Proposed U.S. Arctic Council Chairmanship Program 2015-2017

February 2015

"One Arctic: Shared Opportunities, Challenges, and Responsibilities"

Themes and Initiatives

Arctic Ocean Safety, Security, and Stewardship

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- Marine Environmental Protection
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- Regional Seas Arrangement
- Arctic Ocean Acidification

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Thematic Area 1: Arctic Ocean Safety, Security, and Stewardship

Search and Rescue Exercises

Background: With the increase in human activity in the Arctic Region, as well as the continued use of the Arctic Ocean for aeronautical and maritime transportation, the challenges associated with search and rescue (SAR) operations have never been greater. Extensive distances, extreme weather, and scarcity of physical infrastructure will continue to present operational and logistical challenges for the Arctic Council nations that have Arctic aeronautical and maritime SAR responsibilities. Currently there is only minimal SAR response capability in the Arctic.

The Arctic Council Member States understand the challenges associated with lifesaving operations in one of the harshest environments on earth, and are working together to coordinate the regional use of limited available SAR resources. The International Maritime Organization's Maritime SAR Convention and the International Civil Aviation Organization's Convention on International Civil Aviation provide the global SAR system framework with which the Arctic Council nations could expand SAR capability in the Arctic Region. The Agreement on Cooperation on Aeronautical and Maritime Search and Rescue (SAR) in the Arctic will serve as the basis for current and future SAR cooperation and coordination. An Arctic Council SAREX was held by Canada in 2011, with two additional SAREXs hosted by the Kingdom of Denmark in 2012 and 2013.

Description: The United States proposes to conduct a tabletop exercise, and possibly a SAR functional exercise, to enable the sharing of best practices, identify lessons learned, and understand available SAR resources. The United States will host a SAR exercise comprised of Arctic Council Member States, regional, tribal, and industry stakeholders. The exercise participants will generate report, including recommendations for further action, for delivery by the end of the U.S. Chairmanship. The United States will encourage future chairmanships to host and

sponsor SAREXs, with the recommendation for future cooperation with the Arctic Coast Guard Forum.

Deliverable and timing: SAR experts from Arctic States will be invited to participate in the tabletop exercise, planned for October 2015. If a functional exercise is possible (summer 2016), the United States will invite Arctic States to participate in, or witness, the event.

Mechanism: U.S.-hosted, under the auspices of the SAR Agreement

Marine Environmental Protection

Background: With the acceleration of maritime activity in the Arctic region, there is an increased risk of marine casualties and oil spills. To protect the Arctic marine environment from the hazards of oil and other substances, Arctic Council Member States have emphasized preparedness for and response to pollution incidents in the region. Recognizing the international importance and environmental sensitivity of the Arctic Region, several initiatives have been implemented to improve pollution preparedness and response capabilities in the Arctic; however, additional Arctic-wide collaboration is warranted to enhance capabilities in this important and sensitive region.

Description: The United States proposes to build upon existing preparedness and response programs by placing greater emphasis on research and information sharing regarding: effects of spills and effectiveness of countermeasures, the identification and mobilization of the resources necessary to mitigate the effects of a pollution incident, and the development of international guidelines for preparedness and response in this logistically challenging region. The United States will strive for increased sharing of scientific information related to oil and hazardous substance spill response, identify spill response resources for the creation of a specialized equipment inventory, and implement the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic and related operational guidelines.

It would be useful to promote dialog between the Arctic States on using best available practices and technologies in offshore oil and gas development to enhance Arctic marine environmental protection. Such a dialog could take place under the auspices of the "Framework Plan for Cooperation on Prevention of Oil Pollution from Petroleum and Maritime Activities in the Marine Areas of the Arctic" and its Arctic Offshore Regulators Forum.

Deliverable and timing: This deliverable would comprise several actions. EPPR has approved a proposal to create an inventory of specialized pollution response equipment, and is considering drafting cooperative agreements regarding resource

sharing across the Arctic, and developing international operational guidelines for responses in broken ice and ice covered areas. The products would enhance the current preparedness and response capabilities in the Arctic. Further research regarding the effects of oil and other hazardous substances, as well as the analysis of mechanical recovery efficacy and in-situ burning in open water, broken ice, and hard packed ice is necessary to continue improvements to operational guidelines. Additionally, the U.S. Interagency Coordinating Committee on Oil Pollution Research (ICCOPR) has been advancing Arctic spill prevention and response capabilities by establishing research priorities and sharing research results.

Mechanism: EPPR

Marine Protected Areas Network

Background: Recognizing the international importance of the Arctic Ocean and adjacent seas, the Arctic Council has already taken initial steps to develop a Framework for a Pan-Arctic Network of MPAs, promoting collaboration among Arctic nations to coordinate, connect, and thereby strengthen national MPA networks. The Arctic Council's MPA Expert Group has made encouraging progress on establishing the scope of the Framework and formulating next steps to bolster the Framework's long-term utility. The United States expects that the SAOs will endorse the Framework at their 2015 spring meeting, shortly before the chairmanship transfers to the U.S., which would set the stage for additional work under the U.S. Chairmanship.

The establishment of MPAs is at an early stage. A number of the Arctic States have created, or are considering, MPAs of some type. The establishment of MPAs should include participatory processes that engage various levels of government, indigenous communities, and other stakeholders, be based on the best available science, and be consistent with international law.

As PAME drafts a new Arctic Marine Strategic Plan (AMSP) for 2015–2025 there is the opportunity to transform it into a roadmap for strategic management actions. Traditionally the AMSP has been a simple assessment of needs.

Description: Establish a Pan-Arctic Network of existing MPAs through implementation of the Framework and endorse and Arctic MPA goal consistent with that adopted in 2010 by the Parties to the Convention on Biological Diversity, and reaffirmed at RIO+20, to conserve by 2020 10 percent of coastal and marine areas through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures. The United States proposes that the Arctic States endorse such a goal for the Arctic Ocean and adjacent seas, which include areas within the national jurisdiction of individual Arctic coastal States, and in the high seas portion of the central Arctic Ocean.

This endeavour would create an overarching framework and common vision for international cooperation in MPA network management, planning, and development, based on international best practices and previous Arctic Council initiatives. It would further support the efforts of Arctic States to develop and manage their own MPAs and networks in their respective national jurisdictions, in consultation with Arctic communities and other stakeholders, for the conservation and protection of the Arctic marine environment.

Deliverable and timing: The United States proposes a two-year effort to establish a Pan-Arctic Network of existing MPAs; begin to implement the Network, including the identification of shared priorities related to scientific and management issues for collaboration; and endorse an Arctic-wide MPA goal consistent with existing internationally agreed targets.

Mechanism: PAME, CAFF

Regional Seas Program

Background: Much of the Arctic Ocean remains relatively pristine and, from a scientific perspective, relatively under studied, as compared to the other marine areas of the world. There is no formal agreement or structure among the Arctic States to coordinate management of human activity or to underpin a joint science program. Existing cooperation among the Arctic States in these respects could be profoundly expanded.

Description: The United States proposes a longer-term initiative to improve scientific understanding and coordinated management of the Arctic Ocean through the negotiation of a regional seas program (RSP), which could take any number of forms, including but not limited to an international agreement, a non-binding arrangement, or a program of activities. An Arctic RSP could serve to coordinate and advance efforts to study the Arctic Ocean and serve as a vehicle for managing, or at least coordinating the management of, increasing human activity in the region. It could also serve as a framework for conveniently organizing the growing body of soft and hard law applicable to the Arctic Ocean (e.g. the SAR agreement, the oil pollution preparedness and response agreement, future binding and non-binding agreements/arrangements/actions plans, etc.) An RSP would launch a new level of commitment by the Arctic States to the future management of the Arctic Ocean and internationally signal strong leadership.

The specific nature of an Arctic RSP would have to be tailored to fit the unique circumstances of the Arctic Ocean. The geographic scope of the RSP, especially the southern limit, and the future governance structure of the RSP, are examples of some aspects that could set a new precedent for international RSPs (other RSPs have long existed in other parts of the world, several with the active membership of Arctic Council member States, including the Helsinki Commission and the Oslo-Paris Commission.) Modeling an Arctic RSP based on familiar RSP structures, where possible and appropriate, may facilitate discussions among the Arctic States and Permanent Participants.

Deliverable and timing: An Arctic Council Task Force reporting to the SAOs will reach the conceptual agreement on the nature and scope of an Arctic RSP under the U.S. chairmanship. Further work to establish the RSP will take place under the Finnish chairmanship.

Mechanism: Task Force reporting directly to the SAOs.

Arctic Ocean Acidification

Background: Ocean acidification is one of the most important, urgent ocean issues facing the world today. The world's oceans are absorbing increasing amounts of atmospheric carbon dioxide, leading to greater acidity in the ocean. This change in ocean chemistry is a growing global problem with the potential to have broad and significant impacts – both environmental and economic – on the marine ecosystems on which we all depend. It affects every ocean, in particular the Arctic Ocean due to its cold temperatures and other factors.

Description: The United States proposes an initiative comprised of three major efforts, all aiming towards the overall goal of improving capability to monitor Arctic ocean acidification and its impacts and enhancing understanding of the issue throughout stakeholder communities and the general public:

1. Expand the reach of the Global Ocean Acidification Observing Network (GOA-ON) so that there is complete monitoring coverage of entire Arctic Ocean, including both chemical and biological observations. This will include encouragement for all Arctic Council Members States to join the GOA-ON (currently, scientists from Canada, Iceland, Norway, Sweden, and the United States are members) and Arctic Council observer States with members in the GOA-ON to participate in the effort to increase Arctic Ocean coverage.
2. Increase the number of stakeholders, especially from vulnerable indigenous communities, trained to use and understand monitoring techniques. This will include international workshops hosted by the Arctic States and identification of workshops participants, with specific emphasis on university and industry practitioners, to facilitate increased monitoring capability.
3. Raise public awareness through a series of publications, workshops, and media efforts on the impacts of Arctic ocean acidification, in particular with regard to impacts on economically important species and vulnerable communities, and what individuals can do about it, such as developing adaptation strategies. The United States requests Arctic Council Member States and PPs to help design and disseminate public awareness efforts.

Deliverable and timing: AMAP will report on progress on the three components of this initiative, most of which will conclude in 2017. It may be possible to develop milestones to check progress in 2016.

Mechanism: AMAP

Thematic Area 2: Improving Economic and Living Conditions

Arctic Energy Summit

Background: Improving energy affordability and reducing dependence on fossil fuels will contribute greatly to the quality of life in the Arctic. The SDWG sponsored the Arctic Energy Summit (AES) as a demonstration project in 2011 and 2013. The next AES is scheduled for September 2015 in Fairbanks, Alaska. The Arctic Energy Summit is a multi-disciplinary event expected to draw hundreds of international industry executives, government agency officials and policy makers, researchers, energy professionals and community leaders together to collaborate on and share innovative approaches to Arctic energy issues.

Description: The United States proposes that the SDWG sponsor this again, as it will occur immediately prior to the SDWG meeting nearby, allowing SDWG members the opportunity to attend the AES in person. The United States will encourage the Arctic States and Permanent Participants to disseminate the meeting invitation to subject-matter experts. (The Icelandic MFA is already a major sponsor of this event.)

The 2015 Summit will address:

- Renewable Energy
- Oil & Gas Exploration and Production
- Remote and Rural Heat & Power
- Energy Transportation and Transmission

The three day Summit will feature:

- Plenary keynote speeches and panel discussions related to overarching themes
- Breakout sessions in panel, technical presentation and workshop format
- A "TED-type" public forum that runs concurrently with the AES.
- Closing work sessions to develop recommendations

Deliverable and timing: As has been done in the past, the AES will produce a summary report and present it to the SDWG.

Mechanism: SDWG

Renewable Energy Demonstrations

Background: Many small, isolated Arctic communities currently rely on dirty, expensive diesel fuel to generate electricity. Through improvements in renewable energy technology and public-private partnerships, villages can have more reliable, cheaper and cleaner energy options.

The Remote Communities Renewable Energy (RCRE) partnership aims to "develop, demonstrate, and deploy smaller-scale, hybridized, modular platforms to harvest energy from local renewable energy resources, reduce diesel fuel dependence and to create an independent micro-grid operation." Led by the National Renewable Energy Lab, this existing project aims to create a hybrid modular system that greatly increases the percentage of power provided by renewable energy resources (in this case, wind or solar energy) to the micro-grids that exist in small, remote communities. The RCRE partnership intends to provide these "high-penetration" hybrid systems to small (~100-person) communities in the Arctic, providing more than 75% of their electrical power. Still in its early stages, RCRE aims to develop, test, and deploy a demonstration system in a remote Arctic community by January 2017. Results from the project would show that there is a market for the technology and the technology now exists. This, in turn, would encourage private companies to invest in this field. Public-private partnerships could be developed to support investment in renewable energy technologies across the Arctic region.

Description: The United States proposes to construct a demonstration project that shows the RCRE's feasibility and replicability for other remote Arctic villages. Lessons learned from this project would be shared in the Arctic Council for further implementation in all relevant, remote Arctic communities. Additional deliverables could include country-by-country implementation plans tailored to the different renewable energy capabilities within the Arctic. States that have expertise in renewable energy, energy efficient structures in cold climates, or micro-grid solutions would be invited to contribute technical expertise, and to consider expanding RCRE to an international partnership. This technology would also be applicable to small island developing states and other areas with islanded

grid systems. Arctic states that help develop this technology could then use the lessons learned in the Arctic to sell to these other markets worldwide.

Deliverable and timing: A successful demonstration project is contingent upon funding; lack of funding will alter the deliverable, perhaps to an international conference for technical and policy experts.

Mechanism: SDWG

Water and Sanitation

Background: Water security, reliable access to sufficient quantities of clean freshwater, is essential for healthy communities. Water access, as well as storage and treatment infrastructure, is under threat in remote Arctic communities, in part due climate change impacts on water treatment infrastructure and freshwater sources. In most rural Arctic communities the cost of water is significant and often leads to water rationing and concurrent decreases in health. Recent research has shown that residents of places with ample clean water for hand washing are less likely to contract and transmit certain diseases and viruses.

Description: The United States proposes to address water security through a freshwater assessment, vulnerability index, and innovation challenge.

1. AMAP's Arctic Freshwater Synthesis (AFS) will examine issues such as: the role of freshwater in Arctic systems; historical changes to the Arctic freshwater system and key drivers of such changes; and projected changes to the Arctic freshwater system and drivers of such changes. The AFS will be the first-ever examination of the freshwater picture in the Arctic and could serve as the basis for a broader, in-depth Arctic Freshwater Assessment. The AFS will be a means of educating the public about the role freshwater plays in the various systems in the Arctic (the climate system, the ecosystem, oceanic systems, the hydrologic system, etc.) and to bring freshwater resources into the global discussion about freshwater security. The AFS will be highlighted as a stand-alone deliverable with the recommendations that AMAP pursue an Arctic Freshwater Assessment beginning as soon as possible.

2. The United States proposes to highlight the University of Alaska-Fairbanks' Arctic Water Resource Vulnerability Index (AWRVI), a tool that assists communities with understanding the status of their freshwater resources and resilience, with the aim to internationalize the AWRVI for use in other Arctic Council member States. AWRVI feeds into the Adaptive Capacity Indices and will be part of the Arctic Council's Arctic Adaptation Exchange Portal developed under the Canadian chairmanship.

3. To enhance the connection between the provision of clean water and health, the United States proposes to highlight the State of Alaska's "Alaska Water and Sewer Challenge", an initiative that addresses the need for decentralized/"in-home" water and wastewater treatment, recycling, and usage reduction systems in cold climates. This Challenge will award grants to incentivize innovative technologies that provide water needed for healthful living in rural communities. Ongoing Alaska-based pilot projects of the Water and Sewer Challenge will have results available in 2016. To expand the "Alaska Water and Sewer Challenge" to other Arctic States, the United States will host an international conference of researchers, engineers, manufacturers, vendors, and health experts to ensure clean, safe, affordable and reliable water and sewer services in small Arctic and near-Arctic communities. The conference, entitled Water, Sanitation and Human Health (WASH), will also serve as a platform to initiate a circumpolar assessment of community systems in place, water quality and quantity, utilization of tradition water sources, and related health indicators.

Deliverable and timing: Arctic Freshwater Synthesis to be publicly promoted as an educational tool; expansion of the Arctic Water Resources Vulnerability Indices (AWRVI) to be completed by the end of the U.S. chairmanship (contingent upon funding); Water Sanitation and Health conference in Alaska in 2016.

Mechanism: AMAP, SDWG, CAFF

Telecommunications Infrastructure Assessment

Background: The existing telecommunications infrastructure in the Arctic is not sufficient to meet current demands for modern community needs, regional connectivity, human services, scientific observations, navigation, and support for potential emergency SAR or oil spill response. To adequately meet increased needs and to improve the quality of life for Arctic residents, there is a strong need to assess, and ultimately expand telecommunications infrastructure.

Description: The United States proposes, with the cooperation of all the other Arctic Council Member States, to coordinate a circumpolar assessment of telecommunications infrastructure and networks. As the first step towards this long-term goal, the U.S. National Telecommunications and Information Administration (NTIA) has initiated an assessment of existing telecommunications infrastructure and services in the Alaskan Arctic, above the Arctic Circle. Canada is exploring options for a Canadian-led project, with potential international partners, to satisfy requirements in satellite communications and earth observation coverage of the Arctic; Russia's long-term Arctic strategy includes launching at least four telecommunications satellites to meet its own needs (and to replace broadband and other wired infrastructure).

The United States proposes to establish a Telecommunications Infrastructure Expert Group, consisting of representatives of the Arctic States, the telecommunications industry, and end user groups that would coordinate a broad assessment covering the entire Arctic region. The Expert Group would deliver a completed assessment to include, among other things, recommendations for public-private partnerships to enhance telecommunications access and service in the Arctic. The results of this assessment could be made publicly available on the Arctic Maritime and Aviation Transportation Infrastructure Initiative website and would be presented at the appropriate international fora with a strong message from the Arctic States to make the Arctic a top priority for future telecommunications investment.

Deliverable and timing: The Arctic Telecommunications Assessment should be completed by the 2017 Ministerial meeting. An eventual build-out of an Arctic-wide telecom infrastructure is a long-term, multi-year endeavor.

Mechanism: Expert Group reporting directly to the SAOs

Suicide Prevention and Resilience

Background: Rates of suicide are unusually high in nearly all regions of the Arctic. For example, Alaska's suicide rate is consistently twice as high as the general U.S. population. Rates among at-risk groups, especially young men in indigenous communities, are even higher – up to five times the national average. Under the Canadian chairmanship, the Canadian Institutes of Health Research (CIHR) is leading the Arctic Council in an assessment of interventions that promote mental wellness and suicide prevention in Arctic communities. This work has created a strong evidence-based foundation from which to build. The next logical step is to create a data architecture for efforts to build outwards and upwards from this foundation.

The United States proposes a follow-on from Canada's mental wellness and suicide prevention project, RISING SUN (Reducing the Incidence of Suicide in Indigenous Groups-- Strengths United through Networks). The purpose of RISING-SUN is to create a common, science-based system of metrics to track suicidal behaviors and key correlates, interventions, and outcomes across Arctic States. Common metrics will facilitate data sharing and pooling, evaluation, and interpretation across service systems moving forward. These tools will aid health workers to better serve the needs of their communities, while helping policymakers to measure progress, scale up interventions, and identify challenges. Common metrics and reporting systems are especially important in the Arctic, where the vast geography and significant number of remote communities pose challenges for systematic approaches to suicide prevention.

Description: The National Institute of Mental Health (HHS/NIMH), the Substance Abuse and Mental Health Services Administration (SAMHSA), the Office of Global Affairs (HHS/OGA), and the Centers for Disease Control (CDC) propose to hold a series of three international meetings to advance this work:

1. A gathering for key stakeholders, such as service providers, community leaders, researchers, survivors and families, and government officials. Participants will review the suicide prevention landscape and the accomplishments of the

Canadian project, scope out aims of this initiative, and elicit feedback on efforts (U.S.-based and otherwise) to develop metrics. Further input will be sought between Meetings 1 and 2.

2. A smaller, expert-level meeting, to review stakeholder feedback, and come to consensus on the best metrics systems available.
3. An implementation conference to present results of the expert-level meeting. Participants will develop timelines for implementation, address potential challenges (e.g., linguistic differences), and identify avenues for future, trans-boundary collaborations on research.

Deliverable and timing: A final report synthesizing results from the described activities will be delivered by the end of the U.S. chairmanship, memorializing the work done through this project and laying out a path forward for coordinated implementation, evaluation, and scale-up of effective interventions during future Arctic Council chairmanships, at the discretion of Arctic Council member states and their respective mental health stakeholders.

Mechanism: SDWG

Thematic Area 3: Addressing the Impacts of Climate Change

Reducing Short-lived Climate Pollutants

Background: Black carbon has been linked to a range of climate impacts, including increased temperature and accelerated snow and ice melt. Furthermore, permafrost thaw may lead to the release of methane, a highly potent greenhouse gas. To address black carbon and methane in the Arctic, actions are needed that engage all Arctic States, and Observer States where appropriate, as they are thought to be responsible for a significant share of black carbon deposits in the Arctic, and methane is a globally well-mixed greenhouse gas. Specifically, there is a need for the Arctic Council Member States to improve actions at a national level to reduce black carbon and methane in key sectors, and to augment policy-relevant science; at the same time, the Arctic Council can increasingly be used as a forum to create greater transparency for emissions information and actions, and to create incentives for best practices in the Arctic.

A task force under the Arctic Council recently concluded negotiations on a voluntary Framework for Action on Black Carbon and Methane, which is expected to be approved at the upcoming Arctic Council Ministerial. Among other things under this framework, Arctic States agree to submit national reports once each chairmanship cycle, describing existing and planned actions to reduce black carbon and methane, sharing emission inventories to identify trends and key sources (especially for black carbon), and to highlight best practices to reduce emissions in certain sectors. In addition, the framework calls on Arctic States to sustain or enhance monitoring of these pollutants. It also highlights potential cooperation to address emissions from key sectors - oil and gas and transportation. The U.S. will lead the implementation of this arrangement under its Chairmanship, including by seeking to enhance monitoring, beginning to address black carbon from oil and gas flaring, and exploring opportunities for meaningful reductions in other sectors.

Description: Arctic States, primarily through the newly negotiated voluntary framework, will advance mitigation efforts to reduce black carbon and methane emissions impacting the Arctic.

First, efforts will focus on institutionalizing and implementing key elements of the Framework. Arctic States, and Observer States as appropriate, will submit to the Secretariat national reports on actions to reduce methane and black carbon, including emissions inventories. The Secretariat will synthesize these reports, and submit them to an ***Expert Group***, reporting directly to the SAOs, comprised of representatives from the Arctic States, participating Observer States (those submitting national reports), Permanent Participants, and relevant Arctic Council bodies. The Expert Group will produce a "Summary of Progress and Recommendations" report, including conclusions and specific recommendations for further action, and present these to the Ministers through the SAOs. Separately, each Chair may convene a high-level policy maker forum to explore opportunities for further collaboration based on these recommendations.

Second, the Arctic States to identify opportunities for expanding national activities and capabilities to monitor levels of black carbon and methane in the Arctic. The United States intends to work towards improved coordination across the region through relevant forums in order to, among other things, assist in assessing collective mitigation progress and characterizing climate impacts in the Arctic, including the capability to detect changes in natural methane releases as a result of Arctic warming.

Third, in order to address the potentially very significant but poorly understood black carbon emissions from flaring in the oil and gas sector, the State Department proposes a two year experimental and analytical study that will increase the scientific understanding of and options for mitigating black carbon emissions from associated gas flares in oil fields. The testing aims to assess how black carbon emission flux rates and particle size vary according to the composition of the gas that enters the flare stack and based on the methods and/or equipment used in the flaring process. Testing will be conducted at several Arctic oil fields. The oil field

sites will be preselected and cover a wide range of conditions representative of associated gas flaring in the Arctic.

Deliverables and timing:

Framework for Action on Black Carbon and Methane: On September 1 in the first year of each Chairmanship cycle (2015), Arctic States, and Observer States as appropriate, will submit to the Secretariat national reports that include:

1. Summary of current black carbon emissions to CLRTAP, where appropriate, and, if available, future projections
2. Summary of current methane emissions to UNFCCC and, if available, future projections
3. Summary of National Actions, National Action Plans, or Mitigation Strategies by sector
4. Highlights of best practices or lessons learned for key sectors
5. Projects relevant for the Arctic
6. Other information if available (e.g., climate, health, environmental, economic effects of emissions and mitigation)

On October 1 of the first year of each Chairmanship cycle, the Arctic Council Secretariat will provide a "compilation" report to the Expert Group. The Expert Group will produce a "Summary of Progress and Recommendations" report, including conclusions and specific recommendations for further action. The U.S. may then launch a high-level policy maker's forum to consider these recommendations, and identify opportunities for collaboration and enhanced action. Agreed areas of cooperation could be announced at the U.S. ministerial.

Enhanced monitoring of black carbon and methane: The United States is in the process of working with relevant agencies and Arctic States to determine nationally appropriate deliverables and timing.

Oil and gas flaring assessment: The outputs from the experimental testing will include a methodology for calculating black carbon emissions, a range of black carbon mass emission rates, and a generalized set of black carbon emission factors

based on gas flares tested at several (at least 3) different Arctic oil fields which flare associated gas. Key deliverables will also include a non-technical report on industrial best practices for reducing soot emissions from gas flaring, and publishing of results in a peer-reviewed scientific journal to ensure broad reach. Preliminary results are expected to be available in 2016.

Mechanism: Expert Group, AMAP, ACAP

Arctic Climate Resilience

Background: The Arctic region, home to approximately four million inhabitants, is experiencing some of the most profound climate change impacts in the world. These impacts threaten communities and their ways of life, as well as the ecosystems upon which these communities depend. Because Arctic ecosystems and communities are so closely intertwined, it is important to take a broad approach to increasing resilience in the Arctic. The *Arctic Resilience Report* and the *Adaptation Actions for a Changing Arctic – Part C*, begun during the Swedish chairmanship, will be concluded during the biennium, ideally with the participation of all Arctic States and Permanent Participants.

Description: The United States proposes to spur action to reduce the climate vulnerabilities of Arctic communities and ecosystems.

Deliverables and timing: The United States proposes three inter-related deliverables achieved through an integrated ecosystem- and community-based approach that promotes the resilience of ecosystems that span multiple boundaries and jurisdictions. This integrated approach will be applied in three, interconnected stages:

1. **Advance monitoring efforts and enhance scientific understanding of the resilience of communities and ecosystems.** The United States proposes to improve our fundamental understanding of climate change vulnerabilities and impacts in the Arctic. This will be done through expanded monitoring and assessment efforts that will provide a stronger basis for developing decision making tools and frameworks.
   Specific actions include:
   - Complete the "Arctic Resilience Report" and "Adaptation Actions for a Changing Arctic" (AACA) project, both to be delivered in 2017. The reports will inform our current understanding of ecosystem and community resilience across the Arctic.
   - Expand local environmental monitoring, through existing "citizen science" monitoring networks, and traditional knowledge documentation.

- Promote improved monitoring and data sharing on invasive species and coordinate with other relevant programs including local observations networks.

2. **Develop and promote tools and services that help planners and policy makers make decisions that build more resilient communities and ecosystems.** The United States proposes to promote and strengthen the use of decision-making tools to support adaptation and address priority climate risks and vulnerabilities. These include tools and methods for assessing climate vulnerability and adaptive capacity; screening strategies and programs for climate risks; identifying adaptation options; and weighing the costs and benefits of adaptation actions.
   Specific actions include:
   - Summarize early key findings from the Adaptation Actions for a Changing Arctic (AACA) and Arctic Resilience Report for decision-makers and identify opportunities to apply those key findings through community outreach and development of decision-support tools.
   - Expand the Arctic Adaptation Exchange Portal, in part through the development of a community resilience toolkit that links to the portal. Continue development of the Arctic-wide adaptive capacity indices, which will link to the portal and support decision-making about community-level adaptation.
   - Identify pathways of introduction and spread of invasive species and produce geographic maps of risk from each pathway to assist in prioritizing surveillance and management activities.
   - Summarize current policy and practice for managing invasive species and identify gaps in policies or practices, while also working with industry groups to identify appropriate risk management practices.
   - Linking to the invasive species efforts, promote a One Health management approach in the Arctic, which weaves together data and information on human health, animal health, and ecosystem health.
   - Promote the implementation of ecosystem-based management approaches across the work of the Arctic Council.

3. **Call on Member States, Permanent Participants and other members of the global community to implement actions and policies that respond to climate change vulnerabilities in the Arctic.** The United States proposes to identify a list of top priority climate risks and vulnerabilities and call upon member States, Permanent Participants, and Observers to enhance their domestic adaptation actions to address these priority concerns. Such actions could include building climate resilience into domestic policies, or taking national, bilateral, or multilateral actions that promote community- and ecosystem-based adaptation.
   Specific actions include:
   - Develop a consolidated list of high-level climate change resilience priorities.
   - Encourage Member States and Permanent Participants to take actions that address these common priorities.
   - Encourage action on climate change by the Parties to the UNFCCC during the 21st Conference of the Parties by delivering a statement that brings attention to the impacts of climate change on Arctic communities.
   - Develop voluntary guidelines for Member States for best practices and policies on invasive species prevention and management.
   - Explore the feasibility and potential mechanisms for establishing an Arctic Resilience Fund.

Mechanism: SDWG, AMAP, CAFF, PAME, Adaptation Actions for a Changing Arctic (AACA) report team, Arctic Resilience Report (ARR) team.

Improving Arctic Climate Science: Agreement on Scientific Cooperation

The Task Force on Scientific Cooperation has determined that an agreement among the Arctic States to promote scientific cooperation in the Arctic will have significant benefits, including for climate science activities. The United States proposes to extend the mandate of the Task Force so that the work can continue toward a legally binding agreement for conclusion during the next biennium, but no later than the 2017 Ministerial meeting. Should the agreement be concluded prior to the Ministerial meeting, the U.S. proposes that the Council consider opportunities for early signature to facilitate rapid entry into force and implementation.

Improving Arctic Climate Science:
Climate Change Indicator System for Arctic (CCISA)

Background: Changes related to climate are causing impacts to the natural system that are manifesting themselves in the Arctic faster than anywhere on Earth. Indicator systems can tell us years or decades in advance whether and where there may be non-linear changes in the climate system and help us better understand potential tipping points and thresholds. To better understand the impacts and effects of climate change, the United States Global Change Research Program (USGCRP) is currently developing a set of climate change indicators. The network provides the status and trends of change of key physical, biological, social and economic elements related to climate impacts and effects.

Description: The United States proposes to leverage the ongoing USGCRP climate change indicators effort to cultivate a specific Climate Change Indicator System for the Arctic (CCISA) with the involvement of all Arctic States and Permanent Participants. To link a specific subset of indicators focused on climate change in the Arctic into a single pan-Arctic network CCISA, the Sustaining Arctic Observing Networks (SAON), co-sponsored by the Arctic Council and the International Arctic Science Committee (IASC), will coordinate other Arctic States in the development or strengthening of similar systems. This effort will significantly improve scientific understanding of climate change and its impacts and effects in the Arctic as well as our understanding of the timing and nature of important changes to human society and our living environment in Alaska and the rest of the Arctic region.

Deliverable and timing: The framework for the CCISA will be developed towards the end of the U.S. chairmanship. It may be possible to identify a milestone in 2016 illustrating the potential for an Arctic Indicators Network by pointing to the subset of Arctic-relevant indicators from the larger USGCRP effort.

Mechanism: AMAP, CAFF

Improving Arctic Climate Science: Pan-Arctic Digital Elevation Map

Background: Improving access to topographic information in the Arctic, specifically enhanced high-resolution elevation data, could assist economic development, resource development, land management and scientific analyses. While several high-resolution digital elevation models (DEMs) exist for non-Arctic regions, there is not a reliable high-resolution full Pan-Arctic DEM publicly available.

Description: The United States proposes to coordinate the harmonization of existing digital elevation datasets with the Arctic States wherever available into a high-resolution Pan-Arctic Digital Elevation Model with a single access point to the data. The United States proposes that the Arctic States, through the Arctic Spatial Data Infrastructure (Arctic SDI), harmonize existing national mapping organization digital elevation models into a high-resolution Pan-Arctic DEM.

A series of workshops is proposed to accomplish this deliverable, with possible intermediary work taking place between workshops. The series of workshops would seek to 1) perform research and make recommendations regarding the most appropriate technical specifications for the data, including the geographic extent and data resolution, 2) undertake planning regarding implementation of the data harmonization, 3) harmonize the data, 4) quality assess and check the data, and 5) coordinate on data delivery and accessibility.

Deliverable and timing: Access to the harmonized dataset through a single online geoportal and metadata catalogue location under standards and data-sharing protocols currently being developed by the Arctic SDI. Timing of delivery of the Arctic DEM will be affected by several factors including timing of ongoing data collection projects, availability of personnel, and other technical constraints.

Mechanism: CAFF, AMAP, Arctic SDI

Goal 1: Strengthening the Arctic Council

Background: Most of the chairmanships of the Arctic Council have had a plan for "strengthening" the Council in some way. The single most significant action to date to strengthen the Council was the creation of an administrative secretariat in Tromsø, Norway. Other important actions to strengthen the Council include developing the Council's archives (underway); developing a professional record-keeping system (underway); implementing a communications strategy; creating a logo/brand; upgrading the website; and developing criteria for admitting observers and rules for their participation.

Description: The United States proposes to continue the process of strengthening the Council during the period spring 2015 through spring 2017. Following are proposals for consideration:

1. Re-examine the criteria for admitting observers and the rules that apply to them once admitted;
2. Discuss options for managing the increasing numbers of observer applicants that would also address the growing interest in the Council;

3. Develop rules for relationships between the Council and outside entities (e.g. the Arctic Economic Council, the Arctic Coast Guard Forum, the Arctic Offshore Regulators Forum, the Arctic Regional Hydrographic Commission, and possibly others);

4. Create rules for how the Council deals with work products by outside entities not under the control of the Council, but that seek some sort of Council endorsement (e.g. AHDR-II);

5. Examine the Council's structure, including the six working groups and how the Council utilizes task forces and expert groups, to ensure the current structure continues to meet the needs of the Arctic States;

6. Continue discussions on capacity building for the Permanent Participants, including the future of the Indigenous Peoples Secretariat;

7. Examine the mission statements, terms of reference and operating guidelines for all six working groups to ensure there is no overlap and that all working groups are operating consistently with respect to the permanent participants, observers, invited experts and seating arrangements;

8. Merge the working group websites into the AC website so that there is one "look and feel" for the whole Council;

9. Require that all Council products carry the AC logo, not just the working group logo or any logos created for specific projects/initiatives;

10. Explore whether the Project Support Instrument should be expanded to become a funding mechanism for all Council projects, including examining its terms of reference;

11. Finalize the archiving and record keeping projects.

12. Continue developing the tracking tool and use it to the fullest extent.

Deliverable and timing: Projects undertaken will ideally be advanced towards conclusion by spring 2017, with the possibility for several items to continue into the future.

Mechanism: The primary mechanism for these efforts would be discussion among the SAOs and PPs.

Goal 2: Public Diplomacy Campaign

Background: To ensure that the Arctic States and Permanent Participants are aware, the United States will launch an extensive global public diplomacy campaign to domestic and international audiences to communicate the Arctic as priority region of critical importance. Through traditional and social media outreach, special events, high-level engagements, communications materials, and other public outreach means (e.g. seeking to insert Arctic awareness into appropriate international fora, such as Small Island Developing States forums, the IMO, the UNFCCC, etc.). Although this is an activity outside the Arctic Council, the United States plans to use the opportunity of holding the two-year chairmanship to raise awareness primarily in the United States, but also across the world, of the Arctic, its role in various global systems, and its strategic importance to the rest of the world. To the extent that other Arctic States and Permanent Participants would like to join us in these activities, collaboration is welcome.

In both the development and execution stages, the United States will work closely with key domestic and international partners as appropriate, including the Arctic States, Permanent Participants, other indigenous groups, embassies and consulates, civil society, academia, business and industry, community groups and others.

Given that the United States is perhaps the only Arctic State that does not consider the Arctic as part of its national identity, collaboration of the Arctic States and Permanent Participants in public diplomacy awareness campaign objectives and activities is welcome, as appropriate, including:

1. Raising awareness among domestic and foreign audiences that America is an Arctic nation and why the Arctic is a strategic priority for the United States;

2. Highlighting the social, economic, and environmental challenges and opportunities found in the American Arctic (Alaska);

3. Increasing understanding of and support for the Arctic Council among domestic and foreign audiences;

4. Raising awareness of the impacts that climate change is having within the Arctic and how this affects the rest of the world;

5. Increasing public support for domestic and international action on the following Arctic issues:

   - **Climate change:** Show how climate change is affecting the Arctic (including its communities, permafrost, sea ice, land ice, freshwater incursion into the ocean, flora, fauna, and weather patterns). Demonstrate to people worldwide how these changes impact every country on earth.
   - **Economic and living conditions:** Promote solutions for the challenges faced by Arctic residents and communities, particularly in the American Arctic, including energy access, freshwater access, sanitation, and suicide.
   - **Sustainable economic development:** Encourage business development that increases opportunities for Arctic residents and creates the necessary infrastructure to support increased human activity in the Arctic while protecting the Arctic environment.
   - **Arctic Ocean health:** Raise awareness and understanding of ocean acidification and marine pollution and how these affect marine species and the local, national, and international economies that rely on them; show how related challenges can be addressed and solved through international cooperation and technical measures;
   - **Search and Rescue (SAR):** Increase understanding of the challenges of SAR operations in remote Arctic communities and the Arctic Ocean in order to decrease the risk of future disasters.
   - **Geostrategic:** Maintain the Arctic as a region of peace and cooperation where countries work together within accepted legal norms on scientific, environmental, and other activities despite tensions that may exist among them outside the Arctic.
   - **Capacity-building:** Build capacity among scientists, engineers, regulators, academics, journalists, and others who relate to the Arctic in a positive way through exchange programs and other partnerships.

Deliverable and timing: Outreach will start in earnest immediately following the Iqaluit Ministerial meeting with concentrated efforts during official Arctic Council meetings in a steady flow of activities and media activities.

Mechanism: U.S. Government agencies, domestic interests. If interested, others could participate such as the Council's Communications & Outreach Group. Discussions can be held among the SAOs and PPs, as appropriate.