



FEMA

# Best practices

Disaster Mitigation Working in Alaska

## Flood Mitigation in Nome, Alaska



The 1949 drainage culverts had rusted and collapsed

**Damage prevention investments in 1949 and 1993 helped to protect the city, but high winds and water levels still managed to top the seawall and damage buildings along Front Street.**

**A new drainage system, completed in 2008, provided 30 inch culverts with sufficient capacity to remove the water from the streets and return it to the sea.**

### 2004 flooding on Front Street

**Nome, Alaska** — A powerful and extremely dangerous storm of near-record magnitude impacted the west coast of Alaska during November, 2011. The storm surge and blizzard conditions impacted forty-three communities. This was to be a major test for a recent investment in Nome's critical infrastructure.

Nome had experienced severe storms several times in its history, starting with an event in 1900 that left 1,000 homeless and destroyed the business district. More terrible storms followed and, in 1949, the U.S. Congress allocated \$1 million to build a seawall and drainage system. Strong storms continued to top the rip-rap structure and eventually the old 12 inch drainage pipes serving the downtown began to rust and collapse.

A solution began to come together in 2005 with a proposal by the Alaska Department of Transportation and Public Facilities Northern Region (DOT&PF). The project would replace and upgrade the old, failed culverts to a system of five new 30 inch diameter, one-half inch thick galvanized steel pipes.

The collaboration of effort included the City of Nome, DOT&PF, the Hazard Mitigation Grant Program administered by the Alaska Division of Homeland Security and Emergency Management (DHS&EM), and funds provided by the Federal Emergency Management Agency (FEMA) and State of Alaska.

The work was not easy. Heavy equipment was needed to excavate through



## Large diameter culverts being installed through the seawall

the rip-rap seawall; equipment that's not usually available in a remote Alaskan community. Thick-wall galvanized steel pipe was ordered from a fabricator in Puyallup, Washington. The load was transferred to a barge in Seattle, then towed all the way to Nome. Amazingly, one pipe per day installation was accomplished with the final pipe installed on September 13, 2008.

According to John Handeland, Head of the Nome Joint Utilities System, in the recent severe storms, the project worked quite well. Front Street had little storm water and it flowed out more quickly.

Unlike past disasters, this time there were no traffic diversions, standing water or property damage. "Protecting buildings and infrastructure makes sense. The sea wall improvements in Nome prevented damages that could have easily been greater than the cost of the original mitigation project," said John Madden, Director Division of Homeland Security and Emergency Management. "Winters in Alaska can be brutal and repairs must often wait until spring. Small Alaskan communities cannot thrive without timely restoration of critical infrastructure. With proper mitigation we reduce the impact of future disasters."

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**For Flood Insurance information visit: [www.FloodSmart.gov](http://www.FloodSmart.gov)**