



2015 YEAR IN REVIEW

Progress Report on the Implementation of the National Strategy for the Arctic Region

PREPARED BY THE:
Arctic Executive Steering Committee

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Executive Summary

The United States made tremendous progress in 2015 in advancing the Nation’s strategic goals and policies for the Arctic region. This region continues to undergo rapid climate-related changes that are dramatically affecting its ecosystems and its people. These changes make it imperative for the United States to engage strategically within the region to address the growing risks and challenges to its long-term economic, ecological, and cultural values.

The 2013 *National Strategy for the Arctic Region* (Strategy) set forth the U.S. Government’s strategic priorities for the Arctic region. The Strategy’s purpose is “to position the United States to respond effectively to challenges and emerging opportunities arising from significant increases in Arctic activity due to the diminishment of sea ice and the emergence of a new Arctic environment.” The 2014 *Implementation Plan for the National Strategy for the Arctic Region* (Implementation Plan) set forth “the methodology, process, and approach for executing the Strategy.” To date, the United States has successfully advanced many of the Strategy’s objectives through a combination of independent actions, bilateral initiatives, and multilateral cooperation.

This *2015 Year in Review — Progress Report on the Implementation of the National Strategy for the Arctic Region* details the status of U.S. efforts in the Arctic under the three lines of effort outlined in the Strategy:

1. *Advance United States Security Interests*
2. *Pursue Responsible Arctic Region Stewardship*
3. *Strengthen International Cooperation*

The implementation of these lines of effort has been supported by programs overseen by specified Federal entities in coordination with the State of Alaska and Alaska Natives, as well as international, regional, and local stakeholders. In addition to outlining the Federal Government’s advancement of the Strategy through the Implementation Plan, this report also calls out progress to advance the Strategy through new and additional supporting initiatives, such as:

- Implementation of over 35 commitments announced by President Obama during his historic 2015 trip to the Arctic;
- Implementation of the January 21, 2015 Executive Order on Enhancing Coordination of National Efforts in the Arctic;
- Implementation of the Interagency Arctic Research Policy Committee’s Arctic Research Plan (*see Appendix B*); and
- Progress made in implementing emerging priorities identified by the Arctic Executive Steering Committee.

In 2016, the Arctic Executive Steering Committee (AESC), will continue to develop and strengthen cooperative relationships with the State of Alaska and Alaska Natives. Through these relationships, as well as those with domestic and international stakeholders, the AESC will seek to regularly evaluate and prioritize actions that provide for the safety, security, economic prosperity, and environmental sustainability of the region. To further this effort, the AESC has updated the 2014 Implementation Plan with the 2016 *National Strategy for the Arctic Region Implementation Framework*. Included as Appendix A, the Framework incorporates emerging initiatives—many of which were introduced in 2015—into the existing lines of effort to ensure the United States continues to advance its strategic goals in the Arctic.

Introduction

The Arctic is undergoing rapid changes that are dramatically affecting its ecosystems and its people. The region's long-term economic, ecological, and cultural values make it of critical importance to the United States as well as to the global environment and economy.

The United States made tremendous progress in 2015 in advancing strategic goals and policies for the Arctic. The 2013 *National Strategy for the Arctic Region* (Strategy) prioritized efforts to protect U.S. national security interests, promote responsible stewardship in the Arctic region, and foster domestic and international cooperation. The *Implementation Plan for the National Strategy for the Arctic Region* (Implementation Plan) was released in early 2014, and set forth the methodology, process, and approach for executing the Strategy. To date, the United States has advanced many of the Strategy's objectives by implementing a combination of independent actions, bilateral initiatives, and multilateral cooperation. In 2015, these included implementing the January 2015 Executive Order 13689, *Enhancing Coordination of National Efforts in the Arctic*, which included establishment of the Deputy Secretary-level Arctic Executive Steering Committee; the United States' assumption of the chairmanship of the Arctic Council for 2015-2017; progress in carrying out the Interagency Arctic Research Policy Committee's Arctic Research Plan; and announcement of a number of Arctic initiatives during the President's historic trip to the Arctic.

This report details the Arctic activities undertaken by the Federal Government during 2015, many in coordination with the State of Alaska and Alaska Natives, as well as with international, regional, and local stakeholders. It highlights implementation of new initiatives and the status of action items across the three lines of effort described in the Strategy and its Implementation Plan.

Many of the actions stated in the Implementation Plan are now complete, some are in progress, and a number of new initiatives have been announced during the past year. In order to capture the scope of ongoing efforts, Appendix A of this report provides an updated Implementation Plan framework for use in 2016 and beyond. This new framework:

- Incorporates new initiatives into the existing lines of efforts;
- Incorporates the Interagency Arctic Research Policy Committee Research Plan by reference into Line of Effort 2; and
- Removes those actions listed in the 2014 Implementation Plan that have been completed, or where priorities have shifted.

Implementation of the Executive Order on Enhancing Coordination of National Efforts in the Arctic

The Arctic Executive Steering Committee (AESC) was established on January 21, 2015, by Executive Order 13689, *Enhancing Coordination of National Efforts in the Arctic*.¹ At its first meeting in February 2015, the AESC² established six interagency working groups to address actions required in the Executive Order and to advance emerging issues related to the Arctic region. These working groups advanced the Federal Government's leadership within the region as outlined in the following sections.

Host GLACIER Conference

Under the leadership of the Department of State, the AESC established a working group to coordinate development of the "Conference on Global Leadership in the Arctic: Cooperation, Innovation, Engagement and Resilience" (GLACIER). The conference held on August 31, 2015, in Anchorage, Alaska, highlighted U.S. international and domestic priorities in the Arctic.

The conference brought together Foreign Ministers of Arctic nations and key non-Arctic states with scientists, policymakers, Native peoples, and stakeholders from Alaska and the Arctic. It created a platform to unify individual and collective action to address climate change in the Arctic and the Arctic's unique role in global climate change. Participants identified ways that Arctic innovators are responding to these challenges, addressing topics such as: Building the Resilience of Arctic Coastal Communities in the Face of Climate Change, Strengthening International Preparedness and Cooperation for Emergency Response, Protecting Communities and the Environment through Climate and Air Quality Projects, and Strengthening Observation Networks.

President Barack Obama delivered the closing address for the conference, during which he called for urgent global action to address climate change.³ The President then visited several areas of Alaska, including the village of Kotzebue. The President's trip was the first-ever

¹ Executive Order 13689, *Enhancing Coordination of National Efforts in the Arctic*, is available at: <https://www.gpo.gov/fdsys/pkg/DCPD-201500039/pdf/DCPD-201500039.pdf>

² The AESC is comprised of the following members: Office of Science and Technology Policy (Chair); National Security Council (Vice Chair); Executive Director, Arctic Executive Steering Committee; U.S. Arctic Research Commission; Council on Environmental Quality; Department of Agriculture; Department of Commerce; Department of Defense; Department of Energy; Department of Homeland Security; Department of Housing and Urban Development; Department of Health and Human Services; Department of the Interior; Department of Justice; Department of Labor; Department of State; Department of Transportation; Domestic Policy Council; Environmental Protection Agency; Office of the Chief of Staff; Office of the Director of National Intelligence; Office of Management and Budget; Office of Public Engagement and Intergovernmental Affairs; Office of the Vice President; National Aeronautics and Space Administration; and National Science Foundation.

³ The full text of President Obama's closing remarks is available at: <https://www.whitehouse.gov/the-press-office/2015/09/01/remarks-president-glacier-conference-anchorage-ak>

presidential visit to the U.S. Arctic region. During his visit, the President made commitments to advance resilience, including investments to address climate impacts that can no longer be avoided; assist remote Alaskan communities; and enhance safety and security in the Arctic. He also committed to taking new steps to improve the Federal Government's collaboration with Alaska Natives, the State of Alaska, and local communities.

Improve Tribal Consultation and Engagement with the Alaska Native Community

A key element of Executive Order 13689 is to improve the Federal government's consultation process with the Alaska Native community. The AESC is working through the Department of Health and Human Services (HHS) to form a task force to ensure more effective consultation and collaboration with Alaska Native tribes and other entities, including Alaska Native corporations. HHS will convene the task force under its own consultation authorities.

Launch Energy Efficiency Competition among Remote Alaskan Communities

During his 2015 trip to Alaska, President Obama announced a competition on ways to increase energy efficiency in Alaska. The competition was proposed by an AESC-established interagency team led by the Department of Energy (DOE). The new \$4 million Remote Alaskan Communities Energy Efficiency Competition is intended to accelerate efforts by remote communities and Native villages to develop reliable, affordable, and energy-efficient solutions that can be replicated throughout Alaska and potentially in other Arctic regions. In April 2016, up to 20 communities are expected to be selected from the applicants to receive technical assistance to gather baseline energy data and develop energy plans. In October 2016, a subset of these communities will be selected to receive up to \$1 million each to implement energy efficiency improvements.

Arctic-Specific Plan to Strengthen Oil Spill Prevention, Preparedness, and Response

At the direction of the AESC, the Department of Homeland Security (DHS), through the United States Coast Guard (USCG), was charged with leading an interagency task force to develop Arctic-specific recommendations that strengthen the Nation's ability to prevent and respond to oil spills in the Arctic. The USCG is actively working with partners to implement the three actions that the task force and AESC identified as high priorities:

- *Evaluate opportunities to revitalize Alaska's Area Committees as the primary means of enhancing Area Contingency Planning in the Arctic.* The USCG will initiate a programmatic review of Area Contingency Planning in USCG District 17 based on the

requirements of current laws and regulations. A framework for completing this action is being developed.

- *Enhance collaboration on bilateral agreements with neighboring Arctic countries.* The United States has Joint Contingency Plans (JCPs) in place with both Canada and Russia and has signed a Letter of Intent with Norway. The USCG is working with Canada to update the applicable annexes of the Canada-United States JCP in preparation for a 2016 Beaufort Sea exercise hosted by Canada. Additionally, the United States is party to the multilateral Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (MOSPA) and its corresponding Operational Guidelines with the other seven Arctic nations.
- *Pursuant to the MOSPA Agreement, strengthen support for joint international training and related exercises through the Arctic Council's Emergency Prevention, Preparedness, and Response (EPPR) Working Group activities.* The United States hosted an EPPR workshop in September 2015 to address lessons learned from a 2014 Canada-led exercise and to identify high-risk scenarios in preparation for a United States-led 2016 EPPR Arctic Oil Spill Response Exercise. The workshop also resulted in familiarization of each Arctic nation's pollution response capabilities for development of a future Pan-Arctic Spill Response Equipment Database and improvement of the EPPR Operational Guidelines.

Establish Arctic Coastal Erosion Working Group

The AESC directed the formation of an interagency Coastal Erosion Working Group (CEWG), co-chaired by the Department of Housing and Urban Development (HUD) and the Department of the Interior (DOI). The CEWG was charged with developing recommendations for ways to coordinate the Federal response to the imminent threat of coastal erosion and other climate-related hazards to Alaskan Arctic coastal communities. The CEWG has delivered several recommendations to the AESC thus far, including the following:

- The Denali Commission, an independent Federal agency charged with promoting economic development in rural Alaska, should be designated as the coordinating body and contact point for this effort. The recommendation was implemented in September 2015 when President Obama announced that the Denali Commission would assume this role.
- The AESC should partner with the Alaska Department of Commerce, Community, and Economic Development's Division of Community and Regional Affairs (DCRA) and other State and local agencies to establish pilot programs, such as Village Planning Groups, with at-risk coastal communities to address coastal erosion impacts and to prioritize assistance for managed retreat, voluntary relocation, and other resilience efforts.

- The village of Newtok is using a multi-agency Village Planning Group approach to plan the voluntary relocation of the village, which is suffering from erosion and resulting flooding.
- Using a Coastal Impact Assistance Program grant from the United States Fish and Wildlife Service, the DCRA established similar Village Planning Groups with the villages of Shishmaref, Shaktoolik, and Kivalina. The CEWG is working to further enhance collaboration and coordination of Federal agencies' participation in these groups.
- The CEWG also created the first compendium of Federal resilience programs and funding resources for Alaskan communities: the Climate Resilience in Alaskan Communities Catalog of Federal Programs. The President announced this resource in September 2015, and it is now available on the Denali Commission website.⁴

⁴ The document, *Climate Resilience in Alaskan Communities Catalog of Federal Programs*, is available at: <https://www.denali.gov/publications>

Initiatives Announced during the President’s Historic 2015 Visit to Alaska and the Arctic

During President Obama’s 2015 trip to Alaska and the U.S. Arctic region—historic in that it marked the first time a U.S. President ever visited the region—he announced new Federal priorities and investments to advance the Nation’s efforts to enhance safety and security in the changing Arctic Region, to assist remote Alaskan communities, and to address climate change impacts. These new initiatives are briefly outlined in the paragraphs that follow.

Promote Year-Round Access to Polar Regions

In September 2015, the President announced accelerated acquisition of new Coast Guard icebreakers to develop and maintain the United States’ capacity for year round access within the polar regions. The growth of human activity in the Arctic region demands highly engaged stewardship to maintain open seas for global commerce and scientific research, provide search and rescue services for those in distress, and maintain regional peace and stability. After World War II, the United States had seven icebreakers in its fleet, four under the U.S. Navy and three under the U.S. Coast Guard. Today, the United States owns three icebreakers in its fleet, all under the command of the U.S. Coast Guard. However, when age and reliability are taken into account, the fleet is down to the equivalent of two fully functional icebreakers only one of which can conduct heavy-duty icebreaking operations.

To take concrete steps towards year-round access to the polar regions, the President announced accelerated acquisition of a replacement heavy icebreaker and directed planning for construction of additional icebreakers. The President called on Congress to work with the Administration to provide sufficient resources to fund these critical investments and in order to do so, the Fiscal Year 2017 Budget requests \$150 million to complete all planning and design activities necessary to begin production of a Coast Guard icebreaker by 2020. These heavy icebreakers will ensure that the United States can meet our national interests, protect and manage our natural resources, and strengthen our international cooperation.

Map and Chart Arctic Waters

Increased priority has been given to mapping and charting the Bering, Chukchi, and Beaufort Seas to promote safe Arctic marine operations and transportation:

- In 2015, the National Oceanic and Atmospheric Administration (NOAA) ships *Fairweather* and *Rainier* worked with the USCG icebreaker *Healy* to acquire 12,000 linear nautical miles of trackline depth measurements along the USCG’s proposed transit route between the Bering Strait and Dutch Harbor. The NOAA ships and a contractor also conducted several full bottom coverage hydrographic survey projects, acquiring about 300 square nautical miles of data in coastal areas along western Alaska, specifically

Dutch Harbor and the southern Alaska Peninsula, Kotzebue Sound, Port Clarence, and Point Hope.

- In 2016, NOAA's Office of Coast Survey will acquire survey data in areas around Etolin Strait, the Southern Alaska Peninsula, and the approaches to the Yukon River, with plans to return to the North Slope in 2017. The data will be used to assess and update nautical charts.
- In fiscal year (FY) 2015, NOAA updated 1,714 nautical miles of shoreline on Alaskan nautical charts. This effort is continuing into FY 2016.
- NOAA, the United States Geological Survey (USGS) within the Department of the Interior (DOI), and the State of Alaska are collaborating to advance shoreline and near-shoreline coastal mapping by using satellite data. This action has been determined to be critical to monitoring climate change. NOAA is incorporating USGS, State of Alaska, and other stakeholder input to prioritize locations for FY 2016 satellite imagery-based shoreline products. In support of ongoing efforts, the June 2016 Coastal Mapping Summit/Joint Airborne Lidar Bathymetry Technical Center of Excellence Workshop will include an Alaska-focused coordination meeting to support advancing these efforts.

Evaluate Deepwater Port Capabilities

There currently are no U.S. deep-water harbors north of Dutch Harbor to provide shelter to vessels in the Arctic region. To address this need, the U.S. Army Corps of Engineers is evaluating the feasibility of deepening and extending harbor capabilities in Nome, Alaska. As part of this effort, a draft Environmental Assessment was published in the Federal Register in February 2015. The planning, funding, and implementation timeline originally called for on-site operations to tentatively begin in 2020. Shell Oil Company's recent decision not to continue Arctic oil exploration will require the project to be reevaluated because harboring vessels involved in offshore oil development was a critical driver in the cost-benefit analysis of the draft Environmental Assessment.

Monitor Climate Change

NOAA will update and install additional instrumentation on the Arctic coast to monitor the effects of climate change and enable safe marine operations and transportation. In support of this Presidential initiative:

- In 2016, NOAA will establish a permanent National Water Level Observing Network station to monitor sea-level rise. Six temporary water-level stations were installed and removed in 2015 as part of the preparations for the permanent station. NOAA and partners are working to prioritize locations for water-level sensors in order to close

observation gaps needed to update nautical charts, notify weather warning services, and support community resilience efforts.

- In early 2016, NOAA plans to announce that new near-real-time operational Arctic sea-ice thickness satellite imaging is scheduled to be operational in July 2016.

In September 2015, the Bureau of Indian Affairs Tribal Climate Resilience Program awarded \$1.38 million to support internships for tribal youth working on projects or performing research directly related to climate change impacts.

To enhance community-based monitoring, NOAA contributed nearly \$300,000 for a project to foster adaptation in Alaska Native coastal communities to maintain or improve health and vitality by anticipating and adapting to change. The project, “Resilient Alaska Native Coastal Communities: Integrated Socio-ecological Monitoring and Assessment Supporting Adaptation Decisions” will continue for 2 years. Preliminary results are expected at the end of 2016 with final project deliverables due in early 2018.

The Administration expanded its Climate Data Initiative and Climate Resilience Toolkit (CRT) in 2015 to include a new “Arctic” theme.⁵ This update encompasses more than 250 Arctic-related data sets and more than 40 maps, tools, and other resources designed to support climate-resilience efforts in Alaska and the Arctic. To further assist Tribal Nations with climate change planning, adaptation, and mitigation, the Administration also expanded the CRT in 2015 to include a “Tribal Nations” theme, which is comprised of more than 40 available resources.

Monitor Arctic Biodiversity

In 2015, the Bureau of Ocean Energy Management (BOEM) launched the new Arctic Marine Biodiversity Observation Network (AMBON) project in partnership with University of Alaska Fairbanks, NOAA, and Shell Oil Company. The goals of AMBON are to: close gaps in taxonomic and spatial coverage in biodiversity observations; integrate U.S. Arctic shelf research programs into an Arctic biodiversity observation network with publicly accessible data; demonstrate how a sustainable observing network could be developed for this region; and link with international pan-Arctic programs. In September 2015, AMBON completed the first sampling cruise as part of an intended 5-year demonstration project. Provisional results will be presented at the 2016 Alaska Marine Science Symposium and the 2016 Open Science Meeting. Plans for two future cruises are being reevaluated as a result of Shell Oil Company’s withdrawal from the project. All collected AMBON data will be provided to the Arctic Council’s Arctic biodiversity database and will be made available to promote increased international understanding and research efforts.

⁵ The U.S. Climate Resilience Toolkit can be accessed at: <https://toolkit.climate.gov/>

Support Use of Traditional Knowledge in Arctic Observing

Given the critical role of monitoring changing physical and biological conditions in the Arctic and its importance to Arctic communities, the U.S. Government continues to coordinate with Arctic Council working groups and other international entities to support a session on community-based observing at the upcoming Arctic Observing Summit to be held in Fairbanks, Alaska, in March 2016. The Arctic Council and International Arctic Science Committee are sponsoring this event. A complementary event took place in October 2015 in Seattle, Washington, at the “Best Practices and Data Standards for Community Based Observing Networks and Systems” workshop, which was sponsored by the National Geospatial-Intelligence Agency (NGA) and conducted by the University of Idaho.

Through Environmental Protection Agency (EPA) grants, the Alaska Native Tribal Health Consortium (ANTHC) has released a beta version of the Local Environmental Observer (LEO) Reporter Application in Alaska for Apple iPhone iOS platforms. This application allows observers to share their environmental observations using photos and text, complete with GPS locations. ANTHC also released a LEO Viewer Application for Apple iPhone iOS platforms that allows viewers to experience the observations and technical consults posted by network members. An Android version of both applications is expected to be released in the spring of 2016. In 2016, EPA, ANTHC, and other partners will be promoting circumpolar expansion of the LEO Network with the Arctic Council.

Support Community Resilience

To increase the Federal Government’s support and coordination of coastal resilience in Alaska, the President announced that the Denali Commission will coordinate Federal, State, and tribal resources to assist communities in developing and implementing measures to address impacts of climate change, including coastal erosion, flooding, and permafrost degradation. As part of this effort, the Denali Commission has committed \$2 million to support resilience strategies for vulnerable rural Alaskan communities. In addition, the President called on Congress to provide sufficient funding for the Commission’s critical activities. In December 2015, Congress passed the FY 2016 omnibus appropriations bill providing a total of \$15 million for the Denali Commission, \$1 million more than requested in the President’s 2016 Budget. The Denali Commission will also coordinate with other Federal agencies to serve as the Federal Government’s focal point on matters relating to coastal resilience in Alaska.

To assist U.S. Arctic coastal communities in addressing their specific resilience needs, the AESC created and released a catalog in September 2015 of available programs and funding resources. The catalog is posted on the Denali Commission website (<https://www.denali.gov/publications>) and will be updated annually.

To assist vulnerable communities that lack capacity to address climate resilience, DOE, EPA, NOAA, and the Corporation for National and Community Service are working with the

Rockefeller Foundation and Cities of Service to launch a nationwide, 2-year Resilience AmeriCorps pilot program to recruit, train, and embed AmeriCorps VISTA members in 10 U.S. communities, one of which is Anchorage, Alaska. Training for the new Anchorage VISTA members is scheduled for early 2016.

To assist with climate-related relocation and managed retreat decision-making, HUD is currently developing a set of principles for guidance when using HUD funding for voluntary community relocations. As part of outreach for this effort, HUD (in compliance with its Tribal Government-to-Government Consultation Policy) will continue working with the Newtok Planning Group and will collaborate with the State of Alaska and other agencies in support of Village Planning Groups for Shaktoolik, Shishmaref, and Kivalina.

Assist Rural Community Water and Sewer Systems

In September 2015, the United States Department of Agriculture (USDA) published a final rule that revised definitions and eligibility for the Rural Alaska Villages Grant Program so that in certain circumstances water system conditions do not have to be “dire” before assistance can be provided. This rule will reduce vulnerabilities of critical drinking water infrastructures in Alaskan villages. USDA also provided \$15.9 million in new grants for 17 projects as part of that program. These new grants will help remote Alaskan villages provide safe, reliable drinking water and waste-disposal systems for households and businesses. Also in 2015, EPA provided \$7.1 million in grants for the construction of new and improved drinking water and wastewater systems in nine Alaska Native village communities. EPA provided another \$2.8 million grant to the State of Alaska for operations and maintenance training, and other technical assistance for these systems.

Improve Access to USDA Rural Development Resources

In 2015, the USDA signed cooperative agreements totaling \$240,000 with four Native nonprofit organizations in western Alaska. These agreements extend the reach of USDA and improve access of hard-to-reach populations to USDA Rural Development programs including housing, community facilities, wastewater systems, and broadband.

Tribal Disaster Declarations

The Federal Emergency Management Agency (FEMA) is consulting with Federally-recognized tribal governments to gather input on the second draft of the Tribal Declarations Pilot Guidance that, when finalized, will describe the process that tribal governments will use to request Stafford Act declarations and the criteria that FEMA will use to evaluate those direct tribal declaration requests and make recommendations to the President. This second draft reflects input from the previous consultation, through which FEMA received over 1,000 comments from more than 200 tribes through 60 calls and listening sessions. The second draft guidance was

posted to the Federal Register for comment in January 2016. FEMA will utilize feedback received during the consultation period to inform the final pilot guidance.

Support Less Costly and More Efficient Rural Energy Systems

DOE's Office of Indian Energy released a report on "Tribal Energy System Vulnerabilities to Climate Change and Extreme Weather" in September 2015.⁶ This report focuses on impacts on energy systems that support tribal communities and is designed to help prepare tribal communities for the impacts of climate change.

As discussed in the "2015 Actions to Implement the Executive Order on Enhancing Coordination of National Effort in the Arctic" section of this report, DOE launched a \$4 million initiative to accelerate efforts by remote Alaskan communities to adopt sustainable energy strategies, through a competitive effort that will allow Arctic communities to develop and advance renewable energy solutions.

In September 2015, the White House and the State of Alaska launched the Clean Energy Solutions for Remote Communities to focus on expanding investment in climate solutions for remote communities. Potential investment announcements are expected to be made in early 2016 with DOE providing technical assistance.

In September 2015, DOE made a Funding Opportunity Announcement that will award up to \$6 million to deploy clean energy projects and energy-efficiency projects on Indian lands in 2016. DOE's Office of Indian Energy has solicited applications from Indian tribes (including Alaska Native regional corporations and village corporations) and Tribal Energy Resource Development Organizations to install facility-scale clean energy and energy efficiency projects and community-scale clean energy projects on Indian lands. Award notifications are expected in June 2016.

USDA awarded approximately \$1.5 million in High Energy Cost grants to assist power providers in three Alaska communities with lowering energy bills for families and individuals in areas with extremely high per-household energy costs. Additionally, in 2015 the Rural Utilities Service's High Energy Cost Grant program provided \$1.5 million to the Denali Commission to assist its partners in improving electric infrastructure in rural and remote villages in Alaska and nearly \$3 million to the Kipnuk Light Plant to finance a high-penetration wind-diesel heat system.

In October 2015, the Denali Commission awarded approximately \$15.5 million in grants to support bulk fuel facilities and rural power system upgrades/power generation across rural Alaska. Funds will be provided from the Denali Commission's programmatic funds as well as the Trans-Alaska Pipeline Liability Fund.

⁶ This report is available at: <http://energy.gov/indianenergy/downloads/tribal-energy-system-vulnerabilities-climate-change-and-extreme-weather>

Improve Mapping of Alaska

The National Science Foundation (NSF), NGA, and the University of Minnesota's Polar Geospatial Center are collaborating to produce, based on commercial high-resolution satellite imagery, the first-ever publicly available Digital Elevation Models (DEMs) of Alaska by mid-2016, and of the entire Arctic region by the end of 2017. Eight DEMs are now available for public use. Elevation data and data products support and inform land management, sustainable development, safe recreation, and scientific studies, as well as domain-specific challenges inherent to the aviation, transportation, and defense industries. The data will serve as a benchmark against which future landscape changes can be measured.

Additionally, in 2015, NGA completed development of the most comprehensive pan-Arctic map ever published by the U.S. Government. This map is available on the NGA public website, and includes multiple layers of information and data that users can download.⁷ This website also provides links to the first set of Alaska DEMs discussed in the preceding paragraph, nautical charts for the Arctic region, sailing directions, and other Arctic resources.

USGS worked with the State of Alaska to improve maps and elevation models to unprecedented accuracy levels. Overflights of the Alaskan Arctic were equipped with new sensors that generated Interferometric Synthetic Aperture Radar (ifSAR) data that complement Alaska and Arctic DEMs. Over 60 percent of data on Alaska were collected in 2015. By the end of FY 2015, over 30,000 square miles of new ifSAR data will be acquired over northeast Alaska, including the Arctic National Wildlife Refuge, and over 1,000 new digital U.S. topographical quadrangle maps will be produced for Arctic Alaska, providing highly detailed maps for many coastal communities and the National Petroleum Reserve in Alaska.

Enhance Collaboration with Alaska Native Communities

In August 2015, the Secretary of the Interior restored the Koyukon Athabascan name of "Denali" to the tallest mountain in North America, previously known as "Mt. McKinley." This designation recognizes the sacred status of Denali to generations of Alaska Natives.

In 2015, DOI provided \$375,000 in funding for the Kuskokwim River Inter-Tribal Fish Commission and the Yukon River Inter-Tribal Fish Commission to help build their capacities for full engagement in salmon-management opportunities. This initiative builds upon the 2014 DOI demonstration project to promote tribal cooperative management of fisheries within the Kuskokwim River drainage.

In 2015, under the leadership of DOI, the Administration launched an Arctic Youth Ambassador program to bring together Alaskan youth from urban and rural areas, including Alaska Natives, to share their perspectives, learn together, and prepare to become young stewards of the Arctic way of life. Twenty-two Youth Ambassadors have been selected and will

⁷NGA's public website can be accessed at: nga.maps.arcgis.com

be invited to participate in several events to be held during the U.S. chairmanship of the Arctic Council, including a Youth Ambassador Summit in early 2016.

The U.S. Fish and Wildlife Service (USFWS), National Fish and Wildlife Foundation, Alaska Native Science and Engineering Program (ANSEP) of the University of Alaska Anchorage, and Rasmuson Foundation established a 3-year \$1 million grant to support positions at the USFWS (known as Refuge Information Technicians or RITs) and summer employment for ANSEP students. This program will help bridge the gap between Alaska Native communities, conservation science, and natural resource management. The first RIT was selected in March 2015 with a goal of having five RITs employed annually. In addition, 10 ANSEP students were selected in 2015, and an additional 16 students are expected to be employed in 2016.

Line of Effort 1: Advance United States Security Interests

The U.S. Government's highest priority continues to be protecting the American people, our sovereign territory and rights, and the natural resources and other interests of the United States. To do this successfully within the Arctic region, the Federal Government has continued to build and maintain capacity and capabilities to promote safety, security, and stability in the region. This line of effort is being accomplished through various actions aimed at accomplishing the objectives set forth in the *National Strategy for the Arctic Region* as follows: preparing for increased activity in the maritime domain; sustaining and supporting evolving aviation requirements; developing communication infrastructure in the Arctic; enhancing Arctic domain awareness; sustaining Federal capability to conduct maritime operations in ice-impacted waters; promoting international law and freedom of the seas; and developing renewable and non-renewable energy resources.

Prepare for Increased Activity in the Maritime Domain

In March 2016, the interagency Committee on the Marine Transportation System (CMTS) is expected to complete a 10-year prioritization framework to coordinate the phased development of Federal infrastructure in the U.S. Arctic region. In 2015, the CMTS conducted extensive research and analysis including identifying maritime transportation system users and its supporting communities' infrastructure needs, component interrelatedness, sequencing of development, and feasibility. A draft framework has been developed and is nearing final review. The framework report will expand upon the 2013 CMTS report, *Marine Transportation System in the U.S. Arctic: Overview and Priorities for Action*, and complements the January 2015 report *10-Year Projection of Maritime Activity in the U.S. Arctic*. Once the framework is completed, the CMTS will develop recommendations for pursuing Federal public-private partnerships in support of infrastructure needs.

Sustain and Support Evolving Aviation Requirements

In 2015, the Federal Aviation Administration (FAA) deployed eight additional Automatic Dependent Surveillance-Broadcast (ADS-B) ground stations to advance the improvement of air safety in Alaska. This deployment brings the total number of ADS-B ground stations to 41. These stations provide pilot-advisory services (cockpit traffic and weather information) and air-traffic-control separation services, including surveillance, weather, and communications improvements. The recent ADS-B ground-station installations in the North Slope, Alaska Peninsula, and Lake Clark-Bristol provide enhanced safety, increased efficiency, and additional benefits to general aviation, air carrier, and military air traffic. With these additions, surveillance has been extended in the North Pacific Ocean transition area for commercial airliners flying into

Alaska. One additional ADS-B radio station will be installed at Adak, Alaska, and that station is planned to be operational by the end of 2016.

The FAA is upgrading the Wide Area Augmentation System (WAAS) by installing hardware at all Alaskan Wide-area Reference Stations that will enable reception of the new civil GPS frequency. The transition to the use of the new frequency and upgraded hardware will increase aviation signal stability and reliability, enhancing aviation safety in Alaska's remote regions. Development efforts are underway for two new geostationary satellites that will provide redundant coverage of the WAAS signal to all of Alaska.

The FAA continues to enhance aviation safety and security in rural and remote Alaska:

- In September 2015, FAA completed expansion and reconstruction of the runway safety area of the Kotzebue—Ralph Wien Memorial Airport, which included shifting the runway 200 feet, removing a hillside obstruction, increasing security for FAA navigational aids and landing systems, and installing runway end identifier lights at each runway end.
- Construction is in progress at Nome Airport to construct runway safety areas, relocate a runway 600 feet to the northeast, relocate runway-end identifier lights, and install Precision Approach Path Indicators.

Develop Communication Infrastructure in the Arctic

In 2015, the National Telecommunications and Information Administration led and completed the *Assessment of Communications Facilities and Services in Arctic Alaska*. This document assesses the availability of telecommunications services and infrastructure in the Arctic region and the use of new technology to support improved communications in the region. The assessment's findings will be used to support development of communications infrastructure in the Arctic.

Enhance Arctic Domain Awareness

Working through the DHS's Office of University Programs Centers of Excellence, USCG and NOAA researchers are leveraging the University of Alaska Anchorage's Arctic Domain Awareness Center (ADAC) and the Stevens Institute Center for Maritime Research to examine the use of unmanned aircraft systems (UASs) in the Arctic to collect ship tracking, meteorological, oil spill, and hydrographic data. As part of this arrangement, ADAC researchers participated in the July 2015 Arctic Technology Evaluation aboard USCG Cutter *Healy*, performing carbon-isotope sampling and radar-based ice movement predictions.

Additionally, the USCG continues to work with various academic and government entities to evaluate surface and submersible/semi-submersible unmanned systems to address gaps in data collection. These entities include: Space and Naval Warfare Systems Command, Naval

Undersea Warfare Center Newport, NOAA's Pacific Marine Environmental Laboratory, and Woods Hole Oceanographic Institution in collaboration with Bureau of Safety and Environmental Enforcement and ADAC.

The USCG is coordinating with the FAA as it assesses use of UASs for operational missions. During a 2015 search-and-rescue exercise, ConocoPhillips and its aviation partner, Insitu, flew a UAS from shore and then passed control to a shipboard operator to conduct a simulated search for an offshore downed private aircraft. FAA provided an air space corridor between sections of special use air space to allow the UAS to fly out to international waters to conduct the exercise. Such collaborative work will continue in 2016-2017 as USCG grows its UAS research and provides FAA with information to support its UAS Comprehensive Plan.

As part of a national effort to expand public awareness of UAS technology innovation opportunities, FAA conducted a series of nationwide public meetings in 2015 at UAS test range complexes. The Pan-Pacific UAS Test Range Complex meeting held at the University of Alaska Fairbanks focused on Arctic collaboration. Through Alaska test site operations, the FAA is receiving valuable data on UAS capabilities in the region. Test site projects in 2015 included oil spill detection, Arctic mammal monitoring, air sampling, and operational evaluation of UASs in Arctic conditions.

The USCG is working with Arctic nations and the International Maritime Organization to enhance Long Range Identification and Tracking (LRIT) system capabilities in the Arctic.

The Department of Defense (DOD) is collaborating with USCG, NOAA, other governmental agencies, and Transport Canada, on the Polar Communication and Weather (PCW) mission to improve communications and collection of environmental data by satellite. To date, requirements have been generated, responses to a Transport Canada "Request for Information" have been collected, and Transport Canada is now preparing a "Request for Proposals."

Federal maritime agencies continue to develop the Maritime Information Sharing Environment (MISE) to grow the capability to receive information from diverse sources, analyze the information, and disseminate information to stakeholders. Implementation of MISE is several years away.

In 2015, the Federal Bureau of Investigation (FBI) worked to protect critical infrastructure and mitigate risks in the Arctic region by providing educational and defensive briefings to U.S. industry partners regarding threats emanating from criminal, terrorist, and hostile intelligence organizations. Through its public-private partnerships, industry liaison platforms, and private-sector information-sharing initiatives, the FBI will continue to help commercial organizations throughout the U.S. Arctic protect themselves from physical, cyber, and human threats.

Sustain Federal Capability to Conduct Maritime Operations in Ice-Impacted Waters

The USCG completed the Polar Icebreaker (PIB) Operational Requirements Document (ORD). The PIB ORD outlines the operating requirements needed to meet USCG's polar mission gaps. The document identifies a robust set of effectiveness and suitability requirements to effectively operate in the polar regions.

In addition, the USCG, working through United States Maritime Administration, has awarded a preservation dry dock contract for USCG Cutter *Polar Sea*. The dry dock will arrest any further deterioration of the ship and will simultaneously allow the Coast Guard to conduct a material condition assessment to inform a future alternatives analysis for reactivation or decommission of *Polar Sea*. USCG Cutter *Healy* continues to support Operation Arctic Shield and science activities in the Arctic during the summer months.

Promote International Law and Freedom of the Seas

Federal agencies conducted military exercises and operations in the Arctic in accordance with international law.

Pursue the Development of Renewable Energy Resources

In October 2015, DOE launched Solarize Alaska. This public-private partnership will advance small scale solar projects in Arctic villages. A series of public-private partnership meetings are being planned for 2016 to advance private investments in renewable energy.

Throughout 2014 and 2015, DOE scoped the needed and existing efforts for renewable energy deployments in tribal and public entities across Alaska. These efforts include ongoing development of the Ten Year Renewable Energy Plan for Alaska, the Alaska Rural Utility Study, and the Alaska Microgrid Project. DOE's Office of Indian Energy created a draft integration plan in April 2015 and is working with Alaska Energy Authority to create a Memorandum of Understanding to expand DOE's coordination with Federal, State, tribal, native, and other key stakeholders.

In 2014, the DOE competitively selected five Alaskan communities to receive technical assistance funds from the Strategic Technical Assistance Response Team (START) Program. These funds were used to implement weatherization retrofits to community buildings, and to install biomass combined heat and power and renewable systems. The completed projects are now saving those Native Alaska village communities up to 30 percent on electric bills for their affected buildings. Additionally, in 2015, DOE's Office of Indian Energy partially funded the deployment of weatherization and solar systems on the main office building of the Gwichyaa Zhee Gwich'in Tribal Government in Fort Yukon, Alaska.

In 2015, DOE's Office of Indian Energy provided technical assistance funding to the Association of Village Council Presidents (AVCP) to facilitate the development of community energy plans for the member villages of the Yukon-Kuskokwim Delta. AVCP is a tribal consortium of 56 Alaska Native villages and is one of the original 13 Alaska Native Claims Settlement Act regions.

Ensure the Safe and Responsible Development of Non-Renewable Energy Resources

Bureau of Ocean Energy Management (BOEM) researchers recently concluded a 2-year multi-disciplinary collaboration in the Chukchi Sea that focused on the Burger and Klondike offshore oil and gas prospects. This research program, funded by the oil and gas industry, provided physical, chemical, biological, and oceanographic baseline trends for the study area. The objective of the benthic ecology component was to document species composition, density, and biomass, including investigations of the structure of meiofauna, macrofauna, and megafauna communities.

Under BOEM's leadership, current benthic and lower trophic data are either being recorded or are now available to provide critical monitoring and baselines of benthic development impacts and climate change. Specific accomplishments include the following:

- In 2015, BOEM completed field sampling in the central Beaufort Sea as part of its long-term Arctic Nearshore Impact Monitoring in the Development Area (ANIMIDA) project. This project extends long-term monitoring for detecting changes in chemical contamination, turbidity, biological productivity, and impacts to subsistence activities. Over 20 presentations specific to the ANIMIDA data and the Beaufort Sea will be showcased during the biennial Ocean Sciences Meeting being held in February 2016.
- In 2015, BOEM launched the Marine Arctic Ecosystem Study in the eastern Beaufort Sea to extend monitoring data of benthic and pelagic productivity at designated sampling stations. Full-scale sampling is planned for the summer of 2016.
- BOEM is nearing completion of several surveys of fish and lower trophic communities in the Beaufort Sea, which represent the first systematic survey across the benthic habitat of the Beaufort Sea's continental shelf and slope.
- Through the Coastal Marine Institute cooperative study agreement, BOEM is co-funding an Arctic estuary field survey. Initiated in 2015, this survey extends a multi-year program that contributes to the understanding of the ecological connections between coastal and marine Outer Continental Shelf watershed.

To support development of a regionally tailored, scientific and technical approach to offshore leasing, BOEM created exploration and development scenarios in 2014 and 2015 for Alaska Outer Continental Shelf Planning Areas. These scenarios will be used to evaluate potential lease sales for the 2017-2022 leasing program. The analysis included detailed

information and scheduling of projected potential infrastructure installation and the annual schedule for oil and gas production and other anticipated activities resulting from past, present, and future leasing programs.

DOI's Bureau of Land Management (BLM) completed an interagency report on the capacity and integrity of the Trans-Alaska Pipeline System.

DOI's Bureau of Safety and Environmental Enforcement (BSEE), working with interagency partners, remains committed to regulating and researching Arctic oil spill preparedness to improve the capturing of hydrocarbons in response to an oil spill including the loss of well control:

- BSEE provided the regulatory leadership that resulted in the 2015 creation of the first Arctic Capping Stack and Containment system, designed to both lessen and eliminate the amount of oil released into the environment in the event of a well control event.
- BSEE completed a project in 2015 that provides an analysis of historic data to quantify how frequently environmental conditions may preclude oil spill response operations in the Beaufort and Chukchi Seas.
- BSEE-led research is underway that focuses on tools to enhance mapping and detection of oil under icy conditions.
- All 60 completed and ongoing projects related to Arctic oil spills are available for review on the BSEE website (<http://www.bsee.gov/Technology-and-Research/Research/>).

In February 2015, BSEE and BOEM published a Notice of Proposed Rulemaking for Arctic-specific regulations to advance spill prevention and environmentally sound development of offshore Arctic oil and gas. The proposed regulations incorporated lessons learned from Shell Oil Company's 2012 offshore exploratory drilling operations. The proposed regulations stress safe and responsible exploration and require operators to submit region-specific oil spill response plans, have prompt access to source control and containment equipment, and have assets available to drill a relief well in a timely manner in the event of a loss of well control. The public comment period on the draft regulations has been completed, and the regulations are undergoing interagency review.

In April 2015, the Arctic Offshore Regulators Forum (AORF) convened its first meeting with representatives from Arctic nations in Washington, D.C. BSEE, on behalf of the United States, currently holds the AORF chairmanship. As a recommendation made by the Arctic Council's Task Force on Arctic Marine Oil Pollution Prevention, the AORF will now regularly convene to enhance the capacity of Arctic offshore petroleum regulators to promote oil pollution prevention through regular exchanges of knowledge, best practices, and technical information.

Line of Effort 2: Pursue Responsible Arctic Region Stewardship

Preserving Arctic resources and cultural heritage continues to require responsible stewardship through active conservation of resources, balanced management, and the application of scientific and traditional knowledge to physical and living environments. Implementing this second line of effort focused on: furthering actions led by the Interagency Arctic Research Policy Committee; conserving Arctic ecosystems; improving hazardous material spill prevention, containment, and response; implementing Integrated Arctic Management; understanding human health; and charting the Arctic region.

Actions of the Interagency Arctic Research Policy Committee

Throughout 2015, the Interagency Arctic Research Policy Committee (IARPC) continued to advance interagency scientific understanding of the Arctic region by implementing the *Arctic Research Plan: FY 2013-2017* (Arctic Research Plan). The IARPC agencies include the Office of Science and Technology Policy, Department of Commerce, Department of Defense, Department of Energy, Department of Health and Human Services, Department of Homeland Security, Department of the Interior, Department of State, Department of Transportation, Environmental Protection Agency, Marine Mammal Commission, National Aeronautics and Space Administration, National Science Foundation, Smithsonian Institution, Department of Agriculture, and U.S. Arctic Research Commission. Each year, IARPC produces an annual report outlining its achievements to advance scientific milestones through its 12 collaboration teams.

A number of the actions in the Arctic Research Plan are similar in nature to research action items listed in the Implementation Plan. These overlapping actions are:

- Develop a framework of observations and modeling to support forecasting and prediction of sea ice;
- Develop integrated ecosystem research in the Beaufort and Chukchi Seas;
- Improve understanding of glacial dynamics;
- Understand terrestrial ecosystem processes;
- Investigate wildland fires in the Arctic;
- Understand atmospheric processes to improve climate predictions;
- Integrate Arctic regional models;
- Improve Arctic community sustainability, wellbeing, and cultural and linguistic heritage;
- Understand human health in the Arctic; and

- Increase understanding of the Arctic through scientific research and traditional knowledge.

To avoid duplication of reporting for the above-listed Implementation Plan objectives, this report incorporates the IARPC *5-Year Plan Collaboration Teams: 2015 Summary of Accomplishments and 2016 Priorities* as Appendix B, and does not separately report on the duplicate Implementation Plan actions.⁸

Conserve Arctic Ecosystems

NOAA provided a key component of a coordinated approach to baseline exploration and monitoring in the Arctic through its 10th annual Arctic Report Card, a peer-reviewed source for environmental information on different components of the Arctic environmental system relative to historical records. *Arctic Report Card 2015*,⁹ released in December 2015, relies in part on Sea Ice Index data from NOAA's National Snow and Ice Data Center, much of which is available through [Data.gov](http://data.gov).

In 2015, NOAA collected foundational information to build scenarios for subsistence and commercial use of living marine resources and undertook studies to inform an ecosystem model. This work will continue in 2016 to identify sensitive Arctic areas that will inform Chukchi and Beaufort leasing plans, the Bering Strait Port Access Route Study, the Aleutian Island Risk Assessment, and pollution response preparedness.

In December 2015, NOAA and the Arctic Waterways Safety Committee convened a subsistence hunting-research vessel coordination workshop. The workshop facilitated collaboration between coastal marine mammal subsistence communities in the Bering Strait and Beaufort and Chukchi Seas and the Federal and international research community to begin development of a protocol to increase communication, coordination, mutual respect, and sharing of information. The protocol will be developed as a Standard of Care for the forthcoming Arctic Waterways Safety Plan to mitigate impacts of research vessels on Alaska Native subsistence hunts in the High Arctic. The goal is to have the Standard of Care completed and ready for full implementation in fall 2016.

In November 2015, the Marine Protected Areas Federal Advisory Committee's Arctic Working Group met to begin development of recommendations on the role of marine protected areas (MPAs) in conserving Arctic marine resources. The working group is made up of diverse stakeholders and Alaska Natives to advise U.S. leadership (particularly that of NOAA and DOI) on MPA issues during the U.S. chairmanship of the Arctic Council. MPA Federal Advisory Committee recommendations will be developed in 2016.

⁸ Appendix B, *5-Year Plan Collaboration Teams: 2015 Summary of Accomplishments and 2016 Priorities*, is also available at: <http://www.iarpccollaborations.org/uploads/cms/documents/iarpc-annual-report-2015.pdf>

⁹ NOAA's *Arctic Report Card 2015* is available at: <http://www.arctic.noaa.gov/reportcard/>

Improve Hazardous Material Spill Prevention, Containment, and Response

As part of the ongoing effort to implement lessons learned from exercises simulating oil spills in the Arctic, the USCG conducted a 2-day Oil Spill Response Exercise in Kotzebue, Alaska, in 2015. The USCG worked with local responders from the Kotzebue Fire Department, Northwest Arctic Borough, National Park Service, and Alaska Department of Environmental Conservation. USCG spill response equipment was deployed and the local Subarea Contingency Plan was tested and updated.

The Alaska Regional Response Team is finalizing the new Dispersant Use Plan for Alaska and anticipates approval in early 2016. This plan will enhance region-wide dispersant use protocols, including reinstating preauthorization zones for high-risk transit areas, ensuring compliance with environmental laws. The plan will also align with the State of Alaska's statutes and administrative codes for dispersant usage. Implementation will include a 24-month period to enable industry compliance and allow for the creation of locally developed dispersant use avoidance areas.

The National Academy of Sciences published its Arctic Spill Response Assessment in August 2014.¹⁰ The Alaska Regional Response Team is currently incorporating the assessment's recommendations into its ongoing and planned work.

Use Integrated Arctic Management to Balance Economic Development, Environmental Protection, and Cultural Values

The interagency Integrated Arctic Management (IAM) team, in collaboration with the State of Alaska, continues to develop an interagency Memorandum of Understanding (MOU) for the implementation of IAM. Consultation with the Alaska Native community, which is expected to begin in late 2016, will use recommendation processes being developed by the AESC Tribal Consultation Task Force.

There was continued progress in implementing recommendations from the Interagency Working Group on Coordination of Domestic Energy Developing and Permitting in Alaska's 2013 Report to the President, *Managing for the Future in a Rapidly Changing Arctic*.¹¹ Most notable was the establishment of the Arctic Executive Steering Committee, which fulfilled a recommendation to ensure ongoing high-level White House leadership on Arctic issues. Other actions included:

¹⁰ *Responding to Oil Spills in the U.S. Arctic Marine Environment* is available at: http://www.nap.edu/catalog/18625/responding-to-oil-spills-in-the-us-arctic-marine-environment?utm_medium=email&utm_source=The+National+Academies+Press&utm_campaign=Final+Book+2014.08.04+-+Responding+to+Oil+Spills&utm_content=&utm_term=

¹¹ The report, *Managing for the Future in a Rapidly Changing Arctic*, is available at: <https://www.doi.gov/sites/doi.gov/files/migrated/news/upload/ArcticReport-03April2013PMsm.pdf>

- BLM set aside nearly half of the National Petroleum Reserve-Alaska to protect wildlife, subsistence, and historical resources in 2013. For the portion of the Reserve that is open to oil and gas development, BLM is currently developing a long-term landscape-level regional mitigation strategy rather than undertaking project-by-project mitigation efforts as was previously done—a key concept within IAM. This strategy is being developed through a collaborative, multi-stakeholder process that includes representatives from across Alaska.
- In 2014-2015, DOI and the IAM team implemented a portion of the recommendations termed “coordinated and streamlined Federal actions” by working with the Department of State to incorporate and align domestic Arctic resilience priorities into the U.S. Arctic Council chairmanship program. This effort informed the development of the U.S. chairmanship, including program initiatives regarding invasive species, coastal erosion, climate data-sharing, and resilience research.

In addition, a number of Integrated Arctic Management actions from the Implementation Plan duplicate nationwide Ecosystem-Based Management (EBM) milestones under the *National Ocean Policy Implementation Plan*. In late 2014, these overlapping milestones were transferred for action to the National Ocean Policy EBM Working Group under the National Ocean Council.

Promote Community Sustainability and Health

The Department of Transportation awarded a \$2.9 million grant to the Alaska Native Village of Point Hope through the Transportation Investment Generating Economic Recovery (TIGER) program. This TIGER grant, awarded in October 2015, will provide funds to redesign and construct five critical roads, construct sidewalks, and improve accessibility to transit facilities to meet Americans with Disabilities Act standards.

In addition to the accomplishments relating to human health in the Arctic that are captured in the IARPC’s *5-Year Plan Collaboration Teams: 2015 Summary of Accomplishments and 2016 Priorities*, the Department of Health and Human Services (HHS) supported additional programs in Alaskan communities throughout 2015:

- The Garrett Lee Smith State/Tribal Youth Suicide Prevention and Early Intervention Grant Program provided support to States and Tribes in developing and implementing youth suicide prevention and early intervention strategies.
- The Native Connections/Tribal Behavioral Health Grant Program assisted with the prevention and reduction of suicidal behavior and substance abuse and promoted mental health among American Indian/Alaska Native youth.
- The Tribal Training and Technical Assistance Center provided comprehensive training and technical assistance to federally recognized tribes and other American Indian/Alaska Native communities to address and prevent mental and substance use disorders and suicide and to promote mental health.

- A grant was awarded to develop culturally responsive public-health intervention strategies that will reduce youth suicidal behavior and bolster protective factors in remote Arctic tribal communities of Northwest Alaska.
- HHS supported research through the University of Alaska's Center for Alaska Native Health Research, where researchers collaborated with tribal and local communities on such topics as nutrition and alcohol and drug abuse.

Line of Effort 3: Strengthen International Cooperation

Advancing sound policies and strategies in the Arctic will continue to require international coordination and collaboration. To strengthen international cooperation, the third line of effort in the Strategy, Federal agencies focused on: promoting oil pollution preparedness, prevention, and response; enhancing search and rescue; preventing unregulated high seas fishing; reducing transport of contaminants; identifying and assessing invasive species risks and impacts; promoting scientific research and monitoring with international partners; developing and executing the U.S. agenda for the chairmanship of the Arctic Council; reducing black carbon; addressing considerations associated with acceding to the Law of the Sea Convention; delineating the outer limit of the United States extended continental shelf; developing the International Maritime Organization Polar Code; and promoting waterways management.

Promote Arctic Oil Pollution Preparedness, Prevention, and Response Internationally

A U.S. delegation led by the USCG supported the Arctic Council Task Force on Oil Pollution Prevention (TFOPP) in 2015. The task force developed a non-binding *Framework Plan for Cooperation on Prevention of Oil Pollution from Petroleum and Maritime Activities in the Marine Areas of the Environment*. The framework was accepted by the Arctic Council at the Ministerial meeting in April 2015. The TFOPP's work is complete and implementation will be undertaken by the Arctic Council working groups.

Enhance Arctic Search and Rescue

In October 2015, the U.S. Northern Command, Alaskan Command, Department of State, and USCG coordinated and sponsored Arctic Zephyr, an annual international search-and-rescue (SAR) table-top exercise at the University of Alaska Anchorage. Participants included representatives from seven of the eight Arctic nations. Arctic Zephyr focused on a mass rescue operation scenario to test Arctic responsibilities, coordination nodes, and protocols laid out in the *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic* and to identify areas for improvement.

In October 2015, the USCG and eight Arctic nations signed a joint statement establishing the international Arctic Coast Guard Forum (ACGF). The ACGF is an operationally focused, consensus-based organization that leverages collective resources to foster safe, secure, and environmentally responsible maritime activity in the Arctic.

Prevent Unregulated Arctic High Seas Fisheries

In July 2015, Canada, Denmark, Norway, Russia, and the United States, the five Arctic States with exclusive economic zones bordering the high seas portion of the central Arctic Ocean, signed a declaration to prevent unregulated fishing in the central Arctic Ocean. The five

countries committed to only permit their vessels to conduct commercial fishing in the high seas area once international mechanism(s) are in place to manage fishing in accordance with international standards. The declaration also reflects the intention to establish a joint program of scientific research and monitoring to improve the understanding of the area's ecosystems. The Department of State is convening negotiations among the five States, plus China, Iceland, Japan, South Korea and the European Union, to develop a possible binding agreement consistent with the declaration. At the first meeting in December 2015, the parties agreed to convene a fourth scientific meeting in fall 2016.

The USCG, acting as the DHS Executive Agent for Maritime Domain Awareness (MDA), and the Office of the DOD Executive Agent for MDA, are co-leading an implementation planning team in response to the Presidential Task Force on Combating Illegal, Unreported, and Unregulated Fishing and Seafood Fraud. This task force requested that the Secretaries of Defense and Homeland Security include analyzing and monitoring illegal, unreported, and unregulated fishing as a component of U.S. and international efforts to increase maritime domain awareness globally as well as in the Arctic.

Reduce Transport of Contaminants

The United States continues to support U.S. ratification of the *Stockholm Convention on Persistent Organic Pollutants*. The Convention protects against the harmful effects of chemicals that persist in the environment and enter the food chain. The Convention is particularly important for the people of Alaska, whose environment and foods are impacted by persistent organic pollutants transported by air and water from other parts of the world.

In 2015, the United States participated in the “Technical Information Exchange Workshop on Mercury Abatement in the Metallurgical Industry,” held in Russia, under the auspices of the Arctic Council's Arctic Contaminants Action Program (ACAP) Working Group. With technical and policy support from EPA, the workshop advanced an ACAP mercury emissions control project to reduce the effect of mercury emissions from non-ferrous metals smelting in the Russian Arctic. It also served as an emissions control technology workshop to assist Russia in preparing to implement the *Minamata Convention on Mercury*.

Identify and Assess Invasive Species Risks and Impacts

In the spring of 2015, the U.S. Arctic Invasive Species Working Group (AISWG) was created to consolidate and remove redundancies with the Interagency NSAR Invasive Species Team and the U.S. delegation to the Arctic Council's Conservation of Arctic Flora and Fauna (CAFF) Working Group's Arctic Invasive Species Project (AISP). Led by DOI, the AISWG developed a joint proposal with Norway to create a CAFF invasive species project working group. In October 2015, this proposal was accepted. The AISP is providing an international collaboration platform that will:

- Develop a strategy for the prevention and management of invasive species across the Arctic, including the identification and mitigation of pathways of introductions of invasions. This effort is set to be completed by 2017.
- Incorporate common protocols for early detection and reporting of non-native invasive species in the Arctic into the Circumpolar Biodiversity Monitoring Program. This effort is set to be completed by 2019.

Promote Scientific Research and Monitoring

In the 2015 Iqaluit Declaration, Arctic Council Ministers extended the Scientific Cooperation Task Force mandate to work towards an international, legally binding instrument that would remove obstacles to science cooperation in the Arctic. Negotiations are underway and the agreement is expected to be ready for signature at the 2017 Ministerial Meeting.

NOAA and the National Snow and Ice Data Center worked with the World Glacier Monitoring Service to add 1,200 photographs of glaciers to the online Glacier Photograph Collection, which provides consistent data on glacier fluctuations. The collection is part of the Global Terrestrial Network for Glaciers, operated in support of the *United Nations Framework Convention on Climate Change*.

Develop a Robust Agenda for the U.S. Chairmanship of the Arctic Council

In 2014 and 2015, the Department of State (DOS) conducted stakeholder outreach listening sessions with the State of Alaska and Alaska Natives. Engagement with Alaskans on Arctic Council activities remains a key U.S. priority. In 2015, the DOS Special Representative for the Arctic created three Alaska liaison positions to facilitate closer cooperation with Alaska Natives. Additionally, former Lieutenant Governor Fran Ulmer was named as a Special Advisor to the Secretary of State on issues of Arctic science and policy, including Alaska-specific matters.

The overarching theme of the U.S. chairmanship of the Arctic Council, “One Arctic: Shared Opportunities, Challenges and Responsibilities,” incorporates three thematic areas: improving economic and living conditions in Arctic communities; maintaining Arctic Ocean safety, security, and stewardship; and addressing the impacts of climate change. All projects proposed by the United States have been introduced into the appropriate Arctic Council subsidiary bodies and are making progress as reported at the Senior Arctic Officials meeting in October 2015. The U.S. chairmanship will conclude in spring 2017 with a Ministerial meeting in Alaska, when the United States will transfer the chairmanship to Finland.

Reduce Black Carbon in the Arctic

The Arctic Council’s “Framework for Action on Enhanced Black Carbon and Methane Emissions” was endorsed at the 2015 Arctic Council Ministerial Meeting. The non-binding

framework calls for Arctic nations to accelerate the decline in overall black carbon emissions and to significantly reduce methane emissions. An expert group was also established at the meeting to review implementation of the framework and report to the Arctic Council Ministers in 2017. The United States incorporated input from multiple Federal partners in its national report on black carbon and methane emissions, which was submitted to the Arctic Council in October 2015.¹²

EPA conducted a number of successful diesel black-carbon mitigation demonstration projects during 2015:

- After determining that off-road vehicles at mines and on-road trucks and buses were the top emission sources in Russia's Murmansk region, EPA and its partners conducted a Murmansk bus company demonstration project that yielded a 90-percent decrease in black carbon and other emissions, reduced fuel and operations and maintenance costs, and improved service. The results were documented by the Arctic Council in the brochure, *Economic Benefits, Social Advantages, and Emission Reductions: Bus Fleet Upgrade by Murmanskavtotrans*.¹³
- EPA and its partners developed guidelines for engine repower/retrofits and vehicle replacement of diesel-powered off-road mining vehicles. These guidelines were published in a major Russian journal and a Battelle Memorial Institute report in July 2015.¹⁴
- EPA and its partners retrofitted a diesel generator facility and connected a wind turbine and low-emission back-up generator in a remote indigenous community in northwestern Russia. The work was completed and a verification site visit is scheduled for February 2016.
- EPA and its partners launched a community-based diesel generator project meant to be an alternative solution for diesel power generation at remote communities in the Russian Republic of Karelia. The project is scheduled for implementation starting in December 2015.
- EPA completed a beta version of a Black Carbon Case Studies Platform, which was presented to the Arctic Council in 2015.

¹² All black carbon and methane emissions national reports submitted by the United States and other Arctic member nations and observers can be found at: <https://oaarchive.arctic-council.org/handle/11374/1167>.

¹³ *Economic Benefits, Social Advantages, and Emission Reductions: Bus Fleet Upgrade by Murmanskavtotrans*; is available at: <https://oaarchive.arctic-council.org/handle/11374/389>

¹⁴ The guidelines, *Evaluation of Black Carbon Emission Reductions from Mining Trucks in Russia: The Case of the Murmansk Region*, is available at: http://www2.epa.gov/sites/production/files/2015-08/documents/bc_emission_reductions_from_mining_trucks_in_russia_for_508.pdf

EPA initiated work to develop updated black-carbon emissions estimates for the United States, which will be based on the next U.S. National Emission Inventory and is expected to be released in 2016. EPA is now working with Russian counterparts to further develop Russia's diesel black carbon inventory through the Arctic Council.

At the May 2015 meeting of the International Maritime Organization's Marine Environment Protection Committee (MEPC), the committee agreed on a standard definition of black carbon and noted the need to gain experience with the application of the definition and measurement methods. In February 2016, the MEPC Pollution Prevention and Response Subcommittee will address this need by developing a data collection and measurement protocol consistent with the new black carbon definition. Results of studies using this protocol will be reviewed by the MEPC to assess the impact on the Arctic of black carbon emissions from international shipping.

Having submitted the U.S. black carbon emission inventory as part of the *Convention on Long-Range Transboundary Air Pollution* in both 2014 and 2015, EPA worked with other Convention parties in 2015 to find collective gaps that might be addressed with the Arctic Council's Arctic Monitoring and Assessment Program (AMAP). In addition, EPA and DOE led a joint Arctic Council/Convention inventory workshop in 2015 to review the current state of science on black carbon and identify next steps in technical cooperation by the Convention and AMAP.

Accede to the Law of the Sea Convention

This Administration is committed to joining the *Law of the Sea* Convention, as were the last three administrations. Obtaining Senate advice and consent to accession remains a top priority. The continental shelf off northern Alaska is likely to extend more than 600 nautical miles. Although a coastal State's rights in its continental shelf do not depend on being a party to the Convention, becoming a party would help the United States increase international recognition and legal certainty regarding the outer limits of the U.S. continental shelf.

Delineate the Outer Limit of the U.S. Extended Continental Shelf

Over a 12-year period, nine cruises were conducted by the USCG, NOAA, USGS, and DOS, often undertaken in concert with Canadian authorities, to produce data sufficient to delineate the outer limit of the U.S. extended continental shelf in the Arctic. The Department of State and its Extended Continental Shelf Task Force partners continue to process, interpret, and document the data collected on these missions. This multi-year effort will continue in 2016.

Expedite International Maritime Organization (IMO) Polar Code Development and Adoption

The United States continues to prepare for the International Maritime Organization's Polar Code to enter into effect. Both safety and environment-related provisions of the Polar Code—via amendments to the *International Convention for the Safety of Life at Sea* (SOLAS) and the *International Convention for the Prevention of Pollution from Ships* (MARPOL)—have been adopted by the IMO. The safety and environmental amendments will enter into force in January 2017. Additional Polar Code amendments to the *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers* are expected to be adopted in 2016 and anticipated to enter into force in 2018.

Promote Arctic Waterways Management

The USCG facilitated the development of the Arctic Waterway Safety Committee. This nongovernmental committee is composed of a diverse group of Arctic maritime users that are dedicated to addressing safety, security, subsistence, and environmental issues facing the Arctic region. Modeled after very successful harbor safety committees in other parts of the United States, this Committee will serve as a platform to develop best practices and voluntary waterway guidelines. The committee approved its governing by-laws in March 2015.

Conclusion: Looking to the Future

The United States has had a highly successful year in implementing our *National Strategy for the Arctic Region*. Throughout 2015, the United States continued to demonstrate leadership, resourcefulness, and commitment to adapt to evolving domestic and international priorities for the Arctic region. In 2016, the members of the Arctic Executive Steering Committee (AESC), working with the State of Alaska and Alaska Natives as appropriate, will continue to evaluate and prioritize actions to provide for the short and long-term safety, security, and environmental sustainability of this region. To further this effort, the AESC has included as Appendix A an update to the 2014 Implementation Plan as a new framework for accomplishing on-going and future priorities. This update, the *Implementation Framework for the National Strategy for the Arctic Region*, incorporates new initiatives, many of which were introduced in 2015.

Abbreviations

ACAP	Arctic Contaminants Action Program
ADAC	Arctic Domain Awareness Center
ADS-B	Automatic Dependent Surveillance-Broadcast
AESC	Arctic Executive Steering Committee
AISP	Arctic Invasive Species Project
AISWG	Arctic Invasive Species Working Group
AMAP	Arctic Monitoring and Assessment Program
AMBON	Arctic Marine Biodiversity Observation Network
ANIMIDA	Arctic Nearshore Impact Monitoring in the Development Area
ANTHC	Alaska Native Tribal Health Consortium
AORF	Arctic Offshore Regulators Forum
AVCP	Association of Village Council Presidents
BLM	Bureau of Land Management
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
CAFF	Conservation of Arctic Flora and Fauna
CEWG	Coastal Erosion Working Group
CMTS	Committee on the Marine Transportation System
CRT	Climate Resilience Toolkit
DCRA	Division of Community and Regional Affairs
DEM	digital elevation model
DHS	Department of Homeland Security
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
EBM	ecosystem-based management
EPA	Environmental Protection Agency
EPPA	Emergency Prevention, Preparedness, and Response
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency management Agency
FY	fiscal year
GLACIER	Global Leadership in the Arctic: Cooperation, Innovation, Engagement and Resilience
GPS	global positioning system
HHS	Department of Health and Human Services
HUD	Department of Housing and Urban Development
IAM	Integrated Arctic Management
IARPC	Interagency Arctic Research Policy Committee

IFSAR	Interferometric Synthetic Aperture Radar
IWG	interagency working group
JCP	Joint Contingency Plan
LEO	Local Environmental Observer
LRIT	long-range identification and tracking
MEPC	Marine Environment Protection Committee
MISE	Maritime Information Sharing Environment
MOSPA	Marine Oil Pollution Preparedness and Response in the Arctic
MOU	memorandum of understanding
NOAA	National Oceanic and Atmospheric Administration
MPA	marine protected area
NGA	National Geospatial-Intelligence Agency
NSF	National Science Foundation
ORD	Operational Requirements Document
RIT	Refugee Information Technician
SAR	search and rescue
TFOPP	Task Force on Oil Pollution Prevention
TIGER	Transportation Investment Generating Economic Recovery
USCG	United States Coast Guard
UAS	unmanned aircraft system
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Services
USGS	United States Geological Survey
WAAS	Wide Area Augmentation System