Opportunity to Plan and Develop a Comprehensive U.S. Arctic Research Infrastructure Network Hub at Oliktok Point, Alaska

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The U.S. does not have a comprehensive U.S. research facility in the High Arctic… but it could. The Arctic is changing rapidly, with impacts on environment, ecology, communities, industry, and security. These impacts are also felt globally via changes in weather patterns, ocean currents, and sea level. Human activity for resource extraction, shipping, tourism, and defense purposes is increasing. Infrastructure for search and rescue and emergency response is substandard; while coastal erosion, less sea ice, more storms, and thawing permafrost compromise infrastructure. All activity in the Arctic will benefit from improved understanding to forecast and predict operational conditions and future changes. As Arctic waters open, increased international activities will place greater demands for domain awareness to inform services and security. There is a compelling need for comprehensive U.S. Arctic research infrastructure to address pressing needs.

We identify the opportunity for a comprehensive, multi-agency U.S. High Arctic Research Center (HARC) and network as a national asset to address opportunities and challenges of Arctic change and impacts on energy, food and water security, economic and environmental health, and national security. HARC will contribute to a network to serve Federal and State government, industry, Arctic communities, and researchers in addressing infrastructure, emergency response, search and rescue, domain awareness, environmental change, and Arctic technology challenges. A facility at Oliktok Point, Alaska can serve as a hub for coordinated research in the U.S. Arctic between Toolik Lake, Utqiagvik (Barrow), and Prudhoe Bay; and can take advantage of unique assets. These include: access via land, sea and air; coastal, marine and terrestrial ecologies; controlled airspace across land and ocean; medical and logistic support; atmospheric observations; connections to Utqiagvik and Toolik research sites; broadband fiber-optic link; University of Alaska Fairbanks Unmanned Aircraft Systems (UAS) Test Facility partnership; and an airstrip and hangar for UAS. Combined with the Toolik Field Station and Barrow Environmental Observatory, they would provide complimentary research opportunities via an integrated network of U.S. Arctic Stations.

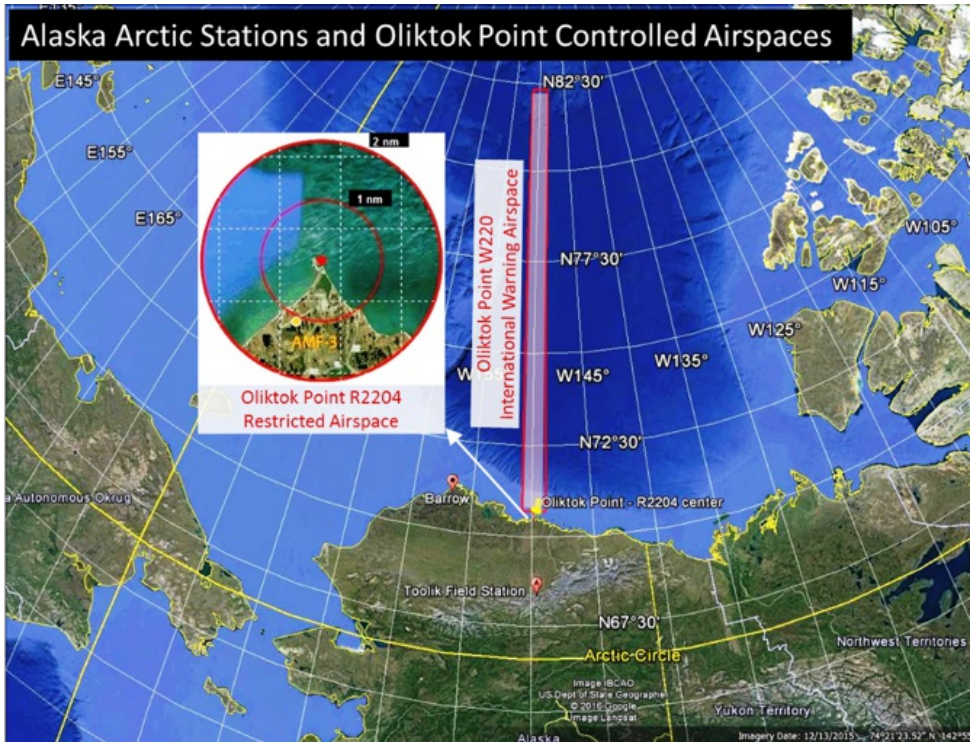

Figure 1. Locations of Alaska Arctic Stations and Controlled Airspaces.