

Testimony of Denise Michels, Mayor for the City of Nome  
The United States Senate Commerce Subcommittee on Disaster Prevention and  
Prediction for the Western Alaska Winter Storms  
March 1<sup>st</sup>, 2006

Good afternoon Mr. Chairman, I am Denise Michels, Mayor for the City of Nome and President of the Alaska Conference of Mayors. I would like to provide you an overview of the winter storms western Alaska has been hit with for the last 100 years and our ability to prepare for these storms and recommendation for your consideration. This information was provided by the communities affected by the storms, National Weather Service, State of Alaska's Division of Community Advocacy, Division of Homeland Security & Emergency Management, and the University of Alaska's International Arctic Research Center.

The City of Nome is located in Northwest Alaska on the southern coast of the Seward Peninsula. Nome lies along the Bering Sea facing Norton Sound. The city is 539 air miles north of Anchorage and 161 miles east of Russia.

Nome Census Area, which encloses a 23,013 square mile section of the Seward Peninsula and the Norton Sound coast. 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 medical and transportation facilities and other services.

Unlike most areas in America, a road system does not exist throughout the Bering Strait Region. Air transportation is the most common and reliable mode of transportation throughout the year. Many of the communities of Northwest Alaska have developed because of the convenience to traditional hunting or fishing grounds and community residents utilize the rivers and coastline as vital routes for transportation during the summer months using boats with outboard motors. When storms hit, all transportation ceases. We are not able to perform medical or emergency evacuations of remote isolate communities due to the high winds and dangerous freezing ice conditions.

Gold was reported in the Nome area as far back as 1867 but it was not until the gold rush of 1899 that brought people in the area settling on the coast. Western Alaska has survived the Spanish Influenza, the deadly diphtheria breakout in Nome and winter storms.

The major risk for the City of Nome and other communities are from coastal storm surges which in the last few years have caused severe erosion. The fairly shallow water off shore normally keeps waves small. However during a surge water depth increases, allowing larger, more powerful waves to impact the coast. This fact, combined with the flooding due to the surge itself can deal a devastating double blow to the area. The situation is made worse if the surge comes at high tide. Ice override may occur when the storm wind conditions are coupled with open water depending on the

prevailing winds. These storm surges have wreaked havoc on the city many times in the past and will do so again.

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. 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 September 12<sup>th</sup>, 1900-The first recorded storm in Nome occurred on September 12<sup>th</sup>, 1900. It is estimated that the winds were 75 mph. The towering waves destroyed or washed away almost everything on the beach, and part of Nome's business district. It was estimated that 1,000 people were homeless, numerous people died, many head of cattle and sheep were lost and 10,000 tons of coal were swept into the sea. The total damage was estimated at \$750,000.

Storm of October 1902-The storm of October 11, 1902 produced waves only 2" less than the storm in 1900 however the wind was not as fierce. The estimated damaged would not exceed \$25,000 to \$30,000.

Storm of October 1913- The October 1913 is the worst storm to date. Waves broke over the top of the city breaking apart entire business blocks. Gale winds were clocked at 60 mph, which produced breaking waves of 40' high and a storm surge of 20'. Most of the town was destroyed. The entire sand spit, which housed hundreds of homes, was completely swept away. Five hundred people were homeless, most of them destitute. The damage was estimated at \$1,000,000.

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 9' 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 led to the push for a seawall and were successful in getting Congress to appropriate \$1 million (Rivers & Harbors Action, 6/16/1948 - PL80-649) in 1949 to build the seawall.

The Great Bering Sea Storm of 1974-Three separate storms simultaneously hit the Northwestern Alaska's coastline in November that produced a storm surge or rise in water level of up to 12' MLLW. Extensive damage to streets and structures occurred with approximately 30 homes destroyed and many displaced as one of the power plant's generators sat in pit and flooded with water and power lines were down. The city's sewage treatment plant was out of order until it was by-passed it so toilets could be used. Water was contaminated due to the sea water coming into the river so water trucks delivered 100 gallons of water to those on the truck route; others had to get water

at the fire hall. An ice pileup reached 30-40'. The seawall protected the city however; damage was still estimated to be over \$30 million.

Extensive damage to villages occurred, flooding homes damaging power lines, and roads.

1980's-A pileup in the winter of 1980 reached a height of 20-25'. The seawall localizes the effects of ice override and prevents the transport of ice inland.

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

Sizable ice piles occur with considerable frequency in Nome. Ice override occurred a few years ago on the east side of town, but a bulldozer turned the ice sheet back.

Storm of 2002-On October 8, 2002 a winter storm hit with winds at 45 mph and in Shishmaref and Kivalina seas were reported at 14' at high tide. Severe erosion on the embankment of the beach in Shishmaref occurred losing 10'-20'. Homes were endangered along with a bulk fuel tank farm. Total damage was \$382,032.

Storm of 2003-On November 21-23, 2003 Shishmaref was hit by a storm with winds blowing 45 mph with gust to 61 mph, seas were as high as 14'. Early warning by National Weather Service (NWS) gave community members one day to move items to higher land. Severe erosion occurred again losing an additional 10'-30' of land endangering power poles to falling over. Boats and drying racks with subsistence food were washed out to sea causing economic hardship to the community. Total damage was \$695,000.

In 2003 FEMA approved the City of Nome's Hazard Mitigation Plan making us the first in the state and second in the nation. We are eligible to apply for various hazard mitigation project grants. Because this was new to us a consultant was hired. We identified community and business leaders, identified vulnerable locations, developed effective mitigation strategies and practiced disaster response plans. We've learned about Incident Command and Unified Command Management and learned how to work and communicate effectively as a team and have established an Emergency Operations Center. The National Weather Service's Nome staff is an essential part of this team.

Storm of 2004-October 19<sup>th</sup>, 2004 Bering Sea Storm caused significant damage and destruction to Western Alaska. Early warnings by the NWS predicted the 941 mb pressure storm could rival that of November 1974, so precautionary steps were taken. The storm did not develop to the levels of the event. At the airport in Nome peak winds were 59 mph. NOAA maintains a weather station on the port causeway which recorded an hourly observation during the storm at 55 mph and a peak tide of +10.5'.

The City of Nome activated the Emergency Operations Plan and implemented the Incident Command System. We involved approximately 100 personnel from the Alaska State Troopers, Alaska National Guard, Nome Volunteer Fire Department, Nome Ambulance Department, Nome Police Department; City/Utility/Public works employees and civilians in various capabilities. Pre-storm activities included boarding up doors and windows, relocating inventory to high ground, securing docks and closing roads.

Many villages in low lying areas were flooded and major damage occurred to the infrastructure and roads. The community of Shishmaref lost more land due to erosion. Kotezbue's Front Street was under water. Commercial propane bottles were thrown around causing an evacuation of Nome's Front Street. We experienced power outages which can compound the destruction by freezing up water and sewer lines. The storm created a new channel and washout the Nome-Council Road at Safety Bridge.

The City of Nome declared a disaster on 10/19 along with Northwest Arctic Borough. The Governor declared a disaster on 10/29 along with the Federal Government on 11/16/2004. The estimate cost of this disaster is \$12,460,469.

Storm of 2005-The 966mb September 22<sup>nd</sup> storm hit Western Alaska and continued until the 23<sup>rd</sup>. Nome's peak tide was +10.3' with peak winds at 56 mph. The Early warnings by the NWS gave a day and half for the city to establish an Emergency Operations Center (EOC). Front Street businesses prepared for the storm by boarding windows, doors, protecting inventory and ensuring operational pumps. The EOC kept in contact with our villages in preparation to assist and to communicate with our emergency services folks if anything developed. In Unalakleet this early warning allowed the community to haul rocks to protect their shorelines in hopes of slowing down erosion.

Kivalina lost 25'-30' of beach erosion along their shoreline and 20' of beach erosion towards the airstrip. In Golovin water covered roads ways 3' deep, fuel tanks were floating and the lower half of town was under water. In Teller sea water flooded the main road splitting the town in two. The community of Shaktoolik located on a spit will become an island if they are hit with another big storm blocking evacuation access.

In Nome power lines were down. Low lying homes were flooded. The new harbor entrance failed as sand eroded away and nearly exposed the utility sewer line. The new breakwater was damaged, 5-8 ton rocks were displaced and repairs had to be done. The Nome Council Road was washed away for several miles and the newly created channel broke thru again. Shelter was given to 17 evacuees; several families were dislocated as their homes were damaged. The City of Nome and surrounding areas, the State of Alaska and the FEMA declared disasters. State DHSEM is preparing an estimate cost and has identified \$2 million in damage to communities and another \$1.2 million to roads and infrastructure.

It is evident that we are seeing severe winter storms more often then the prior years as documented, mainly freeze up comes later in the year. Total cost of Western Alaska

storms for the last 100 years is estimated at \$48,517,501. Alaska is severely impacted by storms as our per capita income is lower than the US eastern seaboard, economic options are limited, and recovery may be slower due to the needed infrastructure.

The City of Nome continues to hold monthly Local Emergency Planning Committee meetings, conduct drills and receive training in incident command and coordination of multiple agencies in Nome. Our professional response, before and after the storm demonstrated our commitment to disaster preparation and recovery. Another preventative measure is that the City of Nome is in process of moving the power plant to higher ground and we need an additional \$4 million to complete construction.

The City of Shishmaref with the assistance of the Alaska Division of Emergency Services completed an evacuation and flood action plan. The Shishmaref Erosion and Relocation Committee are actively pursuing to relocate to the mainland. The community is working with USDA's Natural Resources Conservation Service in assessing two different sites on the mainland. Also the Northwest Arctic Borough is an Emergency Management Grant program participant and they are researching several options to applying for funds to help Kivalina complete their Hazardous Mitigation Plan.

No other communities have completed their hazardous mitigation plan. One reason is that a majority of our cities are hurting financially and are not fully staffed and secondly the State received minimal amount of funds for remaining cities to apply for a grant to complete the hazardous mitigation plan. To assist our communities we recommend the following for your consideration:

- That the Federal Government provide more funds to the State of Alaska for the cities to complete their plans.
- Consider funding a pilot project through the State to complete the plans with the communities in Western Alaska.

To assist the National Weather Service to predict models we recommend the following for your consideration:

- More buoys are need in the Bering Sea. Currently two buoys are located near the Aleutian chain; the closest buoy # 46035 is several hundred miles south of Nome. This would also assist the US Corp of Engineers with the design of causeway, flood protection and shore erosion facilities.
- More observation points are needed throughout the region this will help NWS fill in the data holes.

The City of Nome is in process of working with the University of Alaska in Fairbanks to assess if a science research center is feasible for focus on science, education and history including research. We hope that NOAA will be a partner as Nome is in a unique location to study the environmental changes.

Mr. Chairman, I would like to thank you for giving me the opportunity to provide this information to the committee, it's truly an honor to be here. If there is anything else I can provide please let me know.