

## Appendix A: Alignment of Arctic Research Plan 2022-2026 with the United States Arctic Research Commission Report on the Goals and Objectives for Arctic Research 2019-2020

The Arctic Research and Policy Act of 1984 (amended 1990) directs the Interagency Arctic Research Policy Committee (IARPC) to develop a national Arctic research policy and a five-year plan to implement that policy. It further directs IARPC to cooperate with the United States Arctic Research Commission (USARC) to establish “...a national Arctic research program plan to implement the Arctic research policy.”<sup>1</sup> One duty of USARC is to, every two years, produce a statement of goals and objectives with respect to Arctic research to help guide IARPC in the performance of its duties. The United States and international scientific communities have long benefited from the insightful analyses and guidance provided in USARC Report on the Goals and Objectives for Arctic Research. As laid out below, The Arctic Research Plan 2022-2026 (hereinafter referred to as “the plan”) is closely aligned with the five goals laid out in the USARC’s Goals Report 2019-2020. Close cooperation with USARC ensures federal research activities address concerns of greatest urgency and future research investments target U.S. national interests. The next USARC Goals and Objectives report is expected in early 2022.

**Arctic Research Plan Priority Area 1:** Priority Area 1: Community Resilience and Health has the goal to “Improve community resilience and well-being by strengthening research and developing tools to increase understanding of interdependent social, natural, and built systems in the Arctic”. This priority area and goal are well aligned with USARC Goal 4: Improve Community Health and Well-Being. Both goals recognize that health and well-being extend beyond physical health and disease and include culture and language, food security, and more. They also both recognize the increasing health disparities between Indigenous and non-Indigenous populations and the need to address them. USARC Goal 4 is also well-aligned with the plan’s Well-Being Policy Driver to enhance the wellness of Arctic residents with an emphasis on the themes of cultural vibrancy, food security, economic development, and mental and physiological health.

**Arctic Research Plan Priority Area 2:** Priority Area 2: Arctic Systems Interactions goal to “enhance our ability to observe, understand, predict, and project the Arctic’s dynamic interconnected systems and their links to the Earth system” is strongly linked to both USARC Goal 3: Observe, Understand, and Forecast Arctic Environmental Change and USARC Goal 1: Advance Arctic Infrastructure. Both goals and the priority area recognize the need for augmenting environmental Arctic change knowledge, observation and predictive capabilities. They also illustrate that the impacts of these changes are not limited to the Arctic and therefore are critical to informing decisions and actions worldwide. The importance of fundamental research in understanding Arctic environmental change is also specifically highlighted in Priority Area 2, as well as in the introduction to the plan.

**Arctic Research Plan Priority Area 3:** Priority Area 3: Sustainable Economies and Livelihoods goal is to “observe and understand the Arctic’s natural, social, and built systems to promote sustainable economies and livelihoods”. This priority area recognizes the impacts that changes such as thawing permafrost and coastal erosion have on Arctic infrastructure and calls for actionable research to better understand the Arctic’s built systems. USARC Goal 1: Advance Arctic Infrastructure states that advancing Arctic infrastructure and reducing infrastructure damage and costs require “timely preventative measures, based on a well-informed understanding of environmental conditions, and their projected changes over time”. Both USARC Goal 1 and Priority Area 3 recognize how critical reliable infrastructure is to community well-being and human activity in the Arctic. Priority Area 3 seeks to observe and understand the Arctic’s built systems to inform the adaptation of infrastructure to future environmental shifts. This

<sup>1</sup>U.S. Arctic Research Policy. February 3, 1986. [www.iarpcollaborations.org/uploads/cms/documents/arctic\\_research\\_policy\\_1986.docx](http://www.iarpcollaborations.org/uploads/cms/documents/arctic_research_policy_1986.docx)

is essential to USARC's goal of advancing Arctic infrastructure. Finally, Priority Area 3 specifically calls for the formation of a new collaboration team to focus on research related to infrastructure.

USARC Goal 2: Assess Arctic Natural Resources is also aligned with Priority Area 3. USARC highlights the need for research that "informs management of the Arctic's plentiful and rich natural resources, such as oil and gas, minerals, and wildlife". Recognizing how changes to the Arctic ecosystems impact "state, national, and global economies by affecting global shipping, access to natural resources, and fish and seafood stocks," Priority Area 3 supports research to inform management decisions that maintain the healthy ecosystems that provide critical natural resources.

**Arctic Research Plan Priority Area 4:** Priority Area 4: Risk Management and Hazard mitigation is connected to USARC Goal 1: Advance Arctic Infrastructure and USARC Goal 4: Improve Community Health and Well-Being. The goal of Priority Area 4 is to, "secure and improve quality of life through research that promotes an understanding of disaster risk exposure, sensitivity to hazard, and adaptive capacity". Achieving this goal requires advancing infrastructure (USARC Goal 1) to mitigate risk and hazards to built systems. Securing and improving quality of life is also directly tied to improving community health and well-being (USARC Goal 4).

**Arctic Research Plan Foundational Activities:** The USARC Report on the Goals and Objectives for Arctic Research directs attention to emerging topics in Arctic research including co-production of knowledge and use of advanced technology in Arctic research applications. The Arctic Research Plan 2022-2026 identifies participatory research (which includes co-production of knowledge) as a foundational activity and calls for co-production of knowledge in the introduction and again in priority areas 1 and 3. Technology Innovation and Application as a foundational activity of the plan promotes the importance of advanced technology in all aspects of the plan.

**International Cooperation:** The Arctic Research Plan 2022-2026 recognizes the importance of enhancing international scientific cooperation in the Arctic (USARC Goal 5). The introduction of the plan highlights international collaboration and relationship strengthening which are essential to understanding the interconnected processes that define the Arctic and advancing transboundary research challenges. The importance of enhancing international scientific cooperation is also specifically mentioned in priority areas 1, 2, and 3, the Data Management and Monitoring, Observing, Modeling, and Prediction foundational activities, and in the implementation chapter of the plan.