels of stakeholders to develop and implement a prioritization, funding and implementation mechanism for constructing and maintaining infrastructure and economic development.

Oil, Gas, and Mineral Resources

- Implement regional planning efforts that allow local stakeholders to identify and communicate priorities such as education, infrastructure, and development, to state and federal agencies.
- Develop a mechanism for revenue sharing from resource extraction for impacted communities, developing perpetual trust funds (where lacking) to finance community needs beyond the life of non-renewable resources.

Security and Defense

Due to the complexity and importance of National Arctic security issues the Commission decided that this area warrants more attention than they were able to give it. National Arctic security issues will be reviewed for the DOD agencies and the Coast Guard during 2014.

Marine Transportation

- Encourage development of appropriately integrated systems to monitor and communicate Arctic marine information, and continue state and federal support for programs such as the Alaska Marine Exchange.

Response Operations:

Search and Rescue/Oil Pollution

- 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, and a WX C-130 size aircraft hangar(s).
- Encourage and advocate for more adequate funding so that the U.S. Coast Guard can carry out its assigned and emerging duties in the U.S. maritime Arctic without compromising its capacity to conduct all missions throughout Alaska.
- Expand and support the Department of Environmental Conservation's effort to involve communities through Sub-area Planning and provide local training to maintain limited supplies of oil spill response equipment and to ensure timely, effective and safe response and spill containment.

- Support the Department of Environmental Conservation's ongoing communication with the U.S. Coast Guard in reviewing alternative compliance program development and applications.

Energy and Power

- Develop stable long-term funding mechanisms for state weatherization and energy efficiency programs while continuing robust efforts to find long-term energy solutions.

Fisheries and Wildlife

- Develop an assessment and monitoring program in support of strategies for fish and wildlife management that enhances food security for Arctic residents.
- Develop new and improve existing public education and awareness programs that result in a more informed public who understand the multi-faceted programs and policies that regulate the conservation of Arctic biodiversity and sustainable use of biological resources.





Values community
sustainability &
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Ensures public safety
& security



Advances economic
development & a healthy
environment

Incorporates transparency
& inclusion into
decision making

Co-Chair Senator Lesil McGuire, Anchorage
Co-Chair Representative Bob Herron, South Bering Sea

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PRELIMINARY REPORT

TO THE ALASKA STATE LEGISLATURE

SUBMITTED JANUARY 30, 2014

ALASKA ARCTIC POLICY COMMISSION MEMBERS

Senator Lesil McGuire, Co-Chair – Anchorage

Senator Cathy Giessel – Anchorage

Senator Lyman Hoffman – Bethel

Senator Donny Olson – Golovin

Senator Gary Stevens – Kodiak

Representative Bob Herron, Co-Chair – South Bering Sea

Representative Alan Austerman – Kodiak

Representative Beth Kerttula – Juneau

Representative Bryce Edgmon – Dillingham

Representative Mark Neuman – Big Lake

Nils Andreassen – Executive Director, Institute of the North – International Arctic organization representative

Dr. Lawson Brigham – Distinguished Professor, University of Alaska Fairbanks – University representative

Peter Garay – American Pilots Association delegate – Marine pilots representative

Chris Hladick – Unalaska City Manager – Local government representative

Layla Hughes – Conservation group representative

Reggie Joule – Mayor, The Native Village of Kotzebue - Kotzebue IRA – Tribal entity representative

Stephanie Madsen – Executive Director, At-Sea Processors Association – Fisheries representative

Denise Michels – Nome Mayor – Coastal community representative

Liz Qaulluq Moore – Senior Director, Community & Government Affairs, NANA Regional Corporation – ANCSA Corporation representative

Stefanie Moreland – Special Assistant to Governor Sean Parnell – Governor's appointee

Lisa Pekich – Director of Village Outreach, ConocoPhillips Alaska – Oil & gas industry representative

Pat Pourchot – Special Assistant to the Secretary of the Interior – Federal government representative

Steve Scalzo – COO Foss Marine Holdings – Marine transportation & logistics representative

Stephen Trimble – President, Trimble Strategies – Mining industry representative

Jake Adams – Board Member, Arctic Slope Regional Corporation

Kris Norosz – Government Affairs Director, Icicle Seafoods, Inc.

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1 Foreword



Alaska Arctic Policy Commission

CO-CHAIR: SENATOR LESLIE MCGUIRE, ANCHORAGE, 907.465.2995
CO-CHAIR: REPRESENTATIVE BOB HERRON, BETHEL, 907.465.4942

January 30, 2014

Dear Alaskans,

Alaska is America's Arctic, and the Arctic is changing. All eyes are on this vast, bountiful, and sparsely populated region – this creates new opportunities, and new challenges for Alaska. Across the Arctic and around the world, we have articulated a vision of this region as a vibrant place of activity and possibility. To envision these emerging opportunities is a good start, now we must help bring them to life for the benefit of Alaska and America.

Alaskans must boldly lead the United States in forming a strategy for its Arctic that realizes the state's prominent role in Arctic decision making. Alaskans have a shared responsibility to understand the issues at stake, including the perspectives and priorities of Arctic residents, and to set a clear course for leadership now and into the future.

Planting a flag in the Arctic is like planting a flag on the moon. It is an important symbolic message telling us to push boundaries and move with purpose toward Arctic endeavors. If we can conceive of the Arctic in a new way, a way that mirrors the reality and the way it ought to be—a place of unsurpassed beauty, culture and opportunity—then that is what the Arctic shall be.

Our timely report is consistent with the interest and commitment that our neighbors in the circumpolar north have shown in developing Arctic policies for their homelands. In addition, it coincides with the warranted but past due attention that the United States has given the topic in the last twelve months.

It is our job as Alaskans to seize these new opportunities, while at the same time overcoming new challenges and obstacles. We have trekked far and wide to ensure we received input from Alaskans around our state including Juneau, Barrow, Unalaska, Fairbanks and Anchorage in 2013, with visits to other locations planned in 2014.

2014 is the Year of the Arctic for the Alaska Legislature. There is a need to make sure Alaska is in the captain's seat as arctic decisions are made that will affect all Alaskans today and for hundreds of years to come.



Alaska Arctic Policy Commission

CO-CHAIR: SENATOR LESIL MCGUIRE, ANCHORAGE, 907.465.2995
 CO-CHAIR: REPRESENTATIVE BOB HERRON, BETHEL, 907.465.4942

If we act now, we have an opportunity to set the heading. The United States will be Chair of the Arctic Council in two years and it is imperative for Alaskans to develop and pursue our own Arctic vision. We must strive to be the navigator of the Arctic policy vessel.

This monumental undertaking of shaping an Arctic policy cannot be understated. It is easy for vision and leadership to be lost in the complexity of the task. However, we are not lost if we know where we have been, where we are, and where we are headed. This Preliminary Report acknowledges the first, provides a brief overview of the second, and begins to lay out clear guidelines and direction for the third.

To the legislators reading this, we ask you to take the time during this busy legislative session to provide critical and constructive feedback. Your input will help ensure that the Commission has the information it needs to draft what will become a determining and significant policy and implementation plan that shapes Alaska's future and benefits Arctic residents, citizens of the United States, and visitors who share its waters and land.

As fellow Alaskans, we know you recognize that with increasing activity in the region comes both risk and opportunity. We cannot let the perceptions of others determine Alaska's future. The Alaska Arctic Policy Commission is proud to provide this Preliminary Report of the findings and recommendations we have reached over this past year. We hope that you will view this Preliminary Report as a guide for maximizing opportunities and overcoming challenges that come with accepting our role as America's Arctic state.

Our fellow Commissioners, and many other Alaskans who have provided input, deserve our gratitude for their hard work and patience as together we have crafted this document. We look forward to 2014 when we will be gathering more public input, finalizing this report, seeking your "Arctic" appreciation, and producing a strategy for the implementation of Alaska's Arctic policy.

Sincerely,

Representative Bob Herron

Sincerely,

Senator Lesil McGuire

4 2 Introduction

5 In years to come, Alaskans may ask how citizens of the state - and their government - are
6 working to deal with massive changes coming to the Arctic region. This report of the Alaska
7 Arctic Policy Commission shows that Alaska's leaders are working to understand the local,
8 national, and global impact of an actively changing Arctic. Alaskans are on the forefront of new
9 exploration and use of Arctic resources, and of new circumpolar cooperation.

10 Alaskans continue to dream big about the possibilities that come with an accessible Arctic,
11 building on the vision and hard work of peoples who have lived here for thousands of years and
12 many more who have contributed to exploring and pioneering in the region. The cultural
13 traditions, beliefs, and practices that have sustained us must themselves be sustained. Alaska's
14 leaders are working to make sure that happens.

15 Leaders in Norway, Denmark, Sweden, Finland, Iceland, Russia and Canada - and even non-
16 Arctic nations like Singapore and China - all see the value of the Arctic. Meanwhile, many
17 Americans still do not realize that the United States is an Arctic nation. Providing relevant
18 information about the reality of the emerging Arctic, understanding and communicating the
19 critical issues that affect this frontier, and instilling confidence in the promise of safety and
20 prosperity is essential as Alaska and America move forward to ensure both.

21 The Alaska Arctic Policy Commission is doing its part to lay out a vision for the Arctic that
22 values sustainable communities and thriving cultures; advances economic development and a
23 healthy environment; and ensures public safety and security. The Commission believes these
24 goals can be achieved in a transparent, inclusive process of collaboration with other levels of
25 government and stakeholders.

26 *The Alaska Arctic Policy Commission*

27 In April 2012, the Alaska State Legislature established the Alaska Arctic Policy Commission to
28 "develop an Arctic policy for the state and produce a strategy for the implementation of an Arctic
29 policy." To accomplish these objectives the Commission has conducted a baseline review of the
30 Alaskan Arctic by evaluating strengths, gaps and opportunities, and produced this *Preliminary*
31 *Report to the Legislature*. *The Preliminary Report* sets forth a proposed Arctic policy and
32 recommendations, from which Alaska's perspectives and priorities can be better understood by
33 the many decision makers playing active roles in a rapidly changing Arctic.

34 As highlighted in the Commission's Letter of Intent to Secretary Kerry and National Security
35 Advisor Rice (June 28, 2013)¹, the Commission operated under the "conviction that the state is

¹ See Introduction Appendix A for a copy of the Letter of Intent

36 an active and willing leader and partner in Arctic decision making, bringing expertise and
37 resources to the table." Furthermore, the Commission remains "committed to producing a vision
38 for Alaska's Arctic that stands the test of time; delivering policy statements that capture not only
39 the opportunity of the Arctic but also the need to mitigate the challenges; and completing a final
40 product that elevates the priorities and perspectives of Alaskans to a national and international
41 stage."

42 Alaska's Arctic policy will guide the state's initiatives and inform U.S. domestic and
43 international Arctic policy in order to best serve the interests of Alaskans and the nation. The
44 Commission has considered a broad diversity of perspectives, drawing from a wealth of expertise
45 within Alaska, while considering the national and international context of ongoing Arctic
46 initiatives. This *Preliminary Report* includes a "State of Alaska's Arctic" chapter that
47 summarizes the Commission's findings and which serves as the basis for its recommendations.

48 *The Alaskan Arctic*

49 Alaska is the sole reason the U.S. is an Arctic nation. Alaska holds 56% of U.S. coastline, and is
50 1/5 the size of the entire U.S. with 61.8% of its lands under the control of the Federal
51 Government. Approximately 53,000 people out of Alaska's total population of 740,000 live in
52 the Arctic region, which has a diverse and fragile ecosystem with considerable natural resource
53 potential. Indigenous peoples have occupied the Alaskan Arctic for thousands of years and today
54 account for about 70% of the total population in mainland areas bordering the Bering, Chukchi,
55 and Beaufort Seas. Local, state, federal and tribal governments; Alaska Native Corporations; and
56 industry have been active in the region for decades.

57 *Increased Global Attention*

58 The U.S. government and policymakers around the world have recently shown increased interest
59 in the Arctic. A record number of non-Arctic nations were granted observer status at the 2013
60 Arctic Council Ministerial meeting and many of these nations have developed Arctic Strategies
61 in recent years. This interest is due in large part to significant changes experienced by the region
62 in the last decade, particularly environmental changes such as rapid loss of summer sea ice and
63 melting permafrost. With these developments come a series of new challenges and opportunities
64 with respect to the health, economies, and cultures of Arctic inhabitants; environmental impacts;
65 access to natural resources; commercial shipping and tourism; and security.

66 *Seeking Cohesive Policy in the U.S.*

67 Alaska and U.S. domestic Arctic policy must be coordinated and aligned to achieve key
68 objectives for the benefit of Alaskans and the nation. U.S. international Arctic policy should be a
69 direct extension of sound domestic policy that has meaningful input from, and is endorsed by,
70 Alaskans.

71 The Alaska Arctic Policy Commission was formed partially in response to efforts by the U.S.
72 government to refine its Arctic policy. It is imperative that U.S. policy for the Arctic reflects the
73 values and interests of Alaskans. The need for Alaska to influence national Arctic policy is about
74 more than informed decision making. A top-down approach to U.S. Arctic policy that fails to
75 build on the substantial knowledge (both traditional and scientific) and expertise of Alaskans
76 would be counterproductive, inefficient, and lack legitimacy in the eyes of Alaskans.

77 The establishment of the Commission has provided an opportunity for members of the Alaska
78 State Legislature and Alaskan Arctic experts to speak with a united voice about shared values,
79 interests, and priorities for the Arctic region. Commission work products are intended to guide
80 U.S. and Alaska policymakers to achieve effective Arctic policy at all levels of government. The
81 Alaska State Legislature must continue outreach and education on Arctic policy among its
82 members, all Alaskans, and the broader national and international communities.

83 *Scope of Issues Addressed by the Commission*

84 For the purposes of its work, the Commission applied the geographic definition of the U.S.
85 Arctic set out in the Arctic Research and Policy Act (ARPA), henceforth called the Alaskan
86 Arctic – from the Aleutians to the Canadian border, west and north of the Porcupine, Yukon and
87 Kuskokwim rivers². The Commission acknowledges that there are other ways to define the
88 Arctic. For example, some definitions focus on the physical properties of the area, specifically
89 the Arctic cryosphere (i.e., permafrost, sea ice, etc.), and others focus on geopolitical boundaries.

90 The Commission realizes that many issues facing the ARPA geographic area are similar to, or
91 intertwined with, developments in other regions of Alaska. In fact, much of the dialogue around
92 Arctic issues has relevance to geographic areas of Alaska found outside the “Alaskan Arctic”
93 area as defined by the ARPA.

94 Although the challenges and opportunities of the Alaskan Arctic region cannot truly be separated
95 from those of the state as a whole, the Commission has focused on those issues specific or
96 unique to the Arctic region. The Commission did not wholly avoid statewide issues, but when
97 those issues were addressed, they were examined based on how they related to the Arctic region
98 in particular. Using the ARPA-delineated Arctic region also ensured that the Commission’s work
99 product would be in a form that is helpful to U.S. federal agencies, which draw a distinction
100 between federal policy for the Alaskan Arctic and the rest of Alaska. The Commission
101 recognizes that, especially from a national and international perspective, it is often necessary and
102 beneficial for Alaska as a whole to be included in Arctic discussions.

² See ARPA Map in Introduction Appendix B

103 *Policy Teams and Topics*

104 The Commission organized its 26 members into policy teams co-chaired by Legislative members
 105 tasked with evaluating the following subjects: Governance and Indigenous Perspectives; Science
 106 and Research; Planning and Infrastructure; Oil, Gas, and Mineral Resources; Security and
 107 Defense; Marine Transportation; Response Operations; Energy and Power; and Fisheries and
 108 Wildlife.

109 *Preliminary Report*

110 The Commission has worked toward two deadlines since its inception: submitting a *Preliminary*
 111 *Report* to the Alaska State Legislature by January 30, 2014; and submitting its *Final Report and*
 112 *Implementation Plan* to the Legislature by January 30, 2015. The *Preliminary Report* includes
 113 four components:

- 114 1. **Introduction: The Alaska Arctic Policy Commission:** What and who the Commission
 115 is and why it was formed.
- 116 2. **Alaska’s Arctic Policy:** Distilled, values-based Vision Statement and Arctic Policy that
 117 form the lens through which the Commission evaluated challenges and opportunities in
 118 the Alaskan Arctic.
- 119 3. **Strategic Recommendations:** A prioritized list of recommendations – based on the
 120 background information and policy statements – that the Commission is presenting to the
 121 State Legislature for consideration.
- 122 4. **State of Alaska’s Arctic:** Includes detailed background, discussion, considerations, and
 123 additional draft recommendations.

124 The first three components of the *Preliminary Report* communicate “Alaska’s Arctic Policy” as
 125 well as the key recommendations to the Legislature and the broader Arctic community. The
 126 “State of Alaska’s Arctic” is designed to be a stand-alone document that reviews and evaluates
 127 gaps in knowledge, potential opportunities, challenges facing the region, and strategic assets at
 128 the community, regional, and state level. The *Preliminary Report* should be considered a draft,
 129 with public comment and additional work to be completed throughout 2014 and incorporated
 130 into the Final Report.

131

131 3 Alaska's Arctic Policy

132 *The Alaskan Arctic Vision Statement*

133 The Alaska Arctic Policy Commission respectfully submits to the 28th Alaska State Legislature
134 for careful consideration this draft policy statement to establish an Arctic Policy for the state of
135 Alaska.

136 Alaskans recognize the need for a higher level of attention to and deeper understanding of the
137 “emerging Arctic.” Increasing activity, change and opportunity, globalization and resource
138 development, a sensitive environment and rich and diverse cultures are now framing the Arctic.

139 Therefore, the state of Alaska envisions an Arctic that:

- 140 • ***Values Community Sustainability and Thriving Cultures***

141 Alaska will continue to value and strengthen the sustainability of communities and
142 respect and integrate Arctic peoples' cultures and knowledge.

- 143 • ***Advances Economic Development and a Healthy Environment***

144 Alaska will continue its commitment to economically vibrant communities sustained
145 by development activities that recognize the need and our responsibility for a healthy
146 environment.

- 147 • ***Ensures Public Safety and Security***

148 Alaska will provide a safe and secure Arctic for individuals and communities, and
149 coordinate with federal agencies on national defense obligations to enhance Alaska
150 security.

- 151 • ***Incorporates Transparency and Inclusion into Decision Making***

152 Alaska will collaborate with other levels of government, industry, non-governmental
153 organizations, and tribes to achieve transparent and inclusive Arctic decision making
154 that results in more informed, sustainable and beneficial outcomes.

155 *The Alaskan Arctic Policy Statements*

156 Therefore, it is the policy of the state of Alaska, as it relates to the Arctic, to:

- 157 • Recognize and respect the values and perspectives of the region's indigenous peoples, their
158 cultures, and traditional ways of living.

- 159 • Sustain current and develop new approaches for responding to a changing climate that
160 increase community resilience, adaptability and sustainability, as well as promote health
161 and social well-being.
- 162 • Manage Arctic fisheries and wildlife for abundance and sustained yield using a science-
163 based, ecosystem approach that integrates local and traditional knowledge.
- 164 • Build capacity to conduct science and research and advance innovation and technology,
165 consistent with emerging risk and opportunity in the Arctic, as part of a state-led
166 collaborative effort.
- 167 • Ensure that impacted communities receive direct and indirect benefits from economic
168 development activities, including employment and training opportunities that might come
169 with new and different careers.
- 170 • Strengthen disaster prevention and emergency response capability by coordinating the
171 necessary levels of public and private investment for infrastructure and equipment.
- 172 • Collaborate with industry, local government, and federal agencies, and consult with Arctic
173 residents, to improve the efficiency of permitting and regulatory processes, as well as to
174 foster a positive investment climate.
- 175 • Strengthen cross-border relationships with Canada and Russia and support international
176 Arctic cooperation.
- 177 • Pursue opportunities to meaningfully participate as a partner in development of federal and
178 international Arctic policies and incorporate state and local government knowledge and
179 expertise.
- 180 • Employ integrated, strategic planning and consult with Arctic residents for scientific, local
181 and traditional knowledge to meaningfully enhance Arctic decision making.
- 182 • Attract Arctic investment with a competitive business environment supported by strategic
183 investment in Arctic communications, energy, maritime, and aviation infrastructure.
- 184 • Establish, support and maintain national, state, community and personal security and
185 safety.

186

186 4 Strategic Recommendations

187 Commissioners have identified the following “strategic recommendations” as important for
188 priority consideration given their potential scale of impact – responding to significant gaps
189 and/or opportunities – and the degree to which their implementation is complex or difficult.

190 These have been selected as recommendations that would benefit from the attention of the 28th
191 Alaska State Legislature with the hope that action might come sooner than later. *Note: The*
192 *recommendations are grouped by section and are in the order that they appear in this report.*
193 *Strategies for implementation of recommendations will be further developed in 2014, prior to the*
194 *final report’s delivery in 2015.*

195 **Governance and Indigenous Perspectives**

- 196 • Continue to pursue, and actively expand, all avenues of participation in the Arctic Council,
197 including involvement in Working Groups and by building partnerships with Permanent
198 Participants.
- 199 • Develop, where lacking, and build upon existing programs to improve transparency and
200 community/local inclusion in decision making through state coordination of multi-agency
201 permits, state and federal coordination of permits and plans, and meaningful involvement
202 of regional stakeholders in development activities or plans that affect them.

203 **Science and Research**

- 204 • Increase state funding to, and partnership with, the University of Alaska for Arctic research
205 that aligns with state priorities and leverages the University’s exceptional facilities and
206 academic capacity.
- 207 • State agencies should consider adapting successful models – such as the Alaska
208 Department of Environmental Conservation and Yukon-Koyukuk Tribal
209 Communications Protocol – to development agreements with local governments and
210 tribes regarding the use of traditional knowledge and culturally sensitive practices in
211 research and permitting programs.

212 **Planning and Infrastructure**

- 213 • Conduct a comprehensive Arctic region economic and infrastructure assessment and
214 planning process that integrates local, regional, state and federal planning efforts.
- 215 • Encourage the development of an inter-agency and inter-governmental working group
216 tasked with working with multiple levels of stakeholders to develop and implement a

217 prioritization, funding and implementation mechanism for constructing and maintaining
 218 infrastructure and economic development.

219 **Oil, Gas, and Mineral Resources**

220 • Implement regional planning efforts that allow local stakeholders to identify and
 221 communicate priorities such as education, infrastructure, and development, to state and
 222 federal agencies.

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 224 communities, developing perpetual trust funds (where lacking) to finance community
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 233 the Alaska Marine Exchange.

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 236 maritime response infrastructure and economic development, to include consideration of
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 242 compromising its capacity to conduct all missions throughout Alaska.

243 • Expand and support the Department of Environmental Conservation’s effort to involve
 244 communities through Sub-area Planning and provide local training to maintain limited
 245 supplies of oil spill response equipment and to ensure timely, effective and safe response
 246 and spill containment.

247 • Support the Department of Environmental Conservation’s ongoing communication with
 248 the U.S. Coast Guard in reviewing alternative compliance program development and
 249 applications.

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252 efficiency programs while continuing robust efforts to find long-term energy solutions.

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- 254 • Develop an assessment and monitoring program in support of strategies for fish and
255 wildlife management that enhances food security for Arctic residents.

- 256 • Develop new and improve existing public education and awareness programs that result
257 in a more informed public who understand the multi-faceted programs and policies that
258 regulate the conservation of Arctic biodiversity and sustainable use of biological
259 resources.

260

260 5 State of Alaska's Arctic

261 The "State of Alaska's Arctic" chapter is designed to be a stand-alone document that reviews and
 262 evaluates gaps in knowledge, potential opportunities, challenges facing the region, and strategic
 263 assets at the community, regional and state level. The Commission's Policy Teams were co-
 264 chaired by Legislators, who guided the work of their teams to investigate the topic areas
 265 addressed in the remainder of the document. *Note: these areas will be further developed in 2014*
 266 *with significant additions and revisions based on subject matter expertise, agency input and*
 267 *public comment anticipated and planned for.*

268 5.1 Governance and Indigenous Perspectives

269 *Introduction*

270 Good governance is the foundation and fundamental goal of an Alaskan Arctic Policy. Well-
 271 established principles highlight some of the most important aspects of good governance in the
 272 Arctic³, including a commitment to: economically and environmentally vibrant communities
 273 through balanced resource development and respect for the environment in which Alaskans live;
 274 sustainable communities that respect Alaskans' cultures, practices and traditional values; and
 275 leadership, collaboration, and transparent and inclusive decision making that achieves outcomes
 276 that benefit Arctic peoples and all Alaskans.

277 These principles are reflected in Alaska's Constitution, specifically Section 1.2 that states, "All
 278 political power is inherent in the people. All government originates with the people, is founded
 279 upon their will only, and is instituted solely for the good of the people as a whole." In addition,
 280 Section 8.1 lays out the policy of the state of Alaska to "encourage the settlement of its land and
 281 the development of its resources by making them available for maximum use consistent with the
 282 public interest," and Section 8.2 vests the Legislature with the authority to "provide for the
 283 utilization, development, and conservation of all natural resources belonging to the state,
 284 including land and waters, for the maximum benefit of its people," subject to the sustained yield
 285 requirements of Section 8.4. The Constitution also provides for varying levels of government and
 286 jurisdiction, and provides for maximum local self-government in Section 10.1.

287 *Background*

288 Governance in the Arctic spans international, national, state and local levels, but it is important
 289 to understand and recognize the degree to which tribal governance and indigenous peoples exert
 290 influence on decision making in the Alaskan Arctic. The U.S. is one of many countries with
 291 indigenous populations that have inhabited the Arctic for thousands of years and includes the

³ Arctic Research and Policy Act of 1984, Section 112

292 traditional cultural boundaries of the Iñupiat, Yupik, Siberian Yupik, Cup'ik, Aleut, Athabascan
293 and Gwich'in peoples. Nearly 53,000 people live in the Alaskan Arctic, with more than 37,000
294 people (70%) identifying as Alaska Native or 'Alaska Native and another race.'⁴ Alaska Native
295 cultures have distinct language, familial, historical, cultural and traditional ties to the lands and
296 resources in the Alaskan Arctic and across international borders.

297 Alaska Natives are engaged in multiple arenas of governance that touch every aspect of the lives
298 of Arctic peoples, including the Arctic Council, the International Whaling Commission, state and
299 federal co-management of subsistence resources, borough and city governments, and tribal
300 governments.⁵

301 In addition, the federal government has a unique relationship with Alaska Native tribes. Federal
302 executive departments and agencies are required to engage in meaningful consultation and
303 collaboration with tribal officials in development of federal policies that have tribal implications,
304 and are charged with strengthening the government-to-government relationship between the
305 United States and federally recognized tribes. Alaska Native Corporations⁶ are also consulted, in
306 part due to their role in land management, and this provides an avenue for Alaska Natives to be
307 directly involved in responsible development of natural resources and to develop businesses that
308 support these activities, on behalf of their people. This is accomplished in a similar way to other
309 state and federal public outreach during review and adjudications of planning or development
310 processes.

311 In addition to tribal governance, Alaska has unique local or regional government, all of which
312 have important roles in governance. Unlike most other states that typically have local
313 government structures consisting of many overlapping local government service providers,
314 Alaska's system of local government is simple, efficient and effective. A city government is a
315 municipal corporation and political subdivision of the state of Alaska. It generally encompasses a
316 single community. Presently, there are 145 city governments in Alaska. Like a city, an organized
317 borough in Alaska is a municipal corporation and political subdivision of the state of Alaska.
318 However, organized boroughs are intermediate-sized governments – much larger than cities.
319 Presently, there are 16 organized boroughs in Alaska. All local governments in Alaska – general
320 law cities, home rule cities, general law boroughs, and home rule boroughs – enjoy broad
321 powers. All local governments have certain fundamental duties such as conducting elections and
322 holding regular meetings of the governing bodies. Beyond this, the duties of municipalities in
323 Alaska vary considerably.⁷

324 The role of local government needs to be included in any discussion of governance because it
325 will be Alaska's communities – particularly coastal communities – that will bear the most risk

⁴ 2010 Census

⁵ See appendix – Tribal Governance

⁶ See appendix – Alaska Native Claims Settlement Act

⁷ http://commerce.alaska.gov/dnn/Portals/4/pub/Local_Gov_AK.pdf

326 and potential opportunity, depending on geography and distance from economic activity.
 327 Specifically, local government will be faced with many questions related to increased activity
 328 and potential development in the Arctic:

- 329 • Does the local government have or want a specific tax code to address the activity such as
 330 policies for taxing oil field or mining equipment?
- 331 • Is increased activity going to adversely impact current infrastructure or utilities, including
 332 docks, electric, water and sewer and solid waste? Who pays for necessary improvements?
- 333 • Does the local government have codes to deal with the activity? Are there zoning issues?
- 334 • Does the community realize the impacts to social services that might come with increased
 335 activity?
- 336 • What are the environmental impacts of the activity?
- 337 • How will communities balance the positive benefits of economic development?
- 338 • How will increased revenues maintain community infrastructure and support schools and
 339 other educational resources?

340 Clearly, local government has a distinct and important role to play in the Arctic because potential
 341 and real activity will impact communities in ways that haven't been fully realized.

342 Governance at the state level is defined by the Alaska Statehood Act of 1958, which granted the
 343 state approximately 105 million acres of land intended to help Alaska develop an economic base.
 344 Alaska was also granted ownership of state submerged lands beneath navigable waterways and
 345 submerged lands up to three miles offshore, and was given the primary authority to manage fish
 346 and wildlife on all lands and waters. The state of Alaska is the largest landholder after the federal
 347 government and has responsibilities as such.

348 The state of Alaska has a constitutional duty to responsibly develop and utilize Alaska's
 349 abundant natural resources for the benefit of its citizens, and to safeguard world-class fish,
 350 wildlife and the natural environment. These mandates are primarily achieved through state
 351 agencies entrusted with natural resource management responsibilities. The state of Alaska also
 352 has responsibilities to provide for the health, safety and education of its people.

353 The state of Alaska provides input to federal decision making and activities through state-federal
 354 agency coordination efforts, data and information sharing, submission of formal comments, and
 355 litigation. The state has a formal role in several coordinating entities active in the Arctic region,
 356 including:

- 357 • North Pacific Fishery Management Council
- 358 • Alaska Ocean Observing System
- 359 • North Slope Science Initiative
- 360 • Arctic Landscape Conservation Cooperative and Western Alaska Landscape
 361 Conservation Cooperative

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- 362 • Alaska Climate Change Executive Roundtable
- 363 • North Pacific Research Board
- 364 • Arctic Policy Group

365 In part to keep interested Alaskans informed about the Arctic Council, the Office of the
366 Governor hosts a bi-monthly Alaska Ad Hoc Arctic Council Working Group meeting and
367 conference call. The call brings a diverse group of Alaskans together with the U.S. Department
368 of State Arctic Affairs Officer, federal agency heads of delegation to Arctic Council working
369 groups, and the Alaska Congressional delegation staff.

370 In addition to the activities of the executive branch and state agencies, the Alaska State
371 Legislature acts in many ways to support the residents of the Alaskan Arctic region, perhaps
372 most notably through funding infrastructure projects but also through public bodies that focus on
373 the region. The Alaska State Legislature created the Alaska Northern Waters Task Force in 2010
374 and their final report has been available since January 2012. One of the report's
375 recommendations was the creation of an Alaska Arctic Policy Commission (AAPC),
376 subsequently formed by HCR 23 during the 2012 legislative session. In addition, the Legislature
377 has passed several Arctic-relevant resolutions in recent years, including: HJR 15 "Supporting the
378 Arctic Caucus" and HJR 19 "Urging U.S. Senate to ratify the Law of the Sea Treaty" in 2011;
379 and SJR 17 "Supporting the Arctic Council Task Force" and HJR 34 "Asking Congress to fund
380 icebreakers and a Coast Guard Arctic base" in 2012.

381 The next level of governance to consider is the role of the national government. U.S. Arctic
382 Policy is codified in NSPD-66, which includes the following goals:

- 383 • Meet national security and homeland security needs in the Arctic
- 384 • Protect the Arctic environment and its biological resources
- 385 • Ensure natural resource management and economic development are environmentally
386 sustainable
- 387 • Strengthen institutions for cooperation among the eight Arctic nations
- 388 • Engage the Arctic's indigenous communities in decisions that affect them
- 389 • Enhance scientific monitoring and research into local, regional and global environmental
390 issues

391 On May 10, 2013, the White House released the National Strategy for the Arctic Region
392 (NSAR), emphasizing three lines of effort: Advancing U.S. Security Interests, Pursuing
393 Responsible Arctic Region Stewardship, and Strengthening International Cooperation. The
394 NSAR is intended to position the United States to respond effectively to challenges and
395 emerging opportunities arising from significant increases in Arctic activity due to the
396 diminishment of sea ice and the emergence of a new Arctic environment. It defines U.S. national
397 security interests in the Arctic region and identifies prioritized lines of effort, building upon
398 existing initiatives by federal, state, local and tribal authorities, the private sector, and

399 international partners, and aims to focus efforts where opportunities exist and action is needed. It
400 is designed to meet the reality of a changing Arctic environment, while simultaneously pursuing
401 the global objective of combating the climatic changes that are driving these environmental
402 conditions. The strategy directs the U.S. to consult and coordinate with the state of Alaska and
403 Alaska Natives (recognizing tribal governments' unique legal relationship with the United
404 States).

405 The NSAR will be implemented by more than 20 federal agencies that have
406 responsibilities including resource management; scientific research; homeland security;
407 emergency preparedness and response; maritime and aeronautical safety; and supporting
408 communities. Many stakeholders in the Alaskan Arctic work closely with these agencies
409 to achieve a wide range of management goals; these partners include state agencies, tribal
410 governments and Alaska Native organizations, municipal governments, industrial and
411 commercial interests, and conservation organizations. It is worth highlighting that the
412 NSAR recognizes the state of Alaska as a key partner in its implementation.

413 Given the extent of federal agency involvement in the Arctic, coordination occurs through a
414 number of inter-agency working groups – the Arctic Policy Group, National Ocean Council,
415 Interagency Arctic Research Policy Committee, Interagency Working Group on Coordination of
416 Domestic Energy Development and Permitting in Alaska, and the Committee on Marine
417 Transportation – that meet periodically to review, develop and implement U.S. programs and
418 policies in the Arctic.

419 Coordination between tribal, local/regional, state and national levels of governance is important
420 in the face of increasing international attention paid to the Arctic. A critical starting point from
421 which to consider international governance is the Arctic Council. The Arctic Council is the
422 premier intergovernmental forum for Arctic issues and is made up of eight member nations, six
423 Permanent Participants and observers. The state of Alaska supported the Arctic Council as it
424 formed international agreements for search and rescue and marine oil pollution preparedness and
425 response. The state has urged the U.S. Department of State to look to the Arctic Council to
426 coordinate science and to inform best practices, yet asked that federal agencies look to Alaska
427 when developing new standards and requirements for domestic land and waters.

428 Alaska is represented by the U.S. Secretary of State, the Senior Arctic Official, and federal
429 Heads of Delegation. Four of the Permanent Participants represent Alaska Natives and send
430 delegations from Alaska to engage in all levels of Arctic Council activities, with non-voting seats
431 at the same table as Arctic nations. Canada assumed the Chairmanship of the Arctic Council in
432 May 2013, and the United States is slated to Chair starting in 2015. The theme of Canada's
433 Chairmanship is "development for the people of the North," with a focus on responsible Arctic
434 resource development, safe Arctic shipping and sustainable circumpolar communities. In 2011,
435 the Arctic Search and Rescue Agreement was negotiated and signed under the auspices of the

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436 Arctic Council and in 2013 the Council negotiated the signing of an Agreement on Cooperation
437 on Marine Oil Pollution Preparedness and Response in the Arctic.

438 Secretary Hillary Clinton, U.S. Department of State, and Secretary Ken Salazar, U.S.
439 Department of Interior, attended the Nuuk ministerial meeting in 2011, becoming the first
440 secretarial level officials to attend an Arctic Council (AC) meeting. Secretary John Kerry, U.S.
441 Department of State, attended the 2013 ministerial meeting in Kiruna, Sweden. Increased interest
442 in the AC has been driven both by changes in the region and by the international acceptance of
443 the Council's role as the lead forum for international discussion of Arctic issues. Starting at the
444 Nuuk meeting, by addressing Arctic search and rescue as well as initiating an oil spill response
445 instrument, the ministers made a number of decisions that reflect and advance the growth of the
446 Arctic Council as an institution.

447 By taking on increasingly important topics and negotiating binding commitments, the Arctic
448 Council is evolving from a forum for discussion and technical assessment into an agenda-setting
449 and policy-shaping organization. However, it should be noted that the majority of Arctic Council
450 work does not result in binding agreements and that the Council is limited in the nature of
451 binding agreements it can produce, as agreements must be approved through the domestic
452 process of each member nation. For example, the U.S. cannot commit to major new requirements
453 without Senate treaty approval (a process it has avoided for Arctic Council agreements). Of
454 concern are any new restrictions imposed on Alaskans through an international body, especially
455 when those restrictions may not have been supported by an open and transparent domestic
456 process involving Alaskan stakeholders and domestic authorities.

457 In addition to the Arctic Council, the Arctic Parliamentarians of the Arctic Region serve as a
458 forum for international Arctic cooperation. The Arctic Parliamentarians is a body whose
459 delegates are appointed by the national parliaments of the Arctic nations. Every two years the
460 Conference of Parliamentarians is held in an Arctic location. Senator Lisa Murkowski is the U.S.
461 representative to the Standing Committee of Parliamentarians of the Arctic Region, which is
462 responsible for the work between conferences. In addition to supporting the establishment of the
463 Arctic Council and promoting Arctic Council work, the Standing Committee has Arctic Council
464 observer status.

465 There are many other forums for international engagement in governance, including the
466 International Maritime Organization and the International Whaling Commission. Each deserves
467 Alaska's participation and full attention as the Arctic receives increased levels of attention and
468 activity; especially important for Alaskans to fully understand are the ramifications of ratification
469 of the United Nations Convention on the Law of the Sea (UNCLOS)⁸.

⁸ The Alaska State Legislature is on record as supporting ratification and the Commission will consider more fully in 2014 the issues surrounding the Law of the Sea Treaty such as paying taxes without representation and potential limitations to scientific research.

470 164 countries have joined the UNCLOS, an international agreement establishing the rights and
471 responsibilities of nations in their use of the oceans, and defining guidelines for businesses,
472 environmental protection, and the management of natural resources within and beneath the
473 oceans. The United States remains the only large, maritime non-signatory and the only Arctic
474 nation yet to ratify. The U.S. Senate is responsible for approving international treaties and has
475 yet to vote on UNCLOS.

476 The other four Arctic Ocean coastal nations (Canada, Norway, Russia, and Denmark/Greenland)
477 have signed the treaty and are thereby eligible to submit their extended continental shelf claims
478 to the United Nations. The state of Alaska has a long history of support for ratification, and
479 recently the Alaska Northern Waters Task Force's (ANWTF) priority governance
480 recommendation was that the United States Senate ratify UNCLOS. The ANWTF report
481 included this salient quote from President George W. Bush: "[Ratification] will secure U.S.
482 sovereign rights over extensive marine areas, including the valuable natural resources they
483 contain. Accession will promote U.S. interests in the environmental health of the oceans. And it
484 will give the United States a seat at the table when the rights that are vital to our interests are
485 debated and interpreted."

486 *Discussion and Considerations*

487 As the Arctic Council develops as an institution addressing significant policy concerns, it
488 provides an increasingly useful forum through which the state of Alaska can influence Arctic
489 policy. There are a number of ways to do this. Delegates from the state of Alaska can be invited
490 to participate in U.S. delegations at all levels of meetings, task forces and working groups. For
491 example, the state of Alaska provided a delegate to the U.S. team that negotiated the Oil
492 Pollution Preparedness and Response Agreement. The state does not have the authority to direct
493 PP activity but, some of the State's constituents directly influence Arctic Council policy through
494 the four Permanent Participants representing Alaska Natives. The state of Alaska can also
495 continue to provide expert advice to and review of the range of technical and policy documents
496 created by various Arctic Council working groups.

497 Participation in the Arctic Council derives benefits to the state. The Arctic Council remains an
498 important forum for exchanging technical information, and the state of Alaska can also benefit
499 from the Arctic Council by continuing to contribute to and learn from this information exchange.
500 For example, the Sustaining Arctic Observing Networks (SAON) is a project that integrates data
501 from each nation into an Arctic-wide network. Alaska can also benefit from practical agreements
502 that will help to protect the people of the state - the Search and Rescue agreement commits
503 nations to minimum levels of response infrastructure to help save lives.

504 The state clearly benefits from the heightened visibility of the Arctic through the work of the
505 Arctic Council. People across the world have become more aware of issues such as economic
506 challenges, food security, health and social welfare, and infrastructure needs in the region, and

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507 this awareness can help the state of Alaska educate others, including the federal government,
508 about our needs and goals.

509 Finally, the Arctic Council can serve as a forum for creating new requirements and rules that can
510 help to protect the state. For example, the Arctic Council can suggest rules (or recommend that
511 another institution address them, such as the International Maritime Organization) that address
512 the safety of activities that take place beyond state or federal jurisdiction (e.g., shipping).
513 Because there are a number of ways in which the state of Alaska can benefit from the Arctic
514 Council and pursue its Arctic Policy, the state should continue tracking projects of particular
515 importance to the state and contributing as a member of the U.S. delegations to the Arctic
516 Council via Senior Arctic Officials meetings, Task Forces and working groups. The state and its
517 agencies have been active in the region since statehood, accumulating a wealth of experience and
518 expertise. Every state agency is engaged in work related to the Arctic. Some noteworthy
519 activities with particular relevance to the Arctic region, and which might impact Arctic decision
520 making, include:

- 521 • Conducting exercises and maintaining equipment specifically designed for Arctic search
522 and rescue (DMVA)
- 523 • Engaging in oil spill prevention, preparedness and response (DEC)
- 524 • Monitoring of trans-boundary contaminants (DEC)
- 525 • Addressing rural water and sanitation needs (DEC)
- 526 • Monitoring, conducting research, and managing fish and wildlife populations across the
527 Arctic region (DF&G)
- 528 • Documenting subsistence needs and providing subsistence opportunity (DF&G)
- 529 • Working with proposed development projects to mitigate impacts to fish and wildlife
530 resources and their habitats (DF&G)
- 531 • Leading efforts to improve statewide digital mapping (DNR)
- 532 • Developing expertise in permitting and regulation of resource development activities in
533 Arctic environments (DNR)
- 534 • Contributing to deep draft Arctic port and improved airport infrastructure planning
535 throughout the region (DOT&PF)
- 536 • Coordinating and conducting project permitting (DOT&PF)
- 537 • Building capacity and expertise to conduct comprehensive health impact assessments to
538 inform resource development activities (DHSS)
- 539 • Collaborating with the University of Alaska Fairbanks to study shipping and related
540 considerations for commerce and international trade (DCCED)

541 Consistent with the core state government functions mentioned above, current statewide
542 priorities that are as essential to the future of Alaska's Arctic as to any other region of the state
543 include: resources and energy; education; public safety; transportation and infrastructure; and
544 military support.

545 Indigenous perspectives are extremely relevant and important to consider when evaluating future
 546 decision making. Given tribal governance capacity and sovereignty as well as the economic
 547 capability brought to bear by Alaska Native Corporations, it is important to recognize the interest
 548 and concerns of Arctic indigenous peoples in Alaska. The cultures of Arctic Alaska Natives are
 549 diverse, however there are common interests and concerns about a developing Arctic. The
 550 Arctic's Alaska Native communities have been developing solutions to tackle challenges
 551 affecting the residents of the Arctic that include lack of infrastructure (e.g., transportation,
 552 communications), high energy costs, public safety, high cost of living, and issues affecting social
 553 well-being. The following areas⁹ express a good representation of priorities for consideration,
 554 though are by no means comprehensive or final:

- 555 • Food security – access to and utilizations of subsistence resources for customary and
 556 traditional use – is paramount to the health and well-being and survival of Alaska Native
 557 peoples and cultures
- 558 • Meaningful and direct inclusion in decision making
- 559 • Responsible development of natural resources and infrastructure that benefit the U.S. as a
 560 whole and benefits the peoples of the Arctic
- 561 • Use of local and traditional knowledge in research as well as identification of research
 562 priorities of Alaska Native communities
- 563 • Incorporating traditional knowledge when assembling information upon which to base
 564 decision making and to encourage the use of traditional knowledge at all levels of
 565 decision making
- 566 • Development of a ready workforce to participate in economic activities in the Arctic.
- 567 • Increased opportunities to develop local economies
- 568 • Ratifying the Law of the Sea Treaty¹⁰
- 569 • Continuation of traditional and cultural practices including subsistence hunting, fishing,
 570 gathering and practice of language and culture
- 571 • Reducing bureaucratic processes that require engagement at many levels and which can
 572 burden stakeholders and communities

573 In an increasingly busy Arctic, it is critical that Alaska strengthen and improve the structures,
 574 processes, and practices that determine how relations among people are regulated, how decisions
 575 are made, and the role that citizens have in this process. This includes utilizing transparent public
 576 processes that engage stakeholders, lead to informed decision making, and hold decision makers
 577 accountable. It must include coordination among jurisdictions, cooperation at all levels of
 578 government – including international, national, state, local and tribal – with clearly defined
 579 functions and roles, and balancing multiple values to protect, promote, and enhance the well-
 580 being of the Alaskan Arctic including the people, flora, fauna, land, water and other resources.

⁹ These touch on all facets of Arctic policy and development, as reflected in the Department of Interior report "Managing for the Future in a Rapidly Changing Arctic," the Inuit Circumpolar Council "Inuit Arctic Policy," and other documents prepared by local entities.

¹⁰ Inuit Arctic Policy

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581 *Conclusion: Policy Recommendations*

582 Strategic Recommendations

- 583 • **Continue** to pursue, and actively expand, all avenues of participation in the Arctic Council,
584 including involvement in Working Groups and by building partnerships with Permanent
585 Participants.
- 586 • Develop, where lacking, and build upon **existing programs** to improve transparency and
587 community/local inclusion in decision making through state coordination of multi-agency
588 permits, state and federal coordination of permits and plans, and meaningful involvement
589 of regional stakeholders in development activities or plans that affect them.

590 Other Recommendations

- 591 1. The state of Alaska has had limited participation in Arctic Council activities as part of
592 U.S. delegations.
 - 593 A. The state of Alaska should continue to pursue, and actively expand, all avenues of
594 participation in the Arctic Council, including involvement in Working Groups and by
595 building partnerships with Permanent Participants.
- 596 2. There is a gap in effective communication and formal consultation between Arctic
597 communities and other stakeholders and state and federal agencies.
 - 598 A. The state of Alaska should develop a program that achieves transparency and
599 community/local inclusion in decision making through state coordination of multi-
600 agency permits, state and federal coordination of permits and plans, and meaningful
601 involvement of regional stakeholders in development activities or plans that affect
602 them.
- 603 3. There is lack of information or centralized access to Arctic-specific information to guide
604 governance decisions at all levels.
 - 605 A. The state of Alaska should facilitate the establishment of a clearinghouse of Arctic
606 information that is useful for Alaska residents and communities.
- 607 4. Alaska's offshore and maritime interests are hampered by the U.S. inability to ratify the
608 Law of the Sea Treaty.
 - 609 A. The state of Alaska urges the United States Senate to ratify the United Nations
610 Convention on the Law of the Sea.
- 611 5. Alaska lacks clear and consistent cross-border information sharing and scenarios
612 planning.

613 A. The state of Alaska should foster and strengthen international partnerships with other
614 Arctic Nations, establishing bilateral partnerships with, in particular, Canada and
615 Russia, to address emerging challenges in the Arctic. For example, forming a
616 Beaufort Regional Business Council to work with Canada and/or a Chukchi Regional
617 Business Council to work with Russia on shipping traffic and other issues.
618

618 *5.2 Science and Research*

619 *Introduction*

620 Climate change is causing profound transformations in the Arctic's complex ecosystems at the
621 same time worldwide demand grows for the region's abundant natural resources. With the Arctic
622 warming at twice the global rate, effects such as diminishing sea ice coupled with globalization
623 are opening the way for more human activity in the region. Current or potential increases in
624 shipping, mining, oil and gas development, fisheries and tourism demand that Alaska increase its
625 knowledge of the Arctic's environment to inform the responsible development of these industries
626 and protect human and ecosystem health. Alaska needs a solid research base to understand and
627 mitigate the effects of climate change on residents of the Alaskan Arctic – effects that include
628 coastal erosion, flooding, increasing storm activity and permafrost thawing. Ocean acidification
629 and other changes in the ecosystem affecting flora and fauna may prove detrimental to
630 subsistence users. All these factors are likely to have significant social, cultural, health and
631 economic effects on Alaskan Arctic peoples.

632 Alaska's future prosperity depends in large part on the scientific, technological, cultural and
633 socio-economic research it promotes in the Arctic in the coming years and its ability to integrate
634 science into decision making. Ongoing and new research in the Arctic must be designed to help
635 monitor, assess and improve the health and well-being of communities and ecosystems;
636 anticipate impacts associated with a changing climate and potential development activities;
637 identify appropriate mitigation measures as well as opportunities; and aid in planning successful
638 adaptation to environmental, societal and economic changes in the region.

639 *Background*

640 There are many institutions, organizations and government agencies presently carrying out
641 research in the Arctic.¹¹ State agencies regularly conduct research and several recent state-led
642 initiatives have focused on the impacts of the changing climate in the Arctic. These include, for
643 example, the work of the Alaska Climate Change Sub-Cabinet.¹² Local government and regional
644 organizations conducting research in the Arctic include, but are not limited to: the Barrow Arctic
645 Science Consortium, the North Slope Borough, Kawerak, the Aleut International Association,
646 the Aleutian Pribilof Islands Association, and the Northwest Arctic Borough. Federal agencies
647 active in the Alaskan Arctic conduct extensive mission-related research. They enhance their
648 programs through several key inter-agency structures that promote coordinated efforts to address
649 Arctic issues. These include the Interagency Working Group on Coordination of Domestic

¹¹ See Science and Research Appendix A

¹² The Alaska Climate Change Sub-cabinet issued its final report and recommendations in 2009. Several state departments have followed up on the recommendations, e.g., the ADGF&G Adaptation Advisory Group: see www.adfg.alaska.gov/index.cfm?adfg=ecosystems.climate and www.climatechange.alaska.gov

650 Energy Development and Permitting in Alaska; the National Ocean Council; and the Interagency
651 Arctic Research Policy Committee. Also of note, and straddling governance levels, are the
652 Alaska Ocean Observing System, the North Pacific Research Board, and the North Pacific
653 Fishery Management Council.

654 It is worth highlighting the North Slope Science Initiative (NSSI) and the U.S. Arctic Research
655 Commission (USARC) for their roles in setting science and research agendas for the Arctic.¹³
656 The NSSI is among the most effective and inclusive research coordination and prioritization
657 efforts operating in the Alaskan Arctic, as it actively involves regional stakeholders as well as
658 state and federal agencies. While NSSI does not address the entire Alaskan Arctic, its mission
659 closely parallels the priorities of the state in regards to science and research. As stated in the
660 organization's 2009 *Emerging Issues Summaries*, "The vision of the NSSI is to identify those
661 data and information needs management agencies will need in the future to develop management
662 scenarios using the best information and mitigation to conserve the environments of the North
663 Slope."

664 In addition to coordinating research activities, the NSSI also identifies and prioritizes
665 information needs on an ongoing basis. Its mission states that it "also facilitates information
666 sharing among agencies, non-governmental organizations, industry, academia, international
667 programs and members of the public to increase communication and reduce redundancy among
668 science programs." The wide scope of NSSI research coordination is evident in the diverse
669 membership of its Science Technical Advisory Panel (STAP), which gives guidance to the NSSI
670 on matters of science and research planning, the compatibility of methodologies and data
671 compilation, quality assurance of NSSI-generated science, and many other matters.

672 One of the responsibilities of the USARC, which was created by the Arctic Research and Policy
673 Act of 1984, is to recommend coordination improvements in federal research programs.
674 Additionally, it is among the Commission's lawful duties to "cooperate with the Governor of the
675 state of Alaska, and with agencies and organizations of that state which the Governor may
676 designate" and to "facilitate cooperation between the Federal Government and state and local
677 governments with respect to Arctic research." The USARC also helps develop national research
678 goals and assists the Interagency Arctic Research Policy Committee in creating an Arctic
679 research plan, including, notably, the *Arctic Research Plan: 2013-2017*, which has been
680 incorporated into the federal government's *Draft Framework for the National Strategy for the*
681 *Arctic Region Implementation Plan*.

682 Private sector interests – in particular the oil, gas and mining industries – have been active in
683 Arctic research for decades conducting baseline assessments of environmental conditions,
684 mapping, and identifying social risks and opportunities associated with on-going and potential
685 industrial development in the region. That research informs permitting and license applications

¹³ See Science and Research Appendix A for a full description of NSSI and USARC

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686 as well as allows effective engagement by industry in the regulatory process. Engineering firms
687 and the support industry assist in the data collection and analysis of private sector science and
688 research.

689 Non-governmental organizations have long held interest in the Alaskan Arctic's research
690 programs and many fund research in the region. These include the Pew Charitable Trusts; World
691 Wildlife Fund; Oceana; International Union for Conservation of Nature; Gordon and Betty
692 Moore Foundation; the Aspen Institute, Arctic Commission Roundtable; and the Oak
693 Foundation.

694 Education and the broad impact of public outreach is conducted at multiple levels, including
695 through the university system and such collaborative efforts as the University of the Arctic,
696 which serves as a virtual institution supporting research and education across the Arctic Nations.
697 In addition, the Arctic Portal, based in Iceland, serves as a data depository and information
698 clearinghouse.

699 Many of the above entities regularly collaborate with one another and with international partners.
700 The foremost international forum gathering knowledge of the Circumpolar North is the Arctic
701 Council. The council's six Working Groups—comprised of experts from among the member
702 nations and Permanent Participants—compile research and conduct analysis related to Arctic
703 monitoring and assessment, Arctic contaminants, protection of the marine environment,
704 emergency prevention and preparedness, conservation of flora and fauna, and sustainable
705 development. Officials from Alaska state agencies and researchers from the University of Alaska
706 as well as Alaskans who are members of Permanent Participant organizations have regularly
707 taken part in Arctic Council working groups and task forces.

708 Amidst the multiple layers of research taking place, there are key research areas and
709 methodologies that should be especially emphasized. Identified by authorities worldwide as a
710 high priority, improved regionalized modeling was included in the recommendations of the
711 Alaska Climate Change Sub-Cabinet in 2009 and in the findings of the ANWTF in 2012. Both
712 entities also noted the relationship between improved modeling and effective scenarios planning,
713 and they specifically recommended expanding the Scenarios Network for Alaska and Arctic
714 Planning (SNAP) at the University of Alaska Fairbanks. Additionally, the USARC and the U.S.
715 Interagency Arctic Research Policy Committee emphasize the importance of regional models
716 and scenario planning in the *Arctic Research Plan: 2013—2017*. This is among the most
717 important areas of inquiry for the state because of models' practical use in developing strategies
718 for managing wildlife and for sustainable and adaptable communities, civil infrastructure, and
719 economic development infrastructure.

720 With the support of the state, the NSSI is embarking on scenario planning in partnership with the
721 University of Alaska Fairbanks. NSSI scenario planning will ensure that agencies have good
722 resource information for their decision making on North Slope activities. Decisions about

723 research and monitoring programs are most effective when based on plausible future social-
 724 ecological system expectations. The NSSI will use scenario planning to systematically assess a
 725 range of energy and resource extraction development scenarios for the North Slope and adjacent
 726 seas through 2040 in a manner that will contribute to our mutual understanding of the potential
 727 future state of the social-ecological systems of the region. The specific objectives are to:

- 728 • Identify future development scenarios on Alaska's North Slope and adjacent seas
- 729 • Identify information needs for decision making relative to those scenarios and to prior
 730 NSSI emerging issue analyses
- 731 • Use project results to enable more effective coordination of the identified research and
 732 monitoring needs

733 Simultaneously, as the USARC has advised, policy makers should not unduly focus on
 734 distinctions between basic and applied research, especially in light of the complexity of climate
 735 change and the need for better understanding whole ecosystems. As the state fosters research that
 736 has real-world applications, it should not neglect projects that may take time to yield practical
 737 outcomes. To be able to better anticipate and adapt to changes across the Arctic region, Alaska
 738 needs to continue to advance basic research.

739 In summarizing its chief recommendations, the Alaska Climate Change Sub-Cabinet noted: "The
 740 success and accuracy of downscaled models is largely dependent upon the quantity and quality
 741 of data available." The compiling of comprehensive baseline knowledge of existing
 742 environmental conditions is also crucial to measure, in order to subsequently mitigate, the
 743 impacts of increased activity in Arctic ecosystems. Focuses should not only include marine and
 744 terrestrial physical, chemical, and biological variables but also the cultures, socioeconomics, and
 745 health of Arctic populations. Two areas are worth particular emphasis: data sharing and
 746 accessibility; and traditional knowledge and culturally-considerate practices.

747 Data Sharing and Accessibility

748 In 2012 the ANWTF recommended "improving the exchange of research information and
 749 integration of data management...Faster and more extensive integration of data collected by state
 750 and federal agencies, academics, and industry would yield enormous benefits for all
 751 stakeholders." Better data sharing and accessibility is needed between agencies, academic
 752 institutions, industry and other organizations. Benefits include increasing the knowledge
 753 available to decision makers in both the public and private sectors; strengthening and refining of
 754 findings through data synthesis; reducing duplicative research; and enhancing the effectiveness
 755 of interdisciplinary research efforts. The ANWTF noted that organizations already working
 756 toward these goals – such as the Alaska Ocean Observing System and the NSSI – should be
 757 encouraged and supported.

758 Traditional Knowledge and Culturally Considerate Research Practices

759 In 2012 the ANWTF noted that “the local and traditional knowledge gathered by Alaska’s
760 indigenous peoples over thousands of years is critically important to a fuller understanding of our
761 northern ecosystems and the multitude of marine and land-based resources within them.” The
762 NWTF went on to recommend that “the local and traditional knowledge of the state’s indigenous
763 inhabitants be incorporated into all relevant areas of study” in the Arctic.

764 At the state level, there are few examples of required solicitation and use of local and traditional
765 knowledge specifically related to agency research. Most significant among them is the work
766 carried out by the Division of Subsistence within the Department of Fish and Game. State law
767 requires the division to “compile existing data and conduct studies to gather existing information,
768 including data from subsistence users, on all aspects of the role of subsistence hunting and
769 fishing in the lives of the residents of the state.” Direct uses of this information include the
770 division’s statutory duty to make recommendations to the Board of Fisheries and the Board of
771 Game regarding regulations affecting subsistence fishing and hunting and to collaborate with
772 other agencies on the formation of statewide and regional management plans. The division is
773 also required to “make information gathered available to the public, appropriate agencies, and
774 other organized bodies.”

775 *Discussion and Considerations*

776 Clearly, there is a vast amount of science and research being done in the Alaskan Arctic by a
777 broad spectrum of interests, from the public to the private sector and including non-governmental
778 organizations, the University system and many others. It is critical that Alaska be involved in the
779 various forums that build the information base available to policy-makers. Failure to fully engage
780 will result in the state following the lead of others, which may give rise to policies that do not
781 align with priorities and needs of Alaskans.

782 Traditional Knowledge

783 Local and traditional knowledge and subsistence activities inform many of the above entities’
784 research priorities, activities and findings, but there is a need for more effective use of traditional
785 knowledge. Inquiry into how researchers can better integrate local people and traditional
786 knowledge into their projects is receiving increasing attention.

787 Alaska laws do require public notice and comment periods related to agency decisions on
788 permits, authorizations and area management plans, but many representatives from local
789 governments and Alaska Native organizations have voiced discontent with the lack of specific
790 reference to traditional knowledge and tribal consultation in that body of law.

791 A primary example of meaningful cooperation between the state and local and Alaska Native
792 entities on this issue lies in a tribal communications protocol produced by the Department of

793 Environmental Conservation in 2011. The *DEC and Yukon-Koyukuk Tribal Communications*
 794 *Protocol* was negotiated to enhance communications between the department and regional tribes
 795 during DEC Alaska Pollutant Discharge Elimination System (APDES) permitting. It is designed
 796 to:

- 797 • Facilitate early notification of permit applications received
- 798 • Facilitate effective coordination between DEC and the Tribes by communicating clear
 799 information about APDES permitting
- 800 • Provide DEC APDES permit staff with information for effective tribal communication
 801 and participation in permitting
- 802 • **Facilitate the incorporation of pertinent local and traditional knowledge into**
 803 **permits through early notification and engagement** (Emphasis added)

804 Although the protocol was negotiated specifically in the context of the APDES program, ADEC
 805 Commissioner Larry Hartig has described the document as “a potential model for other Tribes
 806 and communities.” Likewise, the EPA, which funded development of the protocol, stated in its
 807 grant description “the best practices resulting from the project will be applied in other Alaska
 808 Department of Environmental Conservation programs and potentially to other state permitting
 809 programs.”

810 While the goal of using traditional knowledge in conjunction with conventional research is of
 811 considerable importance, there also exists a pressing need for increased investigation into
 812 precisely how to effectively and meaningfully do so. In *Traditional Knowledge and the Arctic*
 813 *Environment*, published by the Pew Charitable Trusts U.S. Arctic Program in August 2013, the
 814 authors assert that it is time to assess the use of traditional knowledge to date and ask, “What can
 815 be done to make better use of what traditional knowledge has to offer while respecting the time,
 816 patience, and expertise of its holders?” The Social Science Working Group of the North Pacific
 817 Research Board is also concerned about these issues and is currently devoting significant
 818 attention to the question of how researchers can best integrate local people and their knowledge
 819 into research projects and decision making. The NSSI, too, is actively working on better ways to
 820 incorporate traditional knowledge into scientific research.

821 Additionally, the Division of Subsistence’s practices, which adhere to the ethical principles of
 822 the social sciences, are useful. These standards include ensuring the anonymity of participants,
 823 informed consent, and following up with study communities to inform them of research findings.
 824 Similarly, research projects at the University of Alaska Fairbanks are rigorously scrutinized by
 825 its Institutional Research Board to ensure community sensitivity, data confidentiality and other
 826 ethical considerations.

827 Another resource is the “Policy Guidelines for Research” adopted by the board of the Alaska
 828 Federation of Natives in 1993, which urges the training and hiring of Alaska Natives to assist in

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829 studies and requires that communities be advised of the positive and negative implications and
830 impacts of the research.

831 State-Federal Collaboration

832 Of significant concern to Alaska is the extent and quality of Alaskan participation in existing
833 federal decision-making bodies that drive scientific research priorities. As described in current
834 federal law, the NSSI's STAP panel's 15 scientists and technical experts are drawn from
835 "diverse professions and interests including the oil and gas industry, subsistence users, Alaska
836 Native entities, conservation organizations, wildlife management organizations, and academia, as
837 determined by the Secretary [of the Interior]." Since 2005, Alaskans have made up a substantial
838 proportion of the STAP membership. However, beyond the general guidance that the STAP
839 membership should include experts from among Alaska Native entities and subsistence users,
840 there are no specific requirements regarding the appointment of Alaskan residents to the panel.

841 At the same time, the USARC consists of seven members, appointed by the President, as well as
842 the director of the National Science Foundation, who serves *ex officio*. At present, the USARC
843 includes four commissioners who are longtime Alaska residents. However, similar to the
844 legislation enabling the NSSI, the Arctic Research and Policy Act of 1984 requires that only one
845 appointee be a resident of Alaska.

846 Currently, nearly 90 percent of the research and development expenditures at the University of
847 Alaska Fairbanks (UAF), which carries out the lion's share of UA research in the Alaskan
848 Arctic, is derived from federal and institutional competitive grants. By contrast, in an average
849 year only about seven percent of UAF's research expenditures budget is derived from state of
850 Alaska funding.

851 UAF competes very successfully for federal grants, for example winning more than \$115 million
852 in research and development funding for the 2012 fiscal year. In almost all cases, federal
853 agencies including the National Science Foundation, the Department of the Interior, NASA, and
854 the Department of Defense proffer grants for projects focused on specific subject matter and in
855 turn the university develops proposals to compete for the funding. Institutional funding, which
856 often includes partnerships with other universities, private industry, and foundations, also
857 normally requires UAF to design research projects according to the grantmakers' goals.

858 Under this rubric, the vast majority of the research conducted by the university is driven by
859 federal agency and institutional priorities, rather than needs identified by the state. Thus, if
860 Alaska seeks more influence over the direction of UAF's Arctic research, it must provide
861 increased research funding to the university. University officials already meet on a regular basis
862 with state agency personnel to strategically examine Alaska's needs and to determine if UAF
863 research capacity makes it the best institution for a given project. There are also opportunities for
864 state funding to leverage substantial federal matches for research on topics of equally high
865 priority to both Alaska and the U.S. government.

866 An Alaska Arctic Research Agenda

867 It is worth considering the development of an Alaskan Arctic research agenda that better
868 articulates the state of Alaska's priorities, which could include:

- 869 • Economic and socio-economic factors affecting Arctic communities' sustainability and
870 adaptability
- 871 • Human physiological, behavioral, and mental health
- 872 • Civil and industrial infrastructure planning
- 873 • Ocean acidification and its possible impacts on subsistence and commercial fisheries;
- 874 • Tracking of trans-boundary contaminants and persistent pollutants and their cumulative
875 impacts on Arctic inhabitants and ecosystems

876 As part of this research agenda, the state of Alaska should be able to make clear to federal
877 entities providing financial support for modeling efforts that while due resources should be
878 devoted to development of models designed to aid in the responsible management of wildlife,
879 equal emphasis must be given to creating models useful for managing infrastructure and critical
880 public services. There are also concerns that the limitations of models developed to aid in
881 decision making be clearly identified. Even as baseline data and component parameterizations
882 improve, decision makers must have a clear understanding of uncertainties present in model
883 projections in order to evaluate contingencies and determine proper levels of precaution in
884 management and strategic approaches.

885 Observational systems are among the most effective means for monitoring and documenting
886 change, improving inputs to models and informing permitting decisions. They are also a valuable
887 way to meaningfully involve Arctic communities in research activities. As Henry P. Huntington
888 and George Noongwook write in their recently published brief *Traditional Knowledge and the*
889 *Arctic Environment*, "Hunters spend a great deal of time on the land and sea and cover a great
890 deal of territory. Making use of this widespread expertise would provide a broader, more up-to-
891 date and different picture of the environment than is available from many other methods,
892 complementing data from remote sensing and sparse monitoring stations. Incorporating local
893 data would also increase confidence in the results of monitoring, building a better foundation for
894 cooperative action to address impacts and changes that are detected."

895 As well as increasing the monitoring and documentation of change, there needs to be a greater
896 understanding within the state of the mechanisms that influence ecosystem dynamics. Process
897 studies can add to this knowledge and help to reveal the forces shaping ecosystem structure and
898 function. In addition, the transfer of findings from process studies into models can reduce model
899 uncertainties and improve the accuracy of model projections.

900 To ensure organized state input to federal, local and institutional decisions on Arctic research
901 and monitoring needs, a process is needed to establish state government priorities guided by state
902 objectives in the region. As the state's engagement with Arctic issues increases, the executive

903 branch will play an important role in improving coordination of state agencies' roles in matters
904 related to Arctic research.

905 Coordination and prioritization of research activities must be improved. Federal interagency
906 efforts in this sphere are already substantial and a number of them include state agency
907 participation. The federal government has called for a review of interagency activities in the
908 Arctic in order to identify and address overlapping missions and reduce duplication of effort.
909 Such a review must include considerations of how each interagency group interacts with state
910 policy makers to ensure their work addresses Alaska's needs. The state has an increasingly
911 important role to play in the review and in the crafting of recommendations for how to more
912 wisely use limited capacity to address Arctic science and research requirements. Alaska should
913 pursue strategies to broaden and strengthen the influence of its agencies, its academic experts,
914 and its local governments and associations.

915 *Conclusion: Policy Recommendations*

916 Strategic Recommendations

- 917 • Increase state funding to, and partnership with, the University of Alaska for Arctic research
918 that aligns with state priorities and leverages the University's exceptional facilities and
919 academic capacity.
- 920 • Consider adapting successful models – such as the Alaska Department of Environmental
921 Conservation and Yukon-Koyukuk Tribal Communications Protocol – to development
922 agreements with local governments and tribes regarding the use of traditional knowledge
923 and culturally sensitive practices in research and permitting programs.

924 Other Recommendations

- 925 1. While there are mechanisms in place to include Alaskans in science and research
926 prioritization and implementation, the extent to which state-federal interagency efforts
927 yield outcomes that align with the state of Alaska's interests varies. The North Slope
928 Science Initiative has been a model for generating borough, Alaska Native Corporation,
929 federal, and state research priorities and strategies that correspond with the state of
930 Alaska's interests.
 - 931 A. The state of Alaska should support discussions currently underway to add Northwest
932 Arctic Borough participation with the NSSI, thereby extending the initiative's
933 geographical scope without compromising its mission or effectiveness.
 - 934 B. The state of Alaska urges its congressional delegation and the U.S. Congress at large
935 to amend Section 103 of the Arctic Research Policy Act of 1984 (Amended 1990) to
936 provide that a minimum of four of the seven members of the U.S. Arctic Research
937 Commission appointed by the President be Alaska residents.

- 938 2. The high proportion of federal funding for Arctic research at the university means that the
 939 majority of inquiry conducted there is guided by federal agency priorities. To enhance its
 940 influence over the direction of UAF's Arctic research, the state must provide increased
 941 research funding to the university.
- 942 A. The state of Alaska should increase state funding to, and partnership with, the
 943 University of Alaska for Arctic research that aligns with state priorities and leverages
 944 the University's exceptional facilities and academic capacity.
- 945 3. Traditional knowledge remains underutilized as a resource in state-agency scientific
 946 research and corresponding decision making. Agencies also need to address the conduct
 947 of specific research projects to include practices that ensure research in and around rural
 948 communities is carried out in a manner considerate of local individuals and their culture.
- 949 A. The state of Alaska should consider adapting successful models – such as the Alaska
 950 Department of Environmental Conservation and Yukon-Koyukuk Tribal
 951 Communications Protocol – to development agreements with local governments and
 952 tribes regarding the use of traditional knowledge and culturally sensitive practices in
 953 research and permitting programs.
- 954 B. The state of Alaska should support and encourage the development of methods for
 955 more effectively integrating traditional knowledge into conventional research and
 956 natural resource management.
- 957 C. In addition, the state of Alaska should participate in Arctic Council efforts to develop
 958 recommendations for incorporation of traditional and local knowledge into its work,
 959 currently undertaken by the Canadian Chairmanship.

960

960 5.3 Planning and Infrastructure

961 *Introduction*

962 A full analysis of Planning and Infrastructure requires a collection and review of cross-border,
963 national, state, regional and community economic development plans, transportation plans, and
964 strategic planning documents.¹⁴ The goal should be to identify ways in which multiple levels of
965 planning are integrated and coordinated to support economic and community development, and
966 response operations, in the Alaskan Arctic. Planning and Infrastructure should accommodate:

- 967 • Ports, Harbors, Places of Refuge, and Anchorages
- 968 • Telecommunications, Aids to Navigation, and Data Acquisition and Sharing
- 969 • Emergency Management and Response
- 970 • Transportation and Access to Resources
- 971 • Energy Extraction, Production and Delivery
- 972 • Human Resources, Workforce Development, Research, Education and Training
- 973 • Sewer and Water

974 Critical to our understanding of these areas is the extent to which they are inter-linked as
975 fundamental building blocks of sustainable development in the Alaskan Arctic. The vast majority
976 of work to date in these areas has been intermittent (conducted on a project by project basis),
977 uncoordinated (unresponsive to a direct point of contact or leadership team) and independent
978 (unable to take into account inter-modal and cross-sector assets or processes). In order to ensure
979 future prosperity in the Arctic, Alaska must implement strategic, integrated, and intentional
980 planning that results in safe, secure, affordable, efficient, and reliable activities.

981 *Background*¹⁵

982 When considering planning and infrastructure in the Alaskan Arctic, it is important to understand
983 the scope of the region, its resources and broader issues of concern. The coastline from Dutch
984 Harbor in the Aleutians to Barrow on the North Slope is the same distance as the coastline from
985 Maine to the southern tip of Florida. Within the Alaskan Arctic, there is a vast array of resources.

986 2012 saw the lowest level of summer sea ice, covering only 3.4 million square kilometers. Sea
987 ice recovered somewhat in 2013, however the overall trend is decreasing sea ice at an aerial
988 extent of 2.7% per decade and accelerating. Predictions are wide-ranging, but there could be a
989 completely ice-free Arctic ocean (in summer months) as early as the 2030's. As ice melts,
990 shipping though the Arctic will increase. Businesses can reduce shipping costs by as much as
991 40% using Arctic routes rather than the Suez Canal. While this is still not (and may not ever be)
992 a major shipping route, there is increasing activity – mainly along the Northern Sea Route (along

¹⁴ See PandI Appendix C Reference list

¹⁵ Adapted from the Alaska Northern Waters Task Force final report, which continues to be relevant

993 Russia's northern coast) and through the Bering Strait. According to the U.S. Committee on the
994 Marine Transportation System, a record 46 vessels transited the Northern Sea Route in 2012
995 compared to 36 in 2011 and 4 in 2010. According to Russian officials, 71 vessels transited the
996 NSR in 2013.¹⁶ In 2012, 1.2 million tons of cargo, up 50% from 2011, was shipped through the
997 Northern Sea Route. In Alaska, and specifically the Bering Sea, vessel traffic is also increasing.
998 Between 2008 and 2012, vessel transits in the Bering Sea rose from 220 to 480. On top of
999 minimal communication equipment, poor weather forecasts, and poor sea ice predictions, the
1000 nearest emergency response facilities are located in Anchorage, Kodiak and Dutch Harbor,
1001 which are at least 635 miles away from the maritime Arctic Circle. There is a critical need to
1002 improve infrastructure along the coast to support search-and-rescue efforts and oil spill response
1003 to keep up with additional marine traffic and other human activity.

1004 Clearly, the Arctic is experiencing profound change as it is confronted with the increasingly
1005 evident forces of globalization and climate change, as well as new economic challenges for its
1006 communities. But this area is not new to the world. Indigenous peoples have been living in the
1007 Arctic for thousands of years. It is home to many Alaska Native cultures that rely on subsistence
1008 hunting and fishing. It is also an area of heightened environmental importance. Even in a region
1009 that is characterized by harsh climates, extreme weather conditions, and times of constant light
1010 followed by constant darkness, there is an abundance of life.

1011 Increasing changes and activity in the Alaskan Arctic are likely to hold enormous implications
1012 for both existing and future construction of infrastructure. The ability to better predict and
1013 understand the effects of phenomena such as widespread thawing of permafrost will help Alaska
1014 prepare for considerable maintenance issues on existing roads, airports, buildings, and pipelines.
1015 Just as importantly, it will aid engineers when it comes to properly siting, designing, and
1016 constructing new infrastructure capable of withstanding future changes in their specific
1017 environments. The Alaska Department of Transportation and Public Facilities (ADOTPF) have
1018 also examined these important concerns in their report on the "Impact of Climate Change on
1019 Alaska's Transportation Infrastructure."¹⁷

1020 These changes pose significant challenges to some communities in Arctic coastal and riverine
1021 areas, most notably those located along the Bering and Chukchi Seas. A number of communities
1022 are threatened with increased rates of coastal erosion and flooding as a result of storm activity
1023 and battered shorelines once protected by shore-fast ice. These problems could become chronic
1024 as the climate warms, seasonal sea ice retreats, and destructive coastal storms become more
1025 frequent. These important concerns have been recognized in reports issued by the state of
1026 Alaska's Climate Change Subcabinet Immediate Action and Adaptation work groups.

¹⁶ See reference, <http://news.nationalgeographic.com/news/energy/2013/11/131129-arctic-shipping-soars-led-by-russia/>

¹⁷ See reference, <http://climate.dot.gov/documents/workshop1002/smith.pdf>

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1027 Immediate investment in Arctic infrastructure is a priority for Alaska and is relevant to the
1028 interests of the entire United States. Alaska will need to explore ways to attract substantial
1029 sources of capital investment in addition to state and federal funding. Action is needed to enable
1030 the responsible development of resources; facilitate, secure, and benefit from new global
1031 transportation routes; and safeguard Arctic residents and ecosystems. This investment will
1032 improve the safety, security, and reliability of transportation in the region—a goal established by
1033 the U.S. Arctic Policy signed by President Bush in 2009 and included in the 2013 U.S. National
1034 Strategy for the Arctic Region.

1035 Over the last 50 years, the state (through the Village Safe Water program within the Alaska
1036 Department of Environmental Conservation) and its federal funding partners (EPA, USDA Rural
1037 Development and Indian Health Service) have supported community sanitation systems in rural
1038 Alaska. However, DEC reports that the cost of addressing rural sanitation needs has increased
1039 substantially in recent years while annual funding has decreased substantially. If this long-term
1040 trend continues, many rural Alaska homes will never receive adequate water and sewer service,
1041 and many others will lose service as resources will be insufficient to replace all aging
1042 infrastructure.

1043 With transformation in the Arctic calling for a broad spectrum of new facilities on such a large
1044 scale, the state of Alaska must take an active role in regional planning efforts with communities
1045 and their stakeholders, while also keeping in mind the maintenance and upkeep of existing
1046 infrastructure. This will help communities develop local strategies and ensure that the state is
1047 getting the most return on investment for local projects. Some communities may not have the
1048 resources to adequately prepare for the future, and the state should take this opportunity to help
1049 increase local capacity for the benefit of all Alaskans.

1050 *Discussion and Considerations*

1051 Alaska is on a cusp; declining oil production and the reliance on that revenue stream have
1052 minimized the development of other resources and the infrastructure necessary for that
1053 development. Regardless of whether the development is of oil, gas, methane gas hydrates,
1054 minerals, geothermal, other renewable resources or the development of transportation
1055 capabilities, a new focus on the development of a statewide *infrastructure system* is necessary
1056 and timely. Regionalizing such a system – and beginning with emerging challenges and future
1057 scenarios in the Arctic – allows planning to take place that recognizes local and community
1058 concerns, prioritizes local resources differently, and provides the greatest leverage to address
1059 localized challenges and the greatest amount of opportunity. Infrastructure contributes to
1060 *economic growth* (acting through both supply and demand) as well as a peoples' quality of life.

1061 The state of Alaska, then, should consider as a fundamental aspect of its Arctic policy the active
1062 development of Arctic infrastructure.¹⁸ Indeed, a robust Arctic infrastructure system is the best
1063 answer to economic development planning. This will require the state to make public
1064 infrastructure investment decisions based on three components: good economic practices
1065 ensuring financial stability; minimizing the impact on the land ensuring environmental
1066 sustainability; and assuring the impact on the peoples of Alaska is always positive.

1067 The primary concern should be the meaningful evaluation of – and investment in – response
1068 capacity. Alaska must take a leadership role in its emergency management systems in order to
1069 reduce uncertainty. A tiered approach whereby Alaska is able to identify primary, secondary and
1070 tertiary response assets is warranted. Included in the mix should be consideration of private
1071 and/or industry-owned assets, which may be closer to an impacted area than public resources.

1072 Increasing attention should be paid to communications and navigational aids, as well as
1073 mapping, hydrography, and bathymetry. The state of Alaska can facilitate this to a large extent,
1074 working with federal partners and industry. The same is true for data sharing, increased research
1075 collaboration, and private-public partnerships in acquisition and value-added products.

1076 It is worth recognizing that differences in proximity, risk, geography, and scale of challenge
1077 make evaluation of response capacity and the need for infrastructure difficult—there is not a one-
1078 size-fits-all approach to infrastructure development.

1079 Infrastructure development must be responsive to social, environmental and cultural impacts as a
1080 core element of sustainable development. This is important not only for transportation
1081 infrastructure, but for energy development and transmission. Furthermore, accessibility of high
1082 speed internet in rural communities is still a major obstacle for participation in decision making
1083 and is needed to foster more innovation for sustainable businesses in rural villages, and to inspire
1084 the state's young people to return after college.

1085 Creative funding strategies (i.e., public-private partnerships) for infrastructure cannot be ignored.
1086 Much of the critical infrastructure throughout the North is under the same influences of time,
1087 climate change and dwindling resources – planning should occur accordingly. At the same time,
1088 investments in infrastructure should be leveraged—an intermodal approach and layering of
1089 resources has a multiplier effect on infrastructure development and a direct impact on economic
1090 and community development. In addition, planning and infrastructure development needs to
1091 account for global supply chains and staging infrastructure outside Alaska.

1092 Lack of adequate water and sewer service is posing a serious health risk in a number of
1093 communities in rural Alaska including in the Arctic. Residents without running water and flush
1094 toilets have a significantly higher incidence of serious infection than persons with sanitation

¹⁸ See Appendix A "Alaska Northern Waters Task Force" - Findings and Recommendations Pg. 18

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1095 service. Approximately 4,500 households in rural Alaska lack running water and flush toilets and
1096 many of the 30,000 homes currently connected to systems are in jeopardy of losing service due
1097 to system age, deterioration, and harsh weather conditions.

1098 Finally, Alaska's greatest resource is its people, who should be prepared to compete beyond the
1099 state for opportunities around the world. Only in this way can Alaska ensure its competitiveness.
1100 Adequate funding for education from pre-kindergarten through college will be necessary, as well
1101 as investment in technical trainings.

1102 *Conclusion: Policy Recommendations*

1103 Strategic Recommendations

- 1104 • Conduct a comprehensive Arctic region economic and infrastructure assessment and
1105 planning process that integrates local, regional, state and federal planning efforts.
- 1106 • Encourage the development of an inter-agency and inter-governmental working group
1107 tasked with working with multiple levels of stakeholders to develop and implement a
1108 prioritization, funding and implementation mechanism for constructing and maintaining
1109 infrastructure and economic development.

1110 Other Recommendations

- 1111 1. Sub-area plans have identified response sites but there is not enough funding to place
1112 container vans for all sites. Additionally, current planning does not identify public and
1113 private or industry-owned assets. Local communities are not up to date with National
1114 Incident Management System/Incident Command System (NIMS/ICS) nor are first
1115 responders trained in HAZWOPER, etc.
 - 1116 A. The state of Alaska should work with industry to identify and develop primary,
1117 secondary and tertiary response infrastructure (and corresponding equipment) and
1118 train and sustain first responders.
 - 1119 B. The state of Alaska should recognize that local contingency plans listing assets must
1120 be included in the Sub-area plans.
- 1121 2. In federal waters the U.S. Coast Guard is in charge of navigational aids; NOAA and the
1122 U.S. Army Corps of Engineers are charged with mapping and bathymetry; and the Alaska
1123 Department of Natural Resources (DNR) is responsible for this in state lands. The private
1124 sector is also collecting data on leased areas.
 - 1125 A. The state of Alaska should support, invest in and complete increased communications
1126 and navigational infrastructure, mapping, hydrographic and bathymetry with data
1127 shared using collaborative research and private-public partnerships.

- 1128 B. The state of Alaska should coordinate with internal and external agencies and gather
1129 private sector data for completion of mapping, hydrographic and bathymetry data
1130 sharing.
- 1131 3. Each region or community has their own separate plans for infrastructure development,
1132 but these plans are not incorporated into a holistic Alaska Arctic plan. Infrastructure
1133 development should be responsive to social, environmental and cultural impacts and that
1134 intermodal infrastructure should benefit economic and community development.
- 1135 A. The state of Alaska should initiate a comprehensive Arctic region economic and
1136 infrastructure assessment and plan.
- 1137 B. The state of Alaska should include in such a plan criteria (that identifies proximity,
1138 risk, geography and scale of challenge to include intermodal infrastructure) from
1139 which projects could be prioritized.
- 1140 4. The state is operating under a banner of fiscal constraint – state, federal and local budgets
1141 are dwindling – while the vast majority of (and increasing) infrastructure projects are in
1142 the millions of dollars.
- 1143 A. The state of Alaska should establish infrastructure funding mechanisms for multiple
1144 infrastructure projects and should include incentives for cross-project planning and
1145 for public-private partnerships.
- 1146 5. The Alaskan Arctic's hub communities have regional training facilities. Some programs
1147 are for high school students only or for adults only.
- 1148 A. The state of Alaska should create additional programs for adults and students in
1149 vocational training.
- 1150 B. The state of Alaska should develop Arctic workforce development and education
1151 opportunities for Alaska's workforce, to include ice navigation, marine mammal
1152 observation, spill response, SAR, pilotage, and engineering.
- 1153 6. The state and federal governments should continue to work together to assure reliable
1154 delivery of adequate water and sewer service in all Alaska Arctic communities.
- 1155 A. Alaska should work with interested parties within the United States and other Arctic
1156 nations to investigate alternative approaches that are less costly to build, operate and
1157 maintain in small Arctic communities.
- 1158 B. Alaska should continue to encourage the U.S. Department of State to include
1159 fostering new technological approaches for in-home water and sewer infrastructure as
1160 part of the agenda for the U.S. chairmanship of the Arctic Council in 2015-17.
- 1161

1161 5.4 Oil, Gas, and Mineral Resources1162 *Introduction*

1163 The state of Alaska has been a sovereign and active Arctic entity engaged in Arctic development
 1164 and protection since statehood. Even before then, Alaska's citizens and communities pioneered
 1165 Arctic resource development and sustainable living. With statehood came the promise that
 1166 Alaska's significant land and resource base would build its economy and support its citizenry. In
 1167 fact, the discovery of oil and gas on the Kenai Peninsula provided the economic justification for
 1168 statehood. Today, oil and gas development provides roughly 90% of Alaska's state revenue, with
 1169 minerals, timber, seafood, and tourism significantly contributing to the balance. Alaska has over
 1170 45 years of oil and gas development experience in the Arctic and over 100 years of mining
 1171 experience.¹⁹

1172 *Background*

1173 The Arctic will inevitably see expanding development. The Alaskan Arctic is increasingly the
 1174 focus of new commercial opportunities for resource development. Arctic sea ice is melting and
 1175 newly opened shipping lanes promise better access to our shores and more efficient and
 1176 expeditious delivery of extracted resources to markets across the globe. Mean estimates for
 1177 undiscovered, technically recoverable resources in the Alaskan Arctic Petroleum Province
 1178 include 30 billion barrels of oil and 181 trillion cubic feet of non-associated natural gas.²⁰ For
 1179 example, North Slope basins hold as much undeveloped coal as the rest of the United States
 1180 combined.²¹ Red Dog Mine produces zinc, lead and silver ore from one of the largest base metal
 1181 deposits in the world. High gold prices have brought increased exploration activity to the region
 1182 and production has reached unprecedented levels. In 2012, Alaska's gold production reached
 1183 870,000 ounces, a volume not seen since the legendary Alaska Gold Rush days of the late 19th
 1184 and early 20th century.^{22 23}

1185 Although the vast mineral and hydrocarbon reserves make the Alaskan Arctic attractive for
 1186 investment, development is challenged by distance to markets, limited infrastructure, costs and
 1187 risks attendant to its remoteness, challenging weather and environmental conditions, and a

¹⁹ Banet, Jr., Arthur C., *Oil and Gas Development on Alaska's North Slope: Past results and future prospect*, USDO I – BLM – Alaska, Open File Report 34, March 1991; See Table 1, www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/ofr.Par.49987.File.dat/OFR_34.pdf (Accessed May 2013).

²⁰ The Arctic Petroleum Province encompasses all lands and adjacent continental shelf areas north of the Brooks Range-Herald arch tectonic belts and south of the northern (outboard) margin of the Alaska rift shoulder. USGS – *Assessment of Undiscovered Petroleum Resources of the Arctic Alaska Petroleum Province*, by David W. Houseknecht, Kenneth J. Bird, and Christopher P. Garrity (Scientific Investigations Report 2012-5147); <http://pubs.usgs.gov/sir/2012/5147> (Accessed May 2013).

²¹ Flores, R.M., G.D. Stricker, and S.A. Kinney. 2003. *Alaska coal resources and coalbed methane potential*. U.S. Geological Survey Bulletin 2198, 4 p., <http://pubs.usgs.gov/bul/b2198> (Accessed May 2013); Flores, R.M., G.D. Stricker, and S.A. Kinney. 2004. *Alaska coal geology, resources, and coalbed methane potential*. U.S. Geological Survey Digital Data Series DDS-77, 127 p. <http://pubs.usgs.gov/dds/dds-077/> (Accessed May 2013); U.S. Energy Information Administration. 2012. *What is the role of coal in the United States?* U.S. Department of Energy website. Updated July 18, 2012, www.eia.gov/energy_in_brief/article/role_coal_us.cfm (Accessed May 2013).

²² Lasley, Shane, *Mining News: 2013: A golden year for Alaska miners*, Petroleum News, Vol. 18, No.4, Jan. 27, 2013; www.petroleumnews.com/pntruncate/636968834.shtml (Accessed May 2013).

²³ In addition, the Donlin Gold Project proposes to add another 1.5 million ounces of gold to the statewide production by the end of the decade.

1188 dwindling subfreezing season necessary for maintaining ice roads and conditions suitable for
 1189 safe travel and operation within the Arctic.²⁴ Despite this challenging environment and
 1190 extraordinary costs, exploration and development investment in the Arctic has steadily increased
 1191 and will continue to increase, if commodity prices remain high and if Alaska remains
 1192 competitive for investment dollars.²⁵ Alaska should not ignore that it is in a global race to attract
 1193 investment that will open new opportunities in the Arctic. To encourage new capital investment,
 1194 and secure the benefits of new resource development upon which state and local communities
 1195 depend, Alaska and our federal counterparts must continue to spearhead new strategies to keep
 1196 Alaska competitive with other Arctic nations.

1197 For over 50 years state agencies, including the Department of Environmental Conservation, the
 1198 Department of Natural Resources, the Department of Fish and Game and the Department of
 1199 Transportation and Public Facilities have provided thorough environmental oversight for
 1200 exploration and development activities in the Arctic. Alaska has some of the most sophisticated
 1201 interagency coordination and permitting processes in the country, with the expertise, experience
 1202 and commitment to safely develop the Alaskan Arctic's vast resources.²⁶ With this history and
 1203 experience, Alaska is well positioned to respond to increased resource development activity in
 1204 the Arctic.

1205 Protecting the environment is a key concern facing the Arctic; so too is ensuring a sound
 1206 economy for its residents. Some Alaskan Arctic communities are currently supporting new
 1207 resource extraction projects, recognizing that oil, gas and mining industries offer meaningful
 1208 employment, stable cash economies and reliable municipal revenues that support clean water,
 1209 sanitation, health clinics, airports and other infrastructure necessary for strong, safe and healthy
 1210 communities. While circumstances differ between local governments, often resource
 1211 development projects have meant an influx of new revenue sources. This new revenue has, in
 1212 some cases, meant that local governments have the resources needed to expand emergency
 1213 response and search and rescue capabilities, take an active role in oil spill preparedness, and
 1214 implement meaningful measures to protect regional ecosystems and local food sources that are
 1215 critical to a subsistence culture. While the U.S. Coast Guard, U.S. Environmental Protection
 1216 Agency, the state of Alaska, and industries play a key role in oil spill planning, prevention and
 1217 response, local governments also must be equipped to maintain and expand both critical
 1218 infrastructure and train response personnel to meet the challenges of new on- and offshore

²⁴ USGCRP. 2009. *Regional climate impacts: Alaska*. in T.R. Karl, J.M. Melillo, and T.C. Peterson (Editors), *Global climate change impacts in the United States: A state of knowledge report from the U.S. Global Change Research Program*. Cambridge University Press, New York, N.Y., p. 139-144, <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-reports.pdf> (Accessed May 2013).

²⁵ Haley, S., M. Klick, N. Szymoniak, and A. Crow. 2011. Observing trends and assessing data for Arctic mining. *Polar Geography* 34:1-2, 37-61.

²⁶ For example, Alaska's spill response planning system partners state agencies with industry. Under this structure the state is obligated for spill response planning and oversight and the responsible party is obligated to provide trained personnel and equipment for the response effort and clean-up. Each year, industry and pertinent state agencies conduct several spill response drills. No other state in the U.S. has a comparable program.

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1219 resource development.²⁷ Local resource development also holds the potential of increasing
1220 access to affordable energy in remote communities suffering from staggering energy costs.

1221 Federal revenue sharing generated from oil, gas and mineral development is central to supporting
1222 these local economies. For example, revenue sharing from the National Petroleum Reserve-
1223 Alaska (NPR-A), in the form of Impact Grants, helps local governments build community
1224 infrastructure and fund programs such as teen centers and cultural education. However, although
1225 federal revenue sharing is in place for oil and gas leasing activities within the NPR-A, for leasing
1226 activities within the federal OCS it is not. Current federal law mandates revenue sharing from
1227 OCS development in the Gulf of Mexico, however.

1228 New resource development opportunities both on- and offshore must be balanced against the
1229 potential impacts by incorporating appropriate mitigation and safeguards. Although the debate
1230 about potential risks to the environment and subsistence resources is often heated and emotional,
1231 it is critical for the state of Alaska to ensure a balance is met (see inset box for example), and that
1232 debates remain constructive and oriented towards finding workable solutions. Local governments
1233 that have active resource development within their boundaries acknowledge that in order to
1234 support and sustain the communities in their region, they must work collaboratively with the
1235 state and industry. This includes ensuring that rural development includes protections for
1236 subsistence resources, cultural identity and lands, while providing needed infrastructure,
1237 services, and employment training opportunities.

1238 Local government, state, and industry collaboration occurs with frequency and success in
1239 Alaska. Arctic communities affected by new development have rightly demanded to be heard
1240 during all phases of a project's development. The manner and scope of this community
1241 engagement continues to evolve as the state, communities and industry work to meet new
1242 concerns and demands. For example, in 2010 the state formally implemented a Health Impact
1243 Assessment (HIA) program within the Department of Health and Social Services and is working
1244 with federal agencies to develop HIAs as part of the process for large-scale projects.²⁸ These
1245 HIAs evaluate the potential health effects of a project on a population and the distribution of
1246 those effects, so that communities and other stakeholders can preemptively develop strategies to
1247 minimize adverse impacts and maximize health benefits to a population near a proposed project.
1248 But these kinds of initiatives are not new. Twenty-three years ago the state was awarded the
1249 National Planning Award for its exemplary outreach to rural communities.²⁹ Communities and

²⁷ See, Charlotte Brower, Mayor North Slope Borough, Congressional Testimony before the Committee on Senate Energy and Natural Resources in support of S. 1273, the "Fixing America's Inequities with Revenues Act of 2013."

²⁸ Health Impact Assessment work first began in Alaska in 2004 when the North Slope Borough conducted two HIAs for resource development projects. HIAs are used elsewhere in the country, although the state of Alaska views its HIA program as a key component of its "best practices" approach to large project permitting. The state formalized the program in the Department of Health and Social Services in 2010. State of Alaska Epidemiology Bulletin No. 19, July 25, 2011.

²⁹ The National Planning Award's Paul Davidoff Award for Community Outreach was presented to the State Department of Natural Resources in 1990 and is on display in the Department's office.

1250 regional organizations also take the lead in creating forms of community engagement that will
1251 produce meaningful and lasting agreement about resource development decisions.

1252 *Discussion and Considerations*

1253 To take advantage of the expanding activity and global interest in the Alaskan Arctic, and to
1254 craft the course and pace of development in the state and in the region, Alaska must invite better
1255 communication and partnership with federal entities.³⁰ Additionally, Alaska must take a more
1256 assertive and proactive role on the national and international stage where Arctic resource
1257 development policy is debated.

1258 Alaska is well-suited to contribute to the national and international dialogue on resource
1259 development in the Arctic. The state of Alaska, its legislature, relevant agencies, and the
1260 Governor – representing all of Alaska's residents – intends to lend a strong voice of experience
1261 and leadership to resource management and development opportunities as they emerge in the
1262 Arctic. Alaska should continue to build a common outlook for the Arctic by building on existing
1263 and potential partnerships with national, international, commercial, academic and non-
1264 government entities.

1265 In addition to focused participation in national and international forums, Alaskans must work
1266 diligently at home to speak with a unified voice as Alaska moves forward to advocate its
1267 sovereign rights as an Arctic state within these arenas. Pro- and anti-development organizations
1268 from inside and outside the state, which often present views that are not in keeping with the
1269 perspectives of most Alaskans, lobby the Federal Government, influence resident stakeholders,
1270 and ultimately impact federal actions. This further highlights the need for Alaskan stakeholders
1271 to collaborate and identify priorities for sustainable resource development that include
1272 environmental safeguards, and approach federal decisions makers with a unified voice on all
1273 development issues.

1274 A more unified voice is crucial to promoting meaningful negotiations with federal agencies and
1275 Congress as the state advocates for additional development opportunities onshore and offshore in
1276 the Alaskan Arctic and seeks more advanced capabilities for emergency preparedness and
1277 response. With declining North Slope oil production, industry access to federal land and Outer
1278 Continental Shelf (OCS) waters is critical to future exploration and development success, and
1279 ultimately to Alaska's economic stability. Recent federal actions such as the National Petroleum
1280 Reserve – Alaska (NPR-A) Integrated Activity Plan, the National Ocean Policy, and the Arctic
1281 National Wildlife Reserve (ANWR) Comprehensive Conservation Plan threaten to restrict

³⁰ Improving the state's relationship with its federal counterparts is prudent, particularly in light of the fact that the Federal Government has primary jurisdiction over nearly three quarters of the U.S. Arctic's land mass. Alaska can help, through example and guidance, as federal agencies work to coordinate and reduce duplication of over 20 federal agencies involved in the U.S. Arctic. See 04/04/2013 press release, www.doi.gov/news/pressreleases/intcragency-working-group-calls-for-integrated-management-and-planning-for-a-rapidly-changing-Arctic.cfm# (Accessed August 2013). The Parnell Administration and Alaska Congressional Delegation have been vocal advocates on various federal energy issues (e.g., ANWR development, OCS, NPR-A, OCS revenue sharing, etc.).

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1282 opportunities that are critical to the future of Alaska's economy. At least one major oil company
1283 complained in 2013 that regulatory uncertainty in the OCS effectively stalled exploration
1284 activities, even after its leases were awarded.^{31 32} Forging stronger alliances within the state,
1285 between local governments, communities, Alaska Native entities and other resident stakeholders,
1286 will be key in addressing these issues on the federal level.³³

1287 Resource development is critical to ensuring healthy local economies. Alaska and the Alaskan
1288 Arctic is a key component to independent U.S. energy security. To meet national, state and local
1289 goals for energy production, and to meet the challenges of adapting to rapidly changing Arctic
1290 conditions, the state of Alaska must work with industry, federal agencies, and local/regional
1291 communities to encourage the development of new technologies, invest in needed infrastructure,
1292 and resolve burdensome legal and regulatory impediments. To that end, considerations should
1293 include to:³⁴

- 1294 • Promote better local, state and federal agency collaboration and coordination to facilitate
- 1295 permitting of resource extraction projects
- 1296 • During all large-project development, ensure that the permitting process includes
- 1297 sufficient time, to allow for meaningful community participation, input and reflection
- 1298 • Strategically build connectivity between communities, development projects and markets
- 1299 including access to roads, ports, facilities, power generation and transmission, and
- 1300 communication
- 1301 • Implement localized resource revenue sharing to support infrastructure development by
- 1302 Arctic communities
- 1303 • Support adequate funding for state-directed baseline data collection and develop
- 1304 reasonable and predictable standards for determining when sufficient data is collected to
- 1305 commence development projects and for ensuring data storage for future access and use
- 1306 • Solve regulatory uncertainty – especially as it relates to OCS development, remote
- 1307 incinerator rules and future air quality regulations, effluent limits, and Endangered
- 1308 Species Act listings

³¹ Press Release, ConocoPhillips Alaska, April 10, 2013, Regulatory Uncertainty Leads ConocoPhillips to Put 2014 Chukchi Sea Exploration Drilling Plans on Hold.

³² However, it is important to note that the U.S. Bureau of Ocean Energy Management and the U.S. Bureau of Safety and Environmental Enforcement are working with company input to develop Alaska Arctic standards that are based on current OCS development permit conditions. According to the Department of Interior, these standards will be out before the year-end and should have no effect on existing permit conditions and therefore no effect on whether or not an oil company with current leases and permits decides to drill in 2014.

³³ Indeed, on May 20, 2013, Governor Parnell's administration, joining forces with the Arctic Slope Regional Corporation and the North Slope Borough, proposed to help finance exploration in the ANWR 1002 Area. Although the Federal Government has been reluctant to open ANWR to exploration, presenting a united front and offering \$50 million in state dollars may help overcome this past resistance. Not all Alaskan's agree with this effort however, with opposition presented by Gwich'in tribal governments who fear the area is critical to the Porcupine caribou herd and others who support permanent protection for the coastal plain, which is an integral part of the protected wildlife refuge.

³⁴ In 2013, the Oil, Gas and Mining – Resource Development team members interviewed AOGA, RDC, AMA, NANA, Donlin Gold and Calista. Policy Team minutes: 05/03/13 and 05/10/13.

1309 To seize the emerging opportunities in the Arctic, and advance energy independence for Alaska,
 1310 its rural communities and the U.S., the state of Alaska and pertinent federal agencies must
 1311 address these issues and lead the way for Arctic resource development strategy and coordination.

1312 *Conclusion: Policy Recommendations*

1313 Strategic Recommendations

- 1314 • Implement regional planning efforts that allow local stakeholders to identify and
 1315 communicate to state and federal agencies priorities for education, infrastructure, and
 1316 development.
- 1317 • Develop a mechanism for revenue sharing from resource extraction for impacted
 1318 communities, developing perpetual trust funds (where lacking) to finance community
 1319 needs beyond the life of non-renewable resources.

1320 Other Recommendations

- 1321 1. Alaska must continue to actively promote oil, gas, and mineral exploration and
 1322 development investment opportunities onshore, offshore and within the extended
 1323 continental shelf in a manner that is safe, respects people and the environment, and that
 1324 maintains a level of production that meets the economic needs of the state, local
 1325 communities, and industry.
 - 1326 A. The state of Alaska should continually advance new technology to improve safety and
 1327 mitigate impacts to the environment.
 - 1328 B. The state of Alaska should establish revenue sharing from resource extraction for
 1329 Alaska's impacted communities in areas where such are lacking and advocate for
 1330 federal revenue sharing from opportunities on the Arctic outer continental shelf.
 - 1331 C. The state of Alaska should encourage use of those funds to develop perpetual trusts,
 1332 such as the Alaska Permanent Fund, that will help fund community needs into the
 1333 future beyond the finite life of non-renewable resources.
 - 1334 D. The state of Alaska should continue to prepare the local workforce to participate in all
 1335 aspects and all phases of resource development including research, monitoring,
 1336 regulatory oversight, project development, construction, operation, remediation, and
 1337 reclamation.
- 1338 2. To ensure a healthy, secure, and safe Arctic region, Alaska must partner with federal
 1339 agencies to advance shared goals, like research collaboration and strategic planning.
 - 1340 A. The state of Alaska should assess and support new infrastructure that may advance
 1341 resource development opportunities.

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- 1342 B. The state of Alaska should coordinate with industry, universities, other research
1343 organizations and countries to enhance sharing and accessibility of scientific data to
1344 better inform state and federal permitting and protect the environment.
- 1345 C. The state of Alaska should collaborate with industry and federal agencies to continue
1346 to update hydrocarbon and mineral resource mapping and estimates in the Alaskan
1347 Arctic.
- 1348 D. The state of Alaska should work with the federal government to develop a
1349 coordinated permitting system for Arctic assets, to include OCS revenue sharing.
- 1350 E. The state of Alaska should promote science-influenced decision making that
1351 incorporates local and traditional knowledge of Alaskans and encourages adaptive
1352 approaches guided by ongoing research and monitoring.
- 1353 3. Greater interest by industries in Alaskan Arctic opportunities will increase the number of
1354 requested resource extraction permits, necessitating more efficient permitting and
1355 coordination by local, state and federal entities.
- 1356 A. The state of Alaska should work with federal agency land managers to achieve
1357 greater access, as well as clear and predictable regulatory standards, that together help
1358 to attract new industry investment in the Alaskan Arctic.
- 1359 B. The state of Alaska should lead joint federal and state working groups to improve
1360 coordination and communication during permitting of resource development projects.
- 1361 C. The state of Alaska should develop region-wide planning that allows local
1362 stakeholders to identify regional priorities for development and improve
1363 understanding and consideration of the cumulative impacts of human activities in the
1364 region.
- 1365 D. The state of Alaska should coordinate with industry, local communities, regions and,
1366 when appropriate, neighboring Arctic nations, to identify future needed baseline data
1367 collection, research and monitoring that would augment and enhance state and federal
1368 permit processing.
- 1369 4. Alaska has extensive experience and knowledge about Arctic resource development that
1370 should inform Arctic policy formation in federal and international arenas.
- 1371 A. The state of Alaska should continue fostering strong partnerships between state and
1372 local resource industry groups, such as the Alaska Miners Association, Resource
1373 Development Council and Alaska Oil and Gas Association, in recognition of the
1374 contribution these local industry groups will make as Alaska establishes itself as a
1375 leader in Arctic policy and expertise.

1376 [Call-out Box]

1377 Leadership by Local Communities: NANA Regional Corporation and Red Dog Mine

1378 Local communities and regional organizations have made community engagement a priority and
1379 one aim is to produce meaningful and lasting agreement about resource development decisions.
1380 We look to the Red Dog Mine, located 90 miles north of Kotzebue, for a good example. Owned
1381 by NANA Regional Corporation, an Alaska Native Corporation created by the Alaska Native
1382 Claims Settlement Act of 1971, Red Dog Mine is operated by Teck, Alaska, formerly Cominco.
1383 Before the initial development began, NANA directly engaged in a decades-long dialogue with
1384 their Inupiat shareholders to determine if resource development was right for their region. As a
1385 result of this extensive dialogue, in 1982 NANA and Cominco signed an innovative operating
1386 agreement that protects the subsistence resources of the Inupiat of Northwest Alaska and
1387 contributes to the regional economy with the production of valuable zinc and lead concentrate at
1388 the Red Dog Mine. The 1982 agreement also created a management and oversight committee
1389 consisting of members of NANA and Cominco (now Teck Alaska, LLC) and a Subsistence
1390 Committee consisting of Elders from neighboring communities who regularly work with mine
1391 officials to address local concerns regarding subsistence impacts.

1392 The mine has proven to be an economic catalyst in the region while protecting the Inupiat way-
1393 of-life. For example, to date NANA has received \$894 million in net proceeds from the mine, of
1394 which more than \$515 million has been shared with other regions as part of the 7(i) sharing
1395 provisions of ANCSA. The Northwest Arctic Borough, the region's home rule borough, has
1396 received \$118 million in payments-in-lieu-of-taxes; and, on average, approximately 57% of the
1397 mine's employees are NANA shareholders. The Red Dog Mine is a success story and one in
1398 which rural communities are leading the decision making process for resource development in
1399 collaboration with state agencies, Native corporations, and industry leaders. Rural communities
1400 are balancing difficult decisions and in this case were able to establish a flexible system that
1401 allowed for resource development while protecting customary and traditional ways of life.

1402 Rural communities will need to continue leading decision making and collaborative partnerships
1403 as new resource development opportunities are balanced against potential negative impacts.
1404 Although the debate about potential risks to the environment and subsistence resources is often
1405 heated, it is critical for the state of Alaska to ensure a balance is met and appropriate mitigation
1406 strategies and other safeguards are in place. The development of resource access roads is one
1407 area where this debate can be found.

1408 NANA Regional Corporation is exploring economic development opportunities for its
1409 shareholders that have the potential to increase job opportunities, reduce energy costs and
1410 increase access to other resources. One project being pursued by NANA in partnership with
1411 NovaCopper is aimed at developing two large copper deposits in the Ambler Mining District
1412 located east of Kotzebue in the Upper Kobuk area. To make this project viable for the

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1413 development phase of the mine, it is necessary to reduce the cost of transporting mineral ore out
1414 of the district. NovaCopper and the state of Alaska are working with communities in the Upper
1415 Kobuk area to weigh both the benefits and the risks of developing the new road. Some
1416 communities are supportive because of potential benefits, including access to services and
1417 supplies that can address the staggeringly high cost of living. Other communities worry that a
1418 public-use road will bring with it more non-resident hunters and increased pressure on the
1419 caribou herd upon which they rely as a subsistence and cultural resource. In fact, locals report
1420 that last year a large number of hunters were dropped into the Ambler/Kobuk area for caribou
1421 hunting which forced the caribou herd to turn to the northeast resulting in local resident hunters
1422 having to travel further at greater cost to hunt.

1423 Resident hunters worry that building a new road would aggravate further the growing pressure
1424 on the caribou herd. NANA, the state, local communities and regional and local Native entities
1425 are collaborating to ensure the best option for access to resources. One option being considered is
1426 to construct an industrial-use only road with limited access. It should be noted that the state has a
1427 history of managing caribou sustainably in the midst of resource and road development. This
1428 dialogue about the risks and benefits of new access is ongoing, with more discussion planned as
1429 the project is still in the exploration phase and an environmental impact study on the road has not
1430 yet commenced.

1431

1431 *5.5 Security and Defense*

1432 *In 2014, the Commission will comment on the recently release DOD Arctic Strategy, provide*
 1433 *additional information about Alaska's Division of Military and Veteran's Affairs (DMVA) and*
 1434 *the National Guard. At the same time, the Commission will expand on the different types of*
 1435 *security, including energy, food, environmental, and economic. Recommendations for this*
 1436 *subject matter area will also be drafted in 2014.*

1437 *Introduction*

1438 Though Alaska is not part of the lower 48, it is part of the homeland that the Department of
 1439 Defense (DOD) defends. Alaska is a critical part of National defense because Alaskans are
 1440 American citizens, Alaska's natural resources fuel the U.S. and Alaska's strategic location
 1441 protects everyone in North America. This should warrant more defense personnel, defense
 1442 hardware and defense technologies. Recognizing the challenges that federal agencies' budgets,
 1443 including DOD's, face and will face into the future, Alaska must consistently make the case that
 1444 the state is worth DOD investment. A secure Alaska is the Gateway to a safe North America – it
 1445 is not enough to guard the gates at Hawai'i and Guam.

1446 An emerging Arctic, with more activity due to diminishing sea ice, is a key aspect of the need for
 1447 continued and long-term investment. The state needs a visible presence in the Arctic. Anyone
 1448 sailing on (or under) or flying through America's sovereign space in its northernmost region
 1449 must know that we will meet and defeat any threat to our homeland.

1450 As part of this new and expanded mission, the state deserves: a strengthened and active Coast
 1451 Guard; response ability along Alaska's western coast, including a deep draft port; greater ability
 1452 to detect submarines in the Bering, Chukchi and Beaufort seas; better domain awareness and
 1453 tracking of maritime activity; and improved communications, navigation and weather
 1454 infrastructure.

1455 Alaska has been and will continue to be a strong partner alongside America's military forces. For
 1456 example, the state provided \$80M in funding for the Tanana bridge extension, thereby
 1457 facilitating the military's access to premier training grounds. Currently, the state is supporting
 1458 renovations to Joint Base Elmendorf-Richardson's (JBER) National Guard Armory and the
 1459 Alaska Industrial Development and Export Authority (AIDEA) is financing the transition of
 1460 Sector Anchorage, saving the Coast Guard as much as \$1.5M/year. The state of Alaska is willing
 1461 to be a financial partner in projects that are in the state's interest. The state's security and defense
 1462 are of paramount importance.

1463 *Background*

1464 The U.S. Department of Defense Arctic Strategy, released November 22, 2013 at the Halifax
 1465 International Security Forum, identifies that a desired end-state for the Arctic is: 'a secure and

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1466 stable region where U.S. national interests are safeguarded, the U.S. homeland is protected, and
1467 nations work cooperatively to address challenges.’ Two main supporting objectives are: (1)
1468 Ensure security, support safety, and promote defense cooperation; and (2) Prepare to respond to a
1469 wide range of challenges and contingencies.

1470 The DOD Arctic Strategy states that the Department will accomplish these objectives in the
1471 following ways:

- 1472 • Exercise sovereignty and protect the homeland
- 1473 • Engage public and private sector partners to improve domain awareness in the Arctic
- 1474 • Preserve the freedom of the seas in the Arctic
- 1475 • Evolve Arctic infrastructure and capabilities consistent with changing conditions
- 1476 • Support existing arrangements with allies and partners while pursuing new ones to build
1477 confidence with key regional partners
- 1478 • Provide support to civil authorities, as directed
- 1479 • Partner with other departments and agencies and nations to support human and
1480 environmental safety
- 1481 • Support the development of the Arctic Council and other international institutions that
1482 promote regional cooperation and the rule of law

1483 The strategy notes the uncertainty of future projections about the Arctic Ocean and climate
1484 change. It also states that ‘fiscal constraints may delay or deny needed investment in Arctic
1485 capabilities, and may curtail Arctic training and operations.’ DOD will also attempt to mitigate a
1486 public narrative that speaks to rivalry and conflict in the Arctic. DOD will also be careful to not
1487 be too aggressive in taking steps to anticipate future Arctic security risks so that mistrust &
1488 miscommunication will not materialize.

1489 U.S. Northern Command (USNORTHCOM) has the primary responsibilities for addressing
1490 Arctic defense and homeland security. It provides Strategic-Level Command through the
1491 Commander of U.S. Northern Command (CDRUSNORTHCOM). CDRUSNORTHCOM is the
1492 geographic combatant commander responsible to the Secretary of Defense and the President for
1493 a range of missions within his assigned area of responsibility (AOR), which includes North
1494 America and the Arctic to the North Pole. Principle missions include homeland defense, defense
1495 support of civil authorities, and security cooperation activities (interactions with foreign defense
1496 establishments). CDRUSNORTHCOM is responsible for the planning and conduct of these
1497 missions throughout this area of responsibility, which includes the Arctic. CDRUSNORTHCOM
1498 is also responsible for the advocacy for DOD Arctic capabilities.

1499 At the operational level, the Commander of Joint Task Force Alaska (CJTF-AK) has
1500 responsibilities. JTF-AK is a subordinate organization to USNORTHCOM. CJTF-AK also
1501 serves as Commander, Alaskan Command (ALCOM), a sub-unified command to Commander,
1502 U.S. Pacific Command (USPACOM), another geographic combatant commander. ALCOM and

1503 JTF-AK are serviced by one combined staff; responsibilities are so intertwined that their most
1504 recent campaign planning action resulted in a combined mission statement: Alaskan Command
1505 and Joint Task Force Alaska, along with trusted partners, conduct homeland defense, civil
1506 support, and mission assurance in Alaska to defend and secure the United States and its interests.

1507 JTF-AK has been tasked with operationalizing the USNORTHCOM missions in the Arctic.
1508 DOD is lead for the homeland defense mission. Most other missions (i.e., defense support of
1509 civil authorities) would be conducted in support of a state-led agency or other lead agencies.
1510 JTF-AK planning is accomplished by developing Arctic concepts of operations (CONOPS).
1511 These CONOPS are basically plans for how key USNORTHCOM missions would be executed
1512 in the Arctic. CONOPS also facilitate identification of required capabilities. Potential CONOPS
1513 to be developed include: Arctic Search and Rescue, Arctic Domain Awareness, and Arctic
1514 Communication.

1515 In order to better educate DOD of the uniqueness of both Alaska and the Arctic operational
1516 environment, ALCOM/JTF-AK created a monthly Arctic Speaker Series. The Arctic speaker
1517 series educates the staff and other Arctic stakeholders on various parts of Alaska and the Arctic.
1518 The range of speakers is very diverse in order to provide a broad knowledge base for the staff.

1519 ALCOM/JTF-AK has also partnered with the University of Alaska, with a memorandum of
1520 understanding on Arctic information sharing, promoting shared DOD-Academia understanding
1521 of emerging Arctic requirements, capabilities and situational awareness. The collaboration is a
1522 productive group of organizational representatives who share knowledge of the Arctic and work
1523 together to prepare for future challenges as the Arctic becomes more accessible and vulnerable to
1524 natural and man-made disasters. JTF-AK has an action plan with University of Alaska Fairbanks
1525 (UAF), which provides specific goals for interaction between the two organizations.

1526 Furthermore, the Alaska Arctic Working Group (AAWG) is an enduring organization made up
1527 of ALCOM/JTF-AK staff and external armed forces stakeholder representatives responsible for
1528 centralized planning and execution of day-to-day activities in support of the JTF-AK Arctic
1529 mission. The AAWG identifies existing operational Arctic capabilities and shortfalls; establishes
1530 and maintains enduring partnerships with key Arctic stakeholders; synchronizes Arctic exercises;
1531 and develops, maintains, and shares Arctic knowledge and situational understanding in support
1532 of USNORTHCOM and USPACOM Arctic objectives.

1533 Currently, the DOD's Arctic Operational Focus is on Search and Rescue (SAR) and Homeland
1534 Defense. Search and Rescue operations occur through the 11th Rescue Coordination Center
1535 (RCC), which is responsible for coordination of aeronautical search and rescue within the state
1536 of Alaska. The RCC also assists the U.S. Coast Guard and the Alaska State Troopers for other
1537 search and rescue cases. Additionally, the Alaska Air National Guard provides a 24/7 search and
1538 rescue alert. Homeland Defense occurs through the Alaskan NORAD Region (ANR), which

Security and Defense

1539 conducts aerospace control within its area of operations and contributes to NORAD's aerospace
1540 warning mission. This mission is conducted on a 24/7 basis.

1541 The focus areas of NORAD's mission are 1) air sovereignty: responding to a threat from outside
1542 the border; 2) asymmetric threat: responding to a threat from within the North American border;
1543 3) strategic threat: carrying out a contingency plan; and 4) consequence management: responding
1544 to the outcomes of controls.

1545 Demand for NORAD is projected to increase with heightened regional activity including
1546 commercial traffic and tourism. New features might include: underwater/shore-based sensors;
1547 unmanned aerial systems; national reconnaissance satellites; more patrol aircraft; and
1548 surface/subsurface vessels.

1549 Potential future DOD Arctic operational focus areas include Search and Rescue exercises with
1550 other Arctic nations (exercising the Arctic Search and Rescue Agreement); science and
1551 technology solutions for Arctic domain awareness; and exercise logistics support to U.S. Coast
1552 Guard in the event of an oil spill.

1553 ALCOM/JTF-AK is aware of the challenges in the Arctic and the increasing maritime traffic due
1554 to the melting ice. Search and Rescue (SAR) is a major concern. A single cruise ship accident off
1555 of the North Slope could easily overwhelm current SAR capabilities. DOD is planning and
1556 advocating for better practices and more capabilities to counter future Arctic issues like these.

1557 *Conclusion: Policy Recommendations*

1558 *National Arctic security issues will be reviewed for the DOD agencies and the Coast Guard by*
1559 *the Commission during 2014.*

1560

1560 *5.6 Marine Transportation*

1561 *Introduction*

1562 The extent of summer sea ice reached a historic low in September 2012, opening more Arctic
 1563 waters to summer marine transportation. The U.S. Coast Guard (Coast Guard) reported that from
 1564 2008 to 2012, total annual vessel traffic in the Arctic region grew from 120 to 250, an increase of
 1565 more than 100%. The growth rate was particularly high for tank vessels, followed by tugs and
 1566 other cargo vessels. Similarly, Bering Strait transits have increased by 100% between 2008 and
 1567 2012, from 220 to 480. There have been ongoing efforts to study these increases and to address
 1568 their implications. As the maritime environment of the Arctic becomes more accessible, those
 1569 most familiar with the Arctic – such as the indigenous peoples who live there, the oil and fishing
 1570 industries, and the state-licensed marine pilots – have a lot to contribute to policy development
 1571 affecting the region.

1572 The Bering Strait is a traffic funnel for two major maritime transportation routes: the Northern
 1573 Sea Route and the Northwest Passage. Arctic marine traffic is primarily driven by globalization
 1574 of the region, the ability to move cargo faster, and the linkage of Arctic natural resources to
 1575 global markets. Sea ice retreat provides for potentially greater marine access, shorter routes, and
 1576 longer seasons of navigation. As the ice retreats, advanced ice-capable and icebreaking ships
 1577 from both government and industry will allow Arctic marine operations in many new and
 1578 uncharted areas.

1579 *Background*

1580 A number of efforts over recent years have worked to address marine transportation issues. In
 1581 2009, the Arctic Council approved the Arctic Marine Shipping Assessment (AMSA) Report,
 1582 which made a number of recommendations to enhance Arctic marine transportation safety,
 1583 protect Arctic people and the environment, and build Arctic marine infrastructure.³⁵ The Arctic
 1584 Council Protection of the Arctic Marine Environment Working Group (PAME) continues to
 1585 follow up on recommendations found in this groundbreaking document.

1586 The International Maritime Organization (IMO) is the United Nations agency with responsibility
 1587 for the safety and security of shipping and the prevention of marine pollution by ships. The IMO,
 1588 since 2010, has been developing a draft international code of safety for ships operating in polar
 1589 waters – the Polar Code.³⁶

1590 The Alaska Northern Waters Task Force (ANWTF) issued a report in 2012 with
 1591 recommendations that drew on input and testimony from universities, U.S. military, non-

³⁵ www.pame.is/amsa-2009-report

³⁶ www.imo.org

Marine Transportation

1592 governmental organizations and dozens of state and federal agencies as well as from local
1593 communities and residents from around the state of Alaska.

1594 Complementing other federal efforts, the U.S. Committee on the Marine Transportation System
1595 (CMTS) issued a report in 2013, titled U.S. Arctic Maritime Transportation System: Overview
1596 and Priorities for Action 2013. This collaborative committee is comprised of the federal
1597 agencies with interests, responsibility and authority in matters pertaining to the Arctic. It follows
1598 AMSA recommendations and was directed via the Coast Guard Authorization Act of 2010.³⁷

1599 The U.S. Coast Guard vision for operating in the Arctic Region is to: ‘ensure safe, secure and
1600 environmentally responsible activity in the Arctic.’ The new USCG Arctic strategy released May
1601 21, 2013 focuses on three strategic objectives: improving awareness; modernizing governance;
1602 and broadening partnerships (domestic and international).

1603 The strategy also recognizes other factors that will be key, including: building national
1604 awareness of the Arctic and its opportunities; strengthening maritime regimes; improving public-
1605 private relationships; and identifying future requirements and resources. The Coast Guard notes
1606 that the Arctic is not a new venture for the Service. It has a long history in Alaska since it was
1607 purchased from Russia in 1867 and a long history of operating the nation’s polar ships. These
1608 experiences provide many historic lessons.

1609 For long-term success the strategy notes as important the following approaches: enhancing
1610 public-private partnerships to implement best practices and respond to challenges; increased
1611 federal interagency cooperation; increased international cooperation at the Arctic Council and
1612 other organizations; use of advanced science and technology applied to the Arctic; and use of
1613 risk-based management to protect the Arctic environment.

1614 The document establishes the Coast Guard’s strategy for operations in the Arctic given the
1615 realities of today’s geo-strategic context. Future development of the Coast Guard’s enhanced
1616 capability in the Arctic will evolve around the three objectives noted above and engagement with
1617 a host of partners and stakeholders. The Coast Guard is the primary federal maritime agency in
1618 the region responsible for multiple missions including marine safety, environmental protection,
1619 maritime security and law enforcement in the United States Arctic Ocean. In the state, the Alaska
1620 State Licensed Marine Pilots are charged under Alaska law to protect life, property, and the
1621 marine environment. They have an important role to play in homeland security issues and in
1622 helping the state and industry to establish best practices for safe development of the Arctic.

³⁷ www.cmts.gov

1623 *Discussion and Considerations*

1624 Vessel traffic through the Bering Strait is increasing with Arctic resource development and
1625 exploration (oil and gas); tankers (along Russia's Northern Sea Route); offshore support vessels;
1626 bulk carriers (hard minerals); and passenger vessels (cruise ships). At the same time, Unimak
1627 Pass is a major constriction point, on the Great Circle Route, in the Eastern Aleutian Islands.
1628 Currently 4,600 vessels transit the route annually and this number is expected to increase
1629 regardless of Arctic development. The remoteness of the Bering Strait and Unimak Pass
1630 complicate any incident – whether vessel grounding, collision or hazardous spill – with
1631 extremely challenging logistics.

1632 Alaska Department of Commerce, Community, and Economic Development (DCCED) is
1633 working with the University of Alaska Fairbanks on an Arctic shipping study to assess trends in
1634 global commerce and trade expected to affect use of Arctic shipping routes. The study will also
1635 identify needed infrastructure to address safety of navigation and to position Alaska to take
1636 advantage of affordable energy and global promotion of trade and economic development
1637 associated with new Arctic maritime transportation.

1638 The Coast Guard does not have a permanent operational base north of the Aleutian Islands and is
1639 operating solely in a seasonal surge capacity reflective of increased human activity in the Arctic.
1640 The current federal fiscal situation calls for prudent planning in an atmosphere of uncertainty and
1641 lean budgets for the foreseeable future. U.S. federal agencies involved in Arctic operations lack
1642 appropriate Arctic capable ships, small boats, aircraft and marine port infrastructure in the
1643 region. The Coast Guard's need for more ice-capable assets is well-documented. The state of
1644 Alaska has supported the planning and funding of ice breakers and ice-capable vessels in the
1645 U.S. government's inventory of multi-agency fleet assets.

1646 It is important to plan now in anticipation of the growth in vessel traffic and its impact on the
1647 environment and on the people who live there. As traffic increases, standards and regulations to
1648 govern vessels in Arctic waters will need to be strengthened. Since many authorities govern the
1649 waters, these agreements will fall under state, national and international jurisdictions. Alaskans
1650 should be informed about and involved in the process of developing policies on these issues.
1651 Special attention should be paid to the Bering Strait, the "gateway" to the Arctic Ocean, which is
1652 also proximate to local residents hunting, fishing, and subsistence needs.

1653 The Coast Guard, state of Alaska and counterparts in Russia must work together to develop
1654 shipping lanes and operating protocols for vessels transiting the Bering Strait; and the Coast
1655 Guard and the state of Alaska must do the same with regards to Unimak Pass. The United States
1656 and Russia must cooperate to develop a voluntary, seasonal (summer and open water) marine
1657 traffic routing scheme for the Bering Strait Region, which could then be submitted to the IMO
1658 for approval. The United States should also work with Canada to resolve their long-standing
1659 boundary dispute in the Arctic.

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1660 There are currently no Arctic-specific regulations in place for marine safety and environmental
1661 protection in the U.S. Arctic. However, there are proposals for the IMO mandatory Polar Code
1662 (international), and non-tank vessel rules (domestic U.S. regulations) are newly implemented. As
1663 the IMO moves toward finalizing the Polar Code, the Coast Guard and other federal agencies
1664 should take a very active role in promulgation of regulations to mitigate risks associated with
1665 increased vessel traffic in the Arctic region.

1666 There will also be future Arctic regulations relating to emissions, discharges (effluent, garbage,
1667 etc.) and other issues (such as routing measures) as the traffic in the area continues to build. The
1668 state of Alaska supports the development of the Polar Code and domestic U.S. regulations that
1669 do not curb economic activity but inform business planning for commercial activities in Arctic
1670 waters while preserving subsistence and supporting environmental sustainability. Any
1671 regulations being considered should be reviewed by the state of Alaska, and state agency experts
1672 on the IMO US delegation. Where applicable the state of Alaska should take advantage of
1673 participation in IMO meetings.

1674 Especially important to residents in the Alaskan Arctic is the threat that increased commercial
1675 activity creates and the unintended consequences for subsistence users and food security. These
1676 include changes in migration patterns, risks to subsistence hunters/fishers and decreases in
1677 stocks, as well as risks of hazardous spills occurring.

1678 Maritime operations off the Alaskan Arctic coast depend on the ability to communicate with
1679 modern technology to address the needs of every possible activity in the Arctic. Data and voice
1680 communications are critical to any public or private agency achieving success – the state of
1681 Alaska may have a role in investing in this infrastructure as a partner with industry. For instance,
1682 the Alaska Aerospace Corporation, a state of Alaska entity, has a launch complex on Kodiak
1683 Island that could put polar-orbit satellites into space to meet communication needs in the Alaska
1684 Arctic. Additionally, the Statewide Broadband Task Force released a report in 2013, *A Blueprint
1685 for Alaska's Broadband Future*, exploring the current state of Alaska's broadband infrastructure
1686 and outlining recommendations including satellite launches as well as polar fiber deployment.

1687 The AMSA and the National Strategy for the Arctic Region (NSAR) note the critical importance
1688 of adequate hydrographic readings and charting for the U.S. maritime Arctic and the entire
1689 Arctic Ocean. The National Oceanic and Atmospheric Administration (NOAA) has the primary
1690 responsibility for charting the waters around Alaska and adequate funding must be provided to
1691 begin a process of charting critical Arctic areas where increased marine use is occurring, or
1692 potential sites for increased Arctic maritime infrastructure. At the same time, year-round ice
1693 forecasting will allow ice-capable ships to find the safest route through the seas during the
1694 summer months, and ice-breaking ships will know the path of least resistance to follow in the
1695 winter.

1696 As part of an integrated approach to the Alaskan Arctic, an enhanced planning process between
 1697 state and federal agencies should be encouraged. The state of Alaska, industry and Alaska
 1698 Natives must be an integral part of the planning process. As part of this process, there needs to be
 1699 regulatory certainty in support of state and local economic activity. This is to encourage a
 1700 transparent and delineated regulatory process from initial resource identification to economically
 1701 viable end usage.

1702 *Conclusion: Policy Recommendations*

1703 Strategic Recommendations

- **Encourage development of appropriately integrated systems to monitor and communicate Arctic marine information, and continue state and federal support for programs such as the Alaska Marine Exchange.**

1707 Other Recommendations

- 1708 1. Alaska's maritime environment, whether through Unimak Pass or the Bering Strait, faces
 1709 increased vessel traffic.
 - 1710 A. The state of Alaska should support development of a Polar Code that meets the state's
 1711 interests and recognizes its priorities, while developing practical and voluntary
 1712 measures that encourage best practices.
 - 1713 B. The state of Alaska should continue to support further development of the AIS system
 1714 established by the Alaska Marine Exchange.
 - 1715 C. The state of Alaska should work to establish IMO- and Russian-endorsed shipping
 1716 routes.
 - 1717 D. The state of Alaska should demand that the United States ratify the Law of the Sea
 1718 Treaty and submit an extended Continental Shelf claim to ensure resources are
 1719 appropriately retained for both Alaska and the United States.
- 1720 2. The Alaskan Arctic is sensitive to offshore resource exploration and production.
 - 1721 A. The state of Alaska should demand federal regulatory certainty and clarity in regards
 1722 to resource exploration.
 - 1723 B. The state of Alaska should endorse existing and encourage examination of future
 1724 Arctic operating practices.
 - 1725 C. The state of Alaska should establish regulatory standards for production of offshore
 1726 resources and their transportation to market.

Marine Transportation

- 1727 D. The state of Alaska should work with the U.S. Coast Guard to update the Coast Pilot -
1728 a reliable and efficient source of information for mariners that gathers all pertinent
1729 and relevant information in one accessible and searchable location, ideally covering
1730 navigation of the Bering Sea³⁸ and Arctic waters.
- 1731 E. The state of Alaska should continue to support the Alaska Maritime Training Center
1732 (Alaska's Institute of Technology) at Seward in its efforts to develop a world-class
1733 facility for training in Arctic operations and ice navigation.
- 1734 3. Decreasing ice increases the size of the Federal Government's area of responsibility,
1735 which results in challenging resource prioritization and directly impacts the state of
1736 Alaska's security, environment and economy.
- 1737 A. The state of Alaska should continue its strong support for replacement of the Coast
1738 Guard's Polar class icebreakers and other ice-capable cutters for conducting Arctic
1739 operations in coastal Alaska.
- 1740 B. The state of Alaska should build on current efforts to identify a deep draft port³⁹ and
1741 identify additional critical aviation and maritime logistics; including a suitable
1742 location to build a C-130-size aircraft hangar (which could be collocated with a deep
1743 draft port).
- 1744 C. The state of Alaska should encourage the development of a deep draft port or ports,
1745 which could include negotiating public and private long-term investments. An Alaska
1746 Arctic Port Authority, or similar body, could facilitate public-private partnerships for
1747 investment, and development of the management strategies for future port operations.
- 1748 4. More effective coordination on the federal level, in consultation with representatives of
1749 the state of Alaska, should be established in order to develop priorities and identify needs
1750 associated with developments in the Arctic, including transportation.
- 1751 A. The state of Alaska suggests that the Coast Guard lead coordination amongst the
1752 Committee for the Marine Transportation System (CMTS) agencies for activities in
1753 the Arctic and should be adequately funded to carry out its duties.
- 1754 B. The state of Alaska should continue to support a single system to monitor vessel
1755 traffic in the Arctic. The Coast Guard and state of Alaska should support and
1756 facilitate such a comprehensive system. A system could also transmit information on
1757 ice and weather, ship's speed, and closed or sensitive areas for navigation.

³⁸ For example; the Canadian 'Arctic Voyage Planning Guide' includes nautical charts, tide and current tables, radio aids, lights, buoys, regulations, IMO guidelines and more - <http://geoportal.gc.ca/eng/Gallery/MapProfile/5#wb-tph> Another example is the Coast Guard's Coast Pilot, which has detailed information for other coastal areas of the U.S., but not yet for Arctic waters.

³⁹ Alaska Arctic Deepwater Ports Study (USACOE AK DOT leads)

1758 5. The Governor and his staff work as a team to leverage state agency information and local
1759 input in developing and communicating the state's position to federal entities, including
1760 the Coast Guard. While the state has frequent communication with Coast Guard District
1761 17 and Headquarters leadership, it is increasingly difficult to navigate the complex and
1762 multi-faceted traffic rules and patterns, navigation aids, OCS activities, fish and wildlife
1763 resources, risk assessment, response, community needs and other issues as they pertain to
1764 maritime transportation, transportation infrastructure, and planning.

1765 A. The state of Alaska should have an Arctic specialist who acts as the liaison between
1766 industry, the public and private sectors, and indigenous groups; tasked with
1767 advocating the state's position to the Coast Guard in Arctic-related maritime and
1768 intermodal transportation policy matters. Such a position should utilize valuable local
1769 knowledge and input in developing policy and have a budget sufficient to support its
1770 efforts.

1771

1771 *5.7 Response Operations: Search and Rescue/Oil Pollution*

1772 *In 2014, this subject matter area will add Search and Rescue information and recommendations,*
1773 *and address additions to the Oil Pollution Prevention and Response section, including*
1774 *emphasizing shipping concerns, as well as national and international efforts to address this*
1775 *issue. This section will also consider local/regional government assets, community response and*
1776 *planning processes.*

1777 *Introduction*

1778 Retreating Arctic sea ice is opening up a once inaccessible region to marine transportation, with
1779 corresponding concerns raised about the integrity of safety and security in the Alaskan Arctic.
1780 With increased onshore and offshore resource development and shipping in the Arctic, the state,
1781 local communities and federal agencies must be equipped to meet new challenges, ensuring that
1782 risks are carefully evaluated and addressed.

1783 *Background*

1784 Currently, the U.S. Coast Guard (Coast Guard) is engaged in cooperative agreements with
1785 Canada on search and rescue, marine environmental protection, and icebreaking, which could all
1786 be strengthened.

1787 As part of this effort, it is worth noting that the Coast Guard and the Alaska Air and Army
1788 National Guard respond to most Arctic, and rural, requests for assistance. The proposed
1789 development of offshore natural resources has highlighted the need for increased response and
1790 recovery capability in the Arctic. Alaska must have the capability to house a C-130-size plane
1791 overnight in sub-zero weather. This hangar can also provide a staging area to coordinate the
1792 evacuation of survivors of a small cruise ship, if one were to abandon ship in the Arctic. Nothing
1793 of this sort exists north of Fairbanks, Alaska.

1794 Improved search and rescue and oil spill response capability and infrastructure will provide a
1795 launching point for defense support to civilian authorities (DSCA) in the Arctic region during
1796 Stafford Act disaster events. The state of Alaska values a close relationship with the Department
1797 of Defense (DOD) and understands the need to use all local resources to respond to disaster
1798 events across the state. This could include DOD assets under the control of an Alaska National
1799 Guard dual-status commander, who is reporting to the Governor through the State Emergency
1800 Operations Center.

1801 Improving domain awareness is another critical component of successful Arctic operations. The
1802 state of Alaska, the federal Department of Homeland Security, and the Department of Defense,
1803 must know who is in the water, and where each vessel is located, to provide maximum safety and
1804 to shorten life-saving response time. The Alaska Marine Exchange (AME) needs expanded
1805 support. It is worth considering increasing Automatic Identification System (AIS) usage on

1806 vessels traveling in U.S. waters off Alaska's coast – this may need bilateral cooperation to
 1807 achieve. Information updates in the Arctic must be a state and national priority. These updates
 1808 must include: new bathymetric charts, real-time weather observations, increased development
 1809 and use of the AIS, as well as improvements to the Alaska Marine Exchange.

1810 Clearly, both assets and capabilities in the Alaskan Arctic must be enhanced. There is an
 1811 immediate need to replace the nation's Polar class icebreakers that are operated by the Coast
 1812 Guard. These major icebreakers are required for a minimal U.S. maritime Arctic presence, and
 1813 for research and incident response. Commercial icebreakers will also have important roles in
 1814 supporting offshore drilling and ice escort. In fact, the development of shipyards and deep draft
 1815 ports in the U.S. and Alaska that can build the private sector assets needed to operate in the harsh
 1816 Arctic environment should be considered. In the event of a large Arctic oil spill, the Coast Guard
 1817 lacks a source for Arctic capable assets and cold weather proven equipment and supplies.

1818 **Search and Rescue**

1819 *Background*

1820 The need for expanded sea and air search and rescue response capacity corresponds to several
 1821 factors, including: increased resource extraction to support economic and community
 1822 development; increased shipping traffic through the Northern Sea Route; increased activity in the
 1823 Canadian Arctic, including the Northwest Passage, to support marine operations like community
 1824 resupply; and increased cruise ship traffic.

1825 *Note: Discussion, conclusions, and policy recommendations will be developed in 2014.*

1826 **Oil Pollution Prevention and Response**

1827 *Introduction*

1828 A significant risk of Arctic resource development continues to be hazards associated with crude
 1829 oil releases. Fortunately, the state of Alaska and many oil and gas companies have operated in
 1830 the Alaskan Arctic for several decades, with experience in planning, prevention and response.
 1831 Industry has extracted over 16 billion barrels of crude oil from the North Slope region and built
 1832 considerable infrastructure since the 1960s including wells, storage tanks, offices and residential
 1833 facilities that are connected by miles of pipelines, power lines and roads. Although the safety and
 1834 environmental record associated with exploration and development work has largely been good,
 1835 the state of Alaska continues to diligently evaluate new models for response planning and
 1836 organization, technologies, and methods for addressing risks in the Arctic.

1837 *Background*

1838 The Alaska Department of Environmental Conservation (DEC) is the state's lead agency
 1839 responsible for monitoring and enforcing state requirements relating to protection of the

Response Operations: Search and Rescue/Oil Pollution

1840 environment. This includes marine waters within three nautical miles of Alaska's coast. DEC's
1841 Division of Spill Prevention and Response (SPAR) is specifically charged with preventing
1842 releases of oil and hazardous substances into the environment; assuring that resource extraction
1843 industries have contingency plans, response equipment and trained personnel who can
1844 immediately respond when a release occurs; and, overseeing that the cleanup and remediation of
1845 contamination meets state standards.

1846 The state shares a number of these duties with the U.S. Coast Guard and the Environmental
1847 Protection Agency. The state also works closely with other federal agencies, state agencies, and
1848 local governments including the U.S. Department of the Interior – Bureau of Ocean Energy
1849 Management (BOEM), Bureau of Safety and Environmental Enforcement (BSEE), Fish and
1850 Wildlife Service (FWS) and Office of Environmental Policy and Compliance (OEPC) – U.S.
1851 Department of Commerce's National Oceanic and Atmospheric Administration (NOAA), Alaska
1852 Department of Fish and Game (ADF&G), Alaska Department of Natural Resources (ADNR), the
1853 North Slope and Northwest Arctic Boroughs and tribes. Through this interagency coordination,
1854 and collaboration with regulated industry groups, such as companies that produce, store or
1855 transport petroleum products, the Alaska DEC ensures the efficacy of oil spill prevention and
1856 response plan requirements.

1857 This state and federal partnership in spill response planning has yielded positive results and
1858 should be supported as part of the state and nation's Arctic policy. For example, under federal
1859 law, a National Oil and Hazardous Substances Pollution Contingency Plan (NCP) determines
1860 how the nation will prepare and respond to spills based on regional plans. Each region of the
1861 country is also required to have a regional contingency plan - Alaska is its own region. State law
1862 also requires a state contingency plan. Like the NCP, the State Master Plan defines the governing
1863 process for state oil spill response. To coordinate the two plans, federal agencies in Alaska and
1864 DEC (through The Alaska Regional Response Team) promulgated in 1994, a joint Alaska
1865 Federal/State Preparedness Plan for Response to Oil and Hazardous Substance
1866 Discharges/Releases (known as the Unified Plan) that addresses how the agencies will coordinate
1867 in responding to a spill. The planning extends to 200 miles offshore and includes geographic
1868 response strategies for the Bering Strait area and mapping of "priority protection areas" to assist
1869 in preventing an oil spill from impacting sensitive environmental or cultural areas. The Unified
1870 Plan divides the state into ten subareas, each with a detailed plan that includes response strategies
1871 to address specifics about the area. The Subarea Plans identify the location of spawning streams,
1872 how and where booms will be deployed, places of refuge for ships in distress, and other
1873 geographical considerations. The plans are updated on a regular basis responding to changes in
1874 industrial activities, advances in science and technology, and changes in applicable laws.⁴⁰

⁴⁰ Work to identify additional culturally or environmentally sensitive areas continues. The state, working with local borough, city, and village leaders, has spearheaded an effort to develop geographic response strategies (GRS) for the shorelines of the Western Alaska and the Northwest Arctic Subareas. GRS identify environmental and cultural areas vulnerable to oil spills and offer spill response strategies that might best protect

1875 One of SPAR's major tools for reducing the risk of hazardous releases is its Industry
 1876 Preparedness Program (IPP). Unlike spill response plans that address geographic areas, this
 1877 program applies to specific facilities that store, handle or transport crude oil or non-crude oil, and
 1878 requires that they have Oil Discharge Prevention and Contingency Plans. These plans are
 1879 reviewed and approved by DEC. The Contingency Plans are designed to minimize the risk of
 1880 spills and verify that the plan holder is prepared to respond to a spill in a timely and effective
 1881 manner. The Contingency Plan holder must provide proof of financial responsibility and affirm
 1882 that they have the actual capacity to respond to an event either with their own equipment and
 1883 personnel, through participation in an industry spill co-op, or under contract with a certified spill
 1884 response contractor. Most operators on the North Slope meet these response requirements
 1885 through participation in the oil spill response co-op, Alaska Clean Seas.⁴¹

1886 While DEC's role is to plan for and prevent hazardous releases, under state and federal law the
 1887 spiller has primary duty to respond in the event of a spill. DEC and its federal counterparts
 1888 provide response oversight, but if a spiller fails to respond as required the government can
 1889 supplement the spiller's actions or take the lead in the response, relying on contractors and local
 1890 governments to assist. The state (the Governor and DEC Commissioner) can access funds from
 1891 Alaska's Oil and Hazardous Substance Release Prevention and Response Fund, which is
 1892 maintained for emergencies. All state costs for overseeing the spiller's response and for any
 1893 supplemental spill response activities are, by law, required to be recovered from the spiller.

1894 In addition to extensive oil spill response planning and preparation, Alaska has also committed
 1895 significant financial and workforce resources to conducting regular drills to practice executing
 1896 these contingency plans. Practice drills are organized using the Incident Command System,
 1897 which provides a structure to organize federal, state and local government, industry and
 1898 responders (including spill response contractors). A federal on-scene coordinator, a state on-
 1899 scene coordinator from DEC and a designee from industry manage this response team, which can
 1900 include as many as 200 people. The response team is divided into groups with expertise in
 1901 planning, logistics, communications, and wildlife, social, and cultural impacts. The structure is
 1902 highly organized and functions with clear roles and divisions of responsibility. Conducting these
 1903 periodic practice drills with agencies, local responders, regulated industry and spill contractors

these sensitive areas. Each GRS provides the site-specific spill response plans to protect the priority area by presenting unified (the public, responders, and agencies) priorities and strategies for implementation. Over 140 GRS have been developed along the Western Alaska coast beginning at Cape Peirce on the north side of Bristol Bay, running north to Point Hope and including the islands of St. Matthew, Nunivak, and St. Lawrence. Currently, 40 more GRS are under development for the Northwest Arctic Subarea. In addition, approximately 200 locations along the coastline of the North Slope Borough have been mapped as "priority protection areas" designated for immediate attention in the event of a spill. Interested federal agencies have participated with Alaska's state agencies in the development of the GRS mapping and strategies through this robust domestic process.

⁴¹ Besides cleaning up spilled hydrocarbons, Alaska Clean Seas collaborates with the Alaska SeaLife Center, in Seward. The Alaska SeaLife Center is a research facility and public aquarium whose mission promotes understanding and stewardship of Alaska's marine ecosystems including marine wildlife response and rehabilitation. A major part of the facility is devoted to a robust wildlife response program, which includes flexible animal care infrastructure that can be tailored to a variety of species enabling care for sick and injured marine animals. The Center has remote wildlife response capability including animal care professionals and field response equipment, and is the only permanent rehabilitation facility for marine animals in Alaska. This organization has also developed a three day instructional program devoted to oiled wildlife care which is presented annually to North Slope spill responders. The Alaska SeaLife Center is uniquely positioned to respond in collaboration with Alaska Clean Seas to ensure rescue response considerations for marine wildlife.

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1904 verifies their readiness for a real event and clarifies the plans are sufficient and can be practically
1905 executed.

1906 The prospect of increased future Arctic development both onshore and offshore brings a more
1907 urgent need for local communities to have the skills and resources to become the immediate and
1908 sometimes first responders. Having a quick and effective initial response to a spill can greatly
1909 reduce its impact and the cost of cleanup. Recognizing the importance of local response, SPAR,
1910 through its Prevention and Emergency Response Program (PERP), is securing formal agreements
1911 with communities that provide a structure for training a response workforce. These agreements
1912 also identify the optimal location for response equipment and materials, and determine the scope
1913 of assistance that the community will provide in the event of a spill. DEC's community
1914 agreements and Subarea Plans affirm the importance of local knowledge and help guarantee
1915 effective ongoing communication between residents and regulatory agencies.⁴²

1916 *Discussion and Considerations*

1917 Oil spill prevention and response planning necessarily includes consideration of the nexus
1918 between open water spills and the Alaska coast. Shell, ConocoPhillips and Statoil each hold
1919 federal outer continental shelf (OCS) leases that are located more than three nautical miles
1920 offshore and thus outside state waters. Oil spill prevention, preparedness and response
1921 requirements on the OCS arise under federal law, primarily under the Outer Continental Shelf
1922 Lands Act, the Clean Water Act, the Oil Pollution Act of 1990, and the regulations of USCG,
1923 BOEM and BSEE. After the Deep Water Horizon catastrophe in the Gulf of Mexico in 2010,
1924 these federal agencies are paying considerable attention to avoiding catastrophic loss of well-
1925 head control, and providing on-hand containment, collection and storage capabilities to minimize
1926 the spread of spilled crude oil. In 2011 as part of approval of Shell's Chukchi Exploration Plan,
1927 BOEM limited drilling into zones capable of flowing hydrocarbons after September 24th to
1928 allow time to respond to a potential spill prior to ice encroachment. It is expected that similar
1929 restrictions would be applied to other Arctic exploration plans. Eventually, if year-round oil
1930 production commences, effectiveness of oil spill containment and recovery in broken-ice
1931 conditions must be improved and new techniques developed. Companies will build permanent
1932 infrastructure, which potentially includes subsea and buried pipelines to transport crude oil to
1933 processing, storage or other points. Detecting corrosion, leaks and devising solutions such as

⁴² When the Exxon Valdez ran aground March 24, 1989, the State, the U.S. Coast Guard and ExxonMobil struggled to organize an immediate response to the worst oil spill in the history of the nation. Controversies about the use of dispersants, mechanical methods of cleanup and hot-water treatment confounded the cleanup (<http://library.thinkquest.org/10867/cleanup/methods/dispersants.shtml>) as did untrained and unprepared responders and workers, lack of information about fauna and other natural resources, complex response logistics, lack of boom and other response materials – many of which had to be shipped to Alaska from points around the world – and the overwhelming distances that the oil traveled. The Exxon Valdez Oil Spill provided Alaska, the Nation and the world a tragic lesson that led to the State and ADEC making aggressive changes including: new laws requiring oil handlers to develop detailed oil discharge prevention and contingency plans and to have equipment in Alaska to respond to certain size spills based on the volume of oil handled, increased State staffing for comprehensive State oversight of marine terminal and tanker operations, annual major spill drills with frequent smaller drills, development of Unified Command / Incident Command Structure, implementation of the Ship Escort / Response Vessel System, positioning of vast reserves of response equipment in key locations, and advanced training for response crews, marine pilots, and tanker and tug officers. See, <http://dec.alaska.gov/spar/evos/thennow.htm> (cited websites accessed October 2013).

- 1934 secondary containment will be critical considerations. DEC and other state agencies remain
 1935 vigilant and involved as federal agencies work to address these considerations and develop
 1936 appropriate regulations to minimize these risks.⁴³
- 1937 Oil spill and other hazardous releases can come from OCS development, but also from tankers
 1938 transporting crude or vessels transporting other hazardous materials through Arctic waters - a
 1939 potentially greater concern as sea ice melts and Arctic shipping lanes remain open longer.
 1940 Improved spill prevention, preparedness, and response capacity is needed to minimize risks
 1941 associated with vessels in innocent passage outside the jurisdiction of state and federal
 1942 regulations. For example, Western Alaska is vulnerable because foreign flagged vessels
 1943 transiting through this area that are not coming from or going to a U.S. port are not subject to Oil
 1944 Pollution Act of 1990 (OPA90) regulations and local infrastructure is not sufficient to conduct a
 1945 response effort. The state frequently responds to vessels losing power and sometimes grounding
 1946 on Alaska's shores.⁴⁴ A case can be made to nations sending vessels through the Aleutians and
 1947 the Bering Strait that, in the absence of a global mandate from IMO, they should require oil spill
 1948 prevention and contingency plans to be made in consultation with Alaska's federal and state
 1949 agencies and coastal communities, and that they should join and support oil spill response
 1950 organizations (OSROs) operating in these regions.
- 1951 Small shore-based spills can also occur from daily activities in the Arctic such as transferring
 1952 and storing fuel or small boat mishaps. Each event requires a different response, but DEC has
 1953 designed programs so that shore-based assets are in place and personnel are trained to effectively
 1954 respond in the event of a spill, be it a significant marine spill or minor spill. However, challenges
 1955 of distance, training, availability of personnel and materials are still an impediment to total
 1956 readiness in key areas of the Arctic. In addition, new OCS development will require greater
 1957 coordination and cooperation among state and federal agencies and industry on issues of
 1958 permitting, spill response planning, infrastructure needs and other responsibilities. Likewise,
 1959 coordinating spill response planning and achieving agreement between state, federal and
 1960 international entities will be critical on topics such as use of dispersants, in situ burning, new
 1961 technologies of on-ice oil recovery and the like. These challenges also highlight the state's
 1962 broader interest in the international communities' negotiations concerning the safety of Arctic
 1963 marine transportation.⁴⁵

⁴³ DEC and other state agencies evaluate and respond as appropriate to federal regulations for offshore development. They also evaluate federal directives for improvements in oil spill preparedness, planning and prevention and participate in memorandums of understanding with federal agencies that delineate the state's role in the review of spill prevention and response provisions in federal OCS contingency plans.

⁴⁴ Regarding the Outer Continental Shelf (OCS) and federal jurisdiction, the Department of Interior's (DOI) Bureau of Safety and Environmental Enforcement (BSEE) is currently developing and clarifying "Alaska Standards" which involves a review of existing Oil Spill Response Plan regulations, a determination of their adequacy for U.S. offshore Arctic environments and a plan to recommend appropriate changes to ensure that adequate trained personnel and equipment is in place to respond to a worst-case discharge. During the summer of 2013, BSEE is concluding outreach meetings and working on drafting proposed regulations and a preamble for the formal rule making. They intend to have the proposed rule out for public comment by the end of 2013.

⁴⁵ This concern and the need for the USCG to have increased capacity to operate in ice infested waters; to participate in Arctic ocean spill response drills; and more consistent presence in Arctic waters, is dealt with in the Marine Transportation chapter, as is the need for ports and other facilities that can be employed in the event of a marine spill.

Response Operations: Search and Rescue/Oil Pollution

1964 On land, the challenges ahead are also numerous: The infrastructure on the North Slope is aging,
1965 including the Trans Alaska Pipeline System (TAPS) and other pipelines. Leaks from these lines
1966 and other facility failures from corrosion are a concern. In response to a significant crude oil leak
1967 in 2006 caused by corrosion in Greater Prudhoe Bay infield pipelines, DEC initiated an
1968 assessment of risks associated with aging infrastructure. This resulted in enactment of new
1969 regulations, and preventative maintenance and corrosion monitoring and control programs.

1970 Under these programs, DEC has conducted compliance reviews of 69% of the North Slope flow
1971 lines and has sponsored technology conferences with leading experts from industry and
1972 government to discuss leak detection and remediation.⁴⁶ Results of the conferences are published
1973 for future use and reference by companies working to address aging infrastructure and striving to
1974 identify the leading indicators of potential spills so they can become more effective in preventing
1975 them. These conferences and other efforts to collaborate will improve the collection of data and
1976 development of tools to analyze and determine the root causes of spills with the goal of reducing
1977 incidents. Experience gained from the North Slope as the state and industry meets the challenges
1978 of addressing corrosion and aging infrastructure must be made available to the next generation
1979 working in the Arctic.

1980 An additional challenge is DEC's lack of presence in Arctic communities and how to allocate
1981 and stage spill response workers, equipment and facilities. Although larger companies have
1982 extensive accommodations and office space for their work force, state agencies are relegated to
1983 renting small, substandard space in Deadhorse or Barrow. Vehicles available for staff are limited
1984 on the North Slope and transportation by air, land and water is expensive. This makes the DEC
1985 duties of inspection, oversight and monitoring expensive and complex. With the potential for
1986 new activity on Point Thomson, NPR-A and offshore, the state must grapple with where and how
1987 agency staff will be accommodated for space, telecommunication and transportation, not only to
1988 ensure a continuous presence, but to accommodate the expected significant influx of additional
1989 personnel in the event of a large spill in the Arctic.

1990 The state's efforts to plan for and prevent oil spills in Alaska are largely paid for by the Oil and
1991 Hazardous Substance Release Prevention and Response Fund. This fund was formed in 1986 by
1992 the Alaska State Legislature using a five-cent surcharge on each barrel of crude oil produced.
1993 The fund was subsequently broken into two accounts: Response and Prevention. Four-cents of
1994 the surcharge feed the Prevention account and one-cent feeds the Response account. When the
1995 balance of the Response account is greater than \$50 million the state suspends collection of the
1996 one-cent surcharge on crude. By law, the Response account must be maintained at \$50 million
1997 and occasionally the one-cent surcharge is reactivated. The Response account can be accessed by
1998 the Governor or DEC Commissioner with notice given to the legislature and used to assist the

⁴⁶ DEC sponsored a technology conference in September 2011, which culminated in a report, *Pipeline Leak Detection Technology 2011 Conference Report* (March 2012). A similar conference was held in 2013 to provide an opportunity for companies new to operating in Alaska to learn side-by-side with experienced companies about the laws, Arctic pipeline engineering and best practices.

1999 state when it responds to the exigencies of a spill. To replenish this account, the state seeks
 2000 recovery of its expenditures from the responsible party and deposits the funds back into the
 2001 account. If this cost recovery is not sufficient, and to ensure the account stays at \$50 million, the
 2002 state can reinstate the one-cent surcharge.

2003 The Prevention account is also an important resource for the state and is used to fund the
 2004 operating expenses of DEC's SPAR Division, including the Industry Preparedness Program and
 2005 other prevention activities. The four-cent surcharge on crude oil production that generates the
 2006 funds appropriated by the legislature into the Prevention account has been adequate to fund the
 2007 SPAR operating budget in the past (approximately \$15 million/year). Now however, as oil
 2008 production in the state declines, the amount collected via the surcharge is no longer adequate. In
 2009 fact, using a best-case scenario, DEC predicts that in FY15 there will be less than \$150,000 in
 2010 the Prevention account. The state of Alaska must decide, and soon, whether or not as a public
 2011 policy the state needs to find another mechanism that will guarantee the sustainability of the
 2012 state's prevention, preparedness, and response work.

2013 *Conclusion: Policy Recommendations*

2014 Strategic Recommendations

- 2015 • Facilitate and secure public and private investment in support of critical aviation and
 2016 maritime response infrastructure and economic development, to include consideration of
 2017 direct state funding and/or public-private partnerships that address development of
 2018 communications, a deep draft port(s), icebreaker(s), logistics hubs, and a WX C-130 size
 2019 aircraft hangar(s).
- 2020 • Encourage and advocate for more adequate funding so that the U.S. Coast Guard can
 2021 carry out its assigned and emerging duties in the U.S. maritime Arctic without
 2022 compromising its capacity to conduct all missions throughout Alaska.
- 2023 • Expand and support the Department of Environmental Conservation's effort to involve
 2024 communities through Subarea Planning and provide local training to maintain limited
 2025 supplies of oil spill response equipment and to ensure timely, effective and safe response
 2026 and spill containment.
- 2027 • Support the Department of Environmental Conservation's ongoing communication with
 2028 the U.S. Coast Guard in reviewing alternative compliance program development and
 2029 applications.

2030 Other Recommendations

- 2031 1. As oil and gas development increases on the federally controlled OCS and in
 2032 international waters, and as tanker traffic rises, Alaska must continue working to prepare
 2033 for a coordinated response to spills that reach its shores and impact its communities. This

Response Operations: Search and Rescue/Oil Pollution

- 2034 necessarily involves working closely with Alaska's federal partners and with its
2035 neighboring Arctic countries.
- 2036 A. The state of Alaska should strive to inform all federal policies concerning oil spill
2037 prevention, preparedness and response measures.
- 2038 B. The state of Alaska should continue to participate and enhance engagement at the
2039 regional and international level to help reduce the risk of spills, including
2040 participation with the following: the Pacific States / BC Oil Spill Task Force; Pacific
2041 Northwest Economic Region; Energy Council; Bilateral negotiations with Russia and
2042 Canada; Arctic Council work groups and projects; International Maritime
2043 Organization; and Industry and trade group conferences and discussions.
- 2044 2. While the Alaska Department of Environmental Conservation has spent decades working
2045 to improve the state's readiness for oil spills of all sizes and types, more needs to be
2046 done.
- 2047 A. The state of Alaska should continue working with its federal partners on its subarea
2048 planning efforts under the Unified Plan, with enhanced input from local people.
- 2049 B. The state of Alaska should continue to explore and advance new technologies and
2050 best practices to reduce the risk of hazardous releases in the Arctic that include local
2051 knowledge and sharing of information between these entities about their respective
2052 efforts to reduce the probability and severity of oil spills.
- 2053 C. The state of Alaska should support the University of Alaska, enabling it to become
2054 the center of excellence for research, technology and practical methodologies for
2055 reducing the probability and severity of hazardous releases in Arctic waters.
- 2056 3. A quick and effective initial response to a spill can greatly reduce its impact and the cost
2057 of cleanup. The State Division of Spill Prevention and Response is diligently working,
2058 through its Prevention and Emergency Response Program, to secure formal agreements
2059 with communities that provide a structure for training a response workforce, but
2060 additional work is needed to enhance first responder capabilities in Arctic communities.
- 2061 A. The state of Alaska should continue to partner with Oil Spill Response Organizations
2062 (OSROs) to develop and maintain an on-call work force for large spills.
- 2063 B. The state of Alaska should monitor OSROs to ensure readiness and encourage new
2064 companies to join OSROs. OSROs should have expertise in open water, broken ice,
2065 near shore and sensitive area protection and be able to meet contingency plan
2066 requirements and operate effectively in the unique and demanding conditions of the
2067 Arctic environment.

2068 4. The funding mechanism for the Prevention account of the Oil and Hazardous Substance
2069 Release Prevention and Response Fund may not be sustainable to support the necessary
2070 work of DEC's SPAR Division, including the Industry Preparedness Program and other
2071 prevention, preparedness and response programs in Alaska.

2072 A. The state of Alaska should devise means to ensure the Oil and Hazardous Substance
2073 Release Prevention and Response account is sustainable and available to the state,
2074 and through the state, to communities as they plan for increased risk of hazardous
2075 releases in the Arctic. It will be important, both for efficiency, and coordination that
2076 contingency planning follow the existing structures described in this section, i.e.
2077 Subarea planning, industry c-planning and the Incident Command System.

2078

2078 *5.8 Energy and Power*

2079 *Introduction*

2080 Energy issues in the Alaskan Arctic are nearly identical to those confronting rural regions
2081 throughout the state. The lack of affordable energy threatens the sustainability of many remote
2082 communities. In villages where residents must spend more than half of their annual income on
2083 fuel and electricity, even modest economic activity, such as maintaining a local consumer
2084 economy, is severely limited. These same costs compromise the effectiveness of local
2085 governments, schools, and utilities, many of which continually struggle for solvency. This comes
2086 at a time when the Arctic is facing expanded opportunity.

2087 *Background*

2088 The majority of Arctic communities depend on expensive diesel fuel for electricity generation
2089 and home heating. In recent years the price for diesel in many rural areas has averaged between
2090 \$6 and \$10 per gallon. Gasoline is similarly priced. It should be noted that communities in the
2091 North Slope Borough—which derives considerable income from Prudhoe Bay oil and gas
2092 development—enjoy substantial borough subsidies for electricity, heating fuel, and gasoline
2093 costs. A 2012 study by Commonwealth North, “Energy for a Sustainable Alaska: The Rural
2094 Conundrum,”⁴⁷ points out that the cost of shipping is a chief factor behind such high prices.
2095 “The further the community is from a hub the greater the cost,” the report states. “Distance also
2096 increases costs by the number of times fuel is handled en route and potential transport or
2097 handling difficulties, especially if barged on a shallow river or flown into communities.”

2098 There are many additional expenses resulting from remoteness. The Commonwealth North study
2099 states, “Community isolation has led to each community having unique and independent power
2100 systems, bulk fuel systems, airports, and rural health clinics. Each community’s infrastructure
2101 has unique capital, operations, and maintenance requirements.” This approach to satisfying
2102 community infrastructure needs is extremely costly. In the Lower 48 a population the size of
2103 Alaska’s typically requires one or two power plants to supply its energy needs for both electricity
2104 and space heat. In Alaska, there are more than 200 power plants.

2105 Alaska has been battling rural energy costs for decades. The Power Cost Equalization (PCE)
2106 program, for example, which subsidizes electricity prices in communities across rural Alaska,
2107 was established in 1984. The federal Low Income Home Energy Assistance Program (LIHEAP)
2108 was created in 1980, and has been augmented since 2008 by state funding through the Alaska
2109 Heating Assistance Program (AKHAP). But PCE covers only a small fraction of rural residential
2110 electricity consumption and heating assistance grants can likewise be described as survival-level
2111 at best. Neither program covers commercial enterprises.

⁴⁷ See reference, www.commonwealthnorth.org/index.cfm?section=About&page=What's-New&viewpost=2&ContentId=807

2112 The PCE program has yielded a wealth of data on utility fuel consumption and associated costs
 2113 in Arctic communities. However, there remains a shortage of comparable information on energy
 2114 consumption for space heating. For effective planning of both public and private sector energy
 2115 development, there is not enough collection of clear and comprehensive community consumption
 2116 and power-supply data.

2117 Few communities in the Arctic have been able to find long-term remedies for crushing energy
 2118 prices, but the state continues to search for solutions. In the recent past, the legislature and the
 2119 executive branch have created and funded many substantial programs and tools focused on these
 2120 issues. Most of the programs in the following list, which is only a sampling, were established or
 2121 dramatically expanded within the past decade:

- 2122 • Renewable Energy Grant Fund
- 2123 • Emerging Energy Technology Fund
- 2124 • Sustainable Energy Transmission and Supply Development Fund
- 2125 • Alternative Energy Conservation Loan Program
- 2126 • Commercial Building Energy Audit Program
- 2127 • Power Project Fund Loan Program
- 2128 • Alaska Housing Finance Corporation (AHFC) Weatherization and Home Energy Rebate
 2129 Programs
- 2130 • AHFC Alaska [Public Building] Energy Efficiency Revolving Loan Fund Program
- 2131 • Community Revenue Sharing

2132 The Alaska Energy Authority (AEA) has been the lead agency for a number of these efforts. For
 2133 example, in administering the Renewable Energy Grant Fund—established by the Legislature in
 2134 2008 to reduce dependence on diesel fuel across the state—AEA has approved more than \$202
 2135 million in grants for 228 renewable energy projects in Alaska through 2012. While the majority
 2136 of these projects are still under construction, it is nevertheless estimated that the program has
 2137 displaced more than 10 million gallons in diesel fuel as of this writing. AEA calculates that the
 2138 first 62 funded projects to reach operation will provide more than half a billion dollars in net
 2139 benefits over their lifetimes. However, experts caution that reducing the amount of diesel fuel
 2140 consumed does not always lead to lower costs for consumers. In some cases, the integration of
 2141 alternative/renewable energy sources does little more than stabilize high prices. In others, it can
 2142 actually increase rates. It is important that AEA continue to be rigorous in its cost-benefit
 2143 analysis of projects competing for investment.

2144 In addition to spearheading many programs for energy innovation and efficiency, AEA also
 2145 publishes a variety of studies and reports as tools for developing local and regional energy
 2146 strategies. These include:

- 2147 • “Alaska Energy - A First Step toward Energy Independence: A Guide for Alaska
 2148 Communities to Utilize Local Energy Sources”

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- 2149 • The periodically updated “Renewable Energy Atlas of Alaska,” which evaluates and
2150 compiles renewable energy resources statewide
- 2151 • “Alaska Energy Pathway,” which, by offering processes for assessing the economics of
2152 developing local alternative energy sources, including financing strategies, seeks to
2153 enable and encourage localities and regions to participate in devising strategies suited to
2154 their individual needs

2155 These reports and other resources, including direct guidance from AEA, are being used by local
2156 governments and organizations in the Arctic who are forming energy plans for the North Slope,
2157 Northwest Arctic, and Bering Straits regions. Presently, local energy plans are in varying stages
2158 of development.

2159 Nearly all of the programs and studies named above are guided by the tenets of a state energy
2160 policy that was developed during months of hearings and stakeholder meetings in 2009 and
2161 adopted unanimously by the Legislature in 2010. Its directives include achieving a 15 percent
2162 increase in energy efficiency on a per capita basis between 2010 and 2020 and increasing to 50
2163 percent by 2025 the state’s electric generation from renewable and alternative energy sources.

2164 Alaska Housing Finance Corporation’s (AHFC) weatherization and home energy rebate
2165 programs are clearly focused on the state policy’s efficiency goal. Since 2008 the Legislature has
2166 appropriated more than \$400 million to these programs, which bring immediate results. So far,
2167 more than 28,000 homes across the state have been weatherized, creating on average a 30
2168 percent annual savings on residential energy costs. Yet that is only 11 percent of Alaska’s
2169 275,000 households, and the rebate program in particular has been criticized for the slower pace
2170 at which rural households have been retrofitted. There is also worry over the stability and
2171 sustainability of funding for these proven programs, which have so far depended on annual
2172 legislative appropriations.

2173 AHFC estimates that the state pays \$642 million each year to heat and power public buildings. A
2174 realistic reduction of 20 percent of those costs through energy efficiency retrofits would amount
2175 to annual savings of \$128 million. The Renewable Energy Alaska Project (REAP) has suggested
2176 that those savings could be designated to provide a stable funding source for AHFC’s residential
2177 weatherization programs, so that these programs would not have to depend on annual legislative
2178 appropriations.

2179 A significant amount of development of energy-related technologies and strategies in Alaska also
2180 occurs outside of state and local government. Just a few examples include:

- 2181 • REAP with more than 80 organizational and individual members across the state, has
2182 since 2004 played a prominent role in promoting the increase in renewable energy use
2183 and energy efficiency and conservation in Alaska.

- 2184 • The Alaska Center for Energy and Power (ACEP) at the University of Alaska conducts
2185 applied energy research designed to lower energy costs and strengthen Alaska
2186 communities and industries.
- 2187 • The Cold Climate Housing Research Center (CCHRC) is a nonprofit corporation that
2188 develops, tests, and employs energy-efficient and cost-effective building technologies for
2189 cold climates.
- 2190 • The Alaska Native Tribal Health Consortium's (ANTHC) Alaska Rural Utilities
2191 Collaborative conducts energy audits of village water plants—often the single largest
2192 user of fuel in a community—and assists in energy-saving infrastructure retrofits and
2193 operational improvements.
- 2194 • The Rural Community Action Program's Energy Wise program educates rural Alaskans
2195 on energy conservation measures in the home.

2196 *Discussion and Considerations*

2197 While efforts to further energy efficiency in households make headway, there is concern that
2198 programs to encourage retrofitting of public and commercial buildings are underutilized. Only a
2199 handful of eligible public buildings have been weatherized using AHFC's Energy Efficiency
2200 Revolving Loan Fund, with many others bypassing this financing method by seeking capital
2201 project grants or direct appropriations from the Legislature. In light of falling state revenues, it is
2202 important that energy efficiency improvements that will generate a return on investment be
2203 financed through loans rather than through state grants that would be better used for essential
2204 projects that do not generate cash flow. Similarly, while AIDEA has financing available for
2205 commercial building energy efficiency retrofits, there appears to be too little outreach to owners
2206 of commercial enterprises to persuade them of the substantial financial advantages of making
2207 these improvements.

2208 Regional electrical grids have been offered as a way to bring down costs through more desirable
2209 economies of scale. However, because the volume of power shared even among multiple
2210 communities would likely remain relatively small, questions persist regarding the cost-
2211 effectiveness of this strategy in all but the most closely-situated clusters of populations.

2212 Similar factors impede the development of natural resources in the Arctic. Meera Kohler,
2213 president of the Alaska Village Electric Cooperative (AVEC), has written that "the cost of
2214 energy is what currently renders Alaska non-competitive in the areas of resource extraction and
2215 refining and in processing products such as fish." Other authorities agree that such costs have
2216 long inhibited the creation of value-added processing and manufacturing industries in the
2217 Alaskan Arctic and beyond. Presently, the extraction and export of raw resources appear to be
2218 the most viable foundation for economic opportunity in the Arctic.

2219 In the view of some policy analysts, further industrial, security, and civil development in the far
2220 North may offer the economies of scale to allow for cost-effective deployment of regional long-

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2221 term energy solutions. However, past development models – such as that of the Red Dog Mine in
2222 the Northwest Arctic Borough – have segregated industrial operations from local communities,
2223 failing to yield lower energy costs for Arctic residents despite their proximity.

2224 While the PCE program requires data reporting on fuel use related to electricity generation, data
2225 on community consumption of fuels – including diesel, gasoline, and biomass – for heating and
2226 transportation go largely unreported. According to ACEP, “A comprehensive data collection and
2227 reporting system could enable businesses or private-public partnerships to develop more
2228 effective business plans for investing in systems with greater efficiency, provide better financial
2229 predications to inform decisions, and provide access to the local expertise needed to operate and
2230 troubleshoot their systems after deployment.”

2231 Clearly, there have been wide-ranging and long-term efforts to confront energy issues in rural
2232 Alaska, yet costs remain at crisis levels in most Arctic communities. Despite the existence of
2233 dozens of studies, plans, and task force reports, Alaskans have not identified and united behind a
2234 comprehensive vision that would ultimately meet the energy needs of the state’s peoples,
2235 whether in rural or Railbelt communities. Community sustainability and opportunities for
2236 economic diversification depend on lowering energy costs in the Arctic and across rural Alaska.

2237 *Conclusion: Policy Recommendations*

2238 Strategic Recommendation

- 2239 • **Develop stable long-term funding mechanisms for state weatherization and energy**
2240 **efficiency programs while continuing robust efforts to find long-term energy solutions.**

2241 Other Recommendations

- 2242 1. The Alaskan Arctic’s communities continue to face daunting energy challenges.
 - 2243 A. While continuing robust efforts to develop long-term energy solutions, the state, local
2244 governments, and the federal government should maintain support for energy
2245 programs to sustain bush communities in the near term.
 - 2246 2. Energy efficiency and conservation programs have been successful in bringing
2247 substantial immediate savings to consumers and improving sustainability in Arctic
2248 communities.
 - 2249 A. The state of Alaska should continue strong support for programs that promote energy
2250 efficiency and weatherization in homes, public and commercial buildings, schools,
2251 and utilities.

- 2252 B. The state of Alaska should implement measures to increase use of these programs. In
 2253 particular it should better communicate the benefits of energy efficiency loan
 2254 programs to owners of commercial and public buildings.
- 2255 C. The state of Alaska should develop a stable, long-term funding mechanism for its
 2256 residential weatherization and energy efficiency programs, which currently depend on
 2257 annual appropriations from the legislature.
- 2258 3. Interest in exploiting natural resources in the Arctic is increasing at the same time state,
 2259 local, and federal governments consider expanding infrastructure to enhance Arctic
 2260 security, search and rescue, and oil spill response capabilities.
- 2261 A. The state of Alaska should advance integrated planning and forward thinking to
 2262 identify opportunities that exploit future industrial and civil infrastructure
 2263 development projects to serve regional energy needs. Early planning processes and
 2264 new development models should seek to share power production and infrastructure to
 2265 bring down costs.
- 2266 4. The development of financeable regional implementation plans—whether by potential
 2267 private-sector investors or public entities—has been hampered by the dearth of
 2268 comprehensive data on community fuel consumption.
- 2269 A. The state of Alaska should increase collection and dissemination of comprehensive
 2270 community consumption and power supply data.
- 2271 5. Innovations that create affordable, reliable, long-term energy solutions for Arctic
 2272 communities are likely to also serve the needs of remote populations in many regions of
 2273 the developing world. Stimulating Alaskan academic and private enterprise has the
 2274 potential to solve problems at home while also creating global opportunities for Alaskan
 2275 businesses.
- 2276 A. Support partnerships with the university and the private sector for research and
 2277 development of new energy technologies to bring down power and heating costs in
 2278 rural Alaskan communities. This could take a form similar to Governor Parnell's
 2279 R&D tax credit legislation introduced in 2012 but not passed by the legislature.
 2280 However, any such legislation should limit tax credits to R&D specifically focused on
 2281 rural energy and power solutions.
- 2282 B. Support programs such as the Emerging Energy Technology Fund, which provides
 2283 grants for technology that is within 5 years of commercialization.
- 2284

2284 **5.9 Fisheries and Wildlife**

2285 *Introduction*

2286 Alaska is world-renowned for its diverse and abundant wildlife, ranging from some of the largest
2287 free-ranging caribou herds in the world to a wide variety of marine mammals including several
2288 iconic to the Arctic such as the bowhead whale and walrus. The region also supports important
2289 nesting habitat for a wide range of waterfowl species. These resources form the foundation of a
2290 subsistence-based culture and as such are important from a food security perspective. They also
2291 provide important hunting and wildlife viewing opportunities. At the same time, Alaskans
2292 depend on sustainable fisheries for their sustenance, livelihood, and recreation. Fishing has been
2293 a major source of food for Alaskans and a provider of employment and economic benefits to
2294 those engaged in this activity and their communities. For indigenous peoples living along the
2295 coast and river systems, fish and fishing has been fundamental to their way of life.

2296 The Alaska seafood industry accounts for over half of all U.S. fisheries production and is a key
2297 economic driver in the state. It is the largest private sector employer in the state. An estimated
2298 one-in-eight workers in Alaska earn at least part of their income directly from the seafood
2299 industry.

2300 A changing climate presents an emerging challenge to management of Alaska’s fish and wildlife
2301 and their habitats. Potential ecosystem impacts include changes in water, snow, ice and
2302 permafrost conditions. These changes potentially have a cascading effect on biodiversity,
2303 ecosystems and human living conditions within the Alaskan Arctic. Arctic climate change is a
2304 global concern and should be monitored to assess major and irreversible impacts on biodiversity,
2305 ecosystems, and the well-being of indigenous peoples and Arctic communities.

2306 **Fisheries**

2307 *Background*

2308 Governance of fisheries in the Alaska region is complex⁴⁸, but has supported some of the most
2309 progressive fisheries management and research programs in the world. Current governance
2310 structures have established protocols for the management of fisheries in the future. Jurisdictions
2311 of fisheries in Alaska and off Alaska’s coasts are generally based on geographic area and species.

2312 International or bilateral agreements among countries oversee some species and areas.⁴⁹
2313 Domestically, the North Pacific Fishery Management Council (NPFMC) and National Marine
2314 Fisheries Service (NMFS) manage marine fisheries occurring between 3 and 200 nautical miles
2315 from shore – the Exclusive Economic Zone (EEZ) – under authority of the Magnuson-Stevens

⁴⁸ See Fisheries and Wildlife Appendix A for detailed Fisheries Governance Chart

⁴⁹ See Fisheries and Wildlife Appendix A

2316 Fisheries Management and Conservation Act⁵⁰. The NPFMC and NMFS have some authority for
 2317 halibut, consistent with the North Pacific Halibut Act administered through the International
 2318 Pacific Halibut Commission. Inside three miles, it is the Board of Fisheries in the Alaska
 2319 Department of Fish and Game (ADF&G) that has jurisdiction⁵¹, with the exception of halibut.
 2320 Since fish straddle and migrate across boundaries, coordination among the governing bodies is
 2321 essential. Coordination occurs now and will be critical as the Arctic develops.

2322 The Alaskan Arctic's marine environment includes two distinct geographic areas: BSAI – Bering
 2323 Strait and the Aleutian Island chain waters south of the Bering Strait, which include the Bering
 2324 Sea, Norton Sound, Bristol Bay, and the waters around St. Lawrence, St. Matthew, Nunivak and
 2325 the Pribilof Islands; and AO – Arctic Ocean waters north of the Bering Strait including the
 2326 Chukchi and Beaufort Seas and Kotzebue Sound.

2327 The waters in the BSAI area support some of the world's most productive and valuable
 2328 commercial fisheries. Species of crab, pollock, cod, sablefish, turbot, rockfish, and scallop are
 2329 caught by vessels using a variety of gear. The catch is processed either 'at sea' or delivered to
 2330 shore based processors. This lucrative industry occurs mostly in the offshore waters in the EEZ.
 2331 Historically, fishery resources in these waters have been sustainably managed.

2332 Western Alaska, Interior, and North Slope river systems and lakes in the Arctic support
 2333 important fresh water subsistence, recreational, personal use and commercial fisheries.
 2334 Communities across the region depend on vitally important subsistence salmon harvests as a
 2335 primary food source and commercial fishing income to support mixed cash-subsistence
 2336 economies.

2337 In the AO area, ice conditions have made the waters relatively inaccessible. It is one of the least
 2338 known marine areas on earth. In 2009, the Arctic Fisheries Management Plan (FMP), approved
 2339 by the NPFMC and implemented by the NMFS, took the proactive and precautionary step of
 2340 establishing a moratorium on commercial fishing in federal waters until sufficient data has been
 2341 accumulated to allow for the responsible management and exploitation of fish stocks. This means
 2342 not only maintaining healthy stocks, but also protecting the ecosystem and environment. Harvest
 2343 in state waters in the AO region has been very low and primarily for subsistence use.

2344 State and federal fisheries management programs for existing fisheries in the Alaska region are
 2345 science-based, requiring support of strong assessment and research programs. Catches are
 2346 limited to biologically sustainable levels determined from the best available information.
 2347 Necessary investments in annual or in-season assessments, catch accounting, monitoring, and
 2348 enforcement ensure management plans are implemented as intended. State and federal law
 2349 require fisheries be managed sustainably and both management systems incorporate ecosystem

⁵⁰ See Fisheries and Wildlife Appendix B

⁵¹ See Fisheries and Wildlife Appendix C

2350 considerations to promote sustainability. Seasonal and gear-specific closures, or in hot spots and
2351 fixed areas are all employed to protect habitat, reduce bycatch (i.e., prohibited species catch,
2352 including salmon, crab, and halibut in non-target fisheries) and other incidental catch. These
2353 restrictions also minimize interactions with protected marine resources. Fishery scientists
2354 incorporate environmental information into their annual stock assessments (e.g., the use of
2355 research to document the relationship between ocean temperature and the productivity of certain
2356 species).

2357 An interagency sponsored study that will provide the first comprehensive survey data conducted
2358 using methods comparable to fisheries surveys in the Bering Sea, is the Arctic Ecosystem
2359 Integrated Survey⁵². The study, when completed, will provide an unprecedented baseline for
2360 understanding Arctic marine and coastal communities and for assessing the potential effects of
2361 future changes in the region on fisheries resources and the marine environment.

2362 *Discussion and Considerations*

2363 As the ice melts the environment will continue to change, possibly altering migration patterns as
2364 well as the range and distribution of marine resources. In some cases, it could lead to extended
2365 productive areas and new species. In others, it could negatively alter the habitat for established
2366 species that are relied upon by local communities and the seafood industry. With the warming
2367 trend, there might be a freshwater component with an increased influence. The risk of
2368 introducing invasive species and pollution also rises with the growth of vessel traffic through the
2369 Bering Strait and along the Northern Sea Route and the Northwest Passage.

2370 There is growing interest and attention in the Arctic, which has led to a number of organizations
2371 and institutions devoting time and energy to the north. Alaska is ideally positioned to be a base
2372 for science and research in the Arctic and the University of Alaska is able to coordinate
2373 international and interdisciplinary research programs. UAF's new research vessel, the *R/V*
2374 *Sikuliaq* offers new opportunities to explore oceanographic and fisheries research, coastal marine
2375 studies, pollution studies, and marine mammal and bird research. The *R/V Sikuliaq* has ice-
2376 breaking capabilities that will allow seasonal access to the Arctic Ocean and year-round access to
2377 waters south of St. Matthew Island.

2378 In light of the rapid changes that the Alaskan Arctic is seeing, short-term scientific studies can
2379 only give us a snapshot in time. For instance, a North Pacific Fishery Management Council
2380 analysis, at the time they adopted their Arctic Fishery Management Plan⁵³, included biomass
2381 estimates for key species such as Arctic and saffron cod and snow crab in the Chukchi and
2382 Beaufort regions. In the Chukchi region, survey data from 1990 and 1991 indicate nearly 95
2383 percent of the estimated biomass of key species in the region was made up of invertebrates,

⁵² See <https://web.sfos.uaf.edu/wordpress/arcticeis/>

⁵³ See the federal analysis supporting the North Pacific Fisheries Management Council's action to adopt the Arctic Fisheries Management Plan. The full analysis is posted at <http://alaskafisheries.noaa.gov/analyses/arctic/carirfra0809final.pdf>

2384 mainly non-commercial species. In the Beaufort region biomass estimates from 2008 survey data
2385 show brittle stars alone making up nearly half the total estimated weight. Comparisons between
2386 two years of Chukchi region survey data show tremendous variation. While commercial species
2387 occur in both regions, they do not occur at densities to support an economically viable fishing
2388 opportunity. Long-term monitoring is needed to understand how the habitat is changing (e.g.,
2389 water salinity, temperature, and acidity), the rate of change, and how fish stocks and critical
2390 ecosystem components will respond.

2391 Partners in the U.S. Arctic want a framework for more inclusive, efficient, and transparent
2392 engagement that does not add unnecessary layers of bureaucracy to the process. Although there
2393 is a lot of work being done, it is scattered and not readily available. The U.S. Arctic Research
2394 Commission (USARC) developed an online science portal that provides information to a broad
2395 cross-section of users. The Alaska Ocean Observing System (AOOS) is also expanding its data
2396 repository for broad use, with much focus on the AO area. The North Pacific Research Board is
2397 also turning more attention and resources to Northern Bering Sea and AO research.

2398 In both the BSAI and AO, there are waters outside the national EEZ zones of adjoining
2399 countries, commonly referred to as the Donut Hole. For the Bering Sea, an international
2400 agreement – the Central Bering Sea Pollock Agreement – was signed, but only after a period of
2401 unregulated fishing significantly reduced the fish stock. The Arctic Fisheries Management Plan
2402 (FMP) established a moratorium on commercial fishing in federal waters until sufficient data has
2403 been accumulated to allow for responsible management of fish stocks. Intended benefits of this
2404 precautionary approach could be eroded by unregulated fishing in international Arctic waters or
2405 by fishing in adjacent EEZs.

2406 Other consideration for efficient and safe harvest of marine resources include sub-standard
2407 internet connectivity, the lack of ports of refuge and a permanent Coast Guard presence, limited
2408 emergency response capability, inadequate charting, and challenging environment.

2409 Fishing has the potential to provide a stable economy, income, jobs and infrastructure to Arctic
2410 Alaska, but it is essential to support the science necessary for responsible management and
2411 exploitation of fish stocks. This should happen before the moratorium in the AO area is lifted to
2412 support adaptive fisheries management programs capable of responding to environmental
2413 changes in the BSAI and Western Alaska as well.

2414 Future development must not diminish the food security of the people and communities that
2415 depend on the harvest of fish, game, or marine mammals. Commercialization of Arctic resources
2416 should benefit the residents of the Arctic; for instance, it could form the basis of an economy,
2417 providing the needed infrastructure for vessels and processors. An example is the Community
2418 Development Quota (CDQ) program, which has been successful in promoting economic
2419 development, fisheries infrastructure and investments, and workforce development in remote
2420 western Alaska communities. Such a program serves as one example of progressive ways of

Fisheries and Wildlife

2421 offsetting development impacts on local resident, other similarly innovative ideas merit
2422 consideration as fisheries become commercially viable.

2423 *Conclusion: Policy Recommendations*

2424 Northern Area (AO)

2425 1. Changes in ice conditions have made the waters of the Arctic Ocean increasingly
2426 accessible, but there is very little infrastructure in place to support safe operations.

2427 A. The state of Alaska should work with the Coast Guard and other federal agencies
2428 to improve and increase search and rescue response capability, communications,
2429 update bathymetric charts, and assess the need for additional navigation aids.
2430 Local and traditional knowledge should help inform this work.

2431 2. As a result of the opening of Arctic waters- one of the least-known marine areas on earth
2432 - baseline information will be needed to inform decision making about the management
2433 of marine resources and to track changes. Continued assessments will be needed in
2434 anticipation of changes in temperature, salinity, acidity and other effects of climate
2435 change.

2436 A. The state of Alaska should support comprehensive scientific research and data
2437 including local knowledge to establish reference points and metrics that could be
2438 used to develop management plans that support sustainable fisheries in the region.

2439 B. The state of Alaska should pursue additional investment in the Arctic to estimate
2440 the biomass and conditions that contribute to the health of marine resources, but
2441 funding must not be “in lieu of” funding needs in the Bering Sea/Aleutian Islands.

2442 C. The state of Alaska should formalize the process to be used when considering the
2443 opening or extension of the fishery of a species for sustained yield in state waters,
2444 to include the evaluation of the potential effects of changes on harvest of other
2445 species of fish and the marine ecosystem.

2446 D. The state of Alaska should establish a program to monitor and continue assessing
2447 the health of the ecosystem for responsive management that implements a
2448 precautionary approach.

2449 3. There is no commercial fishery in the Arctic Ocean, but there are successful existing
2450 structures for management in the Bering Sea/Aleutian Island waters that can provide a
2451 model for emerging fisheries in the Arctic.

2452 A. The state of Alaska should seek ways to participate in current international
2453 organizations discussing fisheries (e.g., International Pacific Halibut Commission,
2454 North Pacific Fisheries Commission, U.S.-Russia Intergovernmental Consultative

2455 Committee, and Convention on the Conservation and Management of the Pollock
 2456 Resources in the Central Bering Sea) as well as contribute to any new
 2457 organization regarding the development of marine resources in the Arctic. Current
 2458 domestic and international fisheries management structures should be adapted to
 2459 the needs of the Arctic region.

2460 B. The state of Alaska should continue to support the U.S. Department of State
 2461 efforts to be proactive in establishing an international agreement that ensures
 2462 sustainable fisheries management plans for waters outside national EEZs are
 2463 implemented across all jurisdictions in the Arctic. Precautionary management
 2464 should be extended to the Arctic donut hole and other Arctic nations' EEZs.

2465 4. Alaskans depend on sustainable fisheries for their sustenance, traditional ways of life and
 2466 also livelihood.

2467 A. The state of Alaska must support maintenance of existing reliance of local
 2468 residents on food from the ocean and inland waters and not allow the food
 2469 security of the people and communities to be diminished.

2470 B. The state of Alaska should develop policies to maximize the value and use of
 2471 marine resources to the benefit of residents of the Arctic, possibly modeled after
 2472 successful programs like the CDQ program or other innovative ideas.

2473 C. The state of Alaska should encourage the development of infrastructure necessary
 2474 to support emerging fisheries such as processing facilities, needed utilities, access
 2475 for local fleets, and transportation to markets.

2476 Bering Sea/Aleutian Islands (BSAI)

2477 1. With changes in temperature, salinity and acidity, there are potential changes in the
 2478 waters of the BSAI.

2479 A. The state of Alaska should continue funding stock assessments, research,
 2480 monitoring and enforcement to support the intent of current fisheries regulations.

2481 2. There is existing oversight of the incidental harvest of non-target fish.

2482 A. The state of Alaska should support technology and policies that continue to
 2483 minimize bycatch in all fisheries.

2484 3. Because fish straddle and migrate across boundaries, coordination among governing
 2485 bodies is critical.

2486 A. The state of Alaska should continue to participate in current international
 2487 organizations discussing fisheries.

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- 2488 4. With the opening of Arctic waters, there are risks of pollution, invasive species, and other
2489 hazards.
- 2490 A. The state of Alaska should work to mitigate risks from increased marine
2491 transportation through the Bering Straits with specific attention to BSAI fisheries
2492 and fish habitat.
- 2493 B. Several mitigation strategies are being considered by the Aleutian Islands Risk
2494 Assessment Project Team for application to the Great Circle Route, and the state
2495 of Alaska should support these strategies.

2496 Wildlife

2497 *Background*

2498 Numerous bodies of scientific evidence suggest a warming in the Arctic region. Those
2499 assessments indicate that higher surface temperatures are driving changes such as loss of summer
2500 sea ice cover, melting of ice sheets, and thawing permafrost increasing methane emissions.⁵⁴ The
2501 effects of climate change in the Arctic region will have significant local, regional and global
2502 implications.

2503 Other potential impacts from these changes have been identified in the ADF&G's Climate
2504 Change Strategy⁵⁵ and include potential alterations to habitats that support wildlife and their
2505 uses. The state is constitutionally required to manage its wildlife for sustained yield, while
2506 responsibly developing resources such as oil and gas and associated infrastructure.

2507 *Discussion and Considerations*

2508 The goal of the Alaskan Arctic wildlife management is to ensure Alaska's wildlife heritage and
2509 manage for abundance in the face of a changing climate. A changing climate will present
2510 management challenges commensurate with the rate and extent of the change. With this in mind,
2511 Alaska should not overlook the potential impact of climate-related changes. Changes to
2512 ecosystems will likely affect permafrost, supplies of water, marine and terrestrial biodiversity,
2513 and traditional/local foods. Diminishing sea ice may impact local fauna, including marine
2514 mammals and will alter opportunities for subsistence hunting by indigenous peoples.

2515 The state is constitutionally required to manage its wildlife for sustained yield and has an
2516 excellent history of actively managing its wildlife under this principle using an adaptive
2517 ecosystem management approach for the benefit of its citizens. In so doing the state is providing
2518 for food security and diversity of use. This is being successfully done while responsibly

⁵⁴ See Arctic Council's Snow, Water, Ice and Permafrost Assessment (SWIPA) of 2011

⁵⁵ www.adfg.alaska.gov/static/lands/ecosystems/pdfs/climatechangestrategy.pdf

2519 developing resources such as oil and gas and associated infrastructure employing a robust and
2520 adaptive environmental review and permitting structure.

2521 The University of Alaska, federal agencies and the Arctic Council have all called for and worked
2522 to establish ecosystem-based management of Arctic resources. In light of the lack of
2523 understanding of what ecosystem-based management entails, the ADF&G continues to employ
2524 an adaptive management system (based on sustained yield and harvest opportunities important to
2525 local communities). Increasingly, national refuge and park lands within Alaska are being
2526 managed using a passive management approach. Under this approach, "natural diversity" is
2527 paramount and wildlife numbers are allowed to fluctuate widely. It will be critical that federal
2528 agencies respect and collaborate with state wildlife management aimed at ensuring food security
2529 and the food security it provides.

2530 Consideration should be given to include:

- 2531 • Understand and cross integrating the plethora of local, state, national, and cross-border
2532 assessments of climate change on marine and terrestrial biodiversity that potentially
2533 impact traditions and local foods
- 2534 • Promote the participation of local and indigenous peoples in the development and
2535 implementation of monitoring and assessment protocols
- 2536 • Coordinate assessment and monitoring at the local, state, national levels
- 2537 • Develop and improve public education and awareness programs that promote the
2538 conservation of Arctic biological diversity and the sustainable use of biological resources
2539

2540 To provide Alaska's policy makers and other stakeholders with a deeper understanding of the
2541 regional and global effects of any Arctic climate change, it is necessary to continue the work of
2542 observing, projecting impacts, and implementing sound policies that preserve our wildlife
2543 heritage and their uses, including food security, for future generations.

2544 *Conclusion: Policy Recommendations*

2545 1. A robust Arctic Wildlife Policy is fundamental to preserving Alaska's heritage and
2546 ensuring management of the state's wildlife for abundance today and for future
2547 generations of Alaskans.⁵⁶

2548 A. The state of Alaska, with the participation of local and indigenous peoples, should
2549 continue on its trajectory to develop a cohesive and comprehensive Arctic wildlife
2550 policy. The establishment of such a policy will have to include the identification
2551 and assessment of climate-related impacts and threats; monitoring of the Alaskan
2552 Arctic biological diversity; scenarios planning and impact assessment;

⁵⁶ See Preamble to Alaska's Constitution

Fisheries and Wildlife

2553 collaborative research and assessment; and consideration of species and habitat
2554 conservation and restoration.

2555 2. There are a large number of federal laws and regulations about wildlife that are already
2556 enacted, though many have broad nationwide jurisdiction.

2557 A. The state of Alaska should work to better understand the infrastructure of
2558 administrating these laws, regulation and the various groups involved and take a
2559 leadership role in the coordination of policies at the local, state, and national
2560 levels.

2561 3. Changes in the environment have a cascading effect on biodiversity, ecosystems and
2562 human living conditions within the Alaskan Arctic.

2563 A. The state of Alaska should develop a robust and adaptive monitoring program to
2564 assess major impacts on biodiversity, ecosystems, and the well-being of
2565 indigenous peoples and Arctic communities and an adaption strategy to address
2566 identified impacts.

2567 4. Alaska is world-renowned for its diverse and abundant wildlife.

2568 A. The state of Alaska should develop new and improve existing public education
2569 and awareness programs that promote the conservation of Arctic biological
2570 diversity and the sustainable use of biological resources.

2571 Strategic Recommendations: Fisheries and Wildlife

2572 • Develop an assessment and monitoring program in support of strategies for fish and
2573 wildlife management that enhances food security for Arctic residents.

2574 • Develop new and improve existing public education and awareness programs that result
2575 in a more informed public who understand the multi-faceted programs and policies that
2576 regulate the conservation of Arctic biodiversity and sustainable use of biological
2577 resources.

2578

2578 **6 Appendices**

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2592

6.1 Commission Members Appendix A

Alaska Arctic Policy Commission



Senator Lesil McGuire
Anchorage
Commission Co-Chair



Representative Bob Herron
South Bering Sea
Commission Co-Chair



Senator Lyman Hoffman
Bethel



Senator Gary Stevens
Kodiak



Senator Cathy Giessel
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Chris Hladick
Unalaska City Manager
Local Government
Representative



Layla Hughes
Conservation Group
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Mayor Reggie Joule
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Stephanie Madsen
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We would also like to specifically thank these individuals for their input and guidance: Lt. Governor Mead Treadwell; USARC Chair Fran Ulmer; US Coast Guard District 17 Rear Admiral Thomas P. Ostebo; US Coast Guard Arctic Planning/Coordination James Robinson; Arctic Circle Co-founder Alice Rogoff; former Alaska Senate President Drue Pearce; and former Department of Natural Resources Commissioner Dan Sullivan.

2595 **6.2 Acronyms Appendix A**

2596	AAPC	Alaska Arctic Policy Commission
2597	AAWG	Alaska Arctic Working Group
2598	AC	Arctic Council
2599	ACEP	Alaska Center for Energy and Power
2600	ADEC	Alaska Department of Environmental Conservation
2601	ADF&G	Alaska Department of Fish and Game
2602	ADNR	Alaska Department of Natural Resources
2603	ADOTPF	Alaska Department of Transportation and Public Facilities
2604	AEA	Alaska Energy Authority
2605	AHFC	Alaska Housing Finance Corporation
2606	AIDEA	Alaska Industrial Development and Export Authority
2607	AIS	Automatic Identification System
2608	AKHAP	Alaska Heating Assistance Program
2609	ALCOM	Alaska Command
2610	AME	Alaska Marine Exchange
2611	AMSA	Arctic Marine Shipping Assessment
2612	ANCSA	Alaska Native Claims Settlement Act
2613	ANR	Alaskan NORAD Region
2614	ANTHC	Alaska Native Tribal Health Consortium
2615	ANWR	Arctic National Wildlife Reserve
2616	ANWTF	Alaska Northern Waters Task Force
2617	AO	Arctic Ocean
2618	AOOS	Alaska Ocean Observing System
2619	AOR	Area of Responsibility
2620	APDES	Alaska Pollutant Discharge Elimination System

2621	ARPA	Arctic Research and Policy Act
2622	ASRC	Arctic Slope Regional Corporation
2623	AVEC	Alaska Village Electric Cooperative
2624	BOEM	Bureau of Ocean Energy Management
2625	BRPC	Brooks Range Petroleum Company
2626	BSAI	Bering Strait and Aleutian Islands
2627	BSEE	Bureau of Safety and Environmental Enforcement
2628	CCHRC	Cold Climate Housing Research Center
2629	CDRUSNORTHCOM	Commander of U.S. Northern Command
2630	CDQ	Community Development Quota
2631	CJTF-AK	Commander of Joint Task Force Alaska
2632	CMTS	U.S. Committee on the Marine Transportation System
2633	CONOPS	Concepts of Operation
2634	CSIS	Center for Strategic and International Studies
2635	CZM	Coastal Zone Management
2636	DCCED	Department of Commerce, Community and Economic Development
2637	DEC	Department of Environmental Conservation
2638	DF&G	Department of Fish and Game
2639	DHFF	Department of Health and Social Services
2640	DMTS	DeLong Mountain Transportation System
2641	DMVA	Department of Military and Veterans Affairs
2642	DNR	Department of Natural Resources
2643	DOD	Department of Defense
2644	DOT&PF	Department of Transportations and Public Facilities
2645	DSCA	Defense Support to Civilian Authorities
2646	EEZ	Exclusive Economic Zone
2647	EPA	Environmental Protection Agency

Acronyms Appendix A

2648	ERMA	Environmental Response Management Application
2649	ESA	Endangered Species Act
2650	FMP	Fisheries Management Plan
2651	FWS	Fish and Wildlife Service
2652	HAZWOPER	Hazardous Waste Operations and Emergency Response
2653	HIA	Health Impact Assessment
2654	ICCAT	International Commission for the Conservation of Atlantic Tunas
2655	ICS	Incident Command System
2656	IEP	Interior Energy Project
2657	IMO	International Maritime Organization
2658	IOCM	Integrated Ocean and Coastal Mapping
2659	IPHC	International Pacific Halibut Commission
2660	IPO	Indigenous Peoples Organizations
2661	IPP	Industry Preparedness Program
2662	IWC	International Whaling Commission
2663	JBER	Joint Base Elmendorf-Richardson
2664	JTF-AK	Joint Task Force Alaska
2665	LIHEAP	Low Income Home Energy Assistance Program
2666	LNG	Liquid Natural Gas
2667	NCP	National Oil and Hazardous Substances Pollution Contingency Plan
2668	NEPA	National Environmental Policy Act
2669	NIMS	National Incident Management System
2670	NMFS	National Marine Fisheries Service
2671	NOAA	National Oceanic and Atmospheric Administration
2672	NORAD	North American Aerospace Defense Command
2673	NPR-A	Nation Petroleum Reserve-Alaska
2674	NPAFC	North Pacific Anadromous Fish Commission

2675	NPFMC	North Pacific Fishery Management Council
2676	NSAR	National Strategy for the Arctic Region
2677	NSB	North Slope Borough
2678	NSSI	North Slope Science Initiative
2679	NWLON	National Water Level Observation Network
2680	NWS	National Weather Service
2681	NWTF	Alaska Northern Waters Task Force
2682	OCS	Outer Continental Shelf
2683	OEPC	Office of Environmental Policy and Compliance
2684	OPA90	Oil Pollution Act of 1990
2685	OR&R	Office of Response and Restoration
2686	OSRO	Oil Spill Response Organization
2687	PAME	Protection of the Arctic Marine Environment
2688	PCE	Power Cost Equalization
2689	PERP	Prevention and Emergency Response Program
2690	RCC	Rescue Coordination Center
2691	REAP	Renewable Energy Alaska Project
2692	RFA	Recreational Fishing Alliance
2693	RFMO	Regional Fishery Management Organizations
2694	SAON	Sustaining Arctic Observing Networks
2695	SAR	Search and Rescue
2696	SNAP	Scenarios Network for Alaska and Arctic Planning
2697	SPAR	Spill Prevention and Response
2698	STAP	Science Technical Advisory Panel
2699	TAPS	Trans Alaska Pipeline System
2700	UA	University of Alaska
2701	UAA	University of Alaska Anchorage

Acronyms Appendix A

2702	UAF	University of Alaska Fairbanks
2703	UNCLOS	United Nations Convention on the Law of the Sea
2704	UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
2705	USARC	United States Arctic Research Commission
2706	USCG	United States Coast Guard
2707	USDA	United States Department of Agriculture
2708	USPACOM	U.S. Pacific Command
2709	USF&WS	U.S. Fish and Wildlife Service
2710	USNORTHCOM	U.S. Northern Command
2711	VMS	Vessel Monitoring System
2712		

2712 6.3 AAPC Letter of Intent - Introduction Appendix A

2713 The Commission sent a Letter of Intent to Secretary Kerry and National Security Advisor Rice
2714 June 28, 2013 outlining their intent, assumptions, and scope of work.



Alaska Arctic Policy Commission

Co-Chair: Senator Lesli McGuire, R-Anchorage, 907.465.2995

Co-Chair: Representative Bob Herron, D-Bethel, 907.465.4942

June 28, 2013

Secretary of State John Kerry
U.S. Department of State
2201 C Street NW
Washington, DC 20520

National Security Advisor Susan Rice
National Security Council
The White House
1600 Pennsylvania Avenue NW
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Dear Secretary Kerry and National Security Advisor Rice,

With this letter we introduce the Alaska Arctic Policy Commission (AAPC) and the Commission's intent, assumptions, and scope of work. We look forward to working with the implementation team for the National Strategy for the Arctic Region and other federal partners in the months ahead.

It is Alaska, of course, that makes the United States an Arctic nation. The people closest to the challenges and opportunities in the Arctic have a critical role in mitigating the impacts and maximizing the benefits from the increasing activity in this region. It is incredibly important to understand the priorities and perspectives of the peoples who live in and depend on the health of the resources in what is, to them, simply home. Arctic policy is important to all Alaskans. The immediate stakeholders are those who actually live and do business in Alaska and Alaska's Arctic, a place where costs are high and living conditions are, without question, challenging.

Alaskans are quick to recognize both the opportunity and risk inherent to increased activity in the Arctic. At stake are responsible exploration and development of resources; safeguarding traditional ways of life; protecting the unique environment; and ensuring jobs and a livelihood for those who live there. The Alaska Arctic Policy Commission convened under these fundamental responsibilities, committed to the need for balanced and informed decision making, as well as the importance of local voices contributing to, and working in partnership with, relevant policy-makers concerning those decisions.

One of the most important aspects of the AAPC's work is to positively influence federal Arctic policy, strategy and implementation. This Letter of Intent serves to articulate the Commission's scope of work, which includes its assumptions, interests and considerations, as well as offering some initial guidance to our federal partners. It conveys our conviction that the state is an active and willing leader and partner in Arctic decision making, bringing expertise and resources to the table.

The compelling reason for this Letter of Intent, well in advance of our January 2014 preliminary report, is the recent flood of federal Arctic policies and strategies that directly impacts Alaska now and in the future. During the National Strategy for the Arctic Region listening session held on June 14, 2013 in Anchorage, it was clear that the State of Alaska and the AAPC have a leading role to play in the development of the Implementation Plan for the Arctic Region. We appreciate and accept this offer of cooperation from our federal partners. The AAPC intends to meaningfully contribute to federal efforts as a full partner in the development and implementation of Arctic policy and strategy.

The Alaska Northern Waters Task Force recommended the creation of an Alaska Arctic policy commission in its January 2012 final report (www.anwtf.com), and the AAPC was subsequently legislatively created in April 2012. This year, the AAPC met in Juneau on March 23 and in Barrow June 12-13. Video of these

meetings are available – along with the schedule for the AAPC – at www.akarctic.com. The Commission will next meet in Unalaska on August 28 and 29.

The AAPC has formed subject matter committees, focused on themes identified in the Alaska Northern Waters Task Force, that were tasked with compiling a summary of issues, stakeholders, questions, challenges and priority areas for future consideration. By conducting interviews with stakeholders and experts, and providing relevant research and findings, the Commission will inform local, state and national decision-making in the year to come. This letter outlines three key assumptions and eight important considerations that frame the Commission's future process. Active and early engagement with communities, state and federal agencies, Alaska Natives, academia and other stakeholders is fundamental to our success. Communication and collaboration have been central tenets of all work to date and are highlighted in each of the areas of consideration in the attached.

The AAPC has work to do and questions to answer as it progresses toward a preliminary report to the Alaska Legislature due January 30, 2014 and a final report due January 30, 2015. These detailed documents will inform the public and policy-makers regarding the principles with which Alaskans approach the promise of the Arctic, and make "North to the Future" a lasting commitment to all Americans. The Commission is committed to producing a vision for Alaska's Arctic that stands the test of time; delivering policy statements that capture not only the opportunity of the Arctic but also the need to mitigate the challenges; and completing a final product that elevates the priorities and perspectives of Alaskans to a national and international stage.

This Letter of Intent and its attachments emphasize an Alaskan approach and commitment to Arctic policy. We look forward to working with you in full partnership while contributing Alaskan leadership, expertise and knowledge toward a promising Arctic future.

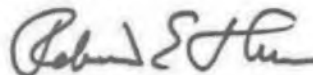
With this Letter of Intent, the 26 Commissioners of the AAPC respectfully submit their observations, suggestions, concerns and determination, on behalf of all Alaska's sovereign citizens, to be involved in our collective Arctic future and Arctic policy.

Sincerely,



Senator Lesil McGuire, Co-Chair

Sincerely,



Representative Bob Herron, Co-Chair

cc:

- Ambassador David Balton (Deputy Assistant Secretary, Oceans and Fisheries, Department of State)
- Tommy P. Beaudreau (Director, Bureau of Ocean Energy Management)
- Eric Cooper (Director, Maritime Security & Director, Arctic Region Policy, National Security Staff)
- Julia Gourley (Senior Arctic Official, Department of State)
- David Hayes (Deputy Secretary, Department of the Interior)
- Brendan P. Kelly (Assist. Director, Polar Science, Office of Science & Technology Policy, EOP)
- Rear Admiral Thomas Ostebo (17th Coast Guard District Commander, U.S. Coast Guard)
- Kathy Sullivan (Acting Administrator, National Oceanic and Atmospheric Administration)
- Nancy Sutley (Chair, White House Council on Environmental Quality)

Enclosures: AAPC Assumptions & Considerations; Alaska Arctic Policy Commission Membership



Alaska Arctic Policy Commission

Co-Chair: Senator Lesil McGuire, R-Anchorage, 907.465.2995

Co-Chair: Representative Bob Herron, D-Bethel, 907.465.4942

Alaska Arctic Policy Commission Assumptions and Considerations

Key Assumptions

1. State Leadership and Experience

The State of Alaska has more than a half century of commitment to supporting Alaska's Arctic communities through responsible resource and infrastructure development, with proven experience to help manage the Arctic's future. State of Alaska policy is to promote healthy, sustainable communities - guided by its people and informed by science, public process, and indigenous knowledge and experience. The State of Alaska actively engages residents of the Arctic region in developing policies and strategies.

- State agencies have decades of subject matter expertise and are intimately involved in and knowledgeable about Alaska's Arctic. The AAPC recognizes these as assets that can be leveraged effectively and quickly in response to increasing activity in the Arctic.
- State of Alaska programs provide or support core services in the Arctic region, such as education, public safety, search and rescue and emergency response, oil spill preparedness and response, water and sanitation infrastructure, fish and wildlife management, road and airport infrastructure, energy infrastructure, environmental monitoring, permitting, and mapping.

2. Federal Oversight, Role and Expectations

Recently-released U.S. Arctic policies and strategies are revealing in that:

- Consistent among them is the need for collaboration with the State of Alaska, indigenous peoples and local communities. However, it is unclear to the AAPC the extent to which this was practiced in the development of these documents. The Commission believes that early participation by the state and local peoples is fundamental for policy formation and successful implementation. Going forward, Alaska is a ready and willing partner in the development of strategies that address the well-being of its people and management of its resources.
- The calls coming from Alaska for an Arctic Ambassador clearly indicate that a stronger U.S. voice is needed not only for the international community but for Americans who still don't know what it means to be an Arctic nation.

3. International Engagement and Governance

The AAPC recognizes the key functions that international governance plays in the Arctic.

- While the AAPC understands that the Arctic Council is not a governing body, Alaskans do have a keen interest in further developing the State of Alaska's role. The AAPC is interested in pursuing all options for Alaskan participation as part of the U.S. Arctic Council delegation.

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including residents serving as subject matter experts in Task Forces and Working Groups, and being involved in State Department representation of the U.S. in this body.

- The AAPC recognizes the role of the International Maritime Organization (IMO) in the development of a Polar Code and looks forward to leveraging the State of Alaska's strong partnership with the Coast Guard to enhance Arctic marine safety and environmental protection issues at the IMO.
- Efforts should be made to constructively address concerns about the U.N. Convention on the Law of the Sea.

Considerations

A Scope of Work for Developing Alaska's Arctic Policy

1. Indigenous Perspectives and Priorities

It is important to engage residents of the Arctic region, particularly Alaska Native and rural residents, in developing Arctic policies and strategies. From scientists to Native elders, Alaskans understand the nuances of a change in the Arctic and the opportunities and challenges a changing Arctic presents better than anyone. Alaskans that live in the Arctic are continuously adapting to a changing environment and have valuable experience to inform future management needs and considerations.

The AAPC recognizes the importance of coordination and consultation with Alaska's Arctic indigenous peoples and to fully involve them at the earliest stages of developing an Arctic Policy in order to integrate and promote their interests. To that end, the Commission will consider the interests of Alaska's Arctic indigenous peoples when evaluating resource development, economic and workforce development, expansion of infrastructure, and mitigation of climate impacts. Such activities will be considered in light of its impacts on human health, language and culture, subsistence resources, and food security.

The AAPC will consider ways to:

- Focus increased attention and priorities to U.S. Arctic communities, particularly regarding human health, food security, culture and language preservation, and climate change issues such as coastal erosion, sea ice retreat, and reduction of permafrost.
- Ensure the needs and concerns of Alaska's Arctic indigenous peoples are incorporated into Alaska's Arctic policy, U.S. Arctic strategy and U.S. participation in international arenas.
- Encourage the use and incorporation of traditional knowledge, along with science-based findings, when assembling information upon which to base decision making at all levels.
- Work closely with Alaska's Arctic indigenous peoples to improve consultation and engagement with Arctic communities while facilitating communication between federal, state, and local governments regarding Arctic decision-making and development activities.

2. Governance

A large body of international, federal and state laws, regulations and standards are applicable to activities in Alaska's Arctic. While stronger governance ensures more certainty on behalf of all

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stakeholders, the current system is fragmented, spanning local and national jurisdictions and involving a number of species, ecosystems, peoples, and industrial activities.

At the heart of current conversations are how these components are coordinated, where leadership resides, and to what extent local and state input is solicited and integrated. The AAPC understands that local communities are concerned about risk associated with increased traffic through the Bering Strait, for example, without a clear sense of how Alaska's Arctic residents benefit. It is important to the Commission that the State of Alaska be involved in, represent and have an impact on all levels of Arctic governance.

The AAPC will consider ways to:

- Support for current and increased participation in the Arctic Council, as part of the U.S. delegation, within Working Groups, building relationships with Permanent Participants and Observers, and working with the State Department to highlight Alaskan priorities.
- Respect for, implementation of and enhancing the many existing relationships, while considering the potential for new and future opportunities.
- Strengthen collaborative efforts with the federal government as it negotiates international and trans-boundary agreements, as well as implements the U.S. Arctic Policy and corresponding Strategy.
- Increased bilateral engagement with northern nations and regional governments, especially with the Russian Federation, on issues related to the Bering Strait region.
- Established and potential planning efforts that account for change, human activity, environmental impacts, potential conflicts, stakeholder engagement, economic development and the regulatory environment.
- Safe, secure and reliable offshore operations, to include fisheries, oil, gas and mineral development, itinerant vessels, Bering Strait traffic, response capacity, and infrastructure development.

3. Oil, Gas, and Mineral Exploration and Development

Alaska's promise at Statehood was that its significant land and resource base would build its economy and support its citizenry. Today, oil and gas development provides roughly 90% of Alaska's state revenue. Alaska's Arctic Petroleum Province is estimated to hold nearly 30 billion barrels of oil and 221 trillion cubic feet of non-associated gas, and significant undiscovered mineral resources. Alaskans pioneered Arctic resource development and sustainable living. The State has over 45 years of oil and gas development experience in the Arctic and over 100 years of mining experience. Applying this history and experience, the AAPC will formulate actionable recommendations regarding oil, gas and mineral development for integration into Alaska's Arctic Policy.

At a June 2013 public meeting in Barrow, local leaders and residents urged petroleum development of the Arctic National Wildlife Refuge 1002 Area as a preferred option to keep the Trans-Alaska Pipeline System operating until offshore drilling is safer and can better guarantee protection of the Arctic Ocean – their traditional food source. This exemplifies the priority Arctic residents place on responsible new resource development, well-paying local jobs for residents and sustainable economies for their communities, while protecting the environment, their food security and cultural practices.

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The AAPC intends to:

- Promote responsible exploration and development of Alaska's Arctic oil, gas and mineral resources to directly benefit the people of the Arctic, and to support improved energy independence for the United States.
- Identify partnership opportunities with federal agencies to advance shared goals and outcomes for a healthy, secure and safe Arctic region.
- Facilitate greater use of both local, traditional knowledge-based and science-based decision making for oil, gas, and mineral development in the Arctic.
- Build partnerships with national, international, commercial, academic and Alaska Native entities to strengthen Alaska's leadership and voice in Arctic resource management and development decisions.

4. Science and Research

If economic activities such as oil and gas exploration, mining, fisheries, shipping, and tourism are to develop responsibly in the Arctic, our knowledge of the far North's marine and terrestrial environments must advance at a corresponding rate. The same warming trends that are expected to create economic opportunities will have a variety of substantial impacts on Arctic communities. Alaska's future prosperity and the well-being of Alaskans living in the Arctic depend in large part on the scientific, technological, cultural, health, and socioeconomic research the state promotes in the coming years.

A strong Arctic research program designed to inform responsible resource development, identify and conserve key ecological functions and subsistence resources, help adaption to a changing climate, and facilitate investment towards healthy Arctic communities rich in tradition and culture must be well coordinated and built on collaborative partnerships. Alaskans hold substantial data, technical expertise, local and traditional knowledge, and other assets of value to collaborative efforts advancing science and research in the region. Dozens of organizations are involved in establishing research priorities and conducting research in the Arctic. Guided by its policy objectives, the state should explore ways to improve, better exploit, and more effectively partner with science and research efforts that serve Alaskans' interests.

The AAPC intends to consider:

- Protocols for respectfully conducting research in and around rural communities and for incorporating local and traditional knowledge into research and decision-making.
- Processes to establish Alaska's research priorities in order to strengthen the state's influence on federal interagency research agendas.
- Applied research, including on oil spills in ice, to inform development decisions, advance technology, and enhance environmental stewardship.
- Basic research and monitoring of environmental conditions to measure impacts of climate change and increased human activity.
- Regional climate modeling in conjunction with scenario planning for sustainable and adaptable communities, civil infrastructure, and economic development infrastructure.
- Ways in which Arctic communities can directly benefit from increased research activities in the region.

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5. Energy

Affordable energy is a critical need in Alaska's Arctic. In communities where residents must spend more than half of their annual income on fuel and electricity, even modest economic activity, such as maintaining a local consumer economy, is severely limited. These same costs compromise the effectiveness of local governments, schools, and utilities, which continually struggle for solvency. The high cost of energy also impedes development of natural resources in remote Arctic locations.

The State of Alaska has focused considerable assets on these issues for many years. It has made progress in achieving energy efficiencies through the Alaska Housing Finance Corporation's weatherization and home energy rebate programs, and the Alaska Energy Authority's Renewable Energy Fund is reducing dependence on diesel fuel. More needs to be done to address the threat of high energy costs to the sustainability of many remote communities. Confronting Arctic energy issues requires focused leadership to unite Alaskans behind a comprehensive statewide strategy that will serve Arctic and non-Arctic communities alike. In this, Alaska and the U.S. must acknowledge the linkages between rural and urban Alaska and apply equal resolve and comparable resources to solutions that meet the needs of all.

The AAPC intends to consider:

- Measures at the local, state, and federal level that help sustain communities in the short and medium term as efforts to develop long-term solutions progress.
- Bringing savings to and prolonging sustainability for Alaska's communities through increased research and funding for energy efficiency in homes, public and commercial buildings, schools, and utilities.
- Ways that Arctic communities can benefit from the infrastructure and economies of scale that may come with resource development projects.

6. Planning & Infrastructure

It is important to identify ways in which multiple levels of planning are integrated and coordinated to benefit all Alaskans. Therefore, planning and infrastructure development in the Arctic must account for ports, harbors, places of refuge, and anchorages; telecommunications, aids to navigation, and data acquisition and sharing; emergency management and response; transportation and access to resources; energy extraction, production and delivery; human resources, workforce development, research, education and training; schools, medical facilities, civil Infrastructure (water, sewer, solid waste facilities) and housing.

Critical to Alaska's understanding of these areas is the extent to which they are inter-linked and represent fundamental building blocks of sustainable development in Alaska's Arctic. In order to ensure future prosperity in the Arctic, Alaska must encourage strategic, integrated and intentional planning that results in effective implementation and safe, secure, affordable, efficient and reliable infrastructure. That long-term vision has to be reconciled with a near-term need to develop the infrastructure (port and harbors) required to allow assets to be placed to respond to emergencies, search and rescue capabilities, to exercise sovereignty and national security.

The AAPC intends to consider:

- Meaningful evaluation of – and investment in – spill prevention and response capacity, while recognizing differences in proximity, risk, geography and scale of challenge. The AAPC also recognizes the role of local community planning, training and response.

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- The need for communications, navigational aids, and a full analysis on the viability of an Arctic deep draft port, as well as hydrography and marine charting for the region.
- New and creative approaches to sustainable development, needed to fund both planning and infrastructure development, leverage private sector investment, develop resources, and inter-modal approaches.
- Alaska's market competitiveness and preparing the state for global investment opportunities.

7. Security and Marine Transportation

Alaska needs to be proactive in anticipation of the growth in vessel traffic in the Arctic and its impact on the environment and on the people who live there. As traffic increases, it will be important to establish standards and regulations to govern vessels in arctic waters. Since shipping is a global enterprise, key elements of governance will be international regulations; others will be U.S. domestic and local rules. Alaska's policy makers and key stakeholders must be knowledgeable about and involved in the process of developing policies at all levels of governance. Special attention should be paid to the choke point and international strait in the Bering Strait region, the gateway to the Arctic Ocean. The U.S. maritime Arctic, including the Bering Strait region, is also a marine highway for local residents, who traverse it for hunting, fishing, and subsistence.

Decreasing sea ice challenges resource prioritization and directly impacts the State of Alaska's security, environment and economy. The Coast Guard should have full and adequate resources to meet expanding needs, including icebreaking assets in Alaska. Alaska can assist in the identification of air and marine port logistics, including the future development of deep draft port(s) that will need public and private sector investment facilitated.

The AAPC intends to consider:

- Updating the U.S. Coast Pilot produced by NOAA to include Arctic information of relevance to mariners operating through the Bering Strait region and within the U.S. maritime Arctic.
- A coordinated approach to vessel traffic monitoring and assessment throughout the U.S. maritime Arctic, and internationally throughout the Arctic Ocean.
- The State of Alaska's participation in and contributions toward international efforts to establish standards for Arctic vessels at the International Maritime Organization.
- Continued emphasis on the Arctic at the executive level and within state agencies on Arctic marine safety and marine environmental protection.
- Vocational training and education opportunities for young Alaskans and community residents to take advantage of the marine industry by becoming licensed engineers, mates, captains, and pilots.
- Work with federal agencies on coordination of responsibilities in Alaska's maritime Arctic, encouraging all agencies and departments to keep communication open and flowing.
- Search and rescue capacity and environmental protection, to include risk mitigation for subsistence users (i.e.; food security) and the capability to respond to oil spills in the Arctic marine environment.

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8. Fisheries

Alaskans depend on sustainable fisheries for their livelihood, recreation, and sustenance. Some of the world's most productive and valuable commercial fisheries occur in the Bering Sea and Aleutian Islands. Indigenous peoples have fished from and lived along western and Arctic Alaska riverine systems for millennia. The high Arctic supports some subsistence fishing, but federal waters of the Chukchi and Beaufort Seas are currently closed to commercial fishing. Fisheries in Alaska's internal and coastal waters are sustainably managed under state and federal management programs grounded in science.

The AAPC intends to consider:

- Change occurring in the Arctic that makes Arctic waters more accessible and the need for monitoring and fishery assessment information that will guide responsive management measures in the Alaskan Arctic.
- The benefit of fisheries' surveys, which in Arctic waters will be critical to informing management of any future, emerging, fishing opportunities in the Arctic.
- The U.S. adoption of a precautionary fisheries management approach for Arctic waters north of the Bering Strait and its benefits, which could be diminished by increased fishing opportunity in adjacent waters, outside U.S. jurisdiction, particularly on migrating and trans-boundary stocks.
- Changes in migration patterns and the range and distribution of marine and freshwater fisheries resources that are anticipated. In some cases, these may affect the possibility of commercial harvest opportunities; in others, it could more broadly alter the habitat for established species relied upon by local communities and the ecology of the area.

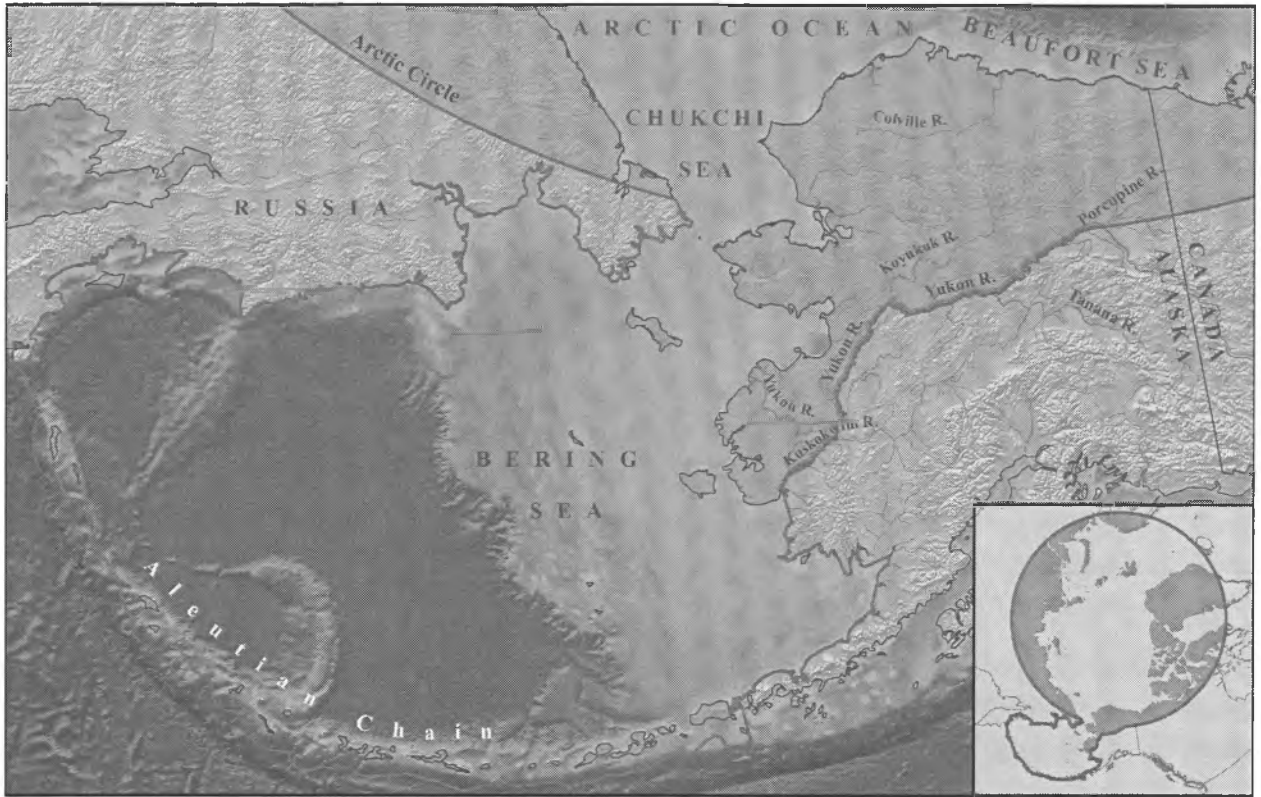
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6.4 ARPA Map - Introduction Appendix B

Arctic Boundary as defined by the Arctic Research and Policy Act (ARPA)

All United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering and Chukchi Seas; and the Aleutian chain.¹



Acknowledgement: Funding for this map was provided by the National Science Foundation through the Arctic Research Mapping Application (armap.org) and Contract #0520837 to CH2M HILL for the Interagency Arctic Research Policy Committee (IARPC).
 Map author: Allison Gaylord, Nuna Technologies. May 27, 2009.

1. The Aleutian chain boundary is demarcated by the 'Contiguous zone' limit of 24-nautical miles.

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2726 *6.5 Governance Appendix A*

2727 The United States Federal government has recently released four Arctic policy documents.

- 2728 1. Managing for the Future in a Rapidly Changing Arctic (Report to the President
2729 March 2013)
- 2730 2. National Ocean Policy and Implementation Plan (July 2010 and April 2013)
- 2731 3. NOAA's Arctic Vision and Strategy (February 2011)
- 2732 4. NSS - National Strategy for the Arctic Region (May 2013)
- 2733 5. U.S. Coast Guard Arctic Strategy (May 2013)
- 2734 6. Department of Defense Arctic Strategy (November 2013)

2735 1. Managing for the Future in a Rapidly Changing Arctic (Report to the President March
2736 2013)⁵⁷

2737 Summary: In consultation with the National Ocean Council, the National Security Staff, and
2738 the Arctic Research Commission, the Interagency Working Group on Coordination of
2739 Domestic Energy Development and Permitting in Alaska (Alaska Interagency Working
2740 Group) initiated this report to describe the challenges related to the management of natural
2741 resources in the U.S. Arctic.

2742 The report recommends ways to advance a common management approach, working off the
2743 many efforts currently underway to improve coordination among the region's stakeholders.
2744 The report recommends employing an Integrated Arctic Management approach when
2745 making stewardship and development decisions affecting the U.S. Arctic.

2746 Stakeholders strongly urged these emphases: whole-of-government coordination to improve
2747 efficiency and operational certainty; direct and meaningful partnership with stakeholders;
2748 science-based decision-making focused on ensuring sustainable ecosystems; adaptive
2749 approaches guided by ongoing research and monitoring; a region-wide planning approach
2750 that looks across jurisdictional boundaries; and improved understanding and consideration
2751 of the cumulative impacts of human activities in the region.

2752 Other recommendations include:

- 2753 • Ongoing high-level White House leadership on Arctic issues.
- 2754 • The Federal government should promptly initiate a high-level dialogue with
2755 representatives of the State of Alaska, including Alaska Native leaders.
- 2756 • By the end of 2013, the Federal government should conduct a review of the

⁵⁷ Managing for the Future in a Rapidly Changing Arctic: www.afsc.noaa.gov/Publications/misc_pdf/IAMreport.pdf

- 2757 numerous interagency efforts related to the U.S. Arctic, with an eye toward
2758 identifying and addressing overlapping missions and reducing duplication of effort.
- 2759 • The federal Arctic leadership team should facilitate international coordination by
2760 ensuring that the U.S. Senior Arctic Official is fully briefed on domestic efforts in
2761 the Arctic so that the Department of State can coordinate these efforts with those of
2762 the United States' bordering international partners and other Arctic nations through
2763 the Arctic Council.
- 2764 2. National Ocean Policy (Executive Order 13547 - Stewardship of the Ocean, Coasts, and
2765 the Great Lakes)⁵⁸
- 2766 Summary: The July 19, 2010 Executive Order 13547 established a national policy to ensure
2767 the protection, maintenance, and restoration of the health of ocean, coastal, and Great Lakes
2768 ecosystems and resources, enhanced the sustainability of ocean and coastal economies,
2769 preserved maritime heritage, supported sustainable uses and access, provided for adaptive
2770 management to enhance the understanding of and capacity to respond to climate change and
2771 ocean acidification and to coordinate with national security and foreign policy interests. The
2772 EO established the National Ocean Council to implement the Final Recommendations of the
2773 Interagency Ocean Policy Task Force.
- 2774 On April 16, 2013, the National Ocean Council released the Implementation Plan, which
2775 describes the actions the Federal Government will take to improve the health of the ocean,
2776 coasts, and Great Lakes. The Plan focuses on improving coordination to speed Federal
2777 permitting decisions; better manage the ocean, coastal, and Great Lakes resources that drive
2778 so much of our economy; develop and disseminate sound scientific information that local
2779 communities, industries, and decision-makers can use; and collaborate more effectively with
2780 State, Tribal, and local partners, marine industries, and other stakeholders. Without creating
2781 any new regulations or authorities, the Plan will ensure the many Federal agencies involved
2782 in ocean management work together to reduce duplication and red tape and use taxpayer
2783 dollars more efficiently.
- 2784 Specific to the Arctic, The Plan calls for:
- 2785 • Providing maritime safety and security in a changing Arctic by enhancing
 - 2786 communication systems in the Arctic
 - 2787 • Improving Arctic environmental incident prevention and response
 - 2788 • Improving Arctic sea ice forecasting
 - 2789 • Improve Arctic mapping and charting

⁵⁸ Executive Order 13547 --Stewardship of the Ocean, Our Coasts, and the Great Lakes: www.whitehouse.gov/the-press-office/executive-order-stewardship-ocean-our-coasts-and-great-lakes

- 2790 • Implementing a distributed biological observatory in the Arctic to monitor changes and
2791 improve our understanding of their socioeconomic and ecosystem impacts

2792 3. NOAA's Arctic Vision and Strategy⁵⁹

2793 Summary: NOAA's Arctic Vision and Strategy provides a high-level framework and six
2794 strategic goals (forecast sea ice, strengthen foundational science to understand and detect
2795 Arctic climate and ecosystem changes, improve weather and water forecasts and warnings,
2796 enhance international and national partnerships, improve stewardship and management of
2797 ocean and coastal resources in the Arctic and advance resilient and healthy Arctic
2798 communities and economies) to address NOAA's highest priorities in the region.

2799 4. NSS - National Strategy for the Arctic Region⁶⁰

2800 Summary: On May 10, 2013, the White House released the National Strategy for the Arctic
2801 Region, emphasizing these three topics: advancing U.S. security, pursuing responsible Arctic
2802 environmental stewardship, and strengthening cooperation with international partners.

2803 This National Strategy is intended to position the United States to respond effectively to
2804 challenges and emerging opportunities arising from significant increases in Arctic activity
2805 due to the diminishment of sea ice and the emergence of a new Arctic environment. It
2806 defines U.S. national security interests in the Arctic region and identifies prioritized lines of
2807 effort, building upon existing initiatives by federal, state, local, and tribal authorities, the
2808 private sector, and international partners, and aims to focus efforts where opportunities exist
2809 and action is needed. It is designed to meet the reality of a changing Arctic environment,
2810 while simultaneously pursuing global objective of combating the climatic changes that are
2811 driving these environmental conditions. The strategy directs the U.S. to consult and
2812 coordinate with Alaska Natives, recognizing tribal governments' unique legal relationship
2813 with the United States.

2814 Other National Strategy Directives:

- 2815 • Evolve Arctic infrastructure and strategic capabilities by working with the State of
2816 Alaska, local, and tribal authorities, as well as public and private sector partners
2817 • Enhance Arctic domain awareness to enhance sea, air, and space capability
2818 • Provide for future U.S. energy security by factoring the Arctic region's potential
2819 energy resources
2820 • Protect the Arctic environment and conserve Arctic natural resources services.
2821 • Use Integrated Arctic Management
2822 • Increase understanding of the Arctic through scientific research and traditional

⁵⁹ NOAA's Arctic Vision and Strategy: www.arctic.noaa.gov/docs/NOAAArctic_V_S_2011.pdf

⁶⁰ National Strategy for the Arctic Region: www.whitehouse.gov/sites/default/files/docs/nat_arctic_strategy.pdf

- 2823 knowledge
- 2824 • Chart the Arctic region's oceans and waterways and map its coastal and interior lands
- 2825 • Work through the Arctic Council to advance U.S. interests in the Arctic region.
- 2826 • Accede to the Law of the Sea Convention
- 2827 • Cooperate with other interested Arctic, non-Arctic states and other entities to advance
- 2828 common objectives in the Arctic

2829 5. U.S. Coast Guard Arctic Strategy (May 2013)⁶¹

2830 Summary: The U.S. Coast Guard vision for operating in the Arctic Region is to: 'ensure safe,
2831 secure and environmentally responsible activity in the Arctic.' The new USCG Arctic strategy
2832 released May 21, 2013 focuses on three strategic objectives:

- 2833 • Improving awareness
- 2834 • Modernizing governance
- 2835 • Broadening partnerships (domestic and international)

2836 The strategy also recognizes other factors that will be key including: building national awareness
2837 of the Arctic and its opportunities; strengthening maritime regimes; improving public-private
2838 relationships; and, identifying future requirements and resources. The Coast Guard notes that the
2839 Arctic is not a new venture for the Service. It has a long history in Alaska since it was purchased
2840 from Russia in 1867 and a long history of operating the Nation's polar ships. These experiences
2841 provide many historic lessons.

2842 For long-term success the strategy notes as important the following approaches: enhancing
2843 public-private partnerships to implement best practices and respond to challenges; increased
2844 Federal interagency cooperation; increased international cooperation at the Arctic Council and
2845 other organizations; use of advanced science and technology applied to the Arctic; and, use of
2846 risk-based management to protect the Arctic environment.

2847 The document establishes the Coast Guard's strategy for operations in the Arctic given the
2848 realities of today's geo-strategic context. Future development of the Coast Guard's enhanced
2849 capability in the Arctic will evolve around the three objectives noted above and engagement with
2850 a host of partners and stakeholders.

2851 6. Department of Defense Arctic Strategy (November 2013)⁶²

2852 Summary: The U.S. Department of Defense Arctic Strategy, released November 22 2013 at the
2853 Halifax International Security Forum, identifies that a desired end-state for the Arctic is: 'a
2854 secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is

⁶¹ U.S. Coast Guard Arctic Strategy: www.uscg.mil/seniorleadership/DOCS/CG_Arctic_Strategy.pdf

⁶² Department of Defense Arctic Strategy: www.defense.gov/pubs/2013_Arctic_Strategy.pdf

Governance Appendix A

2855 protected, and nations work cooperatively to address challenges.’ Two main supporting
2856 objectives are: (1) Ensure security, support safety, and promote defense cooperation; and (2)
2857 Prepare to respond to a wide range of challenges and contingencies.

2858 The DOD Arctic Strategy states that the Department will accomplish these objectives in the
2859 following ways:

- 2860 • Exercise sovereignty and protect the homeland
- 2861 • Engage public and private sector partners to improve domain awareness in the Arctic
- 2862 • Preserve the freedom of the seas in the Arctic
- 2863 • Evolve Arctic infrastructure and capabilities consistent with changing conditions
- 2864 • Support existing arrangements with allies and partners while pursuing new ones to build
2865 confidence with key regional partners
- 2866 • Provide support to civil authorities, as directed
- 2867 • Partner with other departments and agencies and nations to support human and
2868 environmental safety
- 2869 • Support the development of the Arctic Council and other international institutions that
2870 promote regional cooperation and the rule of law

2871 The strategy notes the uncertainty of future projections about the Arctic Ocean and climate
2872 change. It also states that ‘fiscal constraints may delay or deny needed investment in Arctic
2873 capabilities, and may curtail Arctic training and operations.’ DOD will also attempt to mitigate a
2874 public narrative that speaks to rivalry and conflict in the Arctic. DOD will also be careful to not
2875 be too aggressive in taking steps to anticipate future Arctic security risks so that mistrust &
2876 miscommunication will not materialize.

2877 **Arctic Council**

2878 Intergovernmental forum whose membership includes the eight Arctic nations—the United
2879 States, Canada, Denmark (representing Greenland and the Faroe Islands), Iceland, Norway,
2880 Sweden, Finland, and the Russian Federation—and the council’s Permanent Participant (PP)
2881 organizations. These include the Inuit Circumpolar Council, Aleut International Association,
2882 Arctic Athabaskan Council, Gwich’in Council International, Russian Association of Indigenous
2883 Peoples of the North, and the Saami Council. The first four of the Permanent Participants listed
2884 above have members living in Alaska and like all PPs they hold special seats at the Arctic
2885 Council table (distinct from their Arctic Nations) and engage across all the Arctic Council
2886 working groups, expert groups, and task forces.

2887 At the Nuuk Ministerial, the Arctic States also identified a number of other issues to work on,
2888 and decided to address these issues through wide-ranging processes, such as task forces and the
2889 establishment of expert groups. One task force was created to address internal, institutional
2890 issues, and the Ministers also decided to establish a permanent secretariat for the Arctic Council.
2891 These decisions also reflect the development of the Council as an institution.

2892 *AC Working groups, expert groups, and task forces:* Permanent working groups conduct
 2893 research, synthesis and analysis related to Arctic monitoring and assessment, Arctic
 2894 contaminants, protection of the marine environment, emergency prevention and preparedness,
 2895 conservation of flora and fauna, and sustainable development. The Arctic Council Expert Groups
 2896 have very focused work scopes, such as the current Ecosystem-based Management Experts
 2897 Group and in the past an Arctic Health Experts Group. There are also Task Forces that operate
 2898 within the framework of the Arctic Council for a limited amount of time. Current 2013 Task
 2899 Forces include: Task Force on Arctic Marine Oil Pollution Prevention, Task Force on Black
 2900 Carbon and Methane, Scientific Cooperation Task Force, Task Force to Facilitate the
 2901 Circumpolar Business Forum.

2902 **State Agencies**

2903 State agencies are engaged in a series of activities with particular relevance to the Arctic region
 2904 of Alaska. Some of these activities are listed below:

- 2905 • Department of Military and Veterans Affairs conducts exercises and maintains equipment
 2906 specifically designed for Arctic search and rescue
- 2907 • Department of Environmental Conservation engages in oil spill prevention, preparedness,
 2908 and response; monitoring of trans-boundary contaminants; and addressing rural water and
 2909 sanitation needs
- 2910 • Department of Fish and Game monitors, conducts research, and manages fish and
 2911 wildlife populations across the Arctic region, documents subsistence needs, provides
 2912 subsistence opportunity, and works with proposed development projects to mitigate
 2913 impacts to fish and wildlife resources and their habitats
- 2914 • Department of Natural Resources coordinates and conducts project permitting; is leading
 2915 efforts to improve statewide digital mapping; and has developed expertise in permitting
 2916 and regulation of resource development activities in Arctic environments
- 2917 • Department of Transportation and Public Facilities is contributing to deepwater Arctic
 2918 port and improved airport infrastructure planning throughout the region
- 2919 • Department of Health and Social Services has built up capacity and expertise to conduct
 2920 comprehensive health impact assessments to inform resource development activities
- 2921 • Department of Commerce, Community & Economic Development is working in
 2922 collaboration with the University of Alaska Fairbanks to study shipping and related
 2923 considerations for commerce and international trade

2924 **Tribal Governance**

2925 Alaska Natives have a unique government-to-government relationship with the United States.⁶³

2926 Current federal policy acknowledges that the self-determination and the self-governance of
2927 Alaska Native and American Indian people are critical to the survival of these cultures and
2928 peoples. Self-determination policies, such as the Indian Reorganization Act of 1934, were a
2929 result of recognizing the failure of assimilation and termination policies the United States used
2930 against Alaska Native and American Indian people.

2931 Alaska Natives governed themselves for thousands of years before the United States purchased
2932 Alaska from Russia. Today, approximately 229 of the over 500 federally recognized Tribes in
2933 the United States are located within the State of Alaska. Alaska Native Tribal governments are
2934 important Alaska Native communities and Alaska Native people. Approximately 20% of the
2935 citizens of the State of Alaska identify as Alaska Native. Many Alaska Natives are registered
2936 members of their respective Tribal governments Alaska Native Tribes have the ability to execute
2937 federal responsibilities to Alaska Native people using federal resources.⁶⁴ The framework of
2938 Alaska Native Tribal governance is complicated, but important in the context of Arctic policy. In
2939 addition to federal recognition, the rights of Tribes to self-govern and be self-determined are
2940 recognized in international law.⁶⁵

2941 **Alaska Native Land Claims**

2942 Though the United States purchased Alaska from Russia in 1967 and Alaska became a state in
2943 1959, Alaska Native claims to traditional lands was not settled until 1971 through the Alaska
2944 Native Claims Settlement Act (ANCSA). ANCSA established 13 Alaska Native Regional and
2945 about 200 Village corporations that hold title to lands retained by Alaska Natives. The 13th
2946 Regional Corporation ceased operations in 2009 and about 80% of the Village Corporations are
2947 currently active. From these Corporations a framework for economic development was created.
2948 Today 7 of the top 10 companies in Alaska are Alaska Native Corporations.

2949 Alaska Native Claims Settlement Act of 1971: In return for relinquishing claims to nearly all of
2950 Alaska's 375 million acres, Alaska Native people received title to 44 million acres, plus \$962.5
2951 million in cash that used as seed capital for the 13 Native Corporations. (Citation: Alaska Native
2952 Corporations Economic Data Report 2010)

⁶³ November 5, 2009 Presidential Memorandum, President Obama, in recognition of that special relationship and pursuant to Executive Order 13175 of November 6, 2000. "History has shown that failure to include the voices of tribal officials in formulating policy affecting their communities has all too often led to undesirable and, at times, devastating and tragic results. By contrast, meaningful dialogue between Federal officials and tribal officials has greatly improved Federal policy toward Indian tribes. Consultation is a critical ingredient of a sound and productive Federal-tribal relationship."

⁶⁴ PL 93-638 Indian Self-Determination and Education Assistance Act of 1975

⁶⁵ 61/295 United Nations Declaration on the Rights of Indigenous Peoples

2953 Alaska National Interest Lands Conservation Act 1980: Through this legislation statutory
 2954 preference gives qualified subsistence users priority over other users, when resources are scarce,
 2955 in the taking of Alaska's fish and wildlife resources.

2956 The United Nations recognizes Indigenous Peoples Organizations (IPOs) and currently the
 2957 United States is a signatory on the United Nations Declaration on the Rights of Indigenous
 2958 Peoples (UNDRIP). UNDRIP acknowledges that indigenous populations have a right to exercise
 2959 their rights based on their indigenous identity and have a right not to be subjected to forced
 2960 assimilation or destruction of their culture. UNDRIP includes the protection of language and
 2961 culture and access to subsistence resources, in addition to other rights.⁶⁶

2962 Alaska Natives are active in the Arctic Council by their leadership and membership in this
 2963 international forum as Permanent Participants. In Alaska the most engaged are the Aleut
 2964 International Association and the Inuit Circumpolar Council with the Canadian members of the
 2965 Arctic Athabaskan Council and Gwich'in Council International leading their participation.

2966 The International Whaling Commission (IWC) is another international body with Alaska Native
 2967 leadership. IWS is comprised of the countries that signed on to the International Convention for
 2968 the Regulation of Whaling in 1946. IWC regulates the indigenous take of whales by setting
 2969 quotas in addition to its other activities on whaling. The United States provides information to
 2970 the IWC on the continuation of subsistence whaling activities. Information on whaling is
 2971 provided to the federal government by local whaling commissions in accordance with Section
 2972 119 of the Marine Mammal Protection Act. This includes at least 3 whaling commissions.

2973 *National:* The U.S. has a unique legal and political relationship with Indian tribal governments,
 2974 established through and confirmed by the Constitution of the United States, treaties, statutes,
 2975 executive orders, and judicial decisions. Through his November 5, 2009 Presidential
 2976 Memorandum, President Obama, in recognition of that special relationship and pursuant to
 2977 Executive Order 13175 of November 6, 2000, stated that all executive departments and agencies
 2978 will engage in regular and meaningful consultation and collaboration with tribal officials in the
 2979 development of Federal policies that have tribal implications, and are responsible for
 2980 strengthening the government-to-government relationship between the United States and Indian
 2981 tribes. In Alaska, the Federal government interacts with Alaska Natives and [state agencies?]
 2982 through the CDQ Program and Regional Subsistence Committees.

2983 Established in 1992, the Western Alaska Community Development Quota (CDQ) Program
 2984 allocates a percentage of all Bering Sea and Aleutian Islands quotas for groundfish, prohibited
 2985 species, halibut, and crab to eligible communities. There are sixty-five eligible villages that have
 2986 organized into six CDQ entities or village coalitions. Each CDQ entity is federally-recognized as
 2987 an independent nonprofit organization with a separate board of directors and internal governance

⁶⁶ 61/295 United Nations Declaration on the Rights of Indigenous Peoples

2988 process. The purpose of the CDQ Program is to (i) to provide eligible western Alaska villages
2989 with the opportunity to participate and invest in fisheries in the Bering Sea and Aleutian Islands
2990 Management Area; (ii) to support economic development in western Alaska; (iii) to alleviate
2991 poverty and provide economic and social benefits for residents of western Alaska; and (iv) to
2992 achieve sustainable and diversified local economies in western Alaska.

2993 Regional Subsistence Committees: The Marine Mammal Protection Act gives the National
2994 Marine Fisheries Service and the US Fish and Wildlife Service the ability to enter into
2995 cooperative agreements with Alaska Native organizations to co-manage marine mammals.
2996 Cooperative agreements include the Alaska Native organizations that are comprised of local
2997 Alaska Native leaders and utilize traditional knowledge and science to co-manage marine
2998 mammals. Alaska Native organizations include, but are not limited to the Alaska Eskimo
2999 Whaling Commission; the Alaska Beluga Whale Committee; Ice Seal Committee, etc.⁶⁷

3000

⁶⁷ Marine Mammal Protection Act Amendments of 1994, Section 119

3000 *6.6 Science and Research Appendix A*

3001 To give some idea of the profusion of institutions, organizations, and governmental agencies
3002 presently carrying out research in the Arctic, the following is a partial inventory.

3003 State agencies whose work regularly involves research and operations in the Arctic include:

- 3004 • Department of Fish & Game
- 3005 • Department of Environmental Conservation
- 3006 • Department of Natural Resources
- 3007 • Department of Commerce, Community, & Economic Development
- 3008 • Department of Transportation and Public Facilities
- 3009 • Department of Health and Social Services
- 3010 • Division of Homeland Security and Emergency Management

3011 Recent state-led initiatives researching and addressing Arctic issues include:

- 3012 • Alaska Climate Change Sub-Cabinet (2007 to Present)
- 3013 • Alaska Northern Waters Task Force (2012)
- 3014 • Alaska Climate Impact Assessment Commission (2008)

3015 Local government and in-region organizations conducting research in the Arctic include:

- 3016 • Barrow Arctic Science Consortium
- 3017 • North Slope Science Initiative (including local, state, and federal affiliates)
- 3018 • North Slope Borough
- 3019 • Northwest Arctic Borough

3020 The University of Alaska is among the world's leading institutions for the study of the Arctic.

3021 Here are just some of the university's institutes and programs that focus on the region:

- 3022 • International Arctic Research Center at the University of Alaska Fairbanks (UAF)
- 3023 • Alaska Center for Climate Assessment & Policy (UAF)
- 3024 • Scenarios Network for Alaska & Arctic Planning (UAF)
- 3025 • Alaska Climate Research Center (UAF)
- 3026 • Geophysical Institute Permafrost Laboratory (UAF)
- 3027 • Institute for Circumpolar Health Studies (UAA)
- 3028 • Institute of Northern Engineering (UAF)
- 3029 • Environment and Natural Resources Institute (UAA)
- 3030 • School of Fisheries and Ocean Sciences (UAF)
- 3031 • Institute of Social and Economic Research (UAA)
- 3032 • Alaska Center for Energy and Power (UAF)
- 3033 • Northern Studies Program (UAF)

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- 3034 • Center for Cross-Cultural and Indigenous Studies (UAF)
- 3035 • Institute of Arctic Biology (UAF)
- 3036 • School of Natural Resources & Agricultural Sciences (UAF)

- 3037 On the federal level, agencies regularly active in Alaska's Far North include:
 - 3038 • U.S. Department of the Interior
 - 3039 ○ U.S. Fish & Wildlife Service
 - 3040 ○ U.S. Geological Survey
 - 3041 ○ Bureau of Indian Affairs
 - 3042 ○ Bureau of Land Management
 - 3043 ○ Bureau of Ocean Energy Management
 - 3044 • National Oceanic and Atmospheric Administration
 - 3045 ○ National Marine Fisheries Service
 - 3046 ○ Office of Oceanic and Atmospheric Research
 - 3047 • Environmental Protection Agency
 - 3048 • U.S. Coast Guard
 - 3049 • U.S. Army Corps of Engineers
 - 3050 ○ Cold Regions Research and Engineering Laboratory
 - 3051 • U.S. Department of Defense
 - 3052 • National Science Foundation
 - 3053 • Department of Energy
 - 3054 • Marine Mammal Commission

- 3055 Federal inter-agency structures that address Arctic issues include:
 - 3056 • Interagency Arctic Research Policy Committee
 - 3057 • Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska
 - 3058 • National Ocean Council
 - 3059 • U.S. Arctic Research Commission
 - 3060 • Alaska Ocean Observing System
 - 3061 • North Pacific Research Board
 - 3062 • North Pacific Research Board
 - 3063 • North Pacific Fishery Management Council and Scientific and Statistical Committee

- 3064 Non-governmental organizations with Arctic research programs include:
 - 3065 • Pew Charitable Trusts U.S. Arctic Program
 - 3066 • World Wildlife Fund U.S. Arctic Field Program
 - 3067 • Arctic Portal (data and information clearing house)
 - 3068 • Oceana
 - 3069 • International Union for Conservation of Nature
 - 3070 • University of the Arctic

- 3071 • Gordon and Betty Moore Foundation
 - 3072 • Prince Albert of Monaco Foundation
 - 3073 • The Aspen Institute, Arctic Commission Roundtable
 - 3074 • Oak Foundation – Marine Conservation, Arctic Programme
 - 3075 • Center for Strategic & International Studies (CSIS) – Think Tank
- 3076 NSSI
- 3077 Partners in the NSSI include the Alaska Departments of Fish & Game and Natural Resources as
3078 well as the North Slope Borough and the Arctic Slope Regional Corporation. Participating
3079 federal agencies include the Bureau of Land Management; the U.S. Fish and Wildlife, National
3080 Marine Fisheries, and National Parks Services; and the Bureau of Ocean Energy Management,
3081 Regulation, and Enforcement. Advisory entities include the U.S. Arctic Research Commission,
3082 the U.S. Department of Energy, the National Weather Service, and the U.S. Geological Survey.
- 3083 The U.S. Arctic Research Commission (USARC)
- 3084 The commission consists of seven members, appointed by the President, as well as the director
3085 of the National Science Foundation, who serves *ex officio*. Currently, the USARC includes four
3086 commissioners who are longtime Alaska residents: Chair Fran Ulmer; David Benton; Edward
3087 Saggan Itta; and Mary C. Pete. However, similar to the legislation enabling the North Slope
3088 Science Initiative, the Arctic Research and Policy Act of 1984 requires that only one appointee
3089 be an Alaska resident.
- 3090

3090 *6.7 Planning and Infrastructure Appendix A*

3091 The Northern Waters Task Force – Summary Planning and Infrastructure Background

3092 Changes in temperature and precipitation are likely to hold enormous implications for both
3093 existing and future construction of infrastructure. The ability to better predict and understand the
3094 effects of phenomena such as widespread thawing of permafrost will help Alaska prepare for
3095 considerable maintenance issues on existing roads, airports, buildings, and pipelines. Just as
3096 importantly, it will aid engineers when it comes to properly siting, designing, and constructing
3097 new infrastructure capable of withstanding future changes in their specific environments. These
3098 important concerns have also been examined in ADOTPF’s “Impact of Climate Change on
3099 Alaska’s Transportation Infrastructure.”

3100 These changes pose significant challenges to some communities in Arctic coastal and riverine
3101 areas, most notably those located along the Bering and Chukchi Seas. A number of communities
3102 are threatened with increased rates of coastal erosion and flooding as a result of storm activity
3103 and battered shorelines once protected by shore-fast ice. These problems could become chronic
3104 as the climate warms, seasonal sea ice retreats, and destructive coastal storms become more
3105 frequent. These important concerns have been recognized in reports issued by the state of
3106 Alaska’s Climate Change Subcabinet Immediate Action and Adaptation work groups.

3107 Immediate investment in Arctic infrastructure is a foremost priority for Alaska and the entire
3108 United States. Alaska will need to explore ways to attract substantial sources of capital
3109 investment in addition to state and federal funding. Action is needed to enable the responsible
3110 development of resources; facilitate, secure, and benefit from new global transportation routes;
3111 and safeguard Arctic residents and ecosystems. This investment will improve the safety, security,
3112 and reliability of transportation in the region—a goal established by the U.S. Arctic Policy
3113 signed by President Bush in 2009.

3114 As interest and activity in the Arctic continues to rise, America’s preparedness in the region
3115 becomes ever more important to national security. Increased human activity related to shipping,
3116 oil and gas development, commercial fishing, and tourism will require, at a minimum, new ports
3117 and safe harbors, equipment and facilities for oil spill response, additional Polar Class
3118 icebreakers for the U.S. fleet, and improved charting and mapping.

3119 The U. S. Coast Guard’s needs in these areas well illustrate the magnitude of infrastructure
3120 investment necessary in negotiated by the eight Arctic Nations through the Arctic Council
3121 commits the United States to search and rescue response in regions of the Arctic. Domestically,
3122 the National Contingency Plan requires the U.S. Coast Guard to oversee oil spill planning and
3123 preparedness in coastal waters and to supervise any oil spill response. Additionally, the U.S.
3124 Coast Guard’s mission is to protect the public, the environment, and U.S. economic interests in

3125 the nation's ports and waterways, along the coast, on international waters, or in any maritime
3126 region as required for national security.

3127 At present, the Coast Guard has very limited Arctic emergency response capabilities and no
3128 permanent bases on Alaska's North Slope to support its operations. Basic needs there include
3129 communications, housing, and support facilities. It is especially notable that the Coast Guard has
3130 only one operational Polar Class icebreaker, the USCG Cutter Healy. Clearly, the Coast Guard
3131 does not have the assets required to carry out its expanding mission in the Arctic.

3132 As human activity increases in Alaska's northernmost waters, the need to establish a Coast
3133 Guard base in the Arctic grows. The most northern Coast Guard base in the United States is in
3134 Kodiak, Alaska, more than 1,000 miles from possible Chukchi Sea drilling sites and nearly as far
3135 from existing Arctic shipping lanes in the Bering Strait. This distance causes untenable logistical
3136 problems that negatively impact response times and capabilities. The Coast Guard must have a
3137 greater overall presence in the Arctic, with the ability to stage assets closer to future shipping, oil
3138 and gas drilling, and commercial fishing activities.

3139 With transformation in the Arctic calling for a broad spectrum of new facilities on such a large
3140 scale, the state of Alaska must take an active role in regional planning efforts with communities
3141 and their stakeholders. This will help communities develop local strategies and ensure that the
3142 state is getting the most return on investment for local projects. Some communities may not have
3143 the resources to adequately prepare for the future, and the state should take this opportunity to
3144 help increase local capacity for the benefit of all Alaskans.

3145

3145 6.8 Planning and Infrastructure Appendix B

3146 Stakeholders Report

3147 **Sub-Theme: Ports, Harbors, Places of Refuge, and Anchorages**

3148 **AIDEA** has an ownership positions in three ports of which only one is an Arctic region facility -
3149 DeLong Mountain Transportation System (DMTS).

3150 1. AIDEA owns the port facilities at the DMTS which provides critical infrastructure for
3151 the Red Dog mine in the Northwest Arctic Borough. Although this port does not offer a
3152 place of refuge or anchorage, due to its shallow depth and exposure, it is critical for the
3153 development of mineral resources in the Arctic.

3154 i. Current state of this project is that it is fully operational.

3155 ii. This infrastructure is critical to accessing stranded mineral resources and
3156 creating long-term economic opportunities in the region.

3157 2. AIDEA is partnering with the Arctic Slope Regional Corporation (ASRC) in the
3158 development of an Arctic port facility. ASRC and AIDEA are conducting various
3159 feasibility studies, planning efforts and pre-development analyses to assess project's
3160 feasibility and economic viability.

3161 i. Current state is in pre-development analysis.

3162 ii. No assets are in place at this point.

3163 iii. The pre-development analysis is attempting to fill in the information gaps.

3164 iv. This port is important because it has the potential to be a place of refuge,
3165 usable by the USCG and other such agencies, and provide access to market for the
3166 region's extensive mineral resources.

3167 **ASRC** From west to east along the Arctic Slope coastline there are naturally formed
3168 embayments, shelters and anchorages that have served shipping vessels for more than 150 years:
3169 Cape Thompson, Point Hope, Cape Lisburne, Icy Cape, Wainwright Inlet, Point Franklin, Point
3170 Barrow, Cape Halkett, Oliktok Point, Prudhoe Bay, Mary Sachs Entrance and Barter Island. All
3171 of these locales offer shelter and anchorage of some kind. Some, like Cape Thompson, hold the
3172 potential even to host a deepwater port with modifications. Wainwright Inlet, Point Barrow,
3173 Oliktok, Prudhoe Bay, and perhaps Barter Island offer the best mix of shallow-draft access,
3174 shelter and access to infrastructure like landing strips, supplies, communications and people. The
3175 remainder offer excellent refuge and anchorage access for shallow- and mid-range draft vessels.
3176 For the village-based locales, witness the annual barge shipment of fuel goods and dry materials

3177 that occurs at each village and in the oil patch for testaments to the usefulness of the locations for
3178 shipping.

3179 Each individual facet of change that comes to the Arctic will require its own marine access. For
3180 the oil and gas exploration in the Alaska OCS it may be one thing. For the US Coast Guard it
3181 may be something else, and so on. For that reason the future will probably bring us “*Arctic*
3182 *ports*” (plural, and with a lower case “p”) rather than an “*Arctic Port*”. Alaska’s Arctic policy
3183 should maintain that logistics, bathymetry and individual projects will determine the location of
3184 these access points and they should not be determined by some pre-ordained method unrelated to
3185 actual needs.

3186 **Sub-Theme: Transportation and Energy Production (Access to Resources)**

3187 **ASRC** it has occurred in the rest of Alaska, it is the resource development projects themselves
3188 that will create transportation and energy production solutions. There can be no “roads to
3189 resources” for example until there is a real resource development-justified need for the road.
3190 TAPS and the Dalton Highway would not have been built without the discovery of the Prudhoe
3191 Bay field at the other end of the line. The same is true in the marine environment.

3192 **AIDEA** currently has two active assets in Alaska’s Arctic, The DeLong Mountain
3193 Transportation System (DMTS) and the Mustang Road and Production Pad.

3194 1. The DMTS consists of a 52 mile road and port facilities that allow ore concentrates
3195 from the Red Dog Mine to be transported, stored and shipped to facilities for further
3196 processing. This infrastructure has been in place since the 1980s and will continue to
3197 operate for many years to come. AIDEA is currently reviewing proposals for additional
3198 users of the road from the nearby Lik Deposit. The Red Dog mine provides over 500
3199 permanent jobs in the region and provides tax revenues to the Northwest Arctic Borough
3200 and the State.

3201 i. Current state of this project is that it is fully operational.

3202 ii. This infrastructure is critical to accessing stranded mineral resources and
3203 creating long-term economic opportunities in the region.

3204 2. The Mustang Road project was completed this year and consists of a 4.5 mile access
3205 road and production pad for Brooks Range Petroleum Company (BRPC) drill site and
3206 production facility. This project will allow for the development of the planned BRPC
3207 \$180mm oil production facility which is expected to put up to 15,000 bpd of oil into
3208 TAPS. Other companies in the area have expressed an interest in using the road and pad
3209 for their own development and eventual use of the projected production facility. Current
3210 state is in pre-development analysis.

3211 i. The road and production pad are currently in place.

- 3212 ii. The drill site and production facility will be constructed when the financing
3213 package for the project has been completed.
- 3214 iii. This project is important because it will allow for the development of stranded
3215 oil reserves that will not only add oil to TAPS but create well-paying jobs.
- 3216 3. Roads to Resources: AIDEA is currently pursuing Roads to Resources projects in the
3217 Arctic which include the Ambler Mining District Access and the Foothills West Access
3218 projects.
- 3219 4. The Ambler Mining District Access project will provide a 200+ mile, all-season
3220 industrial road to access state lands, and facilitate the exploration and development of
3221 mineral resources within this area. Work with baseline studies continues in preparation
3222 for the filing of the permit application and subsequent EIS.
- 3223 i. Current state it's in pre-permitting baseline data gathering and analysis.
- 3224 ii. No assets are in place at this point.
- 3225 iii. This project is important because it will allow for the development of remote
3226 mineral reserves that will create many well-paying jobs in the region.
- 3227 5. The Foothills West Access project is proposing to construct a road that will provide all
3228 season access to optimize and expand oil and gas exploration and development within the
3229 Foothills area, and provide all-season access to the NPR-A in this region. Since 2009,
3230 DOT&PF has performed and contracted for engineering and environmental studies of
3231 potential road corridors and now AIDEA will continue the work in partnership with Linc
3232 Energy to complete the permitting process.
- 3233 i. Current state it is in pre-permitting phase awaiting EIS.
- 3234 ii. No assets are in place at this point.
- 3235 iii. This project is important because it will allow for the development of stranded
3236 oil reserves that will not only add oil to TAPS but create well-paying jobs.

3237 **Sub-Theme: Energy Extraction, Production and Delivery**

3238 The Interior Energy Project (IEP) authorizes AIDEA to provide a defined financing package to
3239 partner with the private sector to build a liquefied natural gas (LNG) plant on the North Slope
3240 and a natural gas heating distribution system in Fairbanks and North Pole. IEP is anticipated to
3241 reduce monthly heating costs by 40 to 50 percent, resulting in potential annual savings to
3242 residential ratepayers of up to \$3,000. Natural gas should substantially improve Interior air
3243 quality by providing a substitute to wood- and oil-burning heating systems. It is expected this
3244 will help the region meet federal Environmental Protection Agency (EPA) standards.

- 3245 i. Current state it is in pre-development feasibility analysis and private partner
3246 negotiations.
- 3247 ii. Information gaps exist, this pre-development analysis will provide need information.
- 3248 iii. No assets are in place at this point.
- 3249 iv. Project will not only reduce energy costs and air pollution but will create an
3250 environment that is conducive to economic development and long-term sustainability for
3251 the interior (Fairbanks) and northern regions.

3252 **Sub-Theme: Emergency Management and Response**

3253 **ASRC** The North Slope Borough Search and Rescue Department hosts some of the most Arctic-
3254 ready assets for search and rescue functions on the North Slope. With its inventory of fixed wing
3255 and helicopter aircraft, the NSB SAR has been of life-saving benefit to icebreakers, oil and gas
3256 explorers, world travelers and to North Slope residents. So big is their influence that the US
3257 Coast Guard, when they arrived in Barrow to test their own search and rescue assets, said that
3258 they (USCG) were taking a second-string role in search and rescue, to learn from the more
3259 Arctic-skilled personnel and better-suited aircraft of the NSB SAR. As good as it is, the SAR is
3260 only part of the Emergency Response effort. In the event of a collision, spill, or other accident
3261 they would be crucial, but just a part of what the NSB has assembled in an Incident Command.
3262 This has been tested in our region, with exploration well blowouts, plane crashes, fuel spills and
3263 other incidents. The NSB has used its access to traditional knowledge, physical infrastructure,
3264 heavy equipment and manpower, and its IC system to integrate its efforts with the oil and gas
3265 industry as well as state and federal agencies. The NSB system should be fully researched by the
3266 Commission to determine how it would need to be replicated or enhanced in a developing Arctic.

3267 Still needed are staging areas for response equipment in areas of active exploration. There may
3268 be a lot of assets in the Prudhoe Bay area, and other equipment may travel on vessels that transit
3269 to or explore in the Arctic waters, but the Commission should question the adequacy of what
3270 exists now. Once areas of offshore oil and gas development are known, for example, there should
3271 be thought given to pre-staging emergency response assets. Bottom line: stage the right things at
3272 the right place.

3273 **NOAA's** National Weather Service (NWS) provides weather and water forecast services to
3274 protect life and property, and to enhance the economy and fulfill obligations under international
3275 treaties for the safety and security of marine transportation, energy exploration, and tourism
3276 activities. NOAA provides forecasts, warnings, and information for surface, marine, and aviation
3277 weather interests, with emphasis on high-impact events. It's the agencies responsibility to advise
3278 the Federal On-Scene Coordinator on oil cleanup measures in the coastal and marine
3279 environment. In addition to scientific support, NOAA provides spill response training support,

- 3280 preparation for natural resource damage assessment, marine debris removal, research and
3281 education.
- 3282 i. Current state is NOAA faces challenges in meeting its obligations
- 3283 a. NOAA is working with other agencies, states, tribal and local governments,
3284 along with other partners to best meet needs for emergency management and
3285 response.
- 3286 b. Certain science and data gaps exist in the Arctic; NOAA lacks the
3287 infrastructure and technical capability to meet all its obligations to provide
3288 weather warnings and forecasts that protect life, property, and communities.
3289 These gaps impact marine transportation, aviation, oil spill response, and storm
3290 surge warnings. Lack of forecasting negatively impacts northern and western
3291 Alaskan coastal communities from severe flooding and forecasting for NCP
3292 during oil spill response.
- 3293 c. Major challenges also include limited observations and lack of appropriate
3294 operational storm surge model for the region.
- 3295 ii. NOAA has a number of assets in place to support Emergency Response for oil spills.
- 3296 a. Office of Response and Restoration (OR&R) has one Science Support
3297 Coordinator for Alaska (and will be adding a second in August 2013), OR&R has
3298 also developed an Environmental Response Management Application (ERMA)
3299 for the Arctic with Stand-alone capacity and will be conducting a field test on
3300 board the USCG Cutter HEALY in September 2013.
- 3301 b. NOAA's NWS has dozens of meteorologists and technicians with knowledge
3302 and experience in weather, water, and sea ice prediction and emergency response
3303 procedures specific to the challenging Arctic environment.
- 3304 iii. What gaps do you feel need to be addressed?
- 3305 a. Improved NOAA models to predict oil movement and weathering in ice-
3306 infested waters, assess vulnerable natural habitats, build Arctic oil spill response
3307 capacity for NOAA staff, and fund external research to fill science gaps need to
3308 be addressed. Furthermore, mitigation strategies for limited communications and
3309 response infrastructure are needed.
- 3310 b. Accelerate the development and implementation for operational storm surge
3311 model for north and western Alaska coasts; improve use of remote sensing data to
3312 advance the prediction of weather, ocean, and sea ice conditions; improved
3313 observation and information infrastructure for data collection and forecasting.

- 3314 iv. Why is this important to Alaska's Arctic?
- 3315 a. The capacity for emergency response, particularly concerning oil and chemical
- 3316 spills, is fast becoming an urgent requirement with increasing use of the Arctic
- 3317 Marine Transportation System and expected exploration and development of oil
- 3318 and gas.
- 3319 b. Severe weather forecasts are critical for Arctic communities to prepare for and
- 3320 respond appropriately to weather and water-related routine and extreme events.
- 3321 They also support safe maritime transportation through accurate and timely
- 3322 marine forecasts and warnings.

3323 **Sub-Theme: Aids to Navigation, and Data Acquisition and Sharing**

3324 **ASRC** The Alaskan Arctic suffers from a painful lack of access to the world's communication

3325 network. Microwave towers or fiber optic links are the only answer. Resource developers, Arctic

3326 researchers, government agencies, and our own people are hobbled by a lack of efficient

3327 communication infrastructure. Its placement in the Alaskan Arctic will be a life-changing event

3328 for the residents and a crucial key to success for any developing industry.

3329 **NOAA's** National Ocean Service is lead agency for nautical charts and shoreline mapping

3330 supporting safe navigation and efficient maritime commerce. In addition to sea ice and weather

3331 forecasts, NOAA's nautical charts, Coast Pilot, and other aids to navigation are important parts

3332 of the maritime information infrastructure, and are supported by the underlying geodetic,

3333 oceanographic, and hydrographic data that must be collected to build nautical charts. NOAA

3334 recently updated its Arctic Nautical Charting Plan. NOAA is working to acquire gravity data,

3335 tides and currents data, hydrographic data and shoreline mapping data in the U.S. Arctic. This

3336 data is used for navigation products and widely available for other users via NOAA data centers

3337 and Digital Coast. NOAA support the Integrated Ocean and Coastal Mapping (IOCM) of the

3338 Arctic data acquisition.

- 3339 i. Currently the U.S. Arctic is severely deficient in its nautical charts and shoreline maps.
- 3340 a. Arctic waters that are charted were surveyed with obsolete technology, and
- 3341 some surveys date back to the 1800s. Most of Alaska's northern and western
- 3342 coasts has not been mapped to National Shoreline standards since 1960 or earlier.
- 3343 b. There is a gap of 18 National Water Level Observation Network (NWLON)
- 3344 stations in the Arctic for accurate water levels.
- 3345 ii. Current NOAA assets are the 500 sq. nautical miles of Alaskan waters surveyed every
- 3346 summer and 190 sq. nautical miles of coastline using LiDAR, presently funded.

- 3347 a. NOAA has nine NWLON stations to monitor real-time water levels in the
3348 Alaskan Arctic. Gravity data acquisition for accurate heights/positioning is
3349 underway in Alaska and will be mostly completed by 2017, with the Aleutians to
3350 follow.
- 3351 b. NOAA uses availability data and maintains a number of agreements to support
3352 the sharing of environmental data without restriction. In 2011, NOAA signed an
3353 agreement with Shell, Conoco Phillips, and Statoil to share Arctic datasets.
3354 Meteorological and oceanographic data were the first to be shared by the industry
3355 partners. This data was incorporated into NOAA assessments and forecasts during
3356 Shell summer 2012 operations and subsequent emergency incident(s). These
3357 additional observations continue to help NOAA improve forecast accuracy in the
3358 Arctic region.
- 3359 iii. What gaps do you feel need to be addressed?
- 3360 a. The Arctic region has virtually no geospatial infrastructure for accurate
3361 positioning and elevations, sparse tide, current, and water-level prediction
3362 coverage, along with obsolete shoreline and hydrographic data. Funding needs to
3363 be increased and partnerships could speed up the process. Navigation offices in
3364 NOAA are working on further developing partnerships under NOAA's Arctic
3365 Nautical Charting Plan and the National Strategy for the Arctic Region
3366 implementation plan.
- 3367 b. Although NOAA is transparent with its data and is engaged in partnerships to
3368 share data, there is plenty of room to increase the number of collaborators.
- 3369 iv. Why is this important to Alaska's Arctic?
- 3370 a. Safe and efficient navigation is important for Alaska's economy, Arctic coastal
3371 communities, and environmental protection. NOAA's nautical charts and
3372 shoreline maps support safe navigation and knowledge of Arctic waters, habitat
3373 assessments and inundation models. Any changes in the Arctic can alter
3374 indigenous ways of life. When ice barriers that protect Arctic coastal communities
3375 diminish, the state of Alaska and its people must make critical decisions based on
3376 threats from stronger storms, increasing erosion, thawing permafrost, changing
3377 animal migration patterns, and sea level changes. The potential economic impacts
3378 of these changes can be significant as well as a danger to local communities.
- 3379 b. Data-sharing increases the efficiency of delivering services in the Arctic - can
3380 speed up requirements like data collection for navigation services, data for sea ice
3381 forecasts, etc.

3382 **Sub-Theme: Human Resources, Workforce Development, Research, Education and**
3383 **Training and Housing, Sewer and Water**

3384 **ASRC** The answer to these two combined sub-themes will be learned as we go forward. It is said
3385 that offshore oil drilling, for example, will require thousands of individuals. Some will travel
3386 north with their vessels, and others will be employed from around the country, including Alaska.
3387 Yet there is still some risk as to the timing and location of energy exploration. Our local
3388 communities need to have gainful employment from the increase in commerce and exploration.
3389 When energy development does come to the OCS, we need to improve upon the Prudhoe Bay
3390 experience and put more of our own local people to work. Thankfully, we are better poised than
3391 in the early days of Prudhoe Bay; we have Native-owned enterprises that stand ready to assist
3392 energy developers in their efforts and we can target our own residents for employment
3393 opportunities. The size and nature of any new development project, energy or otherwise, will
3394 determine what and where housing, water/sewer, and other infrastructure should be placed. Pre-
3395 staging anything like that ahead of time is a gamble that may result in the wrong facilities in the
3396 wrong place.

3397

3397

6.9 Planning and Infrastructure Appendix C

3398

Reference Material:

3399

Northern Waters Taskforce Report - Findings & Recommendations

3400

http://housemajority.org/coms/anw/pdfs/27/NWTF_Full_Report_Color.pdf

3401

ADOT&PF Statewide Long-Range Transportation Policy Plan – Lets Get Moving 2030

3402

www.dot.alaska.gov/stwdplng/areaplans/2030/assets/SWLRTPPfinal022908.pdf

3403

ADOT&PF Statewide Long-Range Transportation Policy Plan - Data Refresh

3404

www.dot.alaska.gov/stwdplng/areaplans/2030/assets/LGM2030datarefreshfinal12-10.pdf

3405

USACE Alaska Regional Ports 905(b) Reconnaissance Study, May 2008

3406

www.poa.usace.army.mil/Portals/34/docs/AKports/AK%20Regional%20Ports%20905b%20FINAL_May2008.pdf

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3408

USACE/DOT&PF Alaska Deep-Draft Arctic Ports Planning Charrette May 16-17, 2011

3409

www.poa.usace.army.mil/Portals/34/docs/AKports/Charrette%20Summary%207-13-11web.pdf

3410

2013 Alaska Broadband Task Force Report-A Blueprint for Alaska's Broadband Future

3411

www.alaska.edu/files/oit/bbtaskforce/2013-08-AK-Broadband-Task-Force-Report%7CA-Blueprint-for-Alaska%27s-Broadband-Future.pdf

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Paula Lowther, Arctic Deep Water Port, Alaska Business Monthly, Jan 2012

3414

www.akbizmag.com/Alaska-Business-Monthly/January-2012/Arctic-Deep-Water-Port/

3415

US Arctic Research Commission - Goals and Objectives for Research 2011-2012

3416

www.arctic.gov/publications/2011-12_usarc_goals.pdf

3417

National Science and Technology Council (NSTC) Arctic Research Plan FY 2013–2017

3418

www.whitehouse.gov/sites/default/files/microsites/ostp/2013_arctic_research_plan.pdf

3419

US Arctic Research Commission - Arctic Marine Transport Workshop Sept 2004

3420

www.arctic.gov/publications/arctic_marine_transport.pdf

3421

US Coast Guard-High Latitude Region Mission Analysis Capstone Summary

3422

<http://assets.fiercemarkets.com/public/sites/govit/hlsummarycapstone.pdf>

3423

Representative Bob Herron - Empowering Alaska as America's Arctic

3424

www.institutenorth.org/assets/images/uploads/articles/Empowering_Alaska_as_America%E2%80%99s_Arctic_By_Representative_Bob_Herron.pdf

3425

3426

Northwest Arctic Borough-Comp Economic Development Strategy of March 2012

3427

http://commerce.alaska.gov/dnn/Portals/6/pub/NWABEDC_CEDS.pdf

3428

Fairbanks North Star Borough-Comp Economic Development Strategy 2011

3429 http://commerce.alaska.gov/dnn/Portals/6/pub/FNSB_CEDS.pdf

3430 Bering Strait Comp Economic Development Strategy 2009

3431 http://commerce.alaska.gov/dnn/Portals/6/pub/BSDC_CEDS.pdf

3432

3432 6.10 Fisheries Appendix A – Governance of Arctic Fisheries

3433 International agreements oversee several species:

- 3434 • North Pacific Anadromous Fish Commission, NPAFC www.npafc.org/new/index.html
- 3435 ○ NPAFC doesn't actually govern fisheries in US EEZ, but NPFMC (NOAA) is
- 3436 bound by law to observe its conventions, which are primarily responsible for
- 3437 prohibiting harvesting salmon on the high seas and for enforcing that prohibition
- 3438 outside the EEZs of US, Canada, Russia, Japan and Korea. NPAFC Science Plan
- 3439 2011-2015 can be found at
- 3440 [www.npafc.org/new/publications/Documents/PDF%202010/1255\(2011-](http://www.npafc.org/new/publications/Documents/PDF%202010/1255(2011-)
- 3441 [2015%20Science%20Plan\).pdf](http://www.npafc.org/new/publications/Documents/PDF%202010/1255(2011-)
- 3442 • International Pacific Halibut Commission IPHC <http://www.iphc.int/>
- 3443 ○ IPHC sets the quotas which are implemented by IPHC regulations in US waters.
- 3444 In the ARPA Arctic area <http://alaskafisheries.noaa.gov/maps/iphc/areas.htm> in
- 3445 addition to the regulations of IPHC, halibut is managed by the North Pacific
- 3446 Fishery Management Council as a prohibited species. A prohibited species is one
- 3447 that a fishery targeting other species, i.e. pollock, can only catch so much of
- 3448 before they have stop fishing altogether.
- 3449 • Conservation and Management of Pollock Resources in the Central Bering Sea 1994 –
- 3450 the donut hole www.afsc.noaa.gov/refm/cbs/convention_description.htm
- 3451 ○ These are waters that are beyond 200 nautical miles

3452 Russians and Norwegians have an international agreement on fishery management in the Barents
3453 Sea www.fao.org/docrep/006/y4652e/y4652e0e.htm

- 3454 • The Barents region has its own "donut hole" called the "Loophole" and other disputed
- 3455 jurisdiction areas outside the EEZ's of Russia and Norway.

3456 Regional Fishery Management Organizations

3457 http://ec.europa.eu/fisheries/cfp/international/rfmo/index_en.htm

- 3458 • Various RFMOs apply to the Arctic on above the Atlantic; ICCAT for example, extends
- 3459 into the Arctic Ocean on the Atlantic side of the continent.
- 3460 • The RFMOs on the Atlantic side are coordinated by the International Council for the
- 3461 Exploration of the Sea ICES an international fishery management body for Europe and
- 3462 the North Atlantic. www.ices.dk/Pages/default.aspx

3463 United States - www.nwr.noaa.gov/whatwedo/msa/magnuson_stevens_act.html

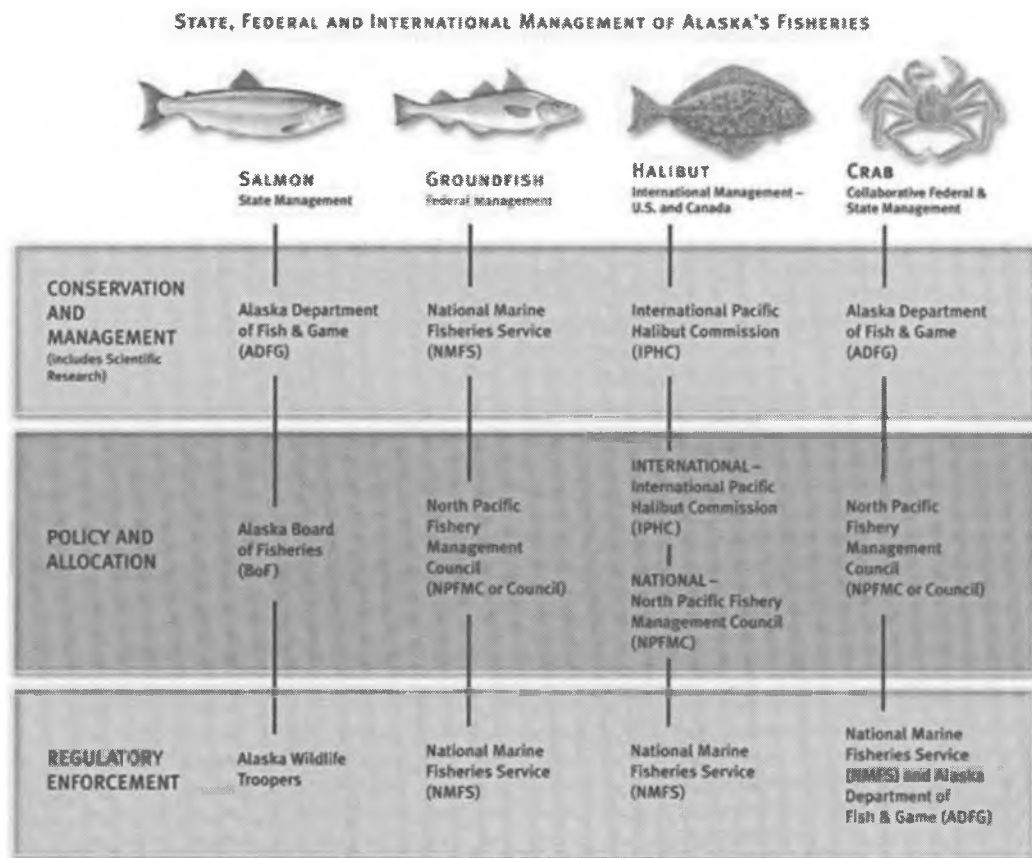
3464 The Magnuson-Stevens Act is the guiding law for marine fisheries occurring between 3 - 200
3465 nautical miles from shore - called the Exclusive Economic Zone (EEZ). It is governed under the
3466 National Ocean and Atmospheric Administration (NOAA). The North Pacific Fishery
3467 Management Council (NPFMC) makes recommendations to the National Marine Fisheries

3468 Service (NMFS) which develops a Fishery Management Plan (FMP) for a specific area. In
 3469 addition to the Magnuson-Stevens Act, they must follow other applicable laws (ESA, NEPA,
 3470 RFA) in the Fishery Management Plan. (see Appendix C for a detailed list)

3471 Alaska - www.adfg.alaska.gov/index.cfm?adfg=fishing.main

3472 The Board of Fisheries in the Alaska Department of Fish and Game (ADF&G) that has
 3473 jurisdiction of the waters up to 3 miles from shore. They regulate commercial, sport, personal use
 3474 and subsistence fishing. This involves research, planning, management, protection, enhancement,
 3475 restoration of the ecosystem. (see Appendix B for a detailed list)

3476 State, Federal and International Management of Alaska's Fisheries:



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3478 6.11 Fisheries Appendix B – State of Alaska Arctic Management

3479 The Board of Fisheries' main role is to conserve and develop the fishery resources of the state. It
3480 sets policy and direction for management of subsistence, commercial, sport, and personal use
3481 fisheries. The board is charged with making allocative decisions, including establishing open and
3482 closed seasons, areas for taking fish; setting quotas, bag limits, harvest levels and limitations for
3483 taking fish, and establishing the methods and means for the taking of fish. The department is
3484 responsible for management based on those decisions.

3485
3486 Commercial Fisheries

- 3487 • Norton Sound, Port Clarence, and Arctic-Kotzebue Area
 - 3488 ○ Commercial Fisheries Management Report
 - 3489 ▪ www.adfg.alaska.gov/FedAidpdfs/FMR13-28.pdf
 - 3490 ○ Commercial Fisheries Overview Webpage
 - 3491 ▪ www.adfg.alaska.gov/index.cfm?adfg=commercialbyareanortonsound.main
- 3492 • Northern Area
 - 3493 ○ Commercial Fisheries Management Report
 - 3494 ▪ www.adfg.alaska.gov/FedAidpdfs/FMR12-23.pdf
 - 3495 ○ Commercial Fisheries Overview Webpage
 - 3496 ▪ www.adfg.alaska.gov/index.cfm?adfg=commercialbyareanorthern.main
- 3497 • Bering Sea & Aleutian Islands Area
 - 3498 ○ Commercial Fisheries Overview Webpage
 - 3499 ▪ www.adfg.alaska.gov/index.cfm?adfg=commercialbyareaaleutianislands.main
 - 3500 ○ Commercial Fisheries Management Report for Herring
 - 3501 ▪ www.adfg.alaska.gov/FedAidPDFs/FMR12-38.pdf
 - 3502 ○ Commercial Fisheries Management Report for Groundfish
 - 3503 ▪ www.adfg.alaska.gov/FedAidPDFs/FMR12-38.pdf
 - 3504 ○ Commercial Fisheries Management Report for Shellfish
 - 3505 ▪ www.adfg.alaska.gov/FedAidPDFs/FMR12-22.pdf

3506 Sport Fisheries

- 3507 • Northwest Drainages Management Area
 - 3508 ○ Sport Fish Overview Webpage
 - 3509 ▪ www.adfg.alaska.gov/index.cfm?adfg=ByAreaInteriornorthwest.main
- 3510 • North Slope Management Area
 - 3511 ○ Sport Fish Overview Webpage
 - 3512 ▪ www.adfg.alaska.gov/index.cfm?adfg=ByAreaInteriorNorthSlope.main
- 3513 • Fishery Management Report for Sport Fisheries in the Northwest / North Slope
3514 Management Area
 - 3515 ○ Management report

- 3516 ▪ www.adfg.alaska.gov/FedAidPDFs/FMR12-45.pdf
- 3517 • Kodiak Management Area (includes the Alaska Peninsula and Aleutian Islands)
- 3518 ○ Overview Webpage
- 3519 ▪ www.adfg.alaska.gov/index.cfm?adfg=ByAreaSouthcentralKodiak.main

3520 Subsistence Fisheries

- 3521 ▪ Bering Sea / Aleutian Islands Area
- 3522 ○ Overview Webpage
- 3523 ▪ www.adfg.alaska.gov/index.cfm?adfg=ByAreaSubsistenceBeringAleutians.main
- 3524 ▪ Norton Sound – Port Clarence Management Area
- 3525 ○ Overview Webpage
- 3526 ▪ www.adfg.alaska.gov/index.cfm?adfg=ByAreaSubsistenceNortonSound.main
- 3527 ▪ Kotzebue Sound Management Area
- 3528 ○ Overview Webpage
- 3529 ▪ www.adfg.alaska.gov/index.cfm?adfg=ByAreaSubsistenceNortonSound.main

3530

3530 *6.12 Fisheries Appendix C – Federal Arctic Management*

3531 Arctic Management Area - Fishery Management Plan

- 3532 • 2009 Fishery Management Plan
- 3533 ○ <http://alaskafisheries.noaa.gov/npfmc/PDFdocuments/fmp/Arctic/ArcticFMP.pdf>
- 3534 • 2013 amendments to the 2009 Plan
- 3535 ○ www.pcouncil.org/groundfish/fishery-management-plan/

3536 Bering Sea Aleutian Islands (BSAI) Management Area

- 3537 • 2012 Groundfish of the BSAI Fishery Management Plan
- 3538 ○ <http://alaskafisheries.noaa.gov/npfmc/pdfdocuments/fmp/bsai/bsai.pdf>
- 3539 • Crab Fisheries
- 3540 ○ <http://alaskafisheries.noaa.gov/sustainablefisheries/crab/default.htm>
- 3541 ■ Rationalization -
- 3542 <http://alaskafisheries.noaa.gov/sustainablefisheries/crab/crfaq.htm>
- 3543 ■ Buy back - www.nmfs.noaa.gov/mb/financial_services/buyback.htm
- 3544 • Rockfish Program
- 3545 ○ <http://alaskafisheries.noaa.gov/sustainablefisheries/rockfish/>
- 3546 • Halibut Catch Sharing Program
- 3547 ○ <http://alaskafisheries.noaa.gov/npfmc/PDFdocuments/halibut/Area4CSP605.pdf>
- 3548 • Exempted Fisheries
- 3549 ○ <http://alaskafisheries.noaa.gov/ram/efp.htm>
- 3550 • 2007 amended Magnuson Stevens Act
- 3551 ○ www.nmfs.noaa.gov/sfa/magact/MSA_Amended_2007%20.pdf
- 3552 • 2006 Amendment 80 – to facilitate formation of harvesting cooperatives
- 3553 ○ <https://alaskafisheries.noaa.gov/sustainablefisheries/amds/80/>
- 3554 • 2004 revision
- 3555 ○ http://alaskafisheries.noaa.gov/npfmc/PDFdocuments/meetings/Management_FMP.pdf
- 3556 • History of Magnuson Stevens Act
- 3557 ○ www.oceanconservancy.org/our-work/fisheries/msa-the-law-thats-saving.pdf

3558 NPFMC Salmon - EEZ - <http://alaskafisheries.noaa.gov/npfmc/fishery-management-plans/salmon.html>

3559 Background informational sites:

3560 NOAA – North Pacific Fisheries Management Board - alaskafisheries.noaa.gov/npfmc

3561 NOAA – Community Development Quota Program - alaskafisheries.noaa.gov/cdq/