Presented By:
City Manager

Action Taken:
Yes 5
No 0
Abstain 0

CITY OF NOME, ALASKA

RESOLUTION NO. R-17-01-03

A RESOLUTION APPROVING UPDATES TO THE NOME HAZARD MITIGATION PLAN

WHEREAS, the City of Nome received a grant from the Federal Emergency Management Agency (FEMA), which was administered by the Alaska State Department of Commerce, Community and Economic Development (DCCED), to prepare a flood mitigation plan; and,

WHEREAS, the Nome Planning Commission held public meetings on January 22, 2002; February 27, 2002; March 27, 2002; July 23, 2002; August 6, 2002; August 26, 2002; and September 10, 2002 regarding the Nome Flood Mitigation Plan, which was by then revised to be the Nome Hazard Mitigation Plan; and,

WHEREAS, at the September 10, 2002 meeting, the Planning Commission recommended that the Nome Common Council approve the Nome Hazard Mitigation Plan; and,

WHEREAS, on September 23, 2002, by way of Resolution R-02-09-06, the Common Council adopted the Plan; and,

WHEREAS, on February 15, 2008, by way of Resolution R-08-06-02, the Common Council approved updates to the Plan; and,

WHEREAS, the Planning Commission recently discussed additional updates to the Plan at its meetings of August 30, 2016; October 11, 2016; and December 6, 2016; and,

WHEREAS, at the meeting of January 3, 2017, the Planning Commission voted to advance the updates to the Common Council with a recommendation that they be ratified; and,

NOW, THEREFORE, BE IT RESOLVED that the Nome Common Council approves updates to the Nome Hazard Mitigation Plan.

APPROVED and **SIGNED** this 9th day of January, 2017.

RICHARD BENEVILLE, Mayor

ATTEST:

BRYANT HAMMOND, Clerk

CITY OF NOME
Phone/443-6663 Fax/443-5345

Memo

TO: Nome Common Council

FROM: Larry Pederson, Planning Commission Chairman LWP

THRU: Jill Nederhood, Deputy City Clerk

DATE: 1/6/2017

RE: Motion Recommending Approval of Updates to the Nome Hazard Mitigation Plan

---

The following motion was passed by the Nome Planning Commission at the Regular Meeting on Tuesday, January 3, 2017:

1. Moved by **K. Hughes** and seconded by **S. Lizak,** the following motion be approved as written:

    - **MOTION:** Recommend the Nome Common Council approve the suggested updates to the Nome Hazard Mitigation Plan.

      AT THE ROLL CALL:

      Ayes: J. Farley; J. Odden; L. Pederson; K. Hughes; C. Williamson; S. Lizak.

      The motion **CARRIED** unanimously.

Discussion concerning this motion is reflected in the minutes from the January 3, 2017 Meeting.

CITY OF NOME, ALASKA

PLANNING COMMISSION RESOLUTION NO. 2017-1: A RESOLUTION APPROVING THE 2017 NOME HAZARD MITIGATION PLAN UPDATE

Whereas, the City of Nome recognizes the threat that all hazards pose to people and property; and

Whereas, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

Whereas, an adopted local hazards mitigation plan is required as a condition of future grant funding for mitigation projects; and

Whereas, the Nome Planning Commission held numerous public meetings on the plan; and

Whereas, the Nome Planning Commission distributed the Nome Hazard Plan to the public for comment and review; and

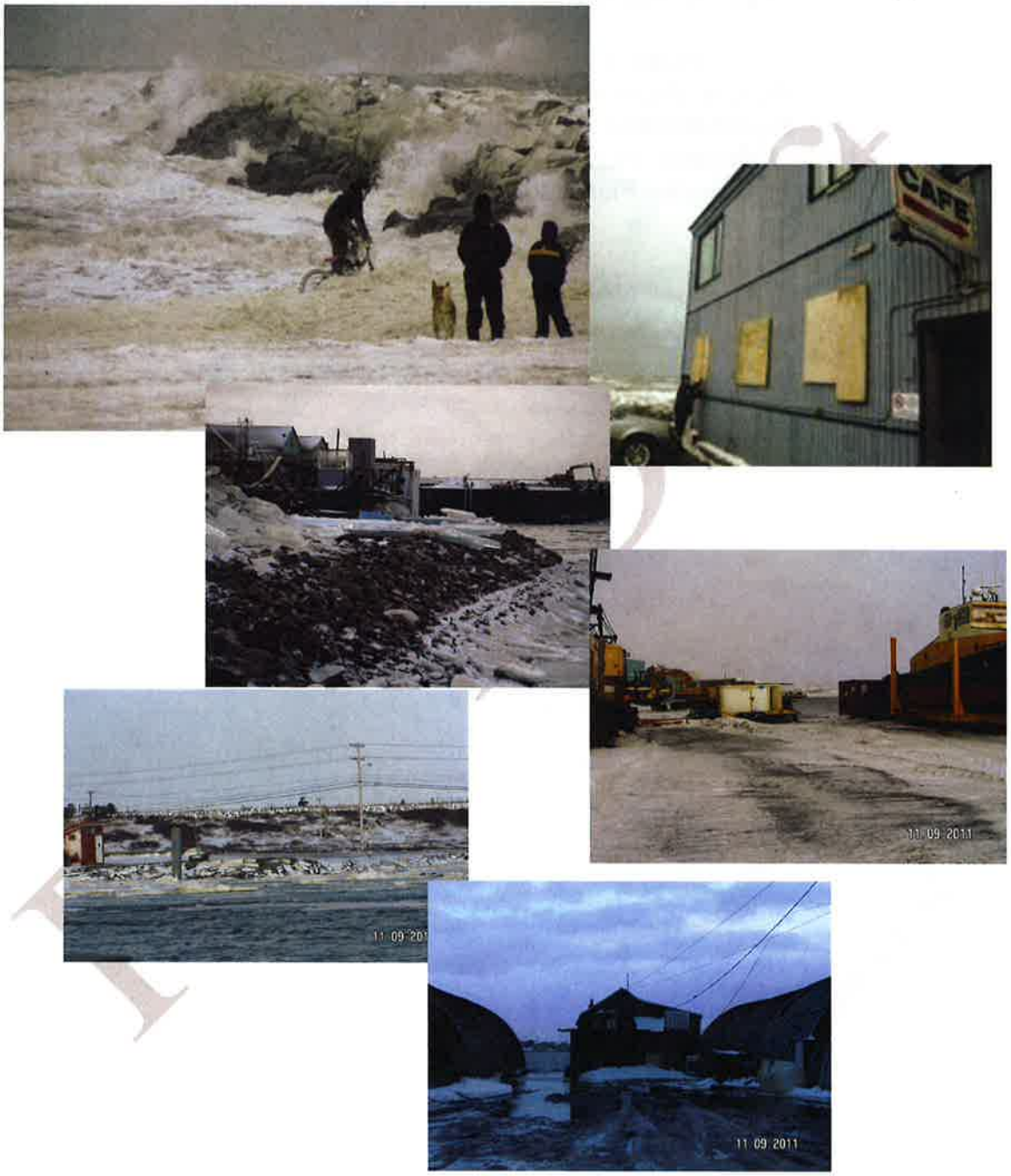
Now, therefore, be it resolved, that the Nome Planning Commission recommends the Nome Common Council approve the Nome Hazard Mitigation Plan.

APPROVED and **SIGNED** this 3rd day of January, 2017.

Larry Pederson, Chairman

Jill Nederhood, Deputy City Clerk

CITY OF NOME, ALASKA
HAZARD MITIGATION PLAN UPDATE
FINAL DRAFT



Storm Pictures 2011 and 2012 by City of Nome, Alaska

This 2016 Hazard Mitigation Plan update was financed by grant funds from the State of Alaska's Department of Military Affairs (DMVA), Division of Homeland Security and Emergency Management (DHS&EM) and Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation grant program funds.

Thanks to AECOM for the format used in this plan.

Nome's Hazard Mitigation Plans

Hazards Mitigation Plan, Approved January 6, 2003
Flood Mitigation Plan, Approved October 29, 2002
Hazard Mitigation Plan Update, Approved February 15, 2008
Hazard Mitigation Plan Update, Approved _____, 2016

November 14,2006
U.S. Department of Homeland Security
Region X
130 228th Street, SW Bothell, WA 98021-9796

FEMA
Dave Liebersbach, Director
Alaska Division of Homeland Security and Emergency Management
Department of Military and Veteran Affairs
P.O. Box 5750
Fort Richardson, Alaska 99505-5750

Attn: Scott Simmons, State Hazard Mitigation Officer

Dear Mr. Liebersbach:

We received a copy of" The City of Nome, Alaska, 2006 All-Hazards Plan Update August 18, 2006." As you are aware, this plan does not require FEMA re-approval until February 13, 2008 (five years). Since we have not received any guidance from FEMA Headquarters on the procedures or requirements for re-approving local mitigation plans, we feel the best course of action is to update our copy of the Nome Local Mitigation Plan and hold until further guidance is received.

We appreciate your staff and local community efforts in keeping their mitigation plans current. These efforts are very important, and we are grateful to your staff for keeping us informed of changes and updates in Alaska mitigation plans.

If you or your staff have any questions, please call Bruce Knipe at 425-487-4689.

Sincerely,

Carl L. Cook, Jr., Director
Mitigation Division

BK:gb

Table of Contents

Tables

Figures

Acronyms/Abbreviations

°F	Degrees Fahrenheit
ACCIMP	Alaska Climate Change Impact Mitigation Program
ACWF	Alaska Clean Water Fund
ADWF	Alaska Drinking Water Fund
AEA	Alaska Energy Authority
AEEE	Alternative Energy And Energy Efficiency
AHFC	Alaska Housing Finance Corporation
AICC	Alaska Interagency Coordination Center
AIDEA	Alaska Industrial Development And Export Authority
AK	Alaska
ARC	American Red Cross
BIA	Bureau Of Indian Affairs
CDBG	Community Development Block Grant
CFR	Code Of Federal Regulations
CGP	Comprehensive Grant Program
City	Nome City
CP	Nome City's Comprehensive Plan
CVRF	Coastal City's Region Fund
CWSRF	Clean Water State Revolving Fund
DCCED	Department Of Commerce, Community, And Economic Development
DCRA	Division Of Community And Regional Affairs
DEC	Department Of Environmental Conservation
Denali	Denali Commission
DHS	Department Of Homeland Security
DHS&EM	Division Of Homeland Security And Emergency Management
DHSS	Department Of Health And Social Services
DGGS	Division Of Geological And Geophysical Survey
DMA 2000	Disaster Mitigation Act Of 2000
DMVA	Department Of Military And Veterans Affairs

Acronyms/Abbreviations

DNR	Department Of Natural Resources
DOE	Department Of Energy
DOF	Division Of Forestry
DOI	Division Of Insurance
DOL	Department Of Labor
DOT/PF	Department Of Transportation And Public Facilities
DSS	Division Of Senior Services
EOC	Emergency Operations Center
EMPG	Emergency Management Performance Grant
EPA	Environmental Protection Agency
EQ	Earthquake
ER	Erosion
EWP	Emergency Watershed Protection Program
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FL	Flood
FMA	Flood Mitigation Assistance
FP&S	Fire Prevention And Safety
ft.	Feet
FY	Fiscal Year
g	Gravity
GF	Ground Failure
GIS	Geospatial Information System
Hazus	Hazard United States – Multi-Hazard Software
HMA	Hazard Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
HMP	Hazard Mitigation Plan
HSGP	Homeland Security Grant Program
HUD	Housing And Urban Development
IBHS	Institute For Business And Home Safety

Acronyms/Abbreviations

Kts	Knots
LEG	Legislative Energy Grant
LEPC	Local Emergency Planning Committee
MAP	Mitigation Action Plan
MGL	Municipal Grants And Loans
MMI	Modified Mercalli Intensity
mph	Miles Per Hour
msl	Mean Sea Level
NAHASDA	Native American Housing Assistance And Self Determination Act
NFIP	National Flood Insurance Program
NIMS	National Incident Management System
NOAA	National Oceanic And Atmospheric Administration
NRF	National Response Framework
NRCS	Natural Resources Conservation Service
NWS	National Weather Service
PCR	Parks Culture & Recreation Center
PDM	Pre-Disaster Mitigation
PGA	Peak Ground Acceleration
PNP	Private Non-Profits
RCASP	Remote Community Alert Systems
RD	Rural Development
RL	Repetitive Loss
RurALCAP	Rural Alaska Community Action Program Incorporated
SAFER	Staffing For Adequate Fire And Emergency Response
SBA	U.S. Small Business Administration
SHMP	Alaska State Hazard Mitigation Plan
SHSP	State Homeland Security Program
SOA	State Of Alaska
Sq.	Square
Stafford Act	Robert T. Stafford Disaster Relief And Emergency Assistance Act

Acronyms/Abbreviations

STAPLEE	Social, Technical, Administrative, Political, Legal, Economic, And Environmental
URS	URS Corporation
US or U.S.	United States
USACE	United States Army Corps Of Engineers
USC	United States Code
USDA	United States Department Of Agriculture
USGS	United States Geological Survey
VFA-RFA	Volunteer Fire Assistance And Rural Fire Assistance Grant
VSW	City Safe Water
WARN	Warning, Alert, And Response Network
WHIP	Wildlife Habitat Incentives Program

1. Introduction

Section One provides a brief introduction to hazard mitigation planning, the grants associated with these requirements, and a description of Hazard Mitigation Plan (HMP).

1.1 Hazard Mitigation Planning

In recent years, a new Federal law has driven local hazard mitigation planning. On October 30, 2000, Congress passed the Disaster Mitigation Act of 2000 (DMA 2000) (P.L. 106-390), which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) (Title 42 of the United States Code [USC] 5121 et seq.) by repealing the act's previous mitigation planning section (409) and replacing it with a new mitigation planning section (322). This new section emphasized the need for State, Tribal, and local entities to closely coordinate mitigation planning and implementation efforts. In addition, it provided the legal basis for the Federal Emergency Management Agency's (FEMA) mitigation plan requirements for mitigation grant assistance.

To implement these planning requirements, FEMA published an Interim Final Rule in the Federal Register on February 26, 2002 (FEMA 2002a), 44 CFR Part 201 with subsequent updates. The planning requirements for local entities are described in detail in Section 2 and are identified in their appropriate sections throughout this HMP.

In October 2007 and July 2008, FEMA combined and expanded flood mitigation planning requirements with local hazard mitigation plans (44 CFR §201.6). Furthermore, all hazard mitigation assistance program planning requirements were combined eliminating duplicated mitigation plan requirements. This change also required participating National Flood Insurance Program (NFIP) communities' risk assessments and mitigation strategies to identify and address repetitively flood damaged properties. Local hazard mitigation plans now qualify communities for several Federal Hazard Mitigation Assistance (HMA) grant programs.

This HMP complies with Title 44 CFR current as of March 2015 and applicable guidance documents.

1.2 Grant Programs with Mitigation Plan Requirements

FEMA HMA grant programs provide funding to States, Tribes, and local entities that have a FEMA-approved State, Tribal, or Local Mitigation Plan. Two of the grants are authorized under the Stafford Act and DMA 2000, while the remaining three are authorized under the National Flood Insurance Act and the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act.

> ***HMA Commitment to Resilience and Climate Change Adaptation***
>
> *"FEMA is committed to promoting resilience as expressed in PPD-8: National Preparedness; the President's State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience; the Administrator's 2011 FEMA Climate Change Adaptation Policy Statement (Administrator Policy 2011-OPPA-01); and the 2014–2018 FEMA Strategic Plan. Resilience refers to the ability to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies. The concept of resilience is closely related to the concept of*

hazard mitigation, which reduces or eliminates potential losses by breaking the cycle of damage, reconstruction, and repeated damage. Mitigation capabilities include, but are not limited to, community-wide risk reduction projects, efforts to improve the resilience of critical infrastructure and key resource lifelines, risk reduction for specific vulnerabilities from natural hazards and climate change, and initiatives to reduce future risks after a disaster has occurred."

For additional information, see http://www.fema.gov/climate-change" (FEMA 2015).

1.2.1 Hazard Mitigation Assistance HMA Grant Programs

HMA grant program activities include the following.

Table 1 HMP Eligible Activities.

Activities	HMGP	PDM	FMA
1. Mitigation Projects	√	√	√
Property Acquisition and Structure Demolition	√	√	√
Property Acquisition and Structure Relocation	√	√	√
Structure Elevation	√	√	√
Mitigation Reconstruction	√	√	√
Dry Floodproofing of Historic Residential Structures	√	√	√
Dry Floodproofing of Non-residential Structures	√	√	√
Generators	√	√	
Localized Flood Risk Reduction Projects	√	√	√
Non-localized Flood Risk Reduction Projects	√	√	
Structural Retrofitting of Existing Buildings	√	√	√
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√
Safe Room Construction	√	√	
Wind Retrofit for One- and Two-Family Residences	√	√	
Infrastructure Retrofit	√	√	√
Soil Stabilization	√	√	√
Wildfire Mitigation	√	√	
Post-Disaster Code Enforcement	√		
Advance Assistance	√		
5 Percent Initiative Projects	√		
Miscellaneous/Other[(1)]	√	√	√
2. Hazard Mitigation Planning	√	√	√
Planning Related Activities	√		
3. Technical Assistance			√
4. Management Cost	√	√	√

Table 1 HMP Eligible Activities.

Activities	HMGP	PDM	FMA
[1] Miscellaneous/Other indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.			

(FEMA 2012)

As the State Hazard Mitigation plan states:

> *"The [FMA] provides pre-disaster grants to State and Local Governments for planning and flood mitigation projects. Created by the National Flood Insurance Reform Act of 1994, its goal is to reduce or eliminate NFIP claims. It is an annual nationally competitive program. Residential and non-residential properties may apply for FMA grants through their NFIP community and are required to have NFIP insurance to be eligible. FMA grant funds may be used to develop the flood portions of hazard mitigation plans or to do flood mitigation projects. FMA grants are funded 75% Federal and 25% applicant.*
>
> *The Biggert-Waters Flood Insurance Reform Act of 2012 eliminated the Repetitive Flood Claims (RFC) and Severe Repetitive Loss (SRL) grant programs. Elements of these flood programs have been incorporated into FMA. The FMA program now allows for additional cost share flexibility:*
>
> - *Up to 100-percent Federal cost share for severe repetitive loss properties.*
> - *Up to 90-percent Federal cost share for repetitive loss properties.*
> - *Up to 75-percent Federal cost share for NFIP insured properties.*
>
> The FMA program is available only to communities participating in the NFIP. In the State of Alaska, the Department of Commerce, Community, and Economic Development (DCCED) manage this program" (SHMP 2013).

1.3 HMP Layout Description

The HMP consists of the following sections and appendices:

Section 1 Introduction

Defines what a hazard mitigation plan is, delineates federal requirements and authorities, and introduces the Hazard Mitigation Assistance program listing the various grant programs and their historical funding levels.

Section 2 Community Description

Provides a general history and background of Nome (City), including historical trends for population and the demographic and economic conditions that have shaped the area.

Section 3 Planning Process

Describes the HMP update's planning process, identifies the Planning Team Members, the meetings held as part of the planning process, and the key stakeholders within the City and the surrounding area. This section documents public outreach activities

(support documents are located in Appendix D); the review and incorporation of relevant plans, reports, and other appropriate information; actions the City plans to implement to assure continued public participation; and their methods and schedule for keeping the plan current.

This section also describes the Planning Team's formal plan maintenance process to ensure that the HMP remains an active and applicable document throughout its 5-year lifecycle. The process includes monitoring, reviewing, evaluating (Appendix F – Maintenance Documents), updating the HMP; and implementation initiatives.

Section 4 HMP Adoption

Describes the community's HMP adoption process (support documents are located in Appendix C)

Section 5 Hazard Profile Analysis

Describes the process through which the Planning Team identified, screened, and selected the hazards to for profiling in this version of the HMP. The hazard analysis includes the nature, previous occurrences, location, extent, impact, and future event recurrence probability for each hazard. The Planning Team added the hazard of earthquake to the HMP. In addition, historical impact and hazard location figures are included when available.

Section 6 Vulnerability Analysis

Identifies the City's potentially vulnerable assets—people, residential and nonresidential buildings (where available), critical facilities, and critical infrastructure. The resulting information identifies the full range of hazards that the City could face and potential social impacts, damages, and economic losses. Land use and development trends are also discussed.

Section 7 Mitigation Strategy

Defines the mitigation strategy, which provides a blueprint for reducing the potential losses identified in the vulnerability analysis. This section lists the community's governmental authorities, policies, programs and resources.

The Planning Team developed a list of mitigation goals and potential actions to address the risks facing the City. Mitigation actions include preventive actions, property protection techniques, natural resource protection strategies, structural projects, emergency services, and public information and awareness activities. Mitigation strategies were developed to address NFIP insured properties (if applicable) while encouraging participation with the NFIP and the reduction of flood damage to flood-prone structures.

Section 8 References

Lists reference materials and resources used to prepare this HMP.

Appendices

Appendix A: Delineates Federal, State, and other potential mitigation funding sources. This section will aid the community with researching and applying for funds to implement their mitigation strategy.

Appendix B: Provides the FEMA Local Mitigation Plan Review Tool, which documents compliance with FEMA criteria.

Appendix C: Provides public outreach information.

Appendix D: Contains the Benefit-Cost Analysis Fact Sheet used to prioritize mitigation actions.

Appendix E: Provides the plan maintenance documents, such as an annual review sheet and the progress report form.

2. Community Description

Section Two provides the City of Nome details, Alaska location, geography, history, and demographic information.

2.1 Location, Geography, and History

2.1.1 Location

The City of Nome is located in Northwest Alaska on the southern coast of the Seward Peninsula. The Seward Peninsula is the westernmost point of the North America mainland and resembles an arrowhead in shape. Nome lies along the Bering Sea facing Norton Sound. The city is 539 air miles northwest of Anchorage, 520 air miles west of Fairbanks and 180 air miles southwest of Kotzebue.

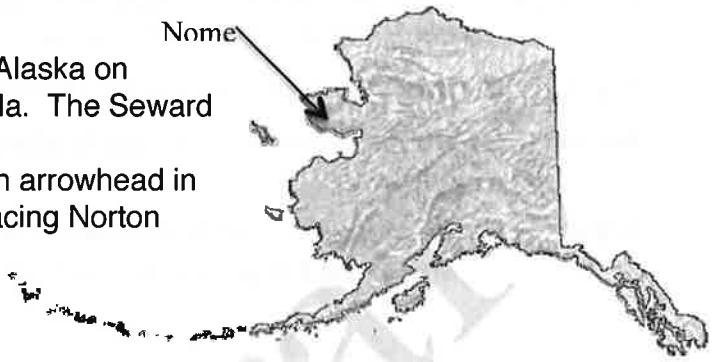


Figure 1 Nome Vicinity Map

Nome is located only 102 miles south of the Arctic Circle and 161 miles east of Russia. The corporate boundaries include 12.5 square miles of land and 9.1 square miles of water. Nome has a latitude of 64.5011° N, and a longitude of 165.4064° W.

Nome is within the Nome Census Area, which encloses a 23,013 square mile section of the Seward Peninsula and the Norton Sound coast. The area whose western boundary is the Bering Sea includes the three islands of St. Lawrence, King, and Little Diomede. The Nome Census Area is commonly referred to as the Bering Strait region.

Currently 17 communities occupy the Nome Census Area, of which Nome has the largest population and is the regional hub for shopping, medical facilities, and other services.

2.1.2 Geography

The Nome area is within the limits defined as underlain by continuous permafrost – perennially frozen ground. Any ground which remains colder than the freezing point of water (32° F) for several years is considered permafrost. Permafrost in the Nome area is primarily restricted to the onshore area.

The Bering Strait Region is home to a variety of rare migratory birds. Ducks, geese, swan and crane reside in fresh water habitat, while seabirds such as eiders, murres and auklets concentrate in great numbers along the coastline. The entire world population of spectacled eider spends the winter in a small portion of the Bering Strait between St. Lawrence and St. Matthew Islands. The region is a popular location among bird watchers.

2.1.3 History

The Seward Peninsula forms the backbone of the Bering Land Bridge which off and on through out the centuries has linked Asia with North America. Indigenous people settled

the area over 4,000 years ago. Their ethnicity is reflected in the area's demographics. Siberian Yupik people make their home on St. Lawrence Island and Malemiut, Kauweramiut and Unalikmiut Eskimos have occupied the Seward Peninsula historically, with a well-developed culture adapted to the environment. Area Natives can trace their cultural roots to one of three distinct groups of Eskimo people. While residents on the Seward Peninsula mostly identify with the Inupiat culture, descendants of the Central Yupiks tend to live south of Nome.

The Seward Peninsula provides well for its people with the combination of coastal marine environment, tundra and woodlands providing suitable habitat for an abundance of wildlife and vegetation. Many of the communities of Northwest Alaska have developed because of the convenience to hunting or fishing grounds or to sources of fuel, such as driftwood.

The Seattle Post-Intelligencer, in the February 20, 1900 issue reported that in May and June 1899 "only a small village of Eskimos existed at the mouth of Snake River". The 1880 US Census also reported an Eskimo village with twenty residents at "Chitnashuak". This site is what the Eskimo people of Nome know as the area at the mouth of Snake River and Sandspit, spelled Sitnasuak.

Western Union surveyors seeking a route across Alaska and the Bering Sea had reported gold discoveries in the Nome area as far back as 1867. However, it was not until the "Three Lucky Swedes" Eric Lindblom, John Brynteson, and Jafet Lindeberg, discovered gold along Anvil Creek in the fall of 1898 that the rumors of a great new gold strike brought over 8,000 people in the summer of 1899.

Over the next few months, a new town exploded along the beach. By 1900, Nome had grown into a town of over 20,000 people. Nome became a busy coastal city with congested streets, 100 saloons, dozens of stores, restaurants and hotels in tents and hastily constructed wooden buildings. It had the largest general delivery address in the U.S. postal system the summer of 1900.

Nome's gold rush lasted only a few summers. By 1910, its population had shrunk to 3,200 residents. During World War I, many Alaskans left the territory to enlist in the army or to take wartime jobs in the states. The 1920 Census recorded only 852 people as living in the town. World War I also brought to Nome the epidemic of Spanish influenza that killed millions of people throughout the world in 1918. The influenza has been linked to the docking at Nome in 1918 of the steamship Victoria. The disease spread through the town and by the time the ship left Nome with 700 persons on board only 500 residents remained in Nome for the winter. The disease infected about 90 percent of the population of the town, mostly affecting Eskimo people. In 1918, the Eskimo population in the Nome was estimated to be about 250 people and of those 200 died of influenza that winter.

The devastating Spanish flu and the decline of the gold mining industry seemed to mark Nome for extinction. However, gold turned out to be the salvation of the region. In the early 1920s, a shift from hydraulic mining to dredging using a cold water thawing method was a turning point in the history of the region because it opened the door for

large-scale dredges on the Seward Peninsula. Gold dredging provided Nome with an economic basis for almost 40 years.

In 1925, this tenacious city once again faced devastation due to a deadly outbreak of diphtheria. The city was without enough antitoxin; thus the relay race by dog sled to rush fresh diphtheria serum nearly seven hundred miles to Nome. This dog sled relay took place in January, becoming one of the most famous and courageous events in Alaskan history. There was, at the time, considerable debate regarding the relay as some believed the danger of the diphtheria was past by the time the serum was delivered. Controversy occurred over which musher should gave gotten the most credit. Across the United States, the men and their dogs were acknowledged as heroes. A dog named Balto still has a statue erected in his honor in New York City's Central Park.

The first commercial airplane flight from Fairbanks to Nome occurred in 1925. Dog teams gave way to the airplane as the major means of long-distance travel in Alaska moving freight, mail and passengers.

Renewed prosperity fueled by a small-scale gold boom was interrupted on September 17, 1934 when the worst fire in the history of Alaska hit Nome. While the cause was never determined, it is known that the fire started in the Golden Gate Hotel. By the time the fire was contained four hours later $2 million to $3 million dollars worth of damage had occurred. No one was killed in the fire but 65 businesses and 90 homes were destroyed. One of the immediate dangers was of starvation since winter was fast approaching and the much of the winter supplies of food were now gone. Many citizens chose to stay through that winter and Nome was slowly rebuilt with new, straight, wide boulevards and better-constructed buildings.

Nome played a critical role in World War II since it was feared that the Japanese would invade the Alaskan mainland, probably landing on the Seward Peninsula. Troops, weapons and supplies were rushed to Nome in 1942, landing on the new airport built by federal funds the year before. The airport was a turning point for Nome because for the first time large jets and bombers could land at Nome. The airport was built to protect the United States from invasion by Japan and was used as a base for patrolling the Bering Sea and the coastline of Northwest Alaska. Also developed during the war was Satellite Field, which was used as a staging area for American planes, flown by Russian pilots under the Lend Lease Act.

Nome has rebuilt itself time and time again. Bering Sea storms have ravaged the City many times during the 20th century, most notably in 1900, 1913, 1937, 1942, 1945, 1946, 1974, 1992, 2004 and 2005. The Nome Seawall protected Nome during the1974 storm, however damage was still estimated at over $30 million. Nome has survived, against all odds, at the mouth of the Snake River since 1898 and will, without a doubt, continue to exist and prosper regardless of the challenges thrown at it.

2.1.4 Economy

The following charts and tables were obtained from the ***State of Alaska, Department of Labor and Workforce Development, Research and Workforce Division***.

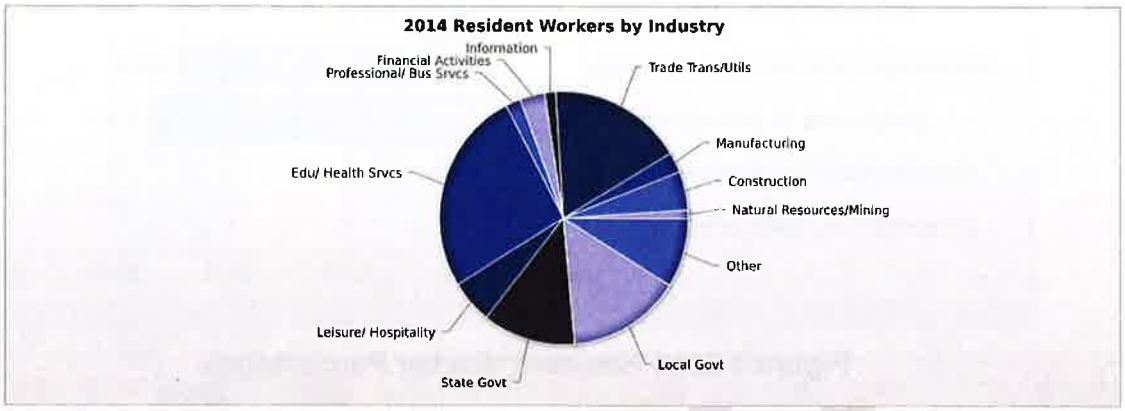


Figure 2 2014 Resident Workers by Industry

Table 2 Nome Work Characteristics

	2014
Residents age 16 and over	2,441
Residents employed	1,779
Female workers	901
Male workers	878
Workers age 45 and over	680
Workers age 50 and over	531
Total wages	$83,758,783
Sector employed in	
Private	1,303
Local government	262
State government	214
Peak quarterly employment	1,572
Workers employed all 4 quarters	1,235
New hires	623
Unemployment insurance claimants	208

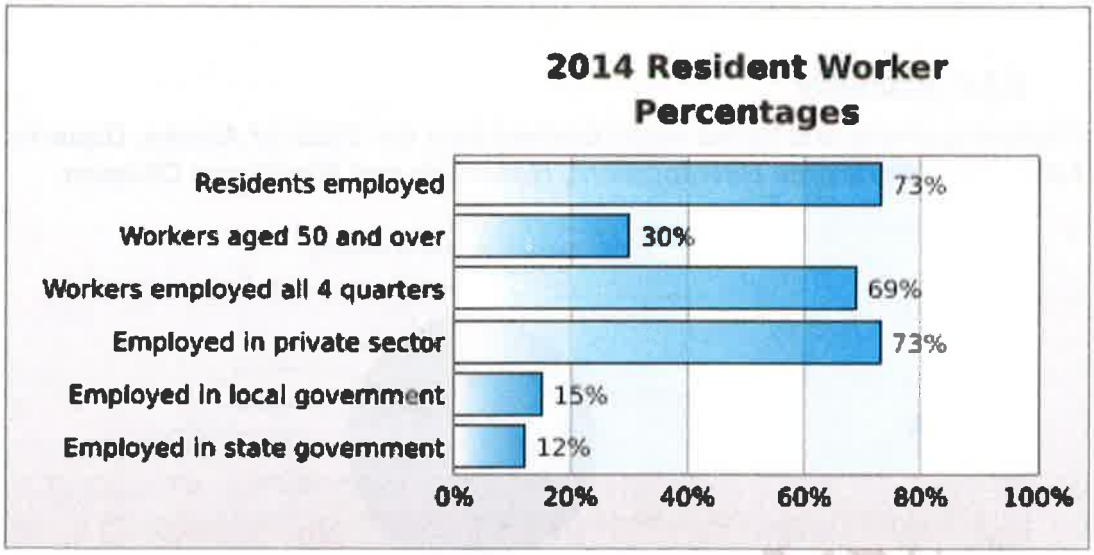


Figure 3 2014 Resident Worker Percentages

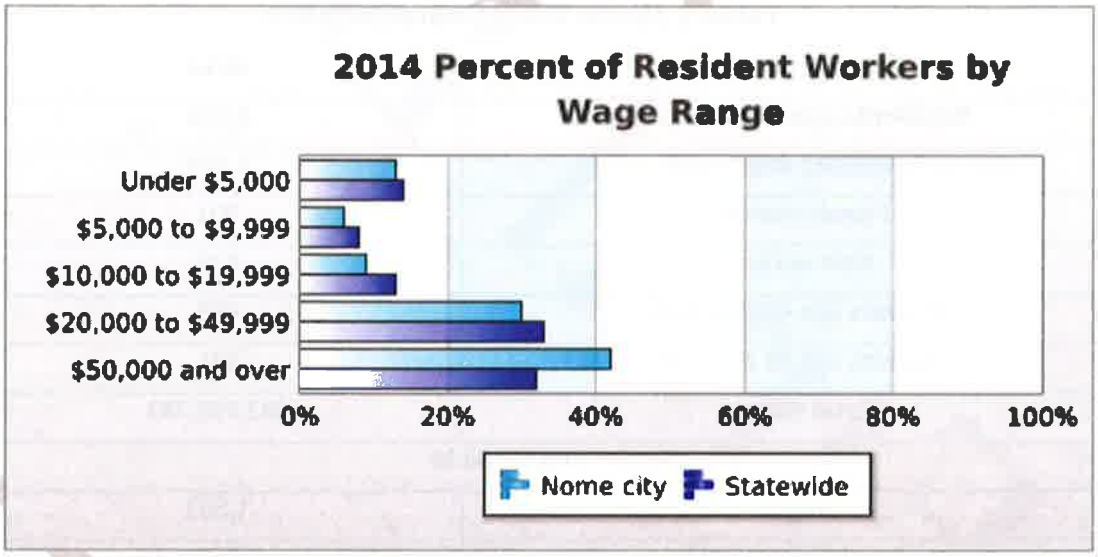


Figure 4 2014 Percent of Resident Workers by Wage Range

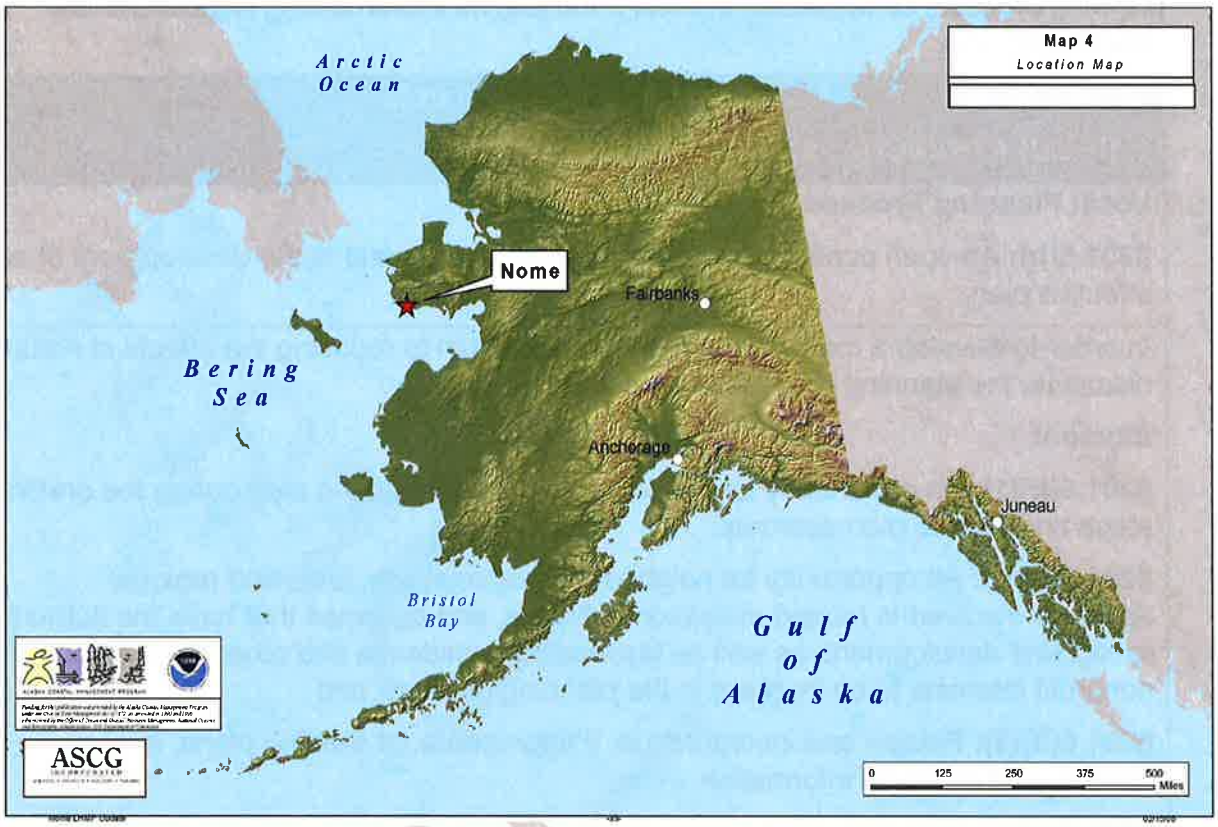


Figure 5 Nome Regional Map

3. Planning Process

Section Three provides an overview of the planning process. The requirements for the planning process, as stipulated in DMA 2000 and its implementing regulations are described below.

DMA 2000 Requirements
1. REGULATION CHECKLIST
Local Planning Process **§201.6(b):** An open public involvement process is essential to the development of an effective plan.
In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: **Element** **§201.6(b)(1):** An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval; **§201.6(b)(2):** An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and nonprofit interests to be involved in the planning process; and **§201.6(b)(3):** Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information. **§201.6(c)(1):** [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved. **§201.6(c)(4)(i):** The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle. **§201.6(c)(4)(iii):** The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.
ELEMENT A. Planning Process
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))
A3. Does the Plan document how the public was involved in the planning process

DMA 2000 Requirements
1. REGULATION CHECKLIST
during the drafting stage? (Requirement §201.6(b)(1))
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))
A5. Is there discussion of how the community (ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle?) (Requirement §201.6(c)(4)(i))
Does the updated plan document how the planning team reviewed and analyzed each section of the plan and whether each section was revised as part of the update process? (Not applicable until 2013 update).
Source: FEMA, March 2015.

3.1 Planning Process Overview

The State of Alaska, Division of Homeland Security and Emergency Management (DHS&EM) provided funding and project oversight to the City.

3.1.1 Hazard Mitigation Planning Team

Table 3 Planning Team Members.

Team Member	Title	Involvement
Larry Pederson	Chair, Planning Commission	Planning Team Leader
Rob Cahoon	Planning Commissioner	Planning Team member
John Odden	Planning Commissioner	Planning team member
Derrick McLarty	Planning Commissioner	Planning team member
Chris Williamson	Planning Commissioner	Planning team member
Sara Lizak	Planning Commissioner	Planning team member
Ken Hughes	Planning Commissioner	Planning team member
Eileen Bechtol	City Planner	HMP update project planner

3.2 Public Involvement & Opportunity for Interested Parties to participate

3.2.1 Public Involvement

Table 3 lists the community's public involvement initiatives focused to encourage participation and insight for the HMP effort.

Table 4 Public Involvement Mechanisms

Mechanism	Description
Open House 10/29/2016	Presented the HMP Update to the Community at an Open House.
PC Meeting 05/02/2016	Reviewed Chapters 1 through 4 at Regularly Advertised Meeting
PC Meeting 08/30/2016	Reviewed Draft HMP Document at Regularly Advertised Meeting
PC Meeting 10/11/2016	Reviewed Draft HMP Document at Regularly Advertised Meeting
Open House 10/12/2016	Presented the Draft HMP Update to the Community at an Open House

The Planning Team identified natural hazards: earthquake, flood/erosion, weather (severe) and wildland/tundra fire which periodically impact the City. A few of the HMP's hazards have been combined within broader categories to better reflect their impacts and relationships.

The Planning Team had copies of the 2008 HMP and the flood plain maps at an Open House on October 29, 2015. The public was encouraged to mark where their home or business was located on the flood maps. llk

The PC reviewed Chapters 1 through 4 on the May 2, 2016 meeting and the Draft HMP Plan at the August 30, 2016 and October 11, 2016 meeting. . The Draft HMP will be available for the public to peruse at an Open House on October 12, 2016.

The public review draft is on the City website. The Open Houses in 2015 and 2016 were advertised in the local paper and posted around the town. All of the Planning Commission meetings are publically advertised and attended by the media.

Public meetings will be held with the PC and the Common Council to adopt the final draft plan after preliminary DHS&EM and FEMA approval.

3.2.2 Opportunity for Interested Parties to participate

The City extended an invitation to all individuals and entities identified on the project mailing list below to comment on the Draft HMP 2016 emailed (attached in public outreach appendix) to relevant academia, nonprofits, and local, state, and federal agencies on October 20, 2016. The following agencies were invited to participate and review the Updated HMP:

- Alaska Department of Transportation and Public Facilities (DOT/PF)
- Bering Straits Native Corporation

- Department of Transportation and Public Facilities, Nome Division (DOTPF)
- Division of Community Advocacy (DCRA)
- DMVA, Division of Homeland Security and Emergency Management (DHS&EM)
- Kawerak Native Corporation
- Nome Police, Fire and LEPC

3.3 2008 HMP Review and Recommendations

44 CFR requires communities to schedule HMP Planning Team meetings and teleconferences to review, discuss, and determine mitigation implementation accomplishments, track data relevance for future HMP update inclusion and document recommendations for future HMP updates.

The Nome Planning Commission was not able to complete many of the actions from the 2008. The MAP on Page 72 lists projects that were completed during this cycle. The Planning Commission plans to actively review the HMP during the next cycle.

3.3.1 Review and Analysis of the 2008 HMP.

The 2008 HMP document was revised as described below.

Section 1. ***Introduction***: added entire new section explaining the plan process.

Section 2. ***Community Description***: updated and expanded community information, including new census and State data.

Section 3. ***Planning Process***: updated this section to reflect 2016 update public process including newsletters, public meetings and 2016 Planning Team.

Section 4. ***Plan Adoption***: 2016 resolutions.

Section 5. ***Hazard Profile Analysis***: reviewed hazard identification and risk assessment for earthquake, flooding, weather (severe) and wildland/tundra fire adding 2008 to 2016 descriptions and data.

Section 6. ***Vulnerability Analysis***: reviewed 2008 HMP vulnerability analysis to determine if there were any significant changes.

Section 7. ***Mitigation Strategy***: reviewed 2008 mitigation goals and actions and added new goals and action for the 2016 Mitigation Action Plan.

Section 8. ***References***: revised to reflect 2016 Update.

3.4 Incorporation of Existing Plans and Other Relevant Information

During the planning process, the Planning Team reviewed and incorporated information from existing plans, studies, reports, and technical reports into the HMP.

Table 5 lists existing plans and other documents that were available regarding the City and were reviewed and used as references for the jurisdiction information and hazard profiles in the risk assessment of the HMP for the City.

Table 5 Existing Plans and Other Relevant Information.

Existing plans, studies, reports, ordinances, etc.	Contents Summary (How will this information improve mitigation planning?)
Flood Mitigation Plan, 2002	Incorporated into hazard mitigation plans in 2003.
Nome Comprehensive Plan – Phase I – 2002	First comprehensive plan for the City.
Hazards Mitigation Plan. 2003	First HMP for a small city in the nation.
Land Use Plan, 2005	Established zoning districts
Hazard Mitigation Plan, 2008	Updated the 2003 HMP
Flood Insurance Study for the City of Nome, revised May 2010	Used for flood zone information.
Comprehensive Plan Public Survey – 2010	Public opinion survey regarding citizen attitudes regarding elements in city planning.
Comprehensive Plan 2020, 2012	Comprehensive actions and priorities, including mitigation actions.
Emergency Operation Plan, 2011	Plan providing lists of assess and responsible people to contact in an emergency.
State of Alaska, Department of Commerce, Community and Economic Development Community Profile	Provided historical and demographic information
State of Alaska Hazard Mitigation Plan (SHMP), 2015	Defined statewide hazards and their potential locational impacts
US Army Corps of Engineers, Erosion Information Paper, Nome, Alaska, November 10, 2008	US Army Corps of Engineers, Erosion Information Paper Nome, Alaska, November 10, 2008
US Army Corps of Engineers, Alaska Baseline Erosion Assessment, 2009	US Army Corps of Engineers, Alaska Baseline Erosion Assessment, 2009
US Army Corps of Engineers, Floodplain	Describes floodplains in Alaska
US Army Corps of Engineers, Alaska Baseline Erosion Assessment, 2009	Defined the area's erosion impacts

3.5 Plan Maintenance

This section describes a formal plan maintenance process to ensure that the HMP remains an active and applicable document. It includes an explanation of how the City's Planning Team intends to organize their efforts to ensure that improvements and revisions to the HMP occur in a well-managed, efficient, and coordinated manner.

The following three process steps are addressed in detail here:

1. Implementation into existing planning mechanisms
2. Continued public involvement
3. Monitoring, reviewing, evaluating, and updating the HMP

3.5.1 Implementation Into Existing Planning Mechanisms

The requirements for implementation through existing planning mechanisms, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements
1. REGULATION CHECKLIST
Incorporation into Existing Planning Mechanisms **§201.6(b)(3):** Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.
ELEMENT A Planning Process (Continued)
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information?
Source: FEMA, March 2015.

Once the HMP is community adopted and receives FEMA's final approval, Each Planning Team Member ensures that the HMP, in particular each Mitigation Action Project, is incorporated into existing planning mechanisms whenever possible. Each member of the Planning Team has undertaking the following activities.

- Conduct a review of the community-specific regulatory tools to assess the integration of the mitigation strategy. These regulatory tools are identified in the following capability assessment section.
- Work with pertinent community departments to increase awareness of the HMP and provide assistance in integrating the mitigation strategy (including the Mitigation Action Plan) into relevant planning mechanisms. Implementation of these requirements may require updating or amending specific planning mechanisms.

3.5.2 Continued Public Involvement

The requirements for continued public involvement, as stipulated in the DMA 2000 and its implementing regulations are described below.

DMA 2000 Requirements
1. REGULATION CHECKLIST
Continued Public Involvement **§201.6(c)(4)(iii):** The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.
ELEMENT A Planning Process (Continued)
A5. Is there discussion of how the community (ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))
Source: FEMA, March 2015.

The City is dedicated to involving the public directly in the continual reshaping and updating the HMP. A paper copy of the HMP and any proposed changes would be available at the City office. An address and phone number of the Planning Team Leader to whom people can direct their comments or concerns will also be available at the City office.

The Planning Team will continue to identify opportunities to raise community awareness about the HMP and the hazards that affect the area. This effort could include attendance and provision of materials at City-sponsored events, outreach programs, and public mailings. Any public comments received regarding the HMP will be collected by the Planning Team Leader, included in the annual report, and considered during future HMP updates.

3.5.3 Monitoring, Reviewing, Evaluating, and Updating the HMP

The requirements for monitoring, reviewing, evaluating, and updating the HMP, as stipulated in the DMA 2000 and its implementing regulations are described below.

DMA 2000 Requirements
Monitoring, Evaluating and Updating the Plan **§201.6(c)(4)(i):** The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.
1. REGULATION CHECKLIST
ELEMENT A. Planning Process (Continued)
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle?)
Source: FEMA, March 2015.

This section provides an explanation of how the City's Planning Team intends to organize their efforts to ensure that improvements and revisions to the HMP occur in a well-managed, efficient, and coordinated manner.

The following three process steps are addressed in detail here:

1. Review and revise the HMP to reflect development changes, project implementation progress, project priority changes, and resubmit
2. HMP resubmittal at the end of the plan's five year life cycle for State and FEMA review and approval
3. Continued mitigation initiative implementation

Monitoring the HMP

The HMP was prepared as a collaborative effort. To maintain momentum and build upon previous Hazard Mitigation Planning efforts and successes, the City will continue to use the Planning Team to monitor, review, evaluate, and update the HMP. Each authority identified in the Mitigation Action Plan (MAP) matrix (Table) will be responsible for implementing the Mitigation Action Plan and determining whether their respective actions were effectively implemented. The Director of Public Safety, the hazard mitigation Planning Team Leader, (or designee), will serve as the primary point of contact and will coordinate local efforts to monitor, evaluate, revise, and tabulate HMP actions' status.

Reviewing the HMP

The City will review their success for achieving the HMP's mitigation goals and implementing the Mitigation Action Plan's activities and projects during the annual review process.

During each annual review, each agency or authority administering a mitigation project will submit a Progress Report (Appendix F) to the Planning Team. The report will include the current status of the mitigation project, including any project changes, a list of identified implementation problems (with appropriate strategies to overcome them), and a statement of whether or not the project has helped achieve the appropriate goals identified in the plan.

Evaluating the HMP

The Annual Review Questionnaire (Appendix F) provides the basis for future HMP evaluations by guiding the Planning Team with identifying new or more threatening hazards, adjusting to changes to, or increases in, resource allocations, and garnering additional support for HMP implementation.

The Planning Team Leader will initiate the annual review two months prior to the scheduled planning meeting date to ensure that all data is assembled for discussion with the Planning Team. The findings from these reviews will be presented at the annual Planning Team Meeting. Each review, as shown on the Annual Review Worksheet, will include an evaluation of the following:

- Determine City authorities, outside agency, stakeholders, and resident's participation in HMP implementation success
- Identify notable risk changes for each identified and newly considered natural or human-caused hazards
- Consider land development activities and related programs' impacts on hazard mitigation
- Mitigation Action Plan implementation progress (identify problems and suggest improvements as necessary)
- Evaluate HMP local resource implementation for HMP identified activities

Updating the HMP

In addition to the annual review, the Planning Team will update the HMP every five years. The following section explains how the HMP will be reviewed, evaluated, and implementation successes described.

DMA 2000 Requirements
Reviewing, Evaluating, and Implementing the Plan
§201.6(d)(3): A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit if for approval within 5 years in order to continue to be eligible for mitigation project grant funding.
ELEMENT D. Planning Process (Continued) *Update activities not applicable to the plan version*
D1. Was the Plan revised to reflect changes in development? (Requirement §201.6(d)(3))
D2. Was the Plan revised to reflect progress in local mitigation effort? (Requirement §201.6(d)(3))
D3. Was the Plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))
Source: FEMA, March 2015.

The City will annually review the HMP as described in Section 3.5.3 and update the HMP every five years (or when significant changes are made) by having the identified Planning Team review all Annual Review Questionnaires (Appendix F) to determine the success of implementing the HMP's Mitigation Action Plan.

The Annual Review Questionnaire will enable the Team to identify possible changes in the HMP Mitigation Action Plan by refocusing on new or more threatening hazards, resource availability, and acquiring stakeholder support for the HMP project implementation.

No later than the beginning of the fourth year following HMP adoption, the Planning Team will undertake the following activities:

- Request grant assistance from DHS&EM to update the HMP (this can take up to one year to obtain and one year to update the plan)
- Ensure that each authority administering a mitigation project will submit a Progress Report to the Planning Team
- Develop a chart to identify those HMP sections that need improvement, the section and page number of their location within the HMP, and describing the proposed changes
- Thoroughly analyze and update the natural hazard risks
    - Determine the current status of the mitigation projects
    - Identify the proposed Mitigation Plan Actions (projects) that were completed, deleted, or delayed. Each action should include a description of whether the project should remain on the list, be deleted because the action is no longer feasible, or reasons for the delay
    - Describe how each action's priority status has changed since the HMP was originally developed and subsequently approved by FEMA
    - Determine whether or not the project has helped achieve the appropriate goals identified in the plan
    - Describe whether the community has experienced any barriers preventing them from implementing their mitigation actions (projects) such as financial, legal, and/or political restrictions and stating appropriate strategies to overcome them
    - Update ongoing processes, and to change the proposed implementation date/duration timeline for delayed actions the City still desires to implement
    - Prepare a "new" MAP matrix for the City.
- Prepare a new Draft Updated HMP
- Submit the updated draft HMP to the Division of Emergency Management (DHS&EM) and FEMA for review and approval

Formal State and FEMA HMP Review

Completed Hazard Mitigation Plans do not qualify the City for mitigation grant program eligibility until they have been reviewed and adopted by the City Council, and received State and FEMA final approval.

The City will submit the draft HMP to the Division of Emergency Management (DHS&EM) for initial review and preliminary approval. Once any corrections are made, DHS&EM will forward the HMP to FEMA for their review and conditional approval.

Once the plan has fulfilled all FEMA criteria, the City will pass an HMP Adoption Resolution. Each of the incorporated cities will pass a resolution for their jurisdictions. The State of Alaska DHS&EM will approve the Port Alsworth portions. Copies will be sent to FEMA for final HMP approval.

FEMA's final approval assures the City is eligible for applying for appropriate mitigation grant program funding.

4. Plan Adoption

Section Four is included to fulfill the City of Nome adoption requirements.

Adoption by Local Governing Bodies and Supporting Documentation

The requirements for the adoption of this HMP by the local governing body, as stipulated in the DMA 2000 and its implementing regulations are described below.

DMA 2000 Requirements
Local Plan Adoption
§201.6(c)(5): [The plan shall include…] Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Assembly, County commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.
1. REGULATION CHECKLIST
ELEMENT E. Plan Adoption
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval??) (Requirement §201.6(c)(5))
Source: FEMA, March 2015.

The City is represented in this HMP and meets the requirements of Section 409 of the Stafford Act and Section 322 of DMA 2000, and 44 CFR §201.6(c)(5).

The Planning Commission and City Council's formal adoption resolutions were submitted with the final draft HMP to FEMA for formal approval.

A scanned copy of the City's resolutions are included in the front of the plan.

5. Hazard Profile Analysis

Section Five identifies and profiles the hazards that could affect the Nome City.

5.1 Overview of a Hazard Analysis

A hazard analysis includes the identification, screening, and profiling of each hazard. Hazard identification is the process of recognizing the natural events that threaten an area. Natural hazards result from unexpected or uncontrollable natural events of sufficient magnitude. Human, Technological, and Terrorism related hazards are beyond the scope of this plan. Even though a particular hazard may not have occurred in recent history in the study area, all natural hazards that may potentially affect the study area are considered; the hazards that are unlikely to occur or for which the risk of damage is accepted as being very low, are eliminated from consideration.

Hazard profiling is accomplished by describing hazards in terms of their nature, history, magnitude, frequency, location, extent, and probability. Hazards are identified through historical and anecdotal information collection, existing plans, studies, and map reviews, and study area hazard map preparations when appropriate. Hazard maps are used to define a hazard's geographic extent as well as define the approximate risk area boundaries.

DMA 2000 Requirements
Identifying Hazards
§201.6(c)(2)(i): The risk assessment shall include a] description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.
§201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.
1. REGULATION CHECKLIST
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction?
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction?
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction?
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods?
Source: FEMA, March 2015.

5.2 Hazard Identification and Screening

Table 6 on the next lists the threats that are present in Nome.

Table 6 Hazard Identification and Screening

Hazard Type	Profiled in 2008	Profiled in 2016 Update	Explanation
Natural Hazards			
Earthquake	Yes	Yes	Periodic, unpredictable occurrences. The City area experienced no damage from the 11/2003 Denali EQ, but experienced minor shaking from the earthquake and its aftershocks, from the 1964 Good Friday Earthquake. The City has experienced zero earthquakes over M5 since 1978.
Flood (Coastal related floods and resultant erosion)	Yes	Yes	The City experiences significant damage from storm surge, coastal ice run-up, and coastal wind erosion along Norton Sound. *Note: In 2008 plan flood and erosion were separate sections. They have been combined in the 2016 update.*
Ground Failure (Avalanche Landslide)	No	No	The City is not vulnerable to ground failure hazards. *Note: Permafrost thawing is covered under severe weather.*
Severe Weather (Cold, Rain, Snow, Wind)	Yes	Yes	Winter storms, heavy or freezing rain, coastal storm surge floods, and high wind impact the City from time to time. Impacts from climate change/global warming and changing El Niño/La Niña Southern Oscillation (ENSO) patterns make the Arctic difficult to predict. Severe weather events cause fuel price increases and frozen pipes. Heavy snow loads potentially damage house roofs. Winds potentially remove or damage roofs and homes and businesses.
Fire (Wildland and Tundra)	Yes	Yes	Fires pose a threat to the City.
Tsunami	No	No	Due to the bathometry of Norton Sound (shallow) there is zero threat of a tsunami in Nome.
Volcano	No	No	There is no threat from a volcano in the community.

5.3 Hazard Profile and Risk Assessment

The requirements for hazard profiles, as stipulated in DMA 2000 and its implementing regulations are described below.

DMA 2000 Requirements
Profiling Hazards **Requirement §201.6(c)(2)(i):** [The risk assessment shall include a] description of the location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.
1. REGULATION CHECKLIST
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction? (Requirement §201.6(c)(2)(i))
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction?
Source: FEMA, March 2015.

The specific hazards selected by the Planning Team for profiling have been examined in a methodical manner based on the following factors:

- Nature (Type)
  - Potential climate change impacts are primarily discussed in the Severe Weather hazard profile but are also identified where deemed appropriate within each hazard profile.
- History (Previous Occurrences)
- Location
- Extent (to include magnitude and severity)
- Impact (Section 5 provides general impacts associated with each hazard.)
- Probability of future events

NFIP insured Repetitive Loss Structures (RL) are addressed in Section 6.0, Vulnerability Analysis Waiting for information from State Floodplain

Each hazard is assigned a rating based on the following criteria for magnitude/severity (Table 7) and future recurrence probability (Table 8).

Estimating magnitude and severity are determined based on historic events using the criteria identified in this section.

Table 7 Hazard Magnitude/Severity Criteria.

Magnitude / Severity	Criteria
4 - Catastrophic	• Multiple deaths. • Complete shutdown of facilities for 30 or more days. • More than 50 percent of property is severely damaged.
3 - Critical	• Injuries and/or illnesses result in permanent disability. • Complete shutdown of critical facilities for at least two weeks. • More than 25 percent of property is severely damaged.
2 - Limited	• Injuries and/or illnesses do not result in permanent disability. • Complete shutdown of critical facilities for more than one week. • More than 10 percent of property is severely damaged.
1 - Negligible	• Less than 10 percent of property is severely damaged.

Similar to estimating magnitude and severity, Probability is determined based on historic events, using the criteria identified above, to provide the likelihood of a future event (Table 8).

Table 8 Hazard Probability Criteria.

Probability	Criteria
4 - Highly Likely	• Event is probable within the calendar year. • Event has up to 1 in 1 year chance of occurring (1/1=100 percent). • History of events is greater than 33 percent likely per year. • Event is "Highly Likely" to occur.
3 - Likely	• Event is probable within the next three years. • Event has up to 1 in 3 year's chance of occurring (1/3=33 percent). • History of events is greater than 20per cent but less than or equal to 33 percent likely per year. • Event is "Likely" to occur.

Probability	Criteria
2 - Possible	• Event is probable within the next five years. • Event has up to 1 in 5 year's chance of occurring (1/5=20 percent). • History of events is greater than 10 percent but less than or equal to 20 percent likely per year. • Event could "Possibly" occur.
1 - Unlikely	• Event is "Unlikely" but is possible to occur.

The hazards profiled for the City are presented throughout the remainder of Section 5.3. The presentation order does not signify their importance or risk level.

5.3.1 Earthquake

5.3.1.1 Nature

An earthquake is a sudden motion or trembling caused by a release of strain accumulated within or along the edge of the earth's tectonic plates. The effects of an earthquake can be felt far beyond the site of its occurrence. Earthquakes usually occur without warning and after only a few seconds can cause massive damage and extensive casualties. The most common effect of earthquakes is ground motion, or the vibration or shaking of the ground during an earthquake.

Ground motion generally increases with the amount of energy released and decreases with distance from the fault or epicenter of the earthquake. An earthquake causes waves in the earth's interior (i.e., seismic waves) and along the earth's surface (i.e., surface waves). Two kinds of seismic waves occur: P (primary) waves are longitudinal or compressional waves similar in character to sound waves that cause back and forth oscillation along the direction of travel (vertical motion), and S (secondary) waves, also known as shear waves, are slower than P waves and cause structures to vibrate from side to side (horizontal motion). There are also two types of surface waves: Raleigh waves and Love waves. These waves travel more slowly and typically are significantly less damaging than seismic waves.

In addition to ground motion, several secondary natural hazards can occur from earthquakes such as:

- **Surface Faulting** is the differential movement of two sides of a fault at the earth's surface. Displacement along faults, both in terms of length and width, varies but can be significant (e.g., up to 20 feet [ft.]), as can the length of the surface rupture (e.g., up to 200 miles). Surface faulting can cause severe damage to linear structures, including railways, highways, pipelines, and tunnels.
- **Liquefaction** occurs when seismic waves pass through saturated granular soil, distorting its granular structure, and causing some of the empty spaces between granules to collapse. Pore water pressure may also increase sufficiently to cause

the soil to behave like a fluid for a brief period and cause deformations. Liquefaction causes lateral spreads (horizontal movements of commonly 10 to 15 ft., but up to 100 ft.), flow failures (massive flows of soil, typically hundreds of ft., but up to 12 miles), and loss of bearing strength (soil deformations causing structures to settle or tip). Liquefaction can cause severe damage to property.

- **Landslides/Debris Flows** occur as a result of horizontal seismic inertia forces induced in the slopes by the ground shaking. The most common earthquake-induced landslides include shallow, disrupted landslides such as rock falls, rockslides, and soil slides. Debris flows are created when surface soil on steep slopes becomes totally saturated with water. Once the soil liquefies, it loses the ability to hold together and can flow downhill at very high speeds, taking vegetation and/or structures with it. Slide risks increase after an earthquake during a wet winter.

The severity of an earthquake can be expressed in terms of intensity and magnitude. Intensity is based on the damage and observed effects on people and the natural and built environment. It varies from place to place depending on the location with respect to the earthquake epicenter, which is the point on the earth's surface that is directly above where the earthquake occurred. The severity of intensity generally increases with the amount of energy released and decreases with distance from the fault or epicenter of the earthquake. The scale most often used in the U.S. to measure intensity is the Modified Mercalli Intensity (MMI) Scale. As shown in, the MMI Scale consists of 12 increasing levels of intensity that range from imperceptible to catastrophic destruction. Peak ground acceleration (PGA) is also used to measure earthquake intensity by quantifying how hard the earth shakes in a given location. PGA can be measured as acceleration due to gravity (g) (MMI 2006).

Magnitude (M) is the measure of the earthquake strength. It is related to the amount of seismic energy released at the earthquake's hypocenter, the actual location of the energy released inside the earth. It is based on the amplitude of the earthquake waves recorded on instruments, known as the Richter magnitude test scales, which have a common calibration.

5.3.1.2 History

Nome has not experienced any earthquakes larger than 0.5 Magnitude since 1978. This information was obtained from the United States Geological Service (USGS) Earthquake Archives which may be viewed at the following website: http://earthquake.usgs.gov/earthquakes/search/.

North America's (Alaska) strongest recorded earthquake occurred on March 27, 1964 in Prince William Sound measuring M9.2 and was felt by many residents throughout Alaska. Nome experienced minimal ground motion from this historic event. Planning Team members further stated that the City has experienced no ground shaking from the November 3, 2002 M7.9 Denali EQ.

5.3.1.3 Location, Extent, Impact, and Probability of Future Events

Location

The entire geographic area of Alaska is prone to earthquake effects. Figure 6 shows the locations of active and potentially active faults in Alaska. Even when earthquakes occur in other parts of the state, secondary effects such as transportation and supply interruptions may affect the City.

The entire community is at equal risk of an earthquake event.

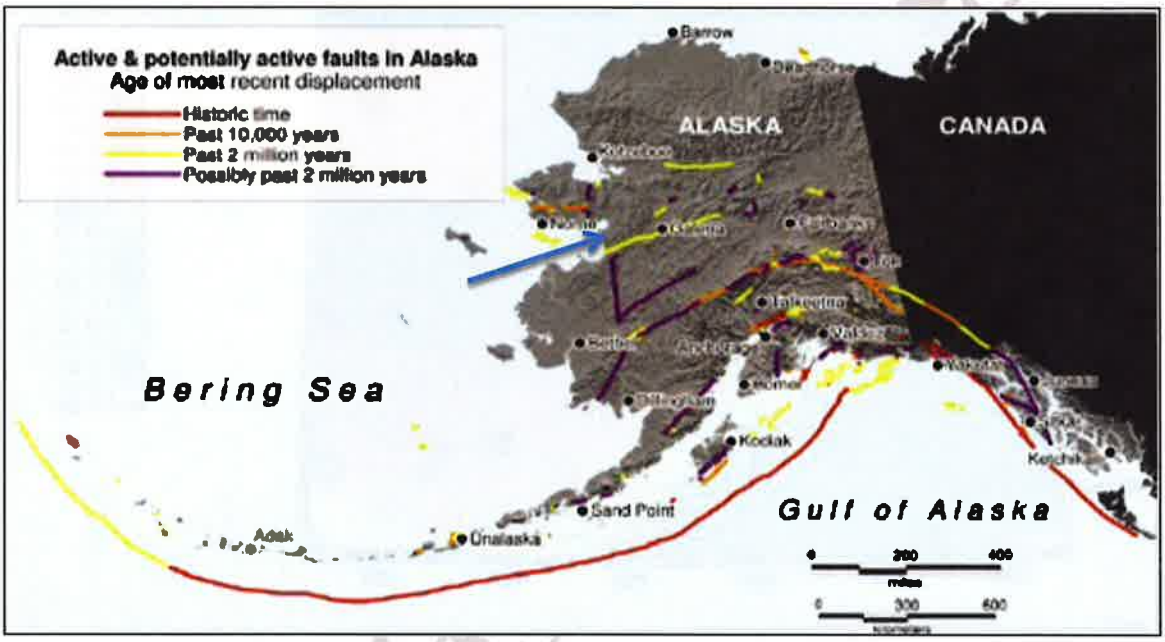


Figure 6 Active & Potentially Active Faults in Alaska.

Extent

Based on historic earthquake events and the criteria identified in Table 7, the magnitude and severity of earthquake impacts in the City are considered "Negligible" with less than ten percent of property is severely damaged.

Impact

Impacts to the community such as significant ground movement that may result in infrastructure damage are not expected. Minor shaking may be seen or felt based on past events in the State. Impacts to future populations, residences, critical facilities, and infrastructure are anticipated to remain the same.

Probability of Future Events

Figure 7, derived from the USGS Earthquake Mapping Model shows the probability of a magnitude 5.0 or greater earthquake occurring in a future 100-year period. The Shake Map shows that Nome has a probability of 30 percent to 40 percent.

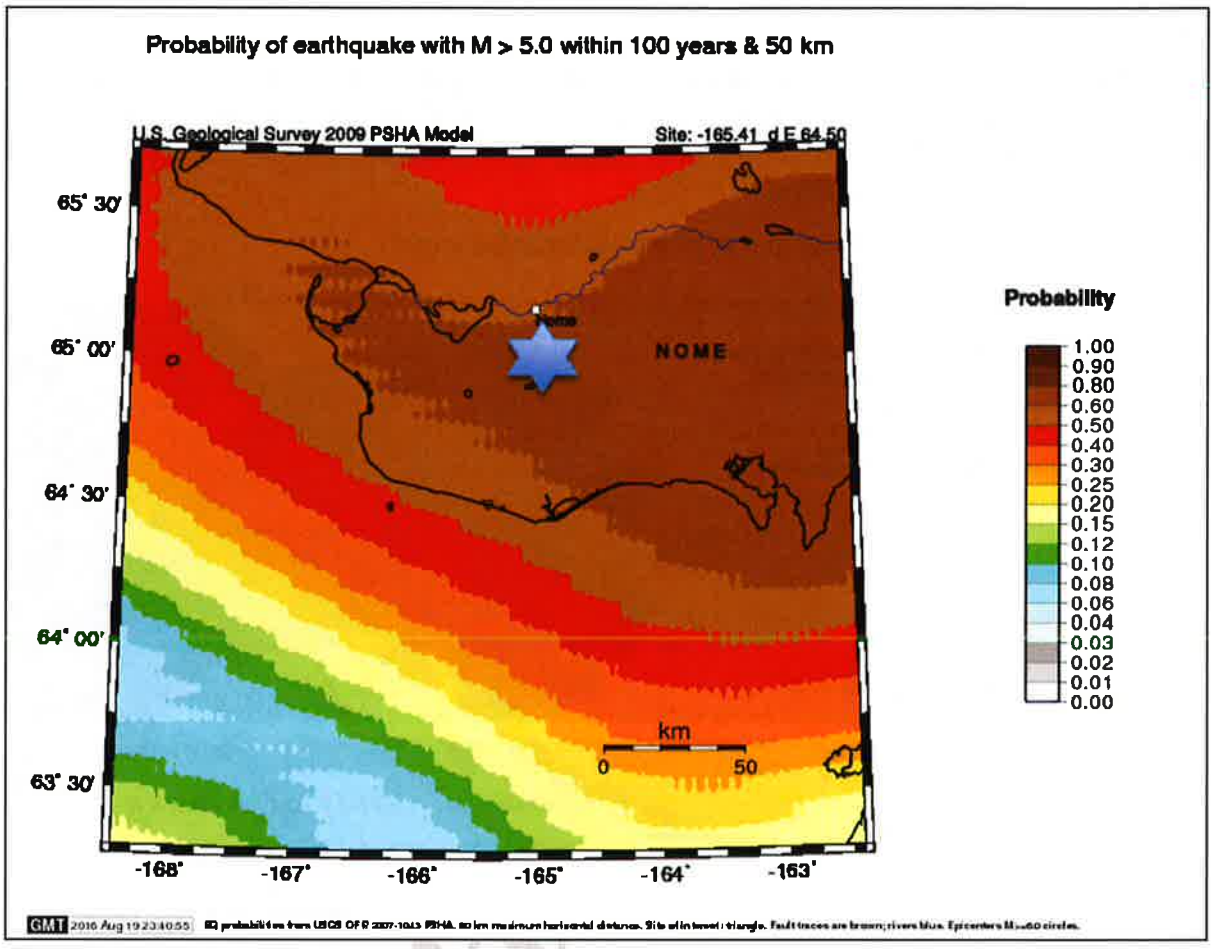


Figure 7 Probability of Earthquake in Nome (USGS)

Based on the history of earthquakes in the City area, the probability map from USGS and the criteria in Table 8, it is "Possible" an earthquake event will occur within the next five years. The event has up to 1 in 5 years chance of occurring (1/5 = 20 percent) and the history of events is greater than 10 percent but less than or equal to 20 percent likely per year. Event could "Possibly" occur.

5.3.2 Flood/Erosion

5.3.2.1 Nature

Flooding is the accumulation of water where usually none occurs or the overflow of excess water from a stream, river, lake, reservoir, glacier, or coastal body of water onto adjacent floodplains. Floodplains are lowlands adjacent to water bodies that are subject to recurring floods. Floods are natural events that are considered hazards only when people and property are affected.

Flood events not only impact communities with high water levels, or fast flowing waters, but sediment transport also impacts infrastructure and barge and other river vessel

access limitations. Dredging may be the only option to maintain an infrastructure's viability and longevity.

Nome is most at danger from a coastal surge. Storm surges, or coastal floods, occur when the sea is driven inland above the high-tide level onto land that is normally dry. Often, heavy surf conditions driven by high winds accompany a storm surge adding to the destructive-flooding water's force. The conditions that cause coastal floods also can cause significant shoreline erosion as the floodwaters undercut roads and other structures. Storm surge is a leading cause of property damage in Alaska.

The meteorological parameters conducive to coastal flooding are low atmospheric pressure, strong winds (blowing directly onshore or along the shore with the shoreline to the right of the direction of the flow), and winds maintained from roughly the same direction over a long distance across the open ocean (fetch).

Nome is situated on the Norton Sound, which has low-lying coastal lands and a gradually sloping bathymetry near the shore. Exposure to strong winds with a long fetch (the distance by wind or waves across open water) is particularly susceptible to coastal flooding. Several communities and villages along the Bristol Bay coast, the Bering Sea coast, the Arctic coast, and the Beaufort Sea coast have experienced significant damage from coastal floods over the past several decades. Most coastal flooding occurs during the late summer or early fall season in these locations. As shore-fast ice forms along the coast before winter, the risk of coastal flooding abates, but later freeze-ups greatly increase the risk of erosion and storm surge flooding..

Coastal erosion is the attrition of land resulting in loss of beach, shoreline, or dune material from natural activity or human influences. Coastal erosion occurs over the area roughly from the top of the bluff out into the near-shore region to about the 30 feet water depth. It is measured as the rate of change in the position or horizontal displacement of a shoreline over a period of time. Bluff recession is the most visible aspect of coastal erosion because of the dramatic change it causes to the landscape. As a result, this aspect of coastal erosion usually receives the most attention.

The forces of erosion are embodied in waves, currents, and winds. Surface and ground water flow, and freeze-thaw cycles may also play a role. Not all of these forces may be present at any particular location. Coastal erosion can occur from rapid, short-term daily, seasonal, or annual natural events such as waves, storm surge, wind, coastal storms, and flooding, or from human activities including boat wakes and dredging. The most dramatic erosion often occurs during storms, particularly because the highest energy waves are generated under storm conditions.

Coastal erosion may also be due to multi-year impacts and long-term climatic change such as sea-level rise, lack of sediment supply, subsidence, or long-term human factors such as aquifer depletion or the construction of shore protection structures and dams. Attempts to control erosion using shoreline protective measures such as groins, jetties, seawalls, or revetments can lead to increased erosion.

Riverine and harbor erosion is a major erosion threat to the City as it threatens the embankment, structures, and utilities of residents.

Riverine and harbor erosion results from the force of flowing water and ice formations in and adjacent to river channels. This erosion affects the bed and banks of the channel and can alter or preclude any channel navigation or riverbank development. In less stable braided channel reaches, erosion, and material deposition are constant issues. In more stable meandering channels, erosion episodes may only occasionally occur such as from human activities including boat wakes and dredging.

Attempts to control erosion using shoreline protective measures such as groins, jetties, levees, or revetments can lead to increased erosion.

Land surface erosion results from flowing water across road surfaces due to poor or improper drainage during rain and snowmelt run-off, which typically result from fall and winter sea storms.

5.3.2.2 History

The City of Nome has been battered many times over the years by storm surges, which have caused significant loss of life and property. Since the early 1900s there have been several significant recorded events during which Nome experienced flooding due to an increase in water levels caused by storm surge. The most noteworthy storms occurred in 1900, 1902, 1913, 1937, 1942, 1945, 1946, 1972, 1974, 1992, 2004, 2005 and 2009. The following is a chronology of information on the largest storms taken from newspaper articles, publications, the Nome Flood Insurance Study, and technical documents prepared by the United States government.

Great Storm of 1900

The first recorded storm in Nome occurred in 1900. This storm was dubbed the Great Storm of September 12, 1900, and was the worst storm ever witnessed by its inhabitants. It is estimated that the winds got up to 75 miles per hour. The towering waves destroyed or washed away almost everything on the beach, and a good part of Nome's business district as well.

Storm of September 12 1900, and was the worst storm ever witnessed by its inhabitants. It is estimated that the winds got up to 75 miles per hour. The towering waves destroyed or washed away almost everything on the beach, and a good part of Nome's business district as well.

The total damage was estimated at nearly $750,000. At the height of the storm on September 12, 1900 several buildings had to be tied down to keep them from washing away, and many more were tossed into the air by the waves and smashed to pieces. It was estimated that after the storm 1,000 people were homeless, numerous people died, many head of cattle, sheep were lost, and 10,000 tons of coal were swept into the sea.

> *"Hundreds of hustling fellows devoted themselves to laying up firewood. Various estimates were heard of the number of person rendered homeless by the waters,*

the general opinion being that one thousand was a reasonable figure. That many of these unfortunate ones suffered severely is undoubted.

A serious loss to the camp was the ten thousand tons of coal drawn into the sea. Owing to the lateness of the season this could not be replaced, and the supply of fuel for the winter was accordingly short. The price of the article was thus entailed on the people as a result of the storm. (Nome "City of the Golden Beaches". Alaska Geographic, Volume 11, Number 1, 1984.)"

Another incident that happened during the storm is the story of the barge Skookum. The barge was washed to shore after a dramatic attempt to keep her offshore by the tug America and a steam launch, which were tied astern the barge. The tug and the steam launch were both lost to the sea, with those aboard when they were caught broadside in the waves, and went down. The Skookum drifted into the beach and was pounded by the huge waves until it broke in two.

Storm of October 1902

The newspaper Nome Nugget reported that the storm of October 11, 1902 produced waves only two inches less than the storm in 1900 however the wind was not as fierce. The Nome Nugget also reported in its October 12, 1902 issue that the estimated damaged would not exceed $25,000 to $30,000.

Storm of October 1913

In October 1913, the worst storm to date occurred and it is said that the City of Nome was never the same afterwards. The storm hit in early October and for several days the water rose higher and higher. The waves finally broke over the top of the city breaking apart entire business blocks. The following is a description of the storm the publication *Nome "City of the Golden Beaches"* and the October 8, 1913 issue of the *Nome Nugget.*

"Many buildings on Front Street were picked up from their foundations and hurled by the waves across the street to smash into other structures as the "debris from broken and destroyed buildings crashed into the streets again on the angry summits of the rollers". When the storm finally subsided a Nugget reporter thought that Nome looked like it had been shelled by a hostile fleet."

Gale winds were clocked at 60 miles per hour, which produced breaking waves of 40 feet high, and a storm surge of 20 feet. Most of the town was destroyed in this storm. The entire sand spit, which housed hundreds of homes, was completely swept away.

The mayor of Nome issued the following appeal through the press:

"A tidal storm has destroyed one-half of Nome. The damage is estimated at $1,000,000. Five hundred people are homeless, most of them destitute. Winter is approaching and public assistance is absolutely necessary. Funds should be sent to the City Treasurer of Nome." *(Nome Nugget)*

The *Nome Nugget* reported on October 8, 1913 that Seattle was the first city to respond sending supplies and funds on the first boat north.

Storms of 1945 and 1946

The 1945 storm caused severe damage to waterfront structures, hurling blocks of ice into the town. In October 1946, a coastal storm created surge estimated at more than nine feet above normal. Many of the streets of Nome were inundated, flooding buildings and property. The storm leveled six buildings. Coastal erosion was so severe that several near shore buildings were undermined and collapsed.

These storms are significant in that they led to the push for a Nome Seawall. Many of the residents favored moving the town away from the sea. However, commercial business interests and especially the powerful Lomen family waged a crusade with the federal government and were successful in getting Congress to appropriate $1 million in 1949 to build the Nome Seawall.

The Great Bering Sea Storm of 1974

Three separate storms simultaneously hit the Nome coastline in November 1974, producing floodwaters three to five feet high on Front Street. Extensive damage to streets and structures occurred. The Nome Seawall protected the city however; damage was still estimated to be over $30 million. Some old timers believe the storm was worse than the storm of 1913. The 1974 storm produced a storm surge or rise in water level of up to 12 feet MLLW.

Storm of 1992

A storm in October 1992 severely damaged the revetment on the eastern edge of the Nome Seawall. This storm led to the 1993 expansion of the large rock Nome Seawall to replace the revetment, which was at a lower elevation and a pavement structure of small stones.

Storm of 2004

In October 2004, a violent gale force storm strafed the Bering Sea and hit Nome. From October 18 to October 21, 2004, the storm ravaged the coastline, driving 18-foot seas over Nome's Seawall. When the storm subsided the Seawall was intact. However damage to Front Street was extensive.

Estimate of City resources expended in emergency protective actions, response and clean up associated with the Bering Sea Storm of October 2004 was $209,070. The City Engineer (in 2003) estimated that damage to the Nome Seawall was $148,200. Damage to the causeway was estimated at $164,500. Damage to local roads was estimated at $91,500.

FEMA declared the storm a Federally Declared Disaster on November 16, 2004, which allowed to City to receive federal disaster funds.

Storm of 2005

On September 22 through September 24, 2005 a powerful fall sea storm from the Bering Sea produced high winds combined with wing-driven tidal surges resulting in severe and widespread coastal flooding.

The City resources expended during the storm and associated clean up were estimated at $164, 673.

The Nome Joint Utilities System (NJUS) (the local utility) estimated damage to infrastructure at $183,500.

The State of Alaska declared a declaration of disaster emergency on October 21, 2005. This authorized DHS&EM to utilize funds for the purpose of disaster assistance and necessary administrative and disaster management expenses.

The DHS&EM Disaster Cost Index delineates historical flood events affecting the City. The most current index (2016) lists the following event.

> **Nome, September 10, 1990** An unseasonable sea storm caused the sinking & destruction of a transfer barge owned by the city. As a result the city was unable to receive essential goods that are customarily transported by sea. In addition the debris presents a hazard jeopardizing the structural integrity of the ***Nome*** causeway.
>
> **Nome Highway Disaster** On October 5, 1992, a major Bering Sea Storm with gale-force winds impacted the Norton Sound Coast of the Seward Peninsula in Western Alaska, producing an unusually high storm surge tide and very large waves, particularly in the ***Nome*** area. The high tidal waves severely damaged two federal-aide highways, isolating the mining community of Council and endangering the traveling public in the Nome area. DOT/PF will request emergency relief funds from Federal Highway Administration.
>
> **2003 Fall Sea Storm (AK-04-209) Declared January 29, 2004 by Governor Murkowski** - A series of sea storms with high winds and tidal surge during the period of November 1 to November 24, 2003 caused damages in the communities of Nome, Diomede, and Port Heiden. Damage was also reported by the Department of Transportation. The City of Nome and Port Heiden declared local emergencies and Diomede requested assistance in a letter to the Division of Homeland Security and Emergency Management. The Department of Transportation reported damages in ***Nome*** on the ***Nome***-Counsel Road (MP 22 and 23.8) and at the Nome airport. No Federal Disaster Assistance was requested. No Hazard Mitigation was applicable. The total for this disaster is approximately $654K. This is for Public Assistance for 4 potential applicants with 5 PW's.
>
> **2004 Bering Strait Sea Storm declared October 28, 2004 by Governor Murkowski then FEMA declared (DR-1571) on November 15, 2004. Amended declaration to extend incident to October 24, 2004:** Between October 18 and 20, 2004, a severe winter storm with strong winds and extreme tidal surges

occurred along the Western Alaska coastline, which resulted in severe damage and threat to life and property, specifically in the Bering Strait Regional Educational Attendance Area (REAA), including Elim, ***Nome***, Koyuk, Shaktoolik, Nome, and other communities; in the Northwest Artic Borough, including Kivalina, Kotzebue, and other communities; and in the City of Mekoryuk; with potentially unidentified damages in adjacent areas, and additional storm surges likely from continuing weather patterns in this area Alaska. Conditions that exist in the coastal communities of the Bering Strait REAA as a result of this disaster: severe damage to gabions (used to protect shoreline), major damage to coastal highways and roads, damage to water and septic systems, damage to a bridge, damage to power distribution systems, damage to fuel storage tanks, fuel spills, and property damage. On November 16, 2004, the declaration was amended to reflect a more accurate timeframe of the disaster. The City of St. George appealed the denial of funding decision for the breakwater. The appeal was granted, which increased the original estimate for total funding of this disaster by more than $3 million. The dates of the severe storm were changed to October 18 through October 24, 2004. Individual assistance totaled $1 million for 271 applicants. Public Assistance total $13 million for 60 potential applicants with 125 PW's. Hazard Mitigation totaled $800K. The total for this disaster is $17 million.

2005 West Coast Storm declared October 24, 2005 by Governor Murkowski then FEMA declared (DR-1618) on December 9, 2005: Beginning on September 22, 2005 and continuing through September 26, 2005, a powerful fall sea storm produced high winds combined with wind-driven tidal surges resulting in severe and widespread coastal flooding and a threat to life and property in the Northwest Arctic Borough, and numerous communities within the Bering Strait (REAA 7), the Kashunamiut (REAA 55), the Lower Yukon (REAA 32) and the Lower Kuskokwim (REAA 31) Rural Education Attendance Areas including the cities of ***Nome***, Kivalina, Nome, Golovin, Tununak, Hooper Bay, Chevak, Mekoryuk and Napakiak. The following conditions existed as a result of this disaster: sever damage to personal residences requiring evacuation and sheltering of the residents; to businesses; to drinking water systems, electrical distribution systems, local road systems, airports, seawalls, and other public infrastructure; and to individual personal and real property; necessitating emergency protective measures and temporary and permanent repairs. On October 25, 2005, a request for a federal time extension was submitted. On December 9, 2005 a presidential disaster was declared (DR-1618) for Public Assistance for the Northwest Arctic Boro, Bering Strait REAA, Kashunamiut REAA (Chevak) and the Lower Kuskokwim REAA however, they failed to include the Lower Yukon REAA in the federal declaration. The State will write Project Worksheets for the Lower Yukon REAA under or State Public Assistance Declaration. Individual Assistance total is estimated at $209K, with 220 applicants. Public Assistance is around $3.63 million for 16 potential applicants with around 20 PW's. Hazard Mitigation total is $254K. The total cost for disaster is estimated at $5.33 million.

2009 Spring Flood declared by Governor Palin on May 6, 2009 then FEMA declared under DR-1843 on June 11, 2009: Extensive widespread flooding due to snow melt and destructive river ice jams caused by rapid spring warming combined with excessive snow pack and river ice thickness beginning April 28, 2009 and continuing. The ice jams and resultant water backup along with flood waters from snow melt left a path of destruction along 3,000 miles of interior rivers, destroying the Native Village of Eagle and forcing the evacuation of multiple communities. The following jurisdictions and communities in Alaska have been impacted: Alaska Gateway Rural Regional Educational Attendance Area (REAA) including the City of Eagle and Village of Eagle; the Copper River REAA including the Village Community of Chisotchina; the Matanuska-Susitna Borough; the Yukon Flats REAA including the City Community of Circle, and City of Fort Yukon, the Villages Communities of Chalkyistik, Beaver, Stevens Village, and Rampart; the Yukon-Koyukuk REAA including the Cities of Tanana, Ruby, Galena, Koyukuk, Nulato, and Kaltag; the Iditarod Area REAA including the Cities of McGrath, Grayling, Anvik, and Holy Cross; the Northwest Arctic Borough including the Cities of Kobuk, and Buckland; the Lower Yukon REAA including the Cities of Russian Mission, Marshall, Saint Mary's, Mountain Village, Emmonak, Alakanuk and Pilot Station and the Community of Ohogamiut; the Lower Kuskokwim REAA including the Cities of Bethel, Kwethluk, Napakiak, Napaskiak, and the Village Community of Oscarville; the Yupiit REAA including the City of Akiak, and the Villages of Akiachak, and Tuluksak; the Kuspuk REAA including the Cities of Aniak, Upper Kalskag, Lower Kalskag, and the Villages Communities of Stony River, Sleetmute, Red Devil, Crooked Creek, and Napaimute; the Fairbanks North Star Borough including the City of North Pole and Community of Salcha; the Bering Strait REAA including the **City of Nome** area.

2011 and 2012 both had coastal storms that did not rise to the level of a state or federal disaster.

5.2.1.3 Location, Extent, Impact, and Future Events Probability

Location

The Norton Sound shoreline area and harbor is at risk of coastal storm surges and scoring from waves. The average of the difference between the Mean High Water (MHW) and the Mean Low Water (MLW) is 0.9 feet. The mean range is the difference between MHW and MLW in the Nome area is 1.0 feet. This very small range of tidal fluctuation at Nome means that it makes little difference whether a storm arrives at high or low tide.

Extent

Floods are described in terms of their extent (including the horizontal area affected and the vertical depth of floodwaters) and the related probability of occurrence.

Based on past event history and the criteria identified in Table 7, the extent of flooding and shoreline scouring with resultant damages to infrastructure and their protective embankments in the City are considered "Critical". The category means that there could be a complete shutdown of critical facilities for at least two weeks. Injuries and/or illnesses could result in permanent disability and more than 25 percent of property could be severely damaged.

Impact

Nationwide, floods result in more deaths than any other natural hazard. Physical damage from floods includes the following:

- Structure flood inundation, causing water damage to structural elements and contents
- Erosion or scouring of stream banks, roadway embankments, foundations, footings for bridge piers, and other features
- Damage to structures, roads, bridges, culverts, and other features from high-velocity flow and debris carried by floodwaters. Such debris may also accumulate on bridge piers and in culverts, increasing loads on these features or causing overtopping or backwater damages
- Sewage and hazardous or toxic materials release as wastewater treatment plants or sewage lagoons are inundated, storage tanks are damaged, and pipelines are severed

Floods also result in economic losses through business and government facility closure, communications, utility (such as water and sewer), and transportation services disruptions. Floods result in excessive expenditures for emergency response, and generally disrupt the normal function of a community.

Impacts and problems also related to flooding are deposition as well as embankment, coastal erosion, and/or wind. Deposition is the accumulation of soil, silt, and other particles on a river bottom or delta. Deposition leads to the destruction of fish habitat, presents a challenge for navigational purposes, and prevents access to historical boat and barge landing areas. Deposition also reduces channel capacity, resulting in increased flooding or bank erosion. Embankment erosion involves material removal from the stream or riverbanks, coastal bluffs, and dune areas.

Probability of Future Events

Based on previous occurrences, 2009 Corps BEA report, and criteria in Table 8, there is a 1 in 3 year (1/3=33 percent) chance of occurring. History of events is greater than 20 percent but less than or equal to 33 percent likely per year. Event is "Likely" to occur.

5.3.3 Weather (Severe)

5.3.3.1 Nature

Severe weather occurs throughout Alaska with extremes experienced by the City, which includes thunderstorms, lightning, hail, heavy and drifting snow, freezing rain/ice storm,

extreme cold, and high winds. The City experiences periodic severe weather events such as the following.

Climate Change influences the environment, particularly historical weather patterns. Climate change and El Niño/La Niña Southern Oscillation (ENSO) influences create increased weather volatility such as hotter summers (drought) and colder winters, intense thunderstorms, lightning, hail, snow storms, freezing rain/ice storms, high winds and even a few tornadoes within and around Alaska.

ENSO is comprised of two weather phenomena known as El Niño and La Niña. While ENSO activities are not a hazard, they can lead to severe weather events and large-scale damage throughout Alaska's varied jurisdictions. Direct correlations were found linking ENSO events to severe weather across the Pacific Northwest, particularly increased flooding (riverine, coastal storm surge) and severe winter storms. Therefore, increased awareness and understanding how ENSO events potentially impact Alaska's vastly differing regional weather.

Climate change is described as a phenomena of water vapor, carbon dioxide, and other gases in the earth's atmosphere acting like a blanket over the earth, absorbing some of the heat of the sunlight-warmed surfaces instead of allowing it to escape into space. The more gasses, the thicker the blanket, the warmer the earth. Trees and other plants cannot absorb carbon dioxide through photosynthesis if foliage growth is inhibited. Therefor carbon dioxide builds up and changes precipitation patterns, increases storms, wildfires, and flooding frequency and intensity; and substantially changes flora, fauna, fish, and wildlife habitats.

Another impact of climate change is thawing permafrost in Nome. Thawing permafrost are often agents of ground failure. Permafrost is defined as soil, sand, gravel, or bedrock that has remained below 32°F for two or more years. Permafrost can exist as massive ice wedges and lenses in poorly drained soils or as relatively dry matrix in well-drained gravel or bedrock. During the summer, the surficial soil material thaws to a depth of a few feet, but the underlying frozen materials prevent drainage. The surficial material that is subject to annual freezing and thawing is referred to as the "active layer".

The governor's Alaska's Climate, Ecosystems & Human Health Work Group is tasked with determining how the changing ecosystems may impact human health and to identify, prioritize, and educate Alaskan's about the connection between their health and changing environmental patterns.

Heavy Rain occurs rather frequently over the coastal areas along the Bering Sea and the Gulf of Alaska. Heavy rain is a severe threat to the City.

Heavy Snow generally means snowfall accumulating to four inches or more in depth in 12 hours or less or six inches or more in depth in 24 hours or less.

Drifting Snow is the uneven distribution of snowfall and snow depth caused by strong surface winds. Drifting snow may occur during or after a snowfall.

Freezing Rain and Ice Storms occur when rain or drizzle freezes on surfaces, accumulating 12 inches in less than 24 hours. Ice accumulations can damage trees,

utility poles, and communication towers, which disrupts transportation, power, and communications.

Extreme Cold is the definition of extreme cold varies according to the normal climate of a region. In areas unaccustomed to winter weather, near freezing temperatures are considered "extreme". In Alaska, extreme cold usually involves temperatures -20 to -50°F. Excessive cold may accompany winter storms, be left in their wake, or can occur without storm activity. Extreme cold accompanied by wind exacerbates exposure injuries such as frostbite and hypothermia.

High Winds occur in Alaska when there are winter low-pressure systems in the North Pacific Ocean and the Gulf of Alaska. Alaska's high wind can equal hurricane force but fall under a different classification because they are not cyclonic nor possess other hurricane characteristics.

Strong winds occasionally occur over the interior due to strong pressure differences, especially where influenced by mountainous terrain, but the windiest places in Alaska are generally along the coastlines.

Winter Storms include a variety of phenomena described above and as previously stated may include several components; wind, snow, and ice storms. Ice storms, which include freezing rain, sleet, and hail, can be the most devastating of winter weather phenomena and are often the cause of automobile accidents, power outages, and personal injury. Ice storms result in the accumulation of ice from freezing rain, which coats every surface it falls on with a glaze of ice. Freezing rain is most commonly found in a narrow band on the cold side of a warm front, where surface temperatures are at or just below freezing temperatures. Typically, ice crystals high in the atmosphere grow by collecting water vapor molecules, which are sometimes supplied by evaporating cloud droplets. As the crystals fall, they encounter a layer of warm air where the particles melt and collapse into raindrops. As the raindrops approach the ground, they encounter a layer of cold air and cool to temperatures below freezing. However, since the cold layer is so shallow, the drops themselves do not freeze, but rather, are super cooled, that is, in liquid state at below-freezing temperature. These supercoiled raindrops freeze on contact when they strike the ground or other cold surfaces.

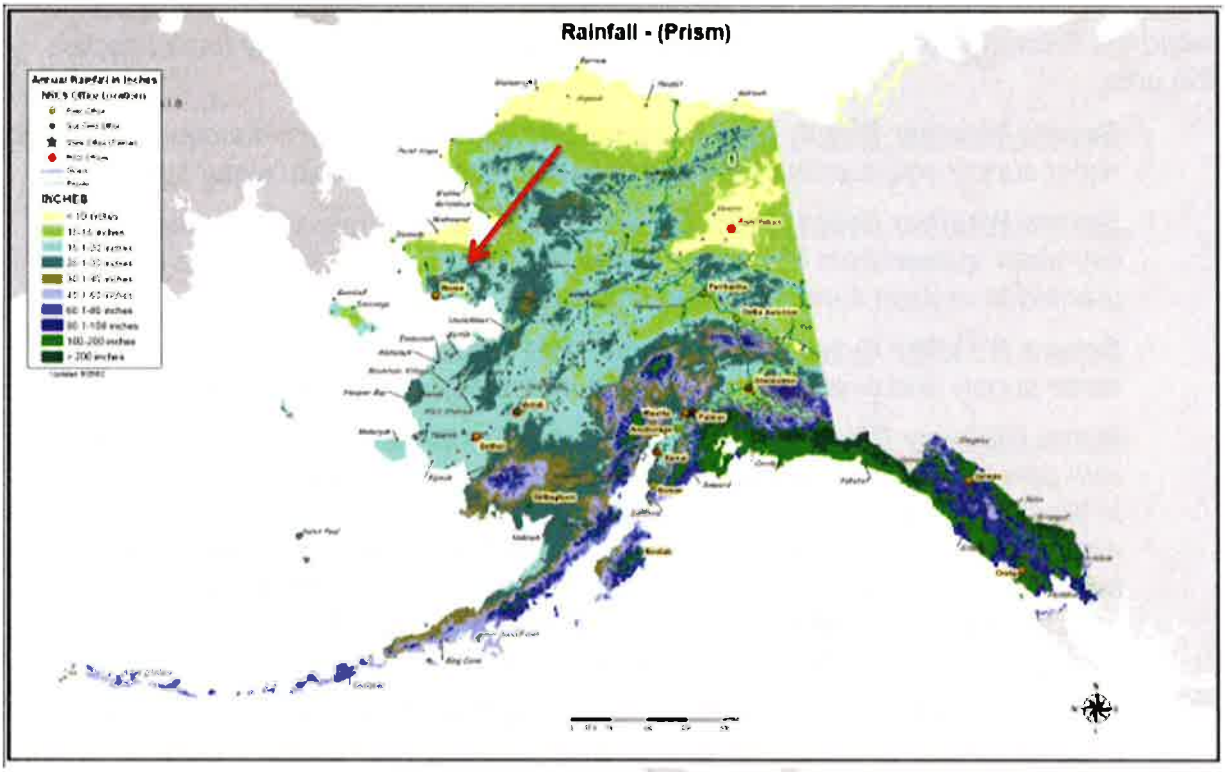


Figure 8 State of Alaska Rainfall Map (NRCS PRISM 2012)

Figure 8 displays Alaska's annual rainfall map based on Parameter-elevation Regressions on Independent Slopes Model (PRISM) that combines climate data from NOAA and Natural Resources Conservation Service (NRCS) climate stations with a digital elevation model to generate annual, monthly, and event-based climatic element estimates such as precipitation and temperature.

Snowstorms happen when a mass of very cold air moves away from the polar region. As the mass collides with a warm air mass, the warm air rises quickly and the cold air cuts underneath it. This causes a huge cloudbank to form and as the ice crystals within the cloud collide, snow is formed. Snow will only fall from the cloud if the temperature of the air between the bottom of the cloud and the ground is below 40 degrees Fahrenheit. A higher temperature will cause the snowflakes to melt as they fall through the air, turning them into rain or sleet. Similar to ice storms, the effects from a snowstorm can disturb a community for weeks or even months. The combination of heavy snowfall, high winds and cold temperatures pose potential danger by causing prolonged power outages, automobile accidents and transportation delays, creating dangerous walkways, and through direct damage to buildings, pipes, livestock, crops and other vegetation. Buildings and trees can also collapse under the weight of heavy snow.

5.3.3.2 History

The City is continually impacted by severe weather events. Hurricane force wind, storm surge, and cold typically have disastrous results.

DHS&EM's latest (2016) Disaster Cost Index and the Nome Comprehensive Plans listed the following statewide severe weather disaster event, which may have affected the area.

Severe Weather Event, 1999 *Extreme cold caused a drastic reduction in the city water supply and eventual freezing of a major loop on the city water system.*

Severe Weather Event, 1996 *Extreme cold froze the transmission main of the city water system from Powers Creek to the airport. Public assistance was granted to replace a major portion of this line.*

Severe Weather Event, 1992 *Extreme cold caused a drastic reduction in the city water supply and eventual freezing of a major loop on the city water system.*

Nome Highway Disaster 1992 *On October 5, 1992, a major Bering Sea Storm with gale-force winds impacted the Norton Sound Coast of the Seward Peninsula in Western Alaska, producing an unusually high storm surge tide and very large waves, particularly in the Nome area. The high tidal waves severely damaged two federal-aide highways, isolating the mining community of Council and endangering the traveling public in the Nome area. DOT/PF will request emergency relief funds from Federal Highway Administration.*

Hazard Mitigation Cold Weather, 1990 *The Presidential Declaration of Major Disaster for the Omega Block cold spell of January and February 1989 authorized federal funds for mitigation of cold weather damage in future events. The Governor's declaration of disaster provided the State matching funds required for obtaining and using this federal money.*

Nome, September 10, 1990 *An unseasonable sea storm caused the sinking & destruction of a transfer barge owned by the city. As a result the city was unable to receive essential goods that are customarily transported by sea. In addition the debris presents a hazard jeopardizing the structural integrity of the Nome causeway.*

Hazard Mitigation Cold Weather, March 5, 1984. *Extreme cold for a period of six to seven weeks caused a drastic reduction in the city water supply and eventual freezing of the southeast loop of the city water system. Residents were left without water for two months. Public* assistance was granted to repair/replace portions of the water system.

Nome, March 5, 1984 *Extreme cold for a period of 6-7 weeks caused a drastic reduction in the city water supply and eventual freezing of a major loop on the city water system. Public assistance has granted to repair/replace portions of the water system.*

Omega Block Disaster, January 28, 1989 & FEMA declared (DR-00826) on May 10, 1989 *The Governor declared a statewide disaster to provide emergency relief to communities suffering adverse effects of a record breaking cold spell, with temperatures as low as -85 degrees. The State conducted a wide variety of emergency actions, which included: emergency repairs to maintain & prevent*

damage to water, sewer & electrical systems, emergency resupply of essential fuels & food, & DOT/PF support in maintaining access to isolated communities.

Table 9 Monthly Weather Summaries 1981 to 2010 (WRCC)

NOME WSO AIRPORT, ALASKA - NCDC 1981-2010 Monthly Normals

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Max. Temperature (F)	13.1	15.4	18.5	27.5	43.1	54.9	58.2	55.9	48.7	34.5	23.1	16.8	34.2
Mean Temperature (F)	5.2	7.4	10.3	20.5	36.8	47.8	52.2	50.1	42.8	28.7	16.9	9.5	27.4
Mean Min. Temperature (F)	-2.8	-0.5	2.1	13.5	30.5	40.7	46.2	44.3	36.9	23.0	10.7	2.2	20.7
Mean Precipitation (in.)	0.94	0.93	0.65	0.76	0.86	0.98	2.11	3.22	2.45	1.61	1.22	1.08	16.81
Heating Degree Days (F)	1855	1611.	1696	1335.	874	517	398	462	666	1124	1443	1720	13703

Western Regional Climate Center, wrcc@dri.edu

5.3.3.3 Location, Extent, Impact, and Probability of Future Events

Location

The entire City experiences extreme weather impacts. The most common to the area are bitter cold weather and winter storms.

Extent

The entire City is equally vulnerable to the severe weather effects. The City experiences severe storm conditions with moderate snow depths; wind speeds exceeding 90 mph; and extreme low temperatures that reach -48°F.

Based on past severe weather events and the criteria identified in Table 7, the extent of severe weather in the City are considered "Limited" where injuries do not result in permanent disability, complete shutdown of critical facilities occurs for more than one week, and more than 10 percent of property is severely damaged.

Impact

The intensity, location, and the land's topography influence a severe weather event's impact within a community. Hurricane force winds, rain, snow, and storm surge can be expected to impact the entire City.

Heavy snow can immobilize a community by bringing transportation to a halt. Until the snow can be removed, airports and roadways are impacted, even closed completely, stopping the flow of supplies and disrupting emergency and medical services. Accumulations of snow can cause roofs to collapse and knock down trees and power lines. Heavy snow can also damage light aircraft and sink small boats. A quick thaw after a heavy snow can cause substantial flooding. The cost of snow removal, repairing damages, and the loss of business can have severe economic impacts on cities and towns.

Injuries and deaths related to heavy snow usually occur as a result of vehicle and or snow machine accidents. Casualties also occur due to overexertion while shoveling snow and hypothermia caused by overexposure to the cold weather.

Extreme cold can also bring transportation to a halt. Aircraft may be grounded due to extreme cold and ice fog conditions, cutting off access as well as the flow of supplies to communities. Long cold spells can cause rivers to freeze, disrupting shipping and increasing the likelihood of ice jams and associated flooding.

Extreme cold also interferes with the proper functioning of a community's infrastructure by causing fuel to congeal in storage tanks and supply lines, stopping electric generation. Without electricity, heaters and furnaces do not work, causing water and sewer pipes to freeze or rupture. If extreme cold conditions are combined with low or no snow cover, the ground's frost depth can increase, disturbing buried pipes. The greatest danger from extreme cold is its effect on people. Prolonged exposure to the cold can cause frostbite or hypothermia and become life threatening. Infants and elderly people are most susceptible. The risk of hypothermia due to exposure greatly increases during episodes of extreme cold, and carbon monoxide poisoning is possible as people use supplemental heating devices.

Thawing or melting permafrost has become a problem for utilities and structures. New structures or built with pipes to pump cold water down the permafrost so that it will stay frozen. Other means to deal permafrost need to be developed.

Probability of Future Events

Based on previous occurrences and the criteria identified in Table 8, it is likely a severe weather event will occur in the next three years (event has up to 1 in 3 years chance of occurring) as the history of events is greater than 20 percent but less than or equal to 33 percent likely per year. Event is "Likely".

5.3.4 Wildland Fire

5.3.4.1 Nature

A wildland fire is a type that spreads through vegetation consumption. It often begins unnoticed, spreads quickly, and is usually signaled by dense smoke that may be visible from miles around. Wildland fires can be caused by human activities (such as unattended burns or campfires) or by natural events such as lightning. Wildland fires often occur in forests or other areas with ample vegetation. In addition to wildland fires, wildfires can be classified as tundra fires, urban fires, interface or intermix fires, and prescribed burns.

The following three factors contribute significantly to wildland fire behavior and can be used to identify wildland fire hazard areas.

Topography describes slope increases, which influence the rate of wildland fire spread increases. South-facing slopes are also subject to more solar radiation, making them drier and thereby intensifying wildland fire behavior. However, ridge tops may mark the end of wildland fire spread since fire spreads more slower or may even be unable to spread downhill.

Fuel and the type and condition of vegetation plays a significant role in the occurrence and spread of wildland fires. Certain types of plants are more susceptible to burning or will burn with greater intensity. Dense or overgrown vegetation increases the amount of combustible material available to fuel the fire (referred to as the "fuel load"). The ratio of living to dead plant matter is also important. Climate change is deemed to increase wildfire risk significantly during periods of prolonged drought as the moisture content of both living and dead plant matter decreases. The fuel load continuity, both horizontally and vertically, is also an important factor.

Weather is the most variable factor affecting wildland fire behavior. Temperature, humidity, wind, and lightning can affect chances for ignition and spread of fire. Extreme weather, such as high temperatures and low humidity, can lead to extreme wildland fire activity. Climate change increases the susceptibility of vegetation to fire due to longer dry seasons. By contrast, cooling and higher humidity often signal reduced wildland fire occurrence and easier containment.

The frequency and severity of wildland fire is also dependent on other hazards, such as lightning, drought, and infestations (such as the damage caused by spruce-bark beetle infestations). If not promptly controlled, wildland fires may grow into an emergency or disaster. Even small fires can threaten lives and resources and destroy improved properties. In addition to affecting people, wildland fires may severely affect livestock and pets. Such events may require emergency water/food, evacuation, and shelter.

The indirect effects of wildland fires can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance rivers and stream siltation, thereby enhancing flood potential, harming aquatic life, and degrading

water quality. Lands stripped of vegetation are also subject to increased debris flow hazards.

5.3.4.2 History

The DHS&EM Disaster Cost Index report no historical fire events affecting the City. The most current index was produced in January 2016.

The Alaska Interagency Coordination Center (AICC) identified 2 tundra/wildland fires that occurred since 1939 (Table 10) that occurred within 100 miles of the center-point of the City.

Table 10 Fires since 1939 within 100 Miles

Fire Name	Fire Year	Estimated Acres	Latitude	Longitude	Specific Cause
Nome 8	1941	0.1	64.4833298	1162.2	Man-Made Cooking Fire
Rock Creek	1959	13.00	64.6	-165.417	Man-Made Debris Burning

Source AICC 2016

5.3.4.3 Location, Extent, Impact, and Probability of Future Events

Location

Under certain conditions wildland fires may occur within the City when weather, fuel availability, topography, and ignition sources combine. Since fuels data is not readily available, for the purposes of this plan, all areas within the City limits are considered to be vulnerable to tundra/wildland fire impacts. Since 1939, two wildland fire events have occurred within the 100 miles of the City (Table 10).

Extent

Generally, fire vulnerability dramatically increases in the late summer and early fall as vegetation dries out, decreasing plant moisture content and increasing the ratio of dead fuel to living fuel. However, various other factors, including humidity, wind speed and direction, fuel load and fuel type, and topography can contribute to the intensity and spread of wildland fires. The common causes of wildland fires in Alaska include lightning strikes and human negligence.

Fuel, weather, and topography influence wildland fire behavior. Fuel determines how much energy the fire releases, how quickly the fire spreads, and how much effort is needed to contain the fire. Weather is the most variable factor. High temperatures and low humidity encourage fire activity while low temperatures and high humidity retard fire spread. Wind affects the speed and direction of fire spread. Topography directs the movement of air, which also affects fire behavior. When the terrain funnels air, as

happens in a canyon, it can lead to faster spreading. Fire also spreads up slope faster than down slope.

Based on the number of past wildland fire events, the possibility of structure fires and the criteria identified in Table 7 and the magnitude and severity of impacts that could in the City are considered "critical" in that more 10 percent of property could be damaged. Injuries and/or illnesses could result in permanent disability. A complete shutdown of critical facilities may last for at least two weeks. More than 25 percent of property would be severely damaged.

Impact

Impacts of a wildland fire that interfaces with the population center of the City could grow into an emergency or disaster if not properly controlled. A small fire can threaten lives and resources and destroy property. In addition to impacting people, wildland fires may severely impact livestock and pets. Such events may require emergency watering and feeding, evacuation, and alternative shelter.

Indirect impacts of wildland fires can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of rivers and streams, thus increasing flood potential, harming aquatic life, and degrading water quality.

Fire is recognized as a critical feature of the natural history of many ecosystems. It is essential to maintain the biodiversity and long-term ecological health of the land. The role of wildland fire as an essential ecological process and natural change agent has been incorporated into the fire management planning process and the full range of fire management activities is exercised in Alaska, to help achieve ecosystem sustainability, including its interrelated ecological, economic, and social consequences on firefighters, public safety and welfare; natural and cultural resources threatened; and the other values to be protected dictate the appropriate management response to the fire

Probability of Future Event

Important issues related to the wildland or tundra fire probability are increased development along the community's perimeter, accumulation of hazardous wildfire fuels, and the uncertainty of weather patterns that may accompany climate change. These three combined elements are reason for concern and heightened mitigation management of each community's wildland interface areas, natural areas, and open spaces.

Based on applying the criteria identified in Table 8, it is "Possible" a wildland or tundra fire event will occur within the next five years. The event has up to 1 in 5 years chance of occurring (1/5=20 percent) and the history of events is equal to or over 10 percent but less than or equal to 20 percent likely each year. Climate change and flammable vegetation species are prolific throughout Alaska's forests and tundra locations. Fire frequency may increase in the future as a result. Event is "Possible".

6. Vulnerability Assessment

6.1 Vulnerability Analysis Overview

DMA 2000 Recommendations
Assessing Risk and Vulnerability, and Analyzing Development Trends
§201.6(c)(2)(ii): The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. *All plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods.* The plan should describe vulnerability in terms of: **§201.6(c)(2)(ii)(A):** The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; **§201.6(c)(2)(ii)(B):** An estimate of the potential dollar losses to vulnerable structures identified in ... this section and a description of the methodology used to prepare the estimate. **§201.6(c)(2)(ii)(C):** Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions. **§201.6(c)(2)(iii):** For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.
1. REGULATION CHECKLIST
ELEMENT B. Risk Assessment, Assessing Vulnerability, Analyzing Development Trends
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))
B4. Does the Plan address NFIP insured structures within each jurisdiction that have been repetitively damaged by floods?
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))
Source: FEMA, March 2015.

The requirements for a vulnerability analysis as stipulated in DMA 2000 and its implementing regulations are described here.

- Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))

- Does the Plan address NFIP insured structures within each jurisdiction that have been repetitively damaged by floods?

- Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))

Table 11 lists the City's infrastructures' hazard vulnerability.

Table 11 Vulnerability Overview to each Hazard.

Hazard	Area's Hazard Vulnerability			
	Percent of Jurisdiction's Geographic Area	Percent of Population	Percent of Building Stock	Percent of Critical Facilities and Utilities
Earthquake	100	100	100	100
Flood	50	50	50	50
Weather	100	100	100	100
Wildland Fire	100	100	100	100

6.2 Population and Building Stock

Population data for the City was obtained from the 2010 U.S. Census and the DCRA. The US Census reports the City's total population for 2010 as 3598 and DCRA 2015 certified population of 3819 (Table 12).

Communities in bush Alaska (no road access) has residential replacement values generally understated because replacement costs exceed Census structure estimates due to material purchasing, barge or airplane delivery, and construction in rural Alaska. This plan estimates an average 30 ft by 40 ft. (1,200 sq. ft.) residential structure costs $350,000.

Table 12 Population and Housing Replacement Costs

Population		Residential Buildings	
2010 Census	DCCED 2014 Data	Total Building Count	Total Value of Buildings
3598	3819	67	11,502,300

Note: Will get information from Clerks office on 10/11/16.

6.3 Infrastructure Improvements

Table 13 list the City's identified "completed" and "pending" infrastructure improvement projects. Produced by DCRA the table provides a depiction of the community's ongoing development trends and focus toward improving aging infrastructure.

Table 13 DCRA Infrastructure Improvements 2008-2016

Project Name	Award Year	Grant Status	Award Amount	End Date
Recreation Center Repairs, Renovation, and Skate Facility	2008	Closed	$1,500,000	5/29/12

Project Name	Award Year	Grant Status	Award Amount	End Date
(Nome Joint Utility Systems) Power Generation Facility Replacement	2008	Closed	$1,500,000	10/7/07
NACTEC Capital Improvements	2008	Closed	$250,000	3/31/09
Public Safety Building Design and Construction	2008	Closed	$4,000,000	9/18/09
Public Safety Building Phase II	2009	Closed	$2,200,000	10/19/10
Fire Fighting Vehicle	2009	Closed	$500,000	9/30/08
Emergency Medical Response Stockpile Packs	2009	Closed	$62,000	7/31/09
FY09 Section 306 Required Tasks	2009	Closed	$6,450	6/30/09
Power Plant Construction Completion	2009	Closed	$0	9/19/10
New Police Vehicle	2000	Closed	$31,025	12/31/99
Alaska Coastal Management Plan 306 Grant	2003	Closed	$12,450	6/30/03
Northwestern Career and Technical Center Dormitory Facility	2007	Closed	$3,000,000	9/30/10
06 - Special Project/Plan Amendment	2006	Closed	$9,682	3/31/06
Nome Power Plant	2007	Closed	$4,000,000	11/15/06
FY08 Section 306 Required Tasks	2008	Closed	$6,000	6/30/08
Site Investigation/D&E for Utility Maintenance/Response Equipment Storage & Personnel Work facility	2008	Active	$560,000	2/28/13
FY10 Section 306 Required Tasks	2010	Closed	$6,000	6/30/10
Purchase of General Liability Insurance	2010	Closed	$107,285	12/4/09
Museum Construction and Development	2011	Active	$2,000,000	6/30/15
SFY11 Section 306 Required Tasks	2011	Closed	$6,000	5/31/11
Nome Public School Sprinkler/Fire Alarm Upgrade	2012	Active	$90,000	6/30/16
The Richard Foster Building Construction	2012	Active	$14,000,000	7/1/11
Long Term Care Facility Replacement	2012	Active	$7,000,000	6/30/16
Multi-Purpose Loader and Snow Blower	2013	Active	$600,000	6/30/17
Long Term Care Facility Construction	2013	Active	$7,550,000	6/30/17
Port Design and Construction	2013	Pending	$10,000,000	6/30/17

Source: DCRA

6.4 Repetitive Loss Properties and NFIP Status

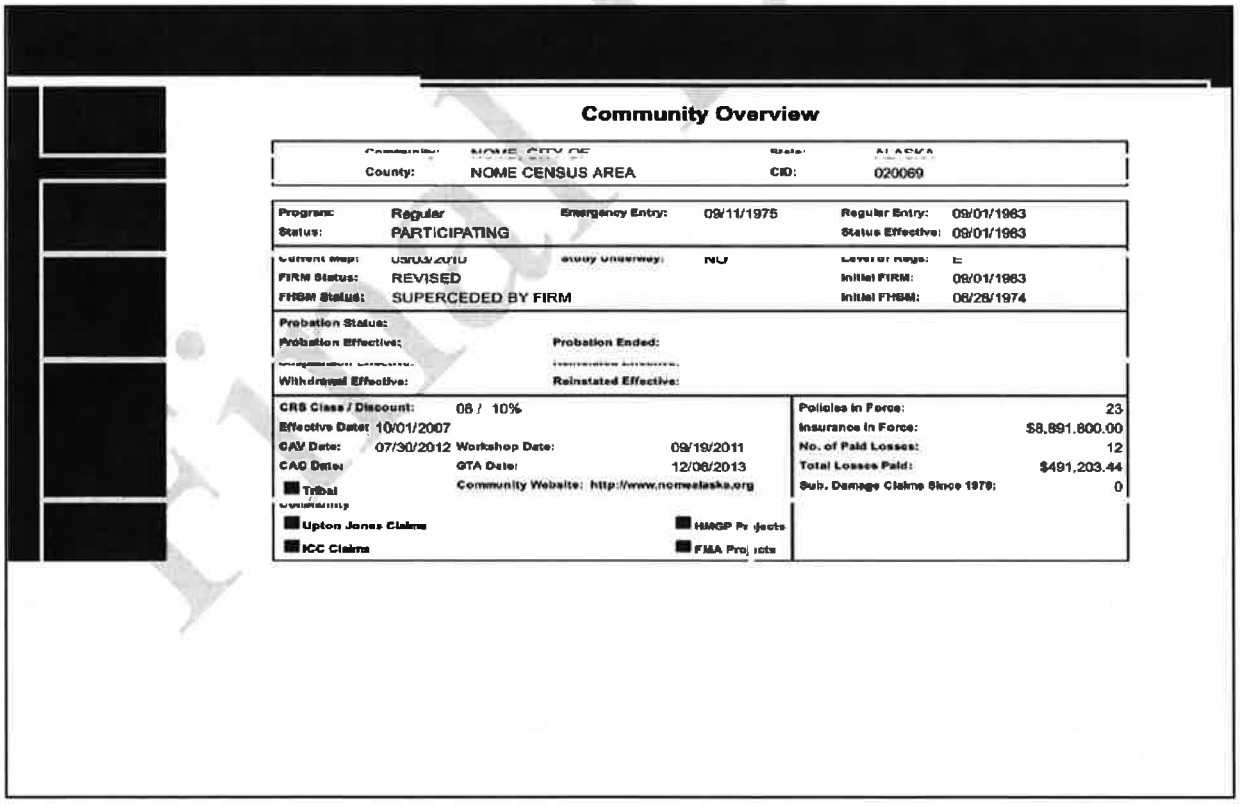
This section estimates the number and type of structures at risk to repetitive flooding such as properties, which have experienced RL, the extent of flood depth, and damage potential. The DMA 2000 requirements for RL from the CFR are described below:

DMA 2000 Requirements
Repetitive Loss Strategy (Optional)
§201.7(c)(3)(vi): An Indian Tribal government applying to FEMA as a grantee may request the reduced cost share authorized under 79.4(c)(2) of this chapter of the FMA and SRL programs if they have an approved Tribal Mitigation Plan meeting the requirements of this section that also identifies actions the Indian Tribal government has taken to reduce the number of repetitive loss properties (which must include severe repetitive loss properties), and specifies how the Indian Tribal government intends to reduce the number of such repetitive loss properties. **[Note: While submittal of a Repetitive Loss Strategy is optional, if the Indian Tribal government wants to request the reduced cost share authorized under 44 CFR 79.4(c)(2) for the FMA and SRL programs as a grantee, then all of the following requirements must be met.]**
1. REGULATION CHECKLIST
ELEMENTS
A. Does the new or updated plan address repetitive loss properties in its risk assessment (see 201.7(c)(2))?
Source: FEMA, March 2015.

6.4.1 NFIP Participation

The City has participated in the NFIP since an emergency entry on 9/11/1975. Regular entry into the program was on 9/1/1983.

Table 14 NFIP Statistics



Community Overview

County:	NOME CENSUS AREA			CID:	020069
Program:	Regular	Emergency Entry:	09/11/1975	Regular Entry:	09/01/1983
Status:	PARTICIPATING			Status Effective:	09/01/1983
FIRM Status:	REVISED			Initial FIRM:	09/01/1983
FHBM Status:	SUPERCEDED BY FIRM			Initial FHBM:	06/28/1974
Probation Status:					
Probation Effective:		Probation Ended:			
Withdrawal Effective:		Reinstated Effective:			
CRS Class / Discount:	08 / 10%			Policies In Force:	23
Effective Date:	10/01/2007			Insurance In Force:	$8,891,800.00
CAV Date:	07/30/2012	Workshop Date:	09/19/2011	No. of Paid Losses:	12
CAC Date:		GTA Date:	12/06/2013	Total Losses Paid:	$491,203.44
Tribal		Community Website:	http://www.nomealaska.org	Sub. Damage Claims Since 1978:	0
Upton Jones Claims		HMGP Projects			
ICC Claims		FMA Projects			

Source: DCRA

6.4.2 Repetitive loss properties

Repetitive loss properties are those with at least two losses in a rolling ten-year period and two losses that are at least ten days apart. Specific property information is confidential, but within the City of Nome there has been one property that meets the FEMA definition of repetitive loss. The property is a single-family home and has flooded two times.

6.5 Vulnerability Exposure

Analysis

The entire community is at equal risk to the hazards of earthquake, weather (severe) and wildfire.

Properties located in the flood zone have not changed since the 2008 HMP. The City of Nome City Clerk's Office researched the number and assessed value of structures located within all the areas identified on the FIRM. The City estimates that there are 67 structures in the flood plain with an assessed value of $11,502,300.

Table 15 lists the City owned properties in Nome and their building value, content value and the total value to replace the facility if it was damaged.

Table 15 City Facility Vulnerabilities

Property Description	Address	BuildingValue	ContentsValue	TotalValue
Child Care Building	606 E. I Street	$3,410,000	$0	$3,410,000
City Hall	102 Division	$1,699,934	$171,647	$1,887,915
Convention Center	409 River Street	$1,208,144	$34,329	$1,242,473
Dump Building	Center Creek Rd	$390,672	$0	$390,672
Fire/Building Inspector Office	500 Bering Street	$2,227,400	$219,869	$2,451,269
Garco Building	Port Road	$935,922	$0	$935,922
Grader Greg Garage (prev. S.R.E.B.)	Greg Krushek Avenue	$948,130	$0	$948,130
Icy View Fire Hall	401 Out-of-the-Way	$349,152	$5,722	$354,874
Landfill Building	Beam Road	$635,540	$0	$635,540
Library/Museum	223 Front Street	$1,237,572	$91,545	$3,329,117
Low Level Dock	Port	$0	$0	$0
Morgue	403 Masonic Avenue	$402,714	$21,133	$423,847
NACTEC Garage	Nome Beltz Complex, Mile 4	$89,121	$0	$89,121
NACTEC House	Nome Beltz Complex, Mile 4	$3,090,000	$0	$3,090,000
New Museum (Builders Risk)	601 Steadman	$13,500,000	$0	$13,500,000
Old Library/Museum	223 Front Street	$1,237,572	$0	$1,237,572
Port Building	307 Belmont Street	$114,946	$5,722	$120,668
Public Safety Bldg/Police/Animal Shelter	102 Greg Kruschek Avenue	$10,947,660	$173,703	$11,276,363
Public Works Building	404 4th Avenue	$1,642,575	$105,666	$1,748,241
Recreation Center	206 E 6th Avenue	$8,486,000	$87,948	$8,573,948
Richard Foster Building	601 Steadman	$19,000,000	$91,545	$21,091,545
St. Joseph's Church	407 Bering Street	$2,720,269	$0	$2,720,269

Property Description	Address	BuildingValue	ContentsValue	TotalValue
Visitors Center	301 Front Street	$270,235	$5,722	$275,957
XYZ Senior Care	104 Division	$2,313,205	$85,824	$2,399,029

Source: City of Nome Finance Department

6.6 Future Development

Table 16 depicts current and future grant projects.

Table 16 Current and Future Grant Projects

Name of Project	Start Date	Status	Grant Amount	
Site Investigation/D&E for Utility Maintenance/Response Equipment Storage & Personnel Work facility	2008	Active	$560,000	2/28/13
Museum Construction and Development	2011	Active	$2,000,000	6/30/15
Nome Public School Sprinkler/Fire Alarm Upgrade	2012	Active	$90,000	6/30/16
The Richard Foster Building Construction	2012	Active	$14,000,000	7/1/11
Long Term Care Facility Replacement	2012	Active	$7,000,000	6/30/16
Multi-Purpose Loader and Snow Blower	2013	Active	$600,000	6/30/17
Long Term Care Facility Construction	2013	Active	$7,550,000	6/30/17
Port Design and Construction	2013	Pending	$10,000,000	6/30/17

Source: DCRA

The City of Nome 2016 Legislative Priorities are listed below in prioritized order.

1. Water and Sewer Infrastructure Improvement
2. Support for an Arctic Deep Draft Port at Nome to -36' MLLW through $3.25M in Design Funds
3. Support of Fire Department Pumper Truck
4. East End Road Upgrade Project
5. Fully Fund Nome Preschool

7. Mitigation Strategy

Section Seven outlines the five-step process for preparing a mitigation strategy including:

1. Identifying each jurisdiction's existing authorities for implementing mitigation action initiatives
2. Developing Mitigation Goals
3. Evaluating Mitigation Actions
4. Implementing the Mitigation Action Plan (MAP)

DMA requirements for developing a comprehensive mitigation strategy include:

DMA 2000 Requirements
Identification and Analysis of Mitigation Actions
§201.6(c)(3): [The plan shall include the following:] A *mitigation strategy* that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools.
§201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
§201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.
§201.6(c)(3)(iii): [The hazard mitigation strategy shall include an] action plan, describing how the action identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
§201.6(c)(3)(iv): [For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.
Requirement §201.6(c)(4): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvements, when appropriate.
ELEMENT C. Mitigation Strategy
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs?
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? *(Addressed in Section 6.4)*
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards?
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure?
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction?
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate?
Source: FEMA, March 2015

7.1 City of Nome Capability Assessment

The City's capability assessment reviews the technical and fiscal resources available to the community.

DMA 2000 Requirements
Incorporation into Existing Planning Mechanisms **§201.6(c)(3):** [The plan shall include the following:] A *mitigation strategy* that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools.
ELEMENT C. Incorporate into Other Planning Mechanisms
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs?
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate?
Source: FEMA, March 2015.

This section outlines the resources available to the City for mitigation and mitigation related funding and training. Tables 17, 18, and 19 delineate the City's regulatory tools, technical specialists, and financial resource available for project management. Additional funding resources are identified in Appendix A.

Table 17 Regulatory Tools.

Regulatory Tools (ordinances, codes, plans)	Existing Yes/No?	Comments (Year of most recent update; problems administering it, etc.)
Comprehensive Plan	Yes	Explains the City's land use initiatives and natural hazard impacts.
Land Use Plan	Yes	Explains the City's land use goals and initiatives.
Emergency Response Plan	Yes	Emergency Operation Plan
Wildland Fire Protection Plan	No	
Building code	Yes	The City exercises this authority.
Zoning ordinances	Yes	The City exercises this authority.
Subdivision ordinances or regulations	Yes	The City exercises this authority.

Local Resources

The City has a number of planning and land management tools that will allow it to implement hazard mitigation activities. The resources available in these areas have been assessed by the hazard mitigation Planning Team, and are summarized below.

Table 18 Technical Specialists for Hazard Mitigation.

Staff/Personnel Resources	Yes / No	Department/Agency and Position
Development and land management practices	Yes	Subdivision codes
Planner or engineer with an understanding of natural and/or human-caused hazards.	Yes	City Planner
Floodplain Manager	Yes	City Building Inspector
Surveyors	No	The City hires consultants when they need a surveyor.
Staff with education or expertise to assess the jurisdiction's vulnerability to hazards.	Yes	City Planner
Personnel skilled in Geospatial Information System (GIS) and/or Hazards Us-Multi Hazard (Hazus-MH) software	Yes	City Clerk familiar with GIS
Scientists familiar with the hazards of the jurisdiction	No	The City works with U.S. Fish & Wildlife Service (USFWS) and Fish & Game (ADF&G), and the Alaska Department of Transportation and Public Facilities
Emergency Manager	Yes	Emergency Manager at Nome Police Department
Finance (Grant writers)	Yes	City Finance Director
Public Information Officer	Yes	City Manager

Table 19 Financial Resources.

Financial Resource	Accessible or Eligible to Use for Mitigation Activities
General funds	Can exercise this authority with voter approval
Payment in Lieu of Taxes (PILT)	Provides operating support funding
Municipal Energy Assistance Program (MEAP)	Provides operating support funding
Community Development Block Grants (CDBG)	Can exercise this authority with voter approval
Capital Improvement Project Funding	Can exercise this authority with voter approval
Authority to levy taxes for specific purposes	Can exercise this authority with voter approval
Incur debt through general obligation bonds	Can exercise this authority with voter approval
Incur debt through special tax and revenue bonds	Can exercise this authority with voter approval
Incur debt through private activity bonds	Can exercise this authority with voter approval
Hazard Mitigation Grant Program (HMGP)	FEMA funding which is available to local communities after a Presidentially declared disaster. It can be used to fund both pre- and post-disaster mitigation plans and projects.
Pre-Disaster Mitigation (PDM) grant program	Yes, Nome participates in the NFIP
Flood Mitigation Assistance (FMA) grant program	Yes, Nome participates in the NFIP

The Planning Team developed the mitigation goals and potential mitigation actions to address identified potential hazard impacts for the City within Section 5.3.

7.2 Developing Mitigation Goals

The requirements for the local hazard mitigation goals, as stipulated in DMA 2000 and its implementing regulations are described below.

DMA 2000 Requirements
Local Hazard Mitigation Goals **§201.6(c)(3)(i):** The hazard mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
ELEMENT C. Mitigation Goals
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards?
Source: FEMA, March 2015

The exposure analysis results were used as a basis for developing the mitigation goals and actions. Mitigation goals are defined as general guidelines that describe what a community wants to achieve in terms of hazard and loss prevention. Goal statements are typically long-range, policy-oriented statements representing community-wide visions. As such, seven goals were developed to reduce or avoid long-term vulnerabilities to the identified hazards (Table 22).

Table 22 Mitigation Goals.

Natural Hazards	
EQ 4	Reduce structural vulnerability to earthquake (ER) damage.
FL 5	Reduce flood and erosion (FL) damage and loss possibility.
W (S) 6	Reduce structural vulnerability to severe weather (SW) damage.
WF 7	Reduce structural vulnerability to Tundra/Wildland Fire (WF) damage.

7.3 Identifying Mitigation Actions

The requirements for the identification and analysis of mitigation actions, as stipulated in DMA 2000 and its implementing regulations are described below.

DMA 2000 Requirements
Identification and Analysis of Mitigation Actions **§201.6(c)(3)(ii):** [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.
ELEMENT C. Mitigation Actions
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure?
Source: FEMA, March 2015

7.4 Evaluating and Prioritizing Mitigation Actions

The requirements for the evaluation and implementation of mitigation actions, as stipulated in DMA 2000 and its implementing regulations are described below.

DMA 2000 Requirements: Mitigation Strategy - Implementation of Mitigation Actions
Implementation of Mitigation Actions **§201.6(c)(3)(iii):** [The hazard mitigation strategy shall include an] action plan, describing how the action identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
ELEMENT C. MITIGATION STRATEGY
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))
Source: FEMA, March 2015

The Planning Team reviewed the simplified social, technical, administrative, political, legal, economic, and environmental (STAPLEE) evaluation criteria (Table 20) and the Benefit-Cost Analysis Fact Sheet (Appendix E) to consider the opportunities and constraints of implementing each particular mitigation action. For each action considered for implementation, a qualitative statement is provided regarding the benefits and costs and, where available, the technical feasibility. A detailed cost-benefit analysis is anticipated as part of the application process for those projects the City chooses to implement.

Table 20 Evaluation Criteria for Mitigation Actions.

Evaluation Category	Discussion "It is important to consider..."	Considerations
Social	The public support for the overall mitigation strategy and specific mitigation actions.	Community acceptance Adversely affects population
Technical	If the mitigation action is technically feasible and if it is the whole or partial solution.	Technical feasibility Long-term solutions Secondary impacts
Administrative	If the community has the personnel and administrative capabilities necessary to implement the action or whether outside help will be necessary.	Staffing Funding allocation Maintenance/operations
Political	What the community and its members feel about issues related to the environment, economic development, safety, and emergency management.	Political support Local champion Public support
Legal	Whether the community has the legal authority to implement the action, or whether the community must pass new regulations.	Local, State, and Federal authority Potential legal challenge
Economic	If the action can be funded with current or future internal and external sources, if the costs seem reasonable for the size of the project, and if enough information is available to complete a Federal Emergency Management Agency (FEMA) Benefit-Cost Analysis.	Benefit/cost of action Contributes to other economic goals Outside funding required FEMA Benefit-Cost Analysis

Evaluation Category	Discussion "It is important to consider…"	Considerations
Environmental	The impact on the environment because of public desire for a sustainable and environmentally healthy community.	Effect on local flora and fauna Consistent with community environmental goals Consistent with local, state, and Federal laws

The Planning Team prioritized the City's natural hazard mitigation actions that were selected to carry forward into the Mitigation Action Plan (MAP).

The Planning Team considered each hazard's history, extent, and probability to determine each potential actions priority. A rating system based on high, medium, or low was used.

- High priorities are associated with actions for hazards that impact the community on an annual or near annual basis and generate impacts to critical facilities and/or people.
- Medium priorities are associated with actions for hazards that impact the community less frequently, and do not typically generate impacts to critical facilities and/or people.
- Low priorities are associated with actions for hazards that rarely impact the community and have rarely generated documented impacts to critical facilities and/or people.

Prioritizing the mitigation actions within the MAP matrix (Table 7-8) was completed to provide the City with an implementation approach.

7.5 Mitigation Action Plan

Table 21 delineates the acronyms used in the Mitigation Action Plan (Table 24). See Appendix A for summarized agency funding source descriptions.

The City's Mitigation Action Plan, Table 22, depicts how each mitigation action will be implemented and administered by the Planning Team. The MAP delineates each selected mitigation action, its priorities, the responsible entity, the anticipated implementation timeline, and provides a brief explanation as to how the overall benefit/costs and technical feasibility were taken into consideration.

Table 21 Possible Funding Sources.

City of Nome (City)
Tribal Assembly (Tribe)
Federal Management Agency (FEMA)/
Hazard Mitigation Assistance Grant Programs (HMA)
Emergency Management Program Grant (EMPG)
Debris Management Grant (DM)
Flood Mitigation Assistance Grants (FMA)
National Earthquake Hazards Reduction Program (NEHRP)
National Dam Safety Program (NDS)
US Department of Homeland Security (DHS)
Citizens Corp Program (CCP)
Emergency Operations Center (EOC)

Homeland Security Grant Program (HSGP)
Emergency Management Performance Grant (EMPG)

State Homeland Security Program (SHSP)

US Department of Commerce (DOC)/

Remote Community Alert Systems Program (RCASP)

National Oceanic and Atmospheric Administration (NOAA)

Denali Commission (Denali)

Energy Program (EP

Solid Waste Program (SWP)

Alaska Department of Military and Veterans Affairs (DMVA), Division of Homeland Security and Emergency Management (DHSEM)

Mitigation Section (for PDM & HMGP projects and plan development)

Preparedness Section (for community planning)

State Emergency Operations Center (SEOC for emergency response)

Alaska Department of Community, Commerce, and Economic Development (DCCED) Division of Community and Regional Affairs (DCRA)/
Community Development Block Grant (CDBG)

Alaska Climate Change Impact Mitigation Program (ACCIMP)

Flood Mitigation Assistance Grants (FMA)

Alaska Department of Transportation

State road repair funding

Alaska Energy Authority (AEA)

AEA/Bulk Fuel (ABF)

AEA/Alternative Energy and Energy Efficiency (AEEE)

Alaska Department of Environmental Conservation (DEC)/

Village Safe Water (VSW)

DEC/Alaska Drinking Water Fund (ADWF)

DEC/Alaska Clean Water Fund [ACWF]

DEC/Clean Water State Revolving Fund (CWSRF)

US Army Corp of Engineers (USACE)/

Planning Assistance Program (PAP)

Capital Projects: Erosion, Flood, Ports & Harbors

Alaska Division of Forestry (DOF)/

Volunteer Fire Assistance and Rural Fire Assistance Grant (VFAG/RFAG)

Assistance to Firefighters Grant (AFG)

Fire Prevention and Safety (FP&S)

Staffing for Adequate Fire and Emergency Response Grants (SAFER)

Emergency Food and Shelter (EF&S)

US Department of Agriculture (USDA)/

Emergency Watershed Protection Program (EWP])

Emergency Conservation Fund (ECF)

Rural Development (RD)

US Geological Survey (USGS)

Alaska Volcano Observatory (AVO)

Assistance to Native Americans (ANA)

Native American Housing Assistance and Self Determination Act (NAFSMA),

Natural Resources Conservation Service (NRCS)/

Emergency Watershed Protection Program (EWP)

Wildlife Habitat Incentives Program (WHIP)

Watershed Planning

US Army Corps of Engineers (USACE)/

Planning Assistance Program

Lindbergh Foundation Grant Program Rasmussen Foundation Grants (LFG)

Table 22 City of Nome Mitigation Action Plan (MAP)

Goal/ Action ID	Description	Priority (High, Medium, Low)	Person Responsible	Potential Funding Source(s)	Timeframe (1-3 Years 2-4 Years 3-5 Years)	Benefit-Costs (BC) / Technical Feasibility (T/F)
EQ 1	Provide information on earthquake mitigation and preparedness activities	High	City Manager DHS&EM	DHS&EM	Annually	B/C: This project would ensure threatened infrastructures are available for use – their loss would exacerbate potential damages and further threaten survivability. T/F: This project is feasible using existing staff skills, equipment, and materials
EQ 2	Continue enforcement of the International Building Code which requires that new construction be built with adequate standards that reduces the structural damage in the community should an earthquake occur.	High	City Building Inspector	City	Annually	B/C: This project would ensure threatened infrastructures are available for use – their loss would exacerbate potential damages and further threaten survivability. T/F: This project is feasible using existing staff skills, equipment,

Goal/ Action ID	Description	Priority (High, Medium, Low)	Person Responsible	Potential Funding Source(s)	Timeframe (1-3 Years 2-4 Years 3-5 Years)	Benefit-Costs (BC) / Technical Feasibility (T/F)
						and materials
EQ 3	Evaluate the need for development of earthquake hazard maps of the Nome areas	Medium	Planning Commission	DHS&EM, NRCS, USARCE, USDA	1-3 Years	B/C: This project would ensure threatened infrastructures are available for use – their loss would exacerbate potential damages and further threaten survivability. T/F: This project is feasible using existing staff skills, equipment, and materials.
EQ 4	Inspect, prioritize, and retrofit any critical facility or public infrastructure that does not meet current State Adopted Building Codes.	High	City Manager Public Works	City, HMA, NRCS, ANA, USACE, US USDA, Lindbergh	1-3 years	B/C: This project would ensure threatened infrastructures are available for use – their loss would exacerbate potential damages and further threaten survivability. T/F: This project is feasible using existing staff skills, equipment, and materials.
EQ 5	Install non-structural seismic restraints for large furniture such as bookcases, filing cabinets, heavy televisions, and appliances to prevent toppling damage and resultant injuries to small children, elderly, and pets.	High	City Manager Public Works	City, HMA, NRCS, ANA, USACE, US USDA, Lindbergh	1-3 years	B/C: This project would ensure threatened infrastructures are available for use – their loss would exacerbate potential damages and further threaten survivability. T/F: This project is feasible using existing staff skills, equipment, and materials.
FLD	Update current FIRM	Completed 2010				
FLD	Request the Corps assess the use of dredge material for nourishing the beach in	Accomplished ongoing yearly event				

Goal/ Action ID	Description	Priority (High, Medium, Low)	Person Responsible	Potential Funding Source(s)	Timeframe (1-3 Years 2-4 Years 3-5 Years)	Benefit-Costs (BC) / Technical Feasibility (T/F)
	front of the Nome Seawall to lessen the storm and erosion damage					
FLD 1	Provide adequate insurance for all city structures located with the flood plain	High	City Building Inspector	City	Annually	B/C: Flood hazard mitigation is among FEMA's highest national priorities. Proactive mitigation activities have a high/cost benefit ratio and result in less costly construction before a problem develops. T/F: The City has the skill to implement this action. Specialized skills may need to be contracted-out with materials and equipment barged in depending on the method.
FLD 2	Pursue a lower CRS ranking	Medium	City Building Inspectors	City	Annually	Same as above
FLD 3	Fund an engineering evaluation to flood proof vulnerable structures	Medium	City Engineers and Building Inspector	City, DCRA	1-3 years	Same as above
FLD 4	Bring a flood proofing workshop to Nome to assist the City and private property owners	Medium	Building Inspector	City, DCRA	1-3 years	Same as above
FLD 5	Continue to require buildings to be built with the lowest floor one foot above base flood elevation, as per NCC 11.50.030	High	Building Inspector	City	Ongoing, currently this is done during the building permit process.	Same as above
FLD 6	Relocate NJUS power lines that are located in the flood plain or in danger from erosion	High	NJUS Manager	City and Grants	Some power lines have been relocated, but need protected.	Same as above
FLD 7	Seek funding for additional maintenance	High	Port Manager	USCOE	1-3 Years	Same as above

Goal/ Action ID	Description	Priority (High, Medium, Low)	Person Responsible	Potential Funding Source(s)	Timeframe (1-3 Years 2-4 Years 3-5 Years)	Benefit-Costs (BC) / Technical Feasibility (T/F)
	and repair to the Nome Seawall					
SW 1	Research and consider instituting the National Weather Service program of "Storm Ready".	Medium	CITY Manager	CITY, HMA, NRCS, ANA, USACE, US USDA, Lindbergh	1-3 years	B/C: This project would ensure threatened infrastructures are available for use – their loss would exacerbate potential damages and further threaten survivability. T/F: This project is feasible using existing staff skills, equipment, and materials.
SW 2	Conduct special awareness activities, such as Winter Weather Awareness Week, Flood Awareness Week, etc.	Medium	CITY Manager	CITY, HMA, NRCS, ANA, USACE, US USDA, Lindbergh	1-3 years	Same as above
SW 3	Expand public awareness about NOAA Weather Radio for continuous weather broadcasts and warning tone alert capability	Medium	CITY Manager	CITY, HMA, NRCS, ANA, USACE, US USDA, Lindbergh	1-3 years	Same as above
SW 4	Develop method to reduce damage for thawing permafrost to new and current structures	Medium	NJUS Manager	CITY, ADOT, HMA, NRCS, USACE, USDA/EWP, USDA/ECP, DCRA	1-3 years	Same as above
SW 5	Comprehensive Dust Plan	High	Planning Chair	City, DOT	1-3	Same as above
WF 1	Continue to support the local fire department with adequate firefighting equipment and training.	High	Emergency Services Manager	CITY, ADOT, HMA, NRCS, USACE, USDA/EWP, USDA/ECP, DCRA	1-3 years	B/C: This action has a high/cost benefit ratio and result in less costly construction before a problem develops. T/F: The CITY has the skill to implement this action. Specialized skills may need to be

Goal/ Action ID	Description	Priority (High, Medium, Low)	Person Responsible	Potential Funding Source(s)	Timeframe (1-3 Years 2-4 Years 3-5 Years)	Benefit-Costs (BC) / Technical Feasibility (T/F)
						contracted-out with materials and equipment barged in depending on the method selected.
WF 2	Promote Fire Wise building design, siting, and materials for construction.	High	Emergency Services Manager	CITY, ADOT, HMA, NRCS, USACE, USDA/EWP, USDA/ECP, DCRA/ ACCIMP	1-3 years	Same as above.
WF 3	Continue to enforce development of building codes and requirements for new construction.	High	Emergency Services Manager	CITY, ADOT, HMA, NRCS, USACE, USDA/EWP, USDA/ECP, DCRA/ ACCIMP	1-3 years	Same as above
WF 4	Enhance public awareness of potential risk to life and personal property. Encourage mitigation measures in the immediate vicinity of their property.	High	Emergency Services Manager	CITY, ADOT, HMA, NRCS, USACE, USDA/EWP, USDA/ECP, DCRA/ ACCIMP	1-3 years	Same as above
WF 5	Construct a public safety building to store fire equipment.	High	Emergency Services	CITY, ADOT, HMA, NRCS, USACE, USDA/EWP, USDA/ECP, DCRA/ ACCIMP	1-3 years	Same as above
WF 6	Roads for both Subdivisions, so that emergency response can reach the area.	High	Public Works Director	CITY, ADOT, HMA, NRCS, USACE, USDA/EWP, USDA/ECP, DCRA/ ACCIMP	1-3 years	Same as above
WF 7	Support efforts to reduce flammable materials near residences and critical facilities.	High	Public Works Director	CITY, ADOT, HMA, NRCS, USACE, USDA/EWP, USDA/ECP, DCRA	1-3 years	Same as above

7.6 Implementing Mitigation Strategy into Existing Planning Mechanisms

The requirements for implementation through existing planning mechanisms, as stipulated in the DMA 2000 and its implementing regulations, are described here.

DMA 2000 Requirements
Incorporation into Existing Planning Mechanisms **§201.6(c)(4)(ii):** [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.
ELEMENT C. Incorporate into Other Planning Mechanisms
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate?
Source: FEMA, March 2015

After the adoption of the MJHMP, each Planning Team Member will ensure that the MJHMP, in particular each Mitigation Action Project, is incorporated into existing planning mechanisms. Each member of the Planning Team will achieve this incorporation by undertaking the following activities.

- Review the community-specific regulatory tools to determine where to integrate the mitigation philosophy and implementable initiatives. These regulatory tools are identified in Section 7.1 capability assessment.
- Work with pertinent community departments to increase awareness for implementing MJHMP philosophies and identified initiatives. Provide assistance with integrating the mitigation strategy (including the Mitigation Action Plan) into relevant planning mechanisms (i.e. Comprehensive Plan, Capital Improvement Project List, Transportation Improvement Plan, etc.).
- Implementing this philosophy and activities may require updating or amending specific planning mechanism.

8. References

Section Eight provides a comprehensive reference list used to develop the MJHMP.

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