EXECUTIVE SUMMARY

Over the last 20 years, the number of state- and federally-declared disasters in Alaska has increased dramatically. The majority of these disasters are caused by flooding and severe storms. Each year, these events put Alaskan communities at risk of loss of life and property. Recent studies indicate that the frequency and intensity of these storms is likely to increase, especially in the coastal regions of Alaska.

FEMA's flood hazard maps are one of the essential tools for flood hazard mitigation and implementation of the National Flood Insurance Program (NFIP) in the United States. These maps are used an estimated 20 million times annually in the private and public sectors. The State of Alaska and its local governments rely on FEMA flood hazard maps to regulate floodplain development and otherwise mitigate for flood losses. Flood hazard maps produced by FEMA currently serve 32 Alaska borough and city governments.

FEMA's efforts to provide flood hazard maps to inform the nation's understanding about flood risk have evolved significantly over the past nearly two decades. From 2002-2008, FEMA's Map Modernization (Map Mod) effort transformed most of the nation's flood hazard mapping inventory to 21st century digital technology and restored confidence in the reliability of floodplain boundaries, while making some updates to underlying engineering data. In order to leverage the successes of Map Mod and further enhance the use, value, and accuracy of flood hazard mapping and related data, FEMA developed the Risk Mapping, Assessment and Planning (Risk MAP) Program in 2008-2009.

Risk MAP represents a philosophical and tactical shift in how FEMA delivers information necessary for flood and other hazard reduction. The focus has shifted from digitizing maps (Map Mod) to evaluating flood hazard data needs, meeting flood hazard data needs, expanding data availability and improving data accessibility. While earlier mapping efforts took one-to-two years with little interaction with the community under study, the Risk MAP process typically takes four-to-six years, with extensive technical assistance provided to the community, combined with a more holistic approach that focuses not only on the flood maps, but on all hazards impacting the community, and how the new data, risk assessments and tools can be integrated into community plans and ongoing efforts to increase community resilience.

The goal of the Risk MAP Program is to increase local resilience by providing communities with natural hazard information and tools they can use to strengthen local ability to make informed decisions about reducing risk. A cornerstone of Risk MAP is the collaborative partnerships developed to increase community resilience to natural hazard risks.

DCRA and FEMA have collaborated for over 30 years to reduce loss of life and property through strategies and programs that reduce natural hazard risk in Alaska. As the State of Alaska's designated State Coordinating Agency for the NFIP, DCRA has actively participated in studying the status of flood hazard mapping and making recommendations for updating or creating new maps. Over the years, significant progress has been made through FEMA's mapping efforts and DCRA's Community Mapping Program. However, the data gathering and the prioritization scheme that formed the basis of DCRA's earlier mapping strategies had not undergone a comprehensive update to reflect mapping progress during

recent years. Consequently, mapping priorities identified in earlier plans did not reflect the current availability of mapping data, local socioeconomic conditions, natural hazard and climate change data as collected by various state and federal agencies.

In 2011, DCRA funded a new effort to rank and prioritize Alaska's watersheds based on a range of criteria specific to Alaska. To accomplish this, state agencies and local communities were coordinated with to obtain information and data necessary for the prioritization of mapping needs. A consulting firm, URS, Inc. (now AECOM), was hired to carry out this process. The process of data acquisition, analysis, and prioritization of future study needs resulted in a new tool, the ***Alaska Prioritization and Future Studies Sequencing Decision Support System,*** which has informed the identification of Alaska's mapping priorities over the past 8 years. This tool is described in detail in Chapter Seven**.** Since development of this prioritization methodology, 17 NFIP-participating local governments have been the recipients of Risk MAP studies. Each of these communities has received or is in the process of receiving non-regulatory risk assessment tools and products, with 10 communities receiving new or updated regulatory Flood Insurance Studies and Flood Insurance Rate Maps.

While the regulatory products of Risk MAP - the Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) - are a critical means to identify flood risk and provide local eligibility to receive federally-backed flood insurance, flooding is not the only natural hazard effecting Alaska's communities, nor is participation in the NFIP a suitable option for all Alaskan communities. Alaska's strategy for Risk MAP addresses both issues.

For example, several communities engaged in Risk MAP Studies have identified landslide, avalanche and erosion as significant threats. Risk MAP Cooperating Technical Partner Grant Program funding has been provided to the City and Borough of Sitka for a landslide study, to the City and Borough of Juneau for a landslide and avalanche hazard study, to the City of Emmonak for a channel migration study, and to the City of Homer for a coastal bluff stability study.

Alaska's Risk MAP Strategy also focuses on bringing the tools and products of Risk MAP to communities that don't participate in the NFIP. Unlike many other states where local governments with flood hazards have long been identified and mapped, Alaska has 109 incorporated municipal governments (cities and boroughs) that have no Flood Insurance Rate Maps. No ordinances exist to regulate floodplain development in these cities and boroughs, nor are they eligible to receive federal flood insurance. Many of these communities are highly flood-prone, resulting in costly State and federal disasters without the benefit of federal flood insurance.

Over the past two decades, awareness has increased of the number of communities, particularly in western and northern Alaska, whose safety and viability is being impacted not only by flooding, but also by erosion and permafrost degradation. A key impediment to these communities making progress in addressing these impacts is the lack of scientific study and data needed to more thoroughly understand the near-, mid- and long-term consequences of these impacts. Without quantifiable data, it is very difficult for these

communities, and the agencies assisting them, to make informed decisions and develop strategies to adapt and respond to hazard threats. A **Statewide Threat Assessment** conducted for the Denali Commission in 2019 identified 144 Alaska Native communities who are at risk to some extent from infrastructure damage from flooding, erosion and permafrost thaw (UAF et al., 2019)

The 2024 Alaska Mapping Business Plan provides a high-level approach to how the Alaska Risk MAP Program can help environmentally threatened communities who don't participate in the NFIP respond and adapt to flood and other hazard threats, while continuing to assist NFIP-communities in reaching their resilience goals.

The Alaska Mapping Business Plan provides an overview of Alaska's NFIP-participating local governments, their local and FEMA characteristics, and the status of Risk MAP studies within these communities. The plan discusses the new Risk MAP initiative to assist environmentally threatened Alaska Native Villages. The State of Alaska's Risk MAP Strategy is discussed, including the prioritization tool used to rank NFIP-participating communities for new Risk MAP Studies, and the process used to prioritize imminently-threatened Alaska Native Villages. Finally, the State's Risk MAP study recommendations and goals for the coming year are provided.

Figure 2: Yukon River Ice Jam at Galena, Alaska

Photo: Ed Plumb, National Weather Service

Figure 3: Tsunami and Coastal Flood-Elevated Home, Lowell Point, Kenai Peninsula Borough