City of Homer
Local All-Hazard
Mitigation Plan

Draft 2010 Update

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Appendices

Chapter I – Introduction

A. Purpose of the Plan:

The purpose of the All-Hazard Mitigation Plan is to fulfill the FEMA requirement under The Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Act), Section 322, Mitigation Planning enacted by Section 104 of the Disaster Mitigation Act of 2000 (DMA) (P.L. 106-390). In accordance with FEMA directives, the City of Homer All-Hazard Mitigation Plan originally adopted in July of 2004 must be updated and revised to reflect the current situation as determined by a review of the mitigation efforts completed under the existing plan and a review of events that have occurred since adoption of the first plan. This plan will identify hazards; establish community goals and objectives and develop mitigation strategies and activities that are appropriate for the City of Homer.

The Disaster Mitigation Act of 2000 (DMA 2000), Section 322 (a-d), as implemented through 44 CFR Part 201.6 requires that local governments, as a condition of receiving federal disaster mitigation funds, have a mitigation plan that describes the process for identifying hazards, risks and vulnerabilities, identifying and prioritizing mitigation actions, encouraging development of local mitigation and providing technical support for those efforts.

The purpose of this plan is to produce a program of activities through actions and projects that will best deal with the City of Homer's hazard problems, while meeting other community needs. This plan will accomplish the following objectives consistent with FEMA planning process guidelines:

- Describe the planning process to include public involvement;
- Conduct an assessment of the risks;
- Determine what facilities, or portions of infrastructure, are vulnerable to a disaster;
- Develop a mitigation strategy to reduce potential losses and target resources;
- Describe how each entity will periodically evaluate, monitor maintain and update the plan; and,
- Describe the process for implementing the plan after adoption by the local governing body of the community and receiving FEMA approval.

B. Methodology

The approach used for the review and update of the City of Homer All-Hazard Mitigation Plan consisted of the following tasks:

1. Coordinate with other agencies and organizations
2. Solicit public involvement
3. Conduct hazard area inventory
4. Review and analyze previous and future mitigation activities
5. Describe the update and review process and schedule for plan maintenance
6. Coordinating the Plan with the Kenai Peninsula Borough and State Hazard Mitigation Plan
7. Submitting to the State Hazard Mitigation Officer for Review
8. Submitting to FEMA Region 10 for Review and Approval
9. Adoption of the Plan following the public hearing process

This All Hazard Local Mitigation Plan Revision contains a list of potential goals and activities with a brief rationale or explanation of how each project or group of projects contributes to the overall mitigation strategy outlined in the plan.

This plan summarizes the activities outlined above to assess the effects of hazards in the City of Homer: flooding, earthquake, wildfire and etc. and recommends mitigation strategies and activities.

The mitigation plan will be evaluated and updated every five years. In addition, the plan will be updated, as appropriate when a declared disaster occurs that significantly affects the City of Homer, whether or not it receives a Presidential Declaration. The update will be completed as soon as possible, but no later than 12 months following the date the disaster declaration occurs.

Routine maintenance of the plan will include updating historical hazard information, completing hazard analysis and adding projects, as new funding sources become available or taking projects off the list when they are accomplished.

C. Homer – Background

The following information was obtained from the DCED Alaska Community Database at this website: http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.cfm

General Location

Homer is located on the north shore of Kachemak Bay on the southwestern edge of the Kenai Peninsula. The Homer Spit, a 4.5-mile long gravel bar, extends from the Homer shoreline into Kachemak Bay. Homer is 227 road miles south of Anchorage, at the southern-most point of the Sterling Highway. It lies approximately 59.6425° North Latitude and -151.54833° West Longitude. (Section 19, Township 6 South, Range 13 West, Seward Meridian.) Homer is located in the Homer Recording District. The area encompasses 10.6 square miles of land and 14.9 square miles of water.

Climate

Homer lies in the maritime climate zone. During the winter, temperatures range from 14° F to 27° F; summer temperatures vary from 45° F to 65° F. Average annual precipitation is 24 inches, including 55 inches of snow.

History

The Homer area has been home to Kenaitze Indians for thousands of years. In 1895, the U.S. Geological Survey arrived to study coal and gold resources. Prospectors bound for Hope and Sunrise disembarked at the Homer Spit. The community was named for Homer Pennock, a gold mining company promoter, who arrived in 1896 and built living quarters for his crew of 50 on the Spit. Their plans were to mine the beach sands along Cook Inlet, from Homer to Ninilchik. The Homer post office opened shortly thereafter. In 1899, Cook Inlet Coal Fields Company built a town and dock on the Spit, a coal mine at Homer's Bluff Point, and a 7-mile long railroad, which carried the coal to the end of the Homer Spit. Various coal mining operations continued until World War I, and settlers continued to trickle into the area, some to homestead in the 1930s and 1940s, other to work in the canneries built to process Cook Inlet fish. Coal provided fuel for homes, and there is still an estimated 400 million tons of coal deposits near Homer. The City government was incorporated in March 1964. After the Good Friday earthquake in 1964, the Homer Spit subsided approximately 4 to 6 feet, and several buildings had to be relocated.

Culture

While commercial fishing has long been the mainstay of the Homer economy, tourism has become increasingly important. Homer is known as an arts community and is also a gateway community in relation to more remote destinations, such as Kachemak Bay State Park and Lake Clark National Park and Preserve. Activities and events, such as the

Homer Jackpot Halibut Derby and Kachemak Bay Shorebird Festival, draw many participants.

Population and Economy

The Department of Community and Economic Development certified Homer's population at 5,551 in 2009 (estimated).

Homer is incorporated as a first-class city. It is primarily a fishing, fish processing, trade and service center, and enjoys a considerable seasonal visitor industry. The Homer Spit has two deep water docking facilities: the Deep Water Dock and the newer Pioneer Dock which is home to the U.S. Coast Guard Cutter Hickory and is the home berth of the Alaska Marine Highways Ferry Tustumena. Homer is home of the $13 million U.S. Fish & Wildlife Visitors Center for the Alaska Maritime National Wildlife Refuge named the Islands and Ocean Visitor Center.

Employment by Occupation and Industry in Homer (2000 Census)

OCCUPATION		**INDUSTRY**	
Management/ Professional	585	Agriculture/ Forestry/ Fishing/Mining	115
Sales & Office	327	Construction	116
Farming/ Fishing/ Forestry	55	Manufacturing	54
Construction/Extraction/ Maintenance	169	Wholesale Trade	28
Production/Transportation	234	Retail Trade	198
		Transportation/warehousing/utilities	171
		Information	35
		Finance/Insurance/Real Estate/Rental/Leasing	95
		Professional/Scientific/Management, Administration/Waste Management Services	82
		Education/Health/Social Services	411
		Arts/Recreation/Food & Lodging	256
		Other	110
		Public Administration	90
2000 Totals	**1,761**		**1,761**

The annual average unemployment rate from 1990 to 2002 for the Kenai Peninsula Borough has fluctuated between a low of 9.7% in 2001, to a high of 15.5% in 1992 (reported by the State Department of Labor Research and Analysis website).

Facilities

Over 90% of homes are fully plumbed. Water is supplied by a dam and 35-acre reservoir at Bridge Creek, is treated, and stored in a 500,000-gallon tank and a newly constructed 1,000,000-gallon tank, and piped to the majority of homes in the City. The newly completed Water Treatment Plant can treat 2.0 million gallons of water per day, with the potential for another 1.0 million gallons per day when needed due to population growth. Other residents use individual wells or have water delivered to home tanks. City sewage is piped to a deep-shaft sewer treatment plant; capacity is 880,000 gallons per day. Refuse is collected by one of two private trash collection services, and hauled to the Borough operated Class 2 landfill and bale-fill in Homer, at mile 169.3 Sterling Highway. Homer Electric Association operates the Bradley Lake Hydroelectric Plant and is part owner of the Alaska Electric Generation & Transmission Cooperative, which operates a gas turbine plant in Soldotna. It also purchases electricity from Chugach Electric.

Transportation

Homer is accessible by the Sterling Highway to Anchorage, Fairbanks, Canada and the lower 48 states. It is often referred to as "The End of the Road", because it lies at the terminus of the Sterling Highway. The State owns and operates the Homer Airport, with a 6,700' asphalt runway, and a seaplane base at Beluga Lake. The City is served by several scheduled and chartered aircraft services. There are four additional private landing strips in the Homer vicinity. The Alaska Marine Highway and local ferry services provide water transportation. The Deep Water Dock was constructed in 1990 and can accommodate vessels up to 800', displacing 65,000 tons. The Pioneer Dock, constructed in 2001/2002 can accept vessels up to 750' and displacing 80,000 tons. The Small Boat Harbor has 920 reserved boat slips (up to 85' boats); 6,000+ linear feet of transient moorage; 48.7 acre boat basin; 2 tidal grids; and a 5 lane load and launch ramp.

Chapter II – Adoption Process and Documentation

The City of Homer All-Hazards Mitigation Plan Update/Revision was developed as a multi-jurisdictional plan in cooperation with the Kenai Peninsula Borough; therefore, the plan was adopted by Resolution (pending approval by the State Hazard Mitigation Officer) by the local governing body as well as the Kenai Peninsula Borough, as incorporated into the Kenai Peninsula Borough All-Hazard Mitigation Plan as an Annex.

Chapter III – Planning Process

A. Planning Process

The City of Homer Fire Chief/Director of Emergency Services along with the City of Homer Planning, Port and Harbor, Library, Police Department, City Council, Public Works Departments and Administrative Staff developed the City of Homer All-Hazard Mitigation Plan 2010 Update/Revision. Various City departments coordinated with agencies to include; the Alaska Division of Homeland Security & Emergency Management and the Kenai Peninsula Borough Office of Emergency Management. These agencies provided information from existing plans including; Alaska State All Hazard Mitigation Plan and the Kenai Peninsula Borough All-Hazard Mitigation Plan. A committee was formed specifically to review the existing All Hazard Mitigation Plan and to formulate changes for the 2010 Update. This committee included: Homer City Manager, Walt Wrede; Police Chief, Mark Robl; Police Lieutenant, Randy Rosencrans; Public Works Director, Carey Meyer; Library Director, Helen Hill, Fire Chief, Bob Painter; Planning and Zoning Technician I and Code Compliance, Officer Dotti Harness; City Planner, Rick Abboud; Port and Harbor Director, Bryan Hawkins; and Homer City Council Member, Barbara Howard. Other city staff and employees provided support and review services of the draft documents and provided helpful feedback to the committee.

The All-Hazard Mitigation Plan Update/Revision Final Draft was then reviewed by the Homer City Council and public comment was sought regarding the drafted plan. The Final Draft was also posted on the City of Homer Web-site to solicit public comment and copies were provide key Stakeholders within the City of Homer requesting review and comment. The City of Homer also relied on information provided by the Kenai Peninsula Borough, U.S. Census, and State of Alaska.

B. Contributors

The City of Homer Volunteer Fire Department, Planning and Zoning, Public Works Department, Library, Police Department, Homer Port and Harbor, Alaska Department of Transportation, Kenai Peninsula Office of Emergency Management, Alaska Division of Homeland Security and Emergency Management, Homer City Council and Mayor, Public, and private sector businesses and non-profit organizations contributed to the development, review, and submission of this document.

C. Public Opportunity for Involvement

In order to enlist public comment on the development of the City of Homer All-Hazard Mitigation Plan 2010 Update/Revision, the Mayor and City Council added the item to the City Council Agenda beginning with the April 12, 2010 meeting. Having the item on the agenda permitted the public to comment on the process and development. Drafts of the 2010 Update were posted on the front page of the City of Homer Website with a feedback form provided for public comment. Input for the plan was also solicited from local stakeholders including: South Peninsula Hospital, Homer Electric Association, local

telecommunications companies (ACS, ATT and GCI). Comments were forwarded to the Review Committee for possible action. *Insert number* comments were submitted.

On April 12, 2010, during the regularly scheduled City Council meeting, public comment was sought on the Draft All-Hazard Plan Update. This meeting was advertised pursuant to Homer City Code and State of Alaska Open Meeting laws. There were *insert number* people that commented.

Chapter IV– Hazard Identification & Risk Assessment

A. Hazard Identification

***Hazard Matrix** – City of Homer

Flood	**Wildland Fire**	**Earthquake**	**Volcano**	**Snow Avalanche**	**Tsunami & Seiche**
Y-M	Y-H	Y-M	Y-M	Y-M	Y-M
Weather	**Landslides**	**Erosion**	**Drought**	**Technological**	**Economic**
Y-H	Y-M	Y-H	N	Y-L	Y-M
Biologic	**Man-Made**				
Y-M	Y-L				

Hazard Identification:

Y: Hazard is present in jurisdiction but probability unknown
N: Hazard is not present
U: Unknown if the hazard occurs in the jurisdiction

Risk:
L : Hazard is present with a low probability of occurrence
M : Hazard is present with a moderate probability of occurrence
H: Hazard is present with a high probability of occurrence

B. Profile of Hazard Events

Flood

Flooding is a natural event and damages occur when humans interfere with the natural process by altering the waterway, developing watersheds, and/or building inappropriately within the floodplain. This flooding threatens life, safety and health; causes extensive property loss; and results in substantial damage. Nationally, on average floods kill about 140 people each year and cause $6 billion in property damage.

Flooding in Homer can be broken into a number of categories including rainfall-runoff floods, snowmelt floods, ground-water flooding, and stream/creek flash floods. Homer also experiences coastal flooding from storm surge but this will be discussed in the Weather section. These are not exclusive categories as a flood event could have elements of more than one type.

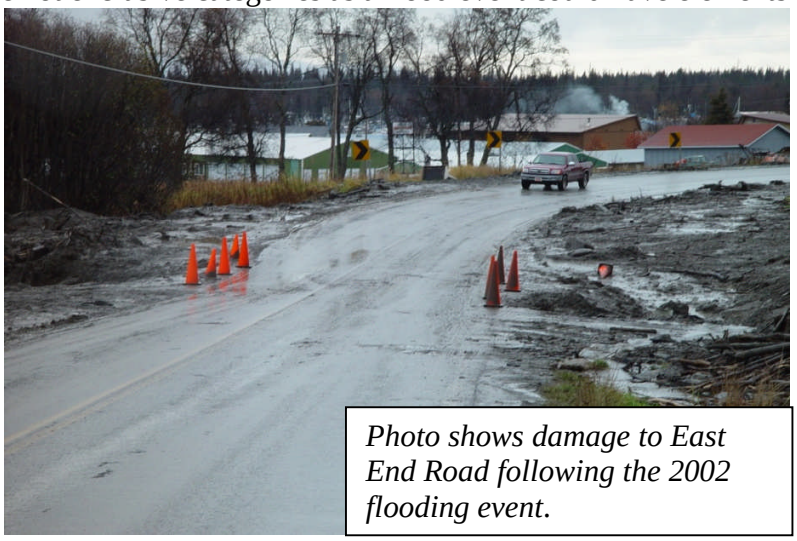


Photo shows damage to East End Road following the 2002 flooding event.

Homer has experienced floods on several occasions in the last 10 years. Major events occurred in 2002 resulting is numerous bridges being washed out on the Kenai Peninsula effectively the peninsula and isolating Homer for several weeks while temporary repairs were made. Two of these events were declared disasters and resulted in disruptions to the economy by preventing the flow of goods and materials south of Ninilchik except by barge or airplane.

There continue to be local events caused by ground water saturation, snow-melt, water runoff and local topography.

Rainfall-Runoff Floods

A typical rainfall event occurs in mid to late summer and early fall. The rainfall intensity, duration, distribution and geomorphic characteristics of the watershed all play a role in determining the magnitude of the flood. Runoff flooding is the most common type of flood. They usually result from weather systems that have prolonged rainfall associated with them such as the 2002 events.

Snowmelt Floods

Snowmelt floods usually occur in the spring or early summer. The depths of the snowpack and spring weather patterns influence the magnitude of river and stream flooding. The Sterling Highway between Homer and Anchor Point is subject to snowmelt flooding each spring.

Ground-water Floods

Ground-water flooding occurs when water accumulates and saturates the soil. The water-table rises and floods low-lying areas, including homes, septic tanks, and other facilities. Ground-water flooding can also occur in basements of structures along streams or in low-lying areas. Areas along Kachemak Drive are subject to ground water flooding.

Flash Floods

These floods are characterized by a rapid rise in water. They are often caused by heavy rain on small stream basins, ice jam formation or by dam failure. They are usually swift moving and debris filled, causing them to be very powerful and destructive. Steep coastal areas in general are subject to flash floods. Debris slides are often associated with heavy rains. The 2002 events resulted in several flash floods which closed roads and washed away bridges. Several small creeks and streams in the Homer area produced substantial debris laden flows during this time.

Wildland Fires

Wildland fires occur in every state in the country and Alaska is no exception. Each year, between 600 and 800 wildland fires, mostly between March and October, burn across Alaska causing extensive damage.

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. In Alaska, the natural fire regime is characterized by a return interval of 50 to 200 years, depending on the vegetation type, topography and location. 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 firefighter and public safety and welfare, natural and cultural resources threatened, and the other values to be protected dictate the appropriate management response to the fire. Firefighter and public safety is always the first and overriding priority for all fire management activities.

Hazard Analysis/Characteristics

Fires can be divided into the following categories:

Structure fires – originate in and burn a building, shelter or other structure. These may subsequently spread to adjacent wildlands.

Prescribed fires - ignited under predetermined conditions to meet specific objectives, to mitigate risks to people and their communities, and/or to restore and maintain healthy, diverse ecological systems.

Wildland fire - any non-structure fire, other than prescribed fire, that occurs in the wildland.

Wildland Fire Use - a wildland fire functioning in its natural ecological role and fulfilling land management objectives.

Wildland-Urban Interface Fires - fires that burn within the line, area, or zone where structures and other human development meet or intermingle with

undeveloped wildland or vegetative fuels. The potential exists in areas of wildland-urban interface for extremely dangerous and complex fire burning conditions which pose a tremendous threat to public and firefighter safety.

Fuel, weather, and topography influence wildland fire behavior. Wildland fire behavior can be erratic and extreme causing fire-whirls and firestorms that can endanger the lives of the firefighters trying to suppress the blaze. 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. Temperature and humidity also affect fire behavior. High temperatures and low humidity encourage fire activity while low temperatures and high humidity help retard fire behavior. Wind affects the speed and direction of a fire. Topography directs the movement of air, which can also affect fire behavior. When the terrain funnels air, like what happens in a canyon, it can lead to faster spreading. Fire can also travel up slope quicker than it goes down.

Wildland fire risk is increasing in Alaska due to the spruce bark beetle infestation. The beetles lay eggs under the bark of a tree. When the larvae emerge, they eat the tree's phloem, which is what the tree uses to transport nutrients from its roots to its needles. If enough phloem is lost, the tree will die. The dead trees dry out and become highly flammable.

Homer like other areas of the Kenai Peninsula has been dramatically affected by the beetle-kill. The vast majority of wildland fires on the Kenai Peninsula are the result of human activities: open burning the most prevalent. Lightning caused fire, though they do occur, are infrequent, especially on the south Kenai Peninsula. Most recent fires in the Homer area: Tracy Avenue Fire, and 17 Mile East End Road Fire were especially threatening to property and potential loss of life. Though located outside Homer City Limits, both recent fires demonstrate the potential for rapid fire spread given the weather conditions, topography and the availability of local and state wildfire fighting crews.

Wildland Fire Management in Alaska

In Homer, wildland fire management is the responsibility of two agencies: Division of Forestry and the City of Homer, Homer Volunteer Fire Department.

The Alaska Division of Forestry has statutory authority of all wildlands within the state of Alaska. The City of Homer provides wildland fire protection under terms of a Cooperative Agreement and Annual Operating Plan with the Division of Forestry (DOF).

These two agencies, along with other mutual-aid fire departments, work together to fight wildfires in and around Homer.

Weather

Weather is the result of four main features: the sun, the planet's atmosphere, moisture, and the structure of the planet. Certain combinations can result in severe weather events that have the potential to become a disaster.

In Homer, there is potential for weather disasters. Wind-driven waves from intense storms produce coastal flooding and erosion. High winds, common on the Kenai Peninsula can topple trees, damage roofs, and result in power outages across vast areas of Homer and the surrounding communities. Heavy snow contributes to the availability of water for the Bradley Lake Hydroelectric Plant, and for keeping the Bridge Creek watershed supplied, but can also cause avalanches or collapse roofs of buildings throughout the area when accumulations are too heavy. A quick thaw can lead to erosion and flooding along creeks and area streams.

Winter Storms

Winter storms originate as mid-latitude depressions or cyclonic weather systems. High winds, heavy snow, and cold temperatures usually accompany them. To develop, they require:

- Cold air - Subfreezing temperatures (below 32ºF, 0ºC) in the clouds and/or near the ground to make snow and/or ice.
- Moisture - The air must contain moisture in order to form clouds and precipitation.
- Lift - A mechanism to raise the moist air to form the clouds and cause precipitation. Lift may be provided by any or all of the following:
- The flow of air up a mountainside.
- Fronts, where warm air collides with cold air and rises over the dome of cold air.
- Upper-level low pressure troughs.

Each year the Seward Highway between Anchorage and the Kenai Peninsula is closed for intervals due to either avalanche or avalanche control efforts. The longest period the roadway was closed was a two-week period which resulted in local stores running low on perishable commodities and the hospital running low of some supplies and medications.

Heavy Snow

Heavy snow, generally more than 12 inches of accumulation in less than 24 hours, can immobilize a community by bringing transportation to a halt. Until the snow can be removed, airports and major 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. In the mountains, heavy snow can lead to avalanches. A quick thaw after a heavy snow can cause substantial flooding, especially along small streams and in urban areas. 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 accidents. Casualties also occur due to overexertion while shoveling snow and hypothermia caused by overexposure to the cold weather.

Record heavy snow occurred in Anchorage on March 17, 2002 when two to three feet of snow fell in less than 24 hours over portions of the city. Ted Stevens International Airport recorded a storm total of 28.7 inches, and an observer near Lake Hood measured over 33 inches. The city of Anchorage was essentially shut down during the storm, which fortunately occurred on a Sunday morning when a minimal number of businesses

were open. Both military bases, universities, and many businesses remained closed the following day, and Anchorage schools remained closed for two days. It took four days for snow plows to reach all areas of the city. This snowfall also impacted Homer and the Kenai Peninsula and resulted in airport closures, travel delays, and delays of transportation of foodstuffs and other commodities.

Ice Storms

The term ice storm is used to describe occasions when damaging accumulations of ice are expected during freezing rain situations. They 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 from the accumulation of freezing rain, which is rain that becomes super-cooled and freezes upon impact with cold surfaces. Freezing rain most commonly occurs in a narrow band within a winter storm that is also producing heavy amounts of snow and sleet in other locations.

Freezing rain develops as falling snow encounters a layer of warm air in the atmosphere deep enough for the snow to completely melt and become rain. As the rain continues to fall, it passes through a thin layer of cold air just above the earth's surface and cools to a temperature below freezing. The drops themselves do not freeze, but rather they become super-cooled. When these super-cooled drops strike the frozen ground, power lines, tree branches, etc., they instantly freeze.

The atmospheric conditions that can lead to ice storms occur most frequently in Southwestern Alaska along the Alaska Peninsula and around Cook Inlet. Brief instances of freezing rain occur frequently along the southern coast of Alaska, but these events generally produce very light precipitation with less than ¼ inch of ice accumulation.

High Winds

In Alaska, high winds (winds in excess of 60 mph) occur rather frequently over the coastal areas along the Bering Sea and the Gulf of Alaska because of coastal storms. High winds, especially across the coast, can also combine with loose snow to produce blinding blizzard conditions and dangerous wind chill temperatures.

They can reach hurricane force and have the potential to seriously damage port facilities, the fishing industry and community infrastructure (especially above ground utility lines).

In the spring of 2003 strong winds across the Kenai Peninsula resulted in wide-spread power outages, downed trees, and structural damage and fanned the flames of a 150 acre wildfire in Anchor Point.

Coastal Storms

From the fall through the spring, low pressure cyclones either develop in the Bering Sea or Gulf of Alaska or are brought to the region by wind systems in the upper atmosphere that tend to steer storms in the north Pacific Ocean toward Alaska. When these storms impact the shoreline, they often bring wide swathes of high winds and occasionally cause coastal flooding and erosion.

Homer has an extensive history of storm damage, especially in the coastal areas along the Homer Spit and adjacent properties. In August of 1989 the U.S. Army Corp of Engineers

published a Storm Damage Reduction Draft Interim Feasibility Report with Engineering Design And Environmental Assessment for the Homer Spit. Over the years attempts have been made to reduce the impacts of coastal storms and subsequent erosion with varying degrees of success and some notable failures. In 1982 significant damage to the sheet pile reinforcement along the Spit prompted the installation of a concrete slab revetment. In a storm in 1984 those repairs were mostly washed away, again resulting in significant damage to the State Highway leading to the end of the Homer Spit. In the 1990's a major project along the western edge of the Spit Road involving the placement of significant large rock revetments along the Spit corridor lessening, but not completely eliminating damage to the roadway during severe storms.

Storm 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 force of the flooding waters. The conditions that cause coastal floods also can cause significant shoreline erosion as the flood waters undercut roads and other structures. Storm surge is a leading cause of property damage in Alaska.

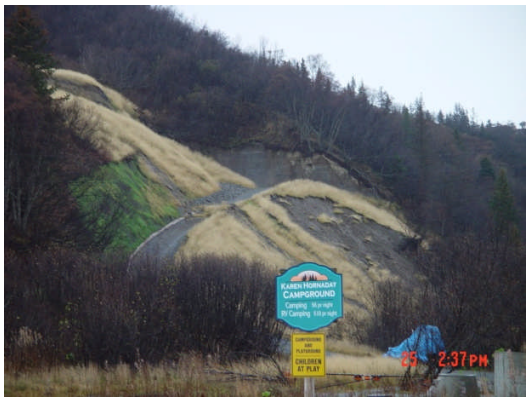
Communities that are situated on low-lying coastal lands with gradually sloping bathymetry near the shore and exposure to strong winds with a long fetch over the water are particularly susceptible to coastal flooding.

The Homer Spit has a moderate exposure to coastal flooding due to the consistent effects of erosion and the extraordinary tidal range in the region. A storm surge and high water levels resulted in flooding on the Homer Spit in November of 2002.

Landslides

Ground failure can occur in many ways. Types of ground failure in Alaska include landslides, land subsidence, and failures related to seasonally frozen ground and permafrost.

Landslide is a generic term for a variety of downslope movements of earth material under the influence of gravity. Some landslides occur rapidly, in mere seconds, while others might take weeks or longer to develop.



Homer Landslide 11-02

Landslides usually occur in steep areas but not always. They can occur as ground failure of river bluffs, cut-and-fill failures associated with road and building excavations, collapse of mine-waste piles, and slope failures associated with open-pit mines and quarries. Underwater landslides

usually involve areas of low relief and slope gradients in lakes and reservoirs or in offshore marine setting.

Landslides can occur naturally or be triggered by human activities. They occur naturally when inherent weaknesses in the rock or soil combine with one or more triggering events such as heavy rain, snowmelt, changes in groundwater level, and seismic or volcanic activity. They can be caused by long-term climate change that results in increased precipitation, ground saturation and a rise in groundwater level, which reduces the shear strength and increases the weight of the soil. Erosion that removes material from the base of a slope can also cause naturally triggered landslides.

Human activities that trigger landslides are usually associated with construction such as grading that removes material from the base, loads material at the top, or otherwise alters a slope. Changing drainage patterns, groundwater level, slope and surface water, for example the addition of water to a slope from agricultural or landscape irrigation, roof downspouts, septic-tank effluent, or broken water or sewer lines can also cause landslides.

Though the risk of landslide in Homer is low, the majority of town rest on a bench of land bordered on the north with steep slopes and gullies that have historical evidence of slides and sloughing. South Peninsula Hospital is situated immediately below such a steep slope and is subject to landslide damage should one occur. Homer is currently addressing steep slope development to mitigate future impacts from construction in these potentially unstable areas.

The secondary effects of landslides can also be very destructive. Landslide dams cause damage upstream due to flooding and downstream due to a flood which may develop as a result of a sudden dam break. Landslides can also trigger tsunamis and seiches.

Land Subsidence

Land subsidence is any sinking or downward settling of the earth's surface. Underground mining for minerals, ground water or petroleum, and drainage of organic materials are typical causes of subsidence. However, these are rare in Alaska. More common causes of land subsidence in Alaska are sediment compaction and seismic or volcanic activity. The Homer Spit subsided 5 – 6 ft. during the 1964 Good Friday Earthquake.

Coastal Erosion in Homer

Erosion is a process that involves the wearing away and movement of land. Coastal erosion along Kachemak Bay is a natural phenomenon which includes four principal processes that include wave action, rain and wind, high tides, and the freeze-thaw liquefaction of soils.

In 2005 the Kachemak Bay Research Reserve completed a study of erosion rates in Homer. The study provided an estimate of coastal bluff erosion rates based on a series of aerial surveys from 1951 to 2003. The result, the average erosion rates along Homer's shoreline is approximately 0.3-1.2 meters per year.

Homer confronts coastal erosion seasonally, usually with winter storms, especially along the Spit and along Ocean Drive Loop, a residential housing area. A seawall has been constructed in an attempt to protect residential structures from continued erosion. Even before the seawall was completed it was damaged by a moderate storm. Following storms have also damaged the seawall leading the engineering firm to bring lawsuit against the manufacturer of the seawall materials. Portions of the Sterling Highway along the Spit had to be reconstructed when undercut by several strong winter storms in 1998-1999.

West of the Homer Spit, erosion threatens the Sterling Highway where steep bluffs are creeping close to the Sterling Highway. Redirecting portions of the Sterling Highway inland is a project that the State of Alaska, DOT and FEMA are considering.

Protective measures such as seawalls, or revetments, can actually lead to increased erosion. This is because shoreline structures eliminate the natural wave run-up and sand deposition and can increase reflected wave action. The increased wave action can scour in front of and behind structures and prevent the settlement of suspended sediment.

Factors Influencing the Erosion Process

When undeveloped coastlines undergo erosion, it does not present a problem because there is nothing to be damaged. However, pressure to develop and protect properties along the Kachemak Bay is increasing. There are a variety of natural and human-induced factors that influence the erosion process. For example, shoreline orientation, beach composition and exposure to prevailing winds, open ocean swells, and waves all influence erosion rates. Natural factors may include:

- Shoreline type
- Geomorphology of the coast
- Nature of the coastal topography
- Elevation of coastal dunes and bluffs
- Shoreline exposure to wind and waves

Human-induced factors include: Information from *Erosion Responses for Property Owners, pg 2, 12.*

- Shoreline stabilization structures that change the power and direction of waves and of sediment transport.
- Density of development
- Development encroaching into the high hazard zones.
- Altered drainages
- Added water to soil
- Cleared lands
- Change of absorption rate of land surface

Earthquake

Seismic hazards in Alaska come from several sources. The largest earthquakes in the state are caused by subduction of the Pacific plate beneath Alaska. Three of the seven largest earthquakes in the 20th century occurred in Alaska (1957 Aleutian, 1964 Prince William Sound, and 1965 Rat Islands). Although it is generally believed that these great earthquakes are rare, with recurrence times on the order of hundreds of years for an individual segment, five great underthrusting events have occurred in Alaska since 1938. In addition, both the 1986 Andreanof Islands and the 1996 Delarof Islands magnitude 8-class earthquakes reruptured sections of the 1957 zone, even though only 29 and 39 years, respectively, had passed since that great event. In a recent evaluation of the seismic potential in Alaska, researchers indicated that several subduction zone segments may be ready to rupture soon. The Yakataga gap and the region between Kodiak Island and the Shumagin Islands are areas where magnitude 8+ events are expected. A second type of hazard comes from the smaller magnitude 6.8 to 8.0 earthquakes, which occur in many regions of central and southcentral Alaska. These events, while smaller, occur at more frequent intervals, and in locations that cannot always be predicted. On average, Alaska has a magnitude 7.0 or larger earthquake about every two years. Similar in size to recent California earthquakes, these events could cause major damage if they occurred in a populated or strategically sensitive area. A third hazard exists from the many smaller events that often occur near populated areas. While these events are too small to cause widespread damage, they are relatively common and thus pose a continuous threat to urban areas. Alaska Earthquake Information Center personnel locate and report about 22,000 earthquakes each year, and advise federal and state officials of each major earthquake's location and size within 30 minutes. (Alaska Earthquake Information Center, 2010)

Hazard Analysis/Characterization

Most large earthquakes are caused by a sudden release of accumulated stresses between crustal plates that move against each other on the earth's surface. Some earthquakes occur along faults that lie within these plates. The dangers associated with earthquakes include ground shaking, surface faulting, ground failures, snow avalanches, seiches and tsunamis. The extent of damage is dependent on the magnitude of the quake, the geology of the area, distance from the epicenter and structure design and construction. A main goal of an earthquake hazard reduction program is to preserve lives through economical rehabilitation of existing structures and constructing safe new structures.

Earthquakes are usually measured in terms of their magnitude and intensity. Magnitude is related to the amount of energy released during an event while intensity refers to the effects on people and structures at a particular place. Earthquake magnitude is usually reported according to the standard Richter scale for small to moderate earthquakes. Large earthquakes, like those that commonly occur in Alaska are reported according to the moment-magnitude scale because the standard Richter scale does not adequately represent the energy released by these large events. Intensity is usually reported using the Modified Mercalli Intensity Scale. This scale has 12 categories ranging from not felt to total destruction. Different values can be recorded at different locations for the same event depending on local circumstances such as distance from the epicenter or building

construction practices. Soil conditions are a major factor in determining an earthquake's intensity, as unconsolidated fill areas will have more damage than an area with shallow bedrock.

Earthquake-induced ground failure is often the result of liquefaction, which occurs when soil (usually sand and course silt with high water content) loses strength as a result of the shaking and acts like a viscous fluid. Liquefaction causes three types of ground failures: lateral spreads, flow failures, and loss of bearing strength. In the 1964 earthquake, over 200 bridges were destroyed or damaged due to lateral spreads. Flow failures damaged the port facilities in Seward, Valdez and Whittier. Similar ground failures can result from loss of strength in saturated clay soils, as occurred in several major landslides that were responsible for most of the earthquake damage in Anchorage in 1964.

Tsunamis

Tsunamis are traveling gravity waves in water, generated by a sudden vertical displacement of the water surface. They are typically generated by uplift or drop in the ocean floor, seismic activity, volcanic activity, meteor impact, or landslides (above or under sea in origin).

Most tsunamis are small and are only detected by instruments. Tsunami damage is a direct result of three factors: inundation (extent the water goes over the land), wave impact on structures and coastal erosion.

In 2003, Homer became the first community in Alaska to receive both a Tsunami and Storm Ready Community Designation from the National Weather Service and ADHSEM.

Types of Tsunamis

Tele-tsunami

Tele-tsunami is the term for a tsunami observed at places 1,000 kilometers from their source. In many cases, tele-tsunamis can allow for sufficient warning time and evacuation. No part of Alaska is expected to have significant damage due to a tele-tsunami. There is a slight risk in the western Aleutians and some parts of Southeast Alaska.

Most tele-tsunamis that have reached Alaska have not caused damage. In fact, most tele-tsunamis have had their largest recorded amplitude (in Alaska) at Massacre Bay, Attu Island. The amplitude is usually under 1 foot.

Risk is even less for communities within Kachemak Bay including Homer.

Magnitude	***Height (ft)***
-2 to –1	<1.0 to 2.5
-1 to 0	2.5 to 4.9
0 to 1	4.9 to 9.9
1 to 2	9.9 to 19.7
2 to 3	19.7 to 34.2
3 to 4	34.2 to 79.0
4 to 5	79 to >105.0

Tsunami Magnitude and Height relationships.

Volcanic tsunamis

There has been at least 1 confirmed volcanically triggered tsunami in Alaska. In 1883, a debris flow from the Saint Augustine volcano reportedly triggered a tsunami that inundated Port Graham (across Kachemak Bay from Homer) with waves 30 feet high, although geologic evidence is inconclusive to substantiate the wave height claim. Other volcanic events may have caused tsunamis but there is not enough evidence to report that conclusively. Many volcanoes have the potential to generate tsunamis.

Seismically-generated local tsunamis

Most seismically-generated local tsunamis have occurred along the Aleutian Arc. Other locations include the back arc area in the Bering Sea and the eastern boundary of the Aleutian Arc plate. They generally reach land 20 to 45 minutes after starting.

Landslide-generated tsunamis

Submarine and subaerial landslides can generate large tsunamis. Subaerial landslides have more kinetic energy associated with them so they trigger larger tsunamis. An earthquake usually, but not always, triggers this type of landslide and they are usually confined to the bay or lake of origin. One earthquake can trigger multiple landslides and landslide-generated tsunamis. Low tide is a factor for submarine landslides because low tide leaves part of the water-saturated sediments exposed without the support of the water.

Landslide –generated tsunamis are responsible for most of the tsunami deaths in Alaska because they allow virtually no warning time.

There is some historical evidence of a landslide generated tsunami impacting the Homer area when a large landslide near the Grewingk Glacier across from Homer impacted the glacier lake sending large quantities of water across Kachemak Bay.

Tsunamis generated by landslides in lakes occur more in Alaska than any other part of the U.S. They are associated with the collapse of deltas in glacial lakes having great depths. They may also be associated with delta deposits from rapidly flowing streams and rivers carrying glacial debris.

Historical Tsunamis

1964 Earthquake Tsunami

The 1964 earthquake triggered several tsunamis, one major tectonic tsunami and about 20 local submarine and sub aerial landslide tsunamis. The major tsunami hit between 20 and 45 minutes after the earthquake. The locally generated tsunamis struck between two and five minutes after being created and caused most of the deaths and damage. Tsunamis caused more than 90% of the deaths – 106 Alaskans and 16 Californian and Oregonian residents were killed.

Volcanoes

Alaska is home to 41 historically active volcanoes stretching across the entire southern portion of the State from the Wrangell Mountains to the far Western Aleutians. An average of 1-2 eruptions per year occurs in Alaska. In 1912, the largest eruption of the 20th century occurred at Novarupta and Mount Katmai, located in what is now Katmai National Park and Preserve on the Alaska Peninsula.

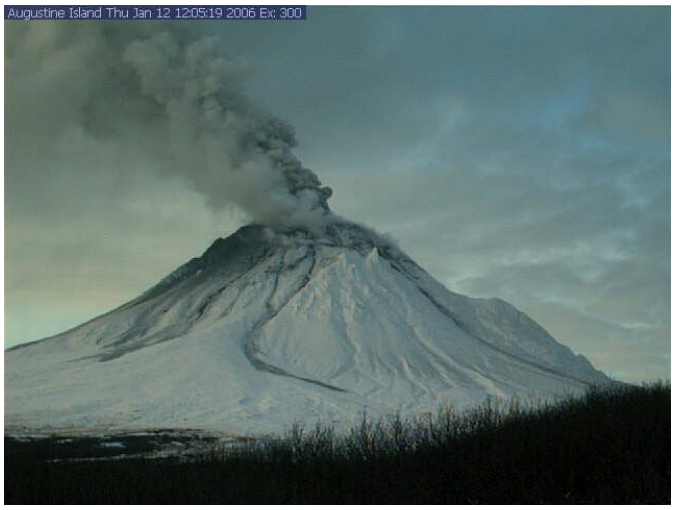
A volcano is a vent at the Earth's surface through which magma (molten rock) and associated gases erupt, and also the landform built by effusive and explosive eruptions.

Volcanoes display a wide variety of shapes, sizes, and behavior, however they are commonly classified among three main types: cinder cone, composite , and shield.

Homer has been recently impacted by volcanic ash events, the only local volcanic hazard, twice in as many years with the eruptions of Mt. Augustine and Redoubt volcano's.

Volcanic Hazards

As stated, other than the disruption of air traffic into and out of Alaska, the only danger from Cook Inlet Volcano in Homer is ash fall:

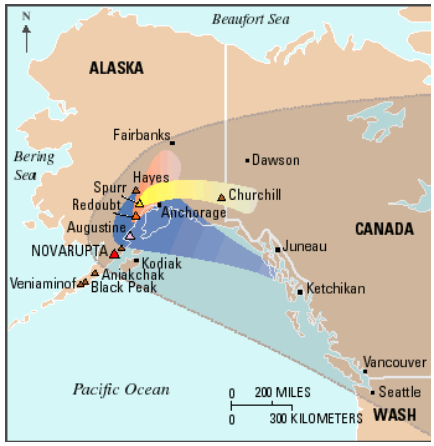


Volcanic Ash

Volcanic ash, also called tephra, is fine fragments of solidified lava ejected into the air by an explosion or rising hot air. The fragments range in size, with the larger falling nearer the source. Ash is a problem near the source because of its high temperatures (may cause fires), burial (the weight can cause structural collapses), and impact of falling fragments. Further away, the primary hazard to humans is decreased visibility and inhaling the fine ash. Ash will also interfere with the operation of mechanical equipment including aircraft. In Alaska, this is a major problem as many of the major flight routes are near historically active volcanoes. Ash accumulation may also interfere with the distribution of electricity due to shorting of transformers and other electrically components (ash is an excellent conductor of electricity).

Historic Volcanic Activity

The largest volcanic eruption of the 20th century occurred at Novarupta Volcano in June 1912. It started by generating an ash cloud that grew to thousands of miles wide during the three-day event. Within four hours of the eruption, ash started falling on Kodiak, darkening the city. It became hard to breathe because of the ash and sulfur dioxide gas. The water became undrinkable and unable to support aquatic life. Roofs collapsed under the weight of the ash. Some buildings were destroyed by ash avalanches while others burned after being struck by lightning from the ash cloud. Similar conditions could be found all over the area. Some villages ended up being abandoned, including Katmai and Savonoski villages. The ash and acid rain also negatively affected animal and plant life. Large animals were blinded and many starved because their food was eliminated.



Novarupta ash fall compared to that from recent Alaskan eruptions. Image courtesy of USGS.

The ash fall from this eruption was significantly greater than the recent eruptions of Redoubt, Spurr and Augustine Volcanoes. Fourteen earthquakes of magnitude 6 to 7 were associated with this event. At least 10 Alaskan volcanoes are capable of this type of event.

Hazard Identification and Assessment

The responsibility for hazard identification and assessment for the active volcanic centers of Alaska falls to the Alaska Volcano Observatory (AVO) and its constituent organizations (USGS, DNR/DGGS, and UAF/GI). AVO is in the process of publishing individual hazard assessments for each active volcano in the State. As of 2002, published or in-press hazard assessments cover the following volcanoes: Hayes, Spurr, Redoubt, Iliamna, Augustine, the Katmai Group, Aniakchak, Shishaldin, Akutan, and Makushin. Additional reports for Shishaldin, Kanaga, Great Sitkin, Westdahl, Dutton, Okmok are expected within the next year or two. Each report contains a description of the eruptive history of the volcano, the hazards they pose and the likely effects of future eruptions on populations, facilities, and ecosystems.

AVO has the primary responsibility to monitor all of Alaska's potentially active volcanoes and to issue timely warnings of activity to authorities and the public. During episodes of volcanic unrest or eruption, AVO is also the agency responsible for characterizing the immediate hazards and describing likely scenarios for an evolving volcanic crisis. AVO uses a 4-color Level of Concern Color Code to succinctly portray its interpretations of the state of activity and likely course of unrest at a given volcano.

Basic information about vulnerable assets and populations are identified in these assessments. However, DCED and other State agencies could work with AVO map data to integrate quantitative, current information regarding communities and other at-risk elements to improve our analysis of vulnerability.

C. Vulnerability Assessments

Identification of Assets -
The Hazard Matrix below includes a list of facilities and/or structures that have been determined to be critical in nature, structures or facilities that would seriously impact not only the quality of life in Homer but also the sustainability and survivability of Homer residents.

Critical Facilities include:

- Essential facilities, which are necessary for the health and welfare of an area and are essential during the response and recovery phase of a disaster such as: public safety facilities, hospital, schools.
- Transportation systems such as: airport, port and harbor, highway and roads.
- Lifeline utility systems such as: potable and waste water treatment plants, electrical generation facilities and power grid and communications systems.

HAZARD MATRIX FOR THE CITY OF HOMER

City Homer	Flood	Wildfire	Earthquake	Volcano	Man made	Tsunami	Weather	Landslide	Erosion	Tech	Economy	Biologic
Airport		X	X	X	X		X			X	X	X
Banking			X	X	X		X			X	X	X
Churches			X	X	X		X			X	X	X
City Hall			X	X	X		X			X	X	X
Fire Dept			X	X	X		X			X	X	X
Fuel System	X	X	X	X	X	X	X		X	X	X	X
Groceries	X		X	X	X		X			X	X	X
HEA	X	X	X	X	X	X	X	X	X	X	X	X
Landfill		X	X	X	X		X			X	X	X
Library			X	X	X		X			X	X	X
Police Dept			X	X	X		X			X	X	X
Port & Harbor	X		X	X	X	X	X		X	X	X	X
Post Office			X	X	X		X			X	X	X
Public Works	X	X	X	X	X	X	X	X	X	X	X	X
Radio Rpts	X		X	X	X	X	X			X		
Reservoir	X	X	X	X	X		X		X	X		X
Roads	X	X	X	X	X	X	X	X	X	X		
Schools		X	X	X	X		X			X	X	X
Senior Center			X	X	X		X			X	X	X
Sewer System	X	X	X	X	X	X	X			X	X	X
SPH			X	X	X		X	X		X	X	X
Telephone	X	X	X	X	X	X	X	X		X	X	X
Water System	X	X	X	X	X	X	X	X	X	X	X	X

Homer's Vulnerability to Identified Hazard:

In summary, most identified hazards are area wide. The principal hazards of flood, earthquake and wildfire could potentially impact any part of Homer. Flooding events, even for those properties unaffected directly, will suffer due to road closures, impacts to public safety (access and response capabilities), limited availability of perishable commodities, and isolation. Earthquake damage would be area-wide with potential damage to critical infrastructure up to and including the complete abandonment of key facilities. Some critical infrastructure has been seismically upgraded (Fire Station) to protect occupants long enough to exit the building, but no facilities have been hardened sufficiently to remain functional following a high magnitude event. Limited building damage assessors are available in Homer to determine a structures integrity following earthquake damage. Priority would have to be given critical infrastructure to include: public safety facilities, health care facilities, shelters and potential shelters, and finally public utilities. The entire South Zone of the Kenai Peninsula is subject to wildfire conflagration. Perhaps with the exception of portions of the Homer Spit, the entire Homer community could be considered an "interface" zone. History has demonstrated that fire brands can be carried by local winds up to ½ mile, jumping man-made fire lines and spreading fire across large areas. Most areas of homer are immediately adjacent to wildland areas and could be threatened by uncontrolled fire.

Based on tsunami inundation mapping provided by the Alaska Division of Homeland Security and Emergency Management very limited areas of the Homer coast line would be potentially damaged by tsunami, with no critical infrastructure immediately threatened.

Other assessed hazards not affecting the entire area would be landslides and erosion. With limited exceptions due to flooding, landslide danger would impact only those portions of Homer located near the base or top of the inland bluffs which create the "Homer bench" and those properties near the coast (due to storm erosion).

Development Trends

The City has several zoning districts ranging from Conservation to Commercial-Industrial zones. In 2003 the City received the right to regulate development in the Bridge Creek Watershed Protection District (BCWPD) which surrounds the City's water supply. In 2010 the City should complete and adopt the Homer's Comprehensive Plan update.

In 2008 to present, Homer is experiencing downturns in both residential and commercial construction starts, which is similar to development trends in other parts of Alaska.

Residential: In the past five years Homer developers have created several urban residential subdivisions with water, sewer, paved streets, some sidewalks and stormwater management. These higher density areas are characterized by single family residents and one development consists of "cluster housing" with eight (8) detached units on one acre.

Commercial: In 2007 and 2008 two phone companies built facilities on the Sterling Highway which host their customer service retail needs and their switch terminals. Funding for public

projects includes Homer's Public Library, Homer Water Treatment Plant and expansion for the hospital, courthouse and college.

Development Trends

	2004	2005	2006	2007	2008	2009
Number of Zoning Permits Issued	107	103	83	87	62	55
Value of Zoning Permits in millions	$23.8	$21.6	$20.2	$14.1	$23.18*	$8.0
						*Water Treatment Plan $8.5 M.

Chapter V– Mitigation Goals, Objectives, & Strategies

A. Public Education Goals

Objective 1.1: Provide public education on the prioritized and identified local hazards. An informed public is crucial to achieving the City's mitigation goals.

Action 1.1.1: *Distribute, display and educate about hazards, flood insurance and the benefits of various protective measures in public outreach programs. Outreach maybe information in a newsletter, on utility bills, in newspapers, public workshops, kiosk at the fire/police hall, and the library. (*from CRS Appl. Pg 16)

Action 1.1.2: *Provide the public library with documents about hazards, flood insurance and the benefits of various protective measures.*

Action 1.1.3: *Provide on the city's website information about hazards and include links to relevant pages that have local conditions, protective measures, permit requirements and maps.*

Responsible Parties: City of Homer; ADHSEM, KPBOEM, West Coast/Alaska Tsunami Warning Center.

B. Tsunami Goals

1. Tsunami Ready Community Designation (Priority-High)

Objective 1.1: Continue *to* meet the requirements for a Tsunami Ready Community Certification.

Action 1.1.1: *Continue to participate in the NWS/WC&ATWC Tsunami Ready Program.*

Action 1.1.2: *Maintain regular tsunami warning siren drills that citizens can learn to recognize and expect.*

Responsible Parties: City of Homer, ADHSEM, West Coast/Alaska Tsunami Warning Center, KPBOEM.

2. ***Tsunami Evacuation Route Signage*** **(Priority-High)**

Objective 2.1: Maintain evacuation route signs and Tsunami Warning System**.**

Action 2.1.1: *Continue to monitor the tsunami evacuation signs on the Homer Spit to Kachemak Drive, East to the junction with East End Road. This route directs people away from the Beluga Slough crossing which is located in the projected tsunami inundation zone.*

Responsible Parties: City of Homer, Department of Transportation, ADHSEM, KPBOEM.

3. ***Encourage City of Homer, Planning & Zoning Office to incorporate high risk areas in land use planning and zoning. (Priority-Medium)***

In 2005 the City of Homer adopted the Tsunami Hazard Map. In 2009 the City adopted updated Flood Insurance Rate Maps. The flood maps are based on a 100 year chance event and do not include tsunamis because the relatively short period of record. Local tsunamis should always be considered before beginning any construction in the coastal areas.

Objective 3.1: Reduce the vulnerability of infrastructure and improvements in high risk areas.

Action 3.1.1: *Reduce susceptibility to damage and disruption by incorporating the Tsunami Hazard and the Flood Insurance Rate Maps into the City Planning and Zoning process.*

Action 3.1.2: *New development in tsunami hazard areas to meet the same standards required in the Coastal High Hazard areas per HCC 21.41.*CRS Tsunami Credits pg 18.

Action 3.1.2: *Require the anchoring of fuel tanks, manufactured home, accessory structures and recreational vehicles to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads per HCC 21.41.*

Responsible Parties: City of Homer, KPB, FEMA, NFIP.

C. Wildfire Goals

There are two phases to addressing the wildfire issue in Homer. The first and foremost revolves around public education (Item A). The second phase focuses on specific mitigation strategies found within the International Urban-Wildland Interface Code™. This code utilizes three mitigation strategies: creation and management of defensible

spaces around threatened structures; wildfire fuel management; and encouraging fire-resistive construction techniques.

1. Create Defensible space.

Objective 1.1: Cooperate with the Division of Forestry in the "Fire Wise" campaign. One of the most useful methods developed for wildfire mitigation has been the concept of "defensible space" thus limiting fuels immediately adjacent to at-risk structures. This strategy was proven during the Mansfield/Hutler Road Fires in which only one structure was lost. The Mansfield Road neighborhood had worked with the fire department in the development of defensible space in the year preceding the fire event. Additional lessons were learned as fire crews and home owners were able to immediately return to the fire area once the fire front had passed and were able to extinguish any remaining fires around their buildings.

> ***Action 1.1.1:*** *Encourage home owners and property owners to remove dead or diseased trees to create "defensible space".*
>
> ***Action 1.1.2:*** *Encourage home and business owners to complete a Fire Wise assessment of their home and/or business.*
>
> ***Action 1.1.3*** *Educate home owners in wildfire resistive construction techniques and strategies to limit their exposure to wildfire.*
>
> ***Action 1.1.4*** *Provide interested residents with Fire Wise informational packets and brochures.*

Responsible Parties: City of Homer, Alaska Division of Forestry, KPB.

2. Control and direct open burning within the City limits of Homer. **(Priority-High)**

Objective 2.1 Limit the number, size and location of burn piles within City Limits. Homer City Code requires that residents obtain an Open Burning Permit anytime during the year for all fires other than "warming fires" (those less than 2 feet in diameter used for cooking or warming). State regulations require residents outside of Homer to have a Burn Permit during the "fire season" of May 1 through the end of September each year.

> ***Action 2.1.1:*** *Issue burn permits to Homer residents who wish to dispose of organic materials. Direct non-residents to the Division of Forestry Website to obtain an open burning permit during the statutory fire season.*
>
> **Responsible Parties:** Homer Volunteer Fire Department, City of Homer, Alaska Division of Forestry.

3. Establish alternative methods of disposal for slash, brush, and organic debris so that residents do not have to use open burning. **(Priority-High)**

Objective 3.1: Explore alternative methods of debris disposal other then open burning.

Action 3.1.1 *Encourage use of composting, chipping, or grinding as an alternative to burning of woody debris.*

Responsible Parties: City of Homer, KPB.

4. Prohibit open burning during high-risk periods. **(Priority-High)**

Objective 4.1: In cooperation with the Division of Forestry, suspend burn permits and open burning during high fire danger conditions or when other factors will contribute to high fire danger.

Action 4.1.1 *Maintain open lines of communication between the Division of Forestry, National Weather Service, and the Homer Volunteer Fire Department to determine when fire conditions warrant suspension of burn permits or open burning in general.*
Action 4.1.2 *When conditions warrant suspension of burn permits or open burning in Homer, disseminate that information in the form of press-releases to the local radio and print media.*
Action 4.1.3 *When open burning is prohibited, or burn permits are suspended ensure that the Homer Police Department Dispatch center is notified so that they can advise persons that call in to activate their individual permit that a temporary suspension has been placed on open burning.*
Action 4.1.4 *Complete a daily assessment of fire danger during closures or suspensions by 10:00 AM each day to determine the need to continue the closure or resend the closure.*

Responsible Parties: Homer Volunteer Fire Department, Alaska Division of Forestry, National Weather Service, KPB-OEM.

5. Develop wildfire fuel load reduction projects such limbing and thinning, especially around critical infrastructure and identified "safe zone" and potential emergency shelters. (Priority-High, Funding Dependent).

Objective 5.1: Review current fuel loads surrounding infrastructure and safety zone/shelter locations identified in the Community Wildfire Protection Plan.

Action 5.1.1 *Develop list of know shelters (from Emergency Plan), safe zones, and critical infrastructure.*
Action 5.1.2 *Review wildfire fuel load and develop mapping of area in need of fuels management activities.*
Action 5.1.3 *Develop and implement fuel reduction plan.*

Responsible Parties: Homer Volunteer Fire Department, Alaska Division of Forestry, Kachemak City, KPB.

Objective 5.2: Continue collaborative effort between the Community Wildfire Protection Plan and the City of Homer.

Action 5.2.1 *Attend local planning meetings when conducted.*
Action 5.2.2 *Review drafts of the CWPP when available and provide feedback to DOF as appropriate.*

Responsible Parties: Homer Volunteer Fire Department, CWPP Stakeholders.

D. Earthquake Goals

1. **Protect existing critical infrastructure from earthquake damage. (Priority-Medium, Funding Dependent)**

Objective 1.1: Perform an engineering assessment of the earthquake vulnerability of each identified critical infrastructure owned by the City of Homer.

Action 1.1.1 *Identify buildings and facilities that must be able to remain operable during and following a hazard event.*
Action 1.1.2 *Contract a structural engineering firm to assess the identified buildings and facilities to determine their structural integrity and strategy to improve their earthquake resistance.*

Objective 1.2 Perform those steps identified above to protect critical infrastructure from earthquake damage and to preserve functionality.

Action 1.2.1 *Identify priorities and budget to retrofit existing infrastructure to existing earthquake resistive construction standards.*
Action 1.2.2 *Develop a Request for Proposals to submit for design and construction of the retrofitting requirements.*

Responsible Parties: City of Homer, KPB, FEMA Mitigation Programs.

2. **Building Code Adoption-Seismic Requirement-New Construction (Priority-Low)**

While the State of Alaska has adopted the International Building, Fire and Mechanical Codes that include seismic requirements, there is no State-wide building code for single family, duplex and triplex residential construction. There are no adopted seismic codes for these most vulnerable occupancies.

Objective 2.1: Encourage practices of the International Residential Building code, including all 1 and 2 family residential occupancies (State of Alaska adopted Building Code covers residential occupancies greater than 3-plex).

Action 2.1.1 *Reference the International Residential Code (**Current** Edition) for* seismic and wind load requirements.

Responsible Parties: City of Homer, Planning Department, Public Works Department, Homer Volunteer Fire Department.

3. Existing Buildings – Non-Structural Mitigation Program (Priority-Medium, Funding Dependent)

Experience demonstrates (Nisqually Earthquake, February 28, 2001) that mitigation programs which emphasizing tie-downs and strapping of book shelves and computers is an effective and economical way to reduce property damage and loss of life during earthquake events.

Objective 3.1: Provide technical advice and information to those individuals, businesses and institutions requesting non-structural mitigation program guidance.

Action 3.1.1 *Compile list of available non-structural mitigation resources available to the public.*

Responsible Parties: City of Homer, KPBOEM, FEMA.

E. Flood Goals

City of Homer updated the Flood Prone Areas section of the Homer City Code 21.41 on September 15, 2009. (Ord. 09-38).

1. Participation in National Flood Insurance Program (NFIP)(Priority-High).

Homer participates in the NFIP which is a source of reasonably priced flood insurance for property owners that build to floodplain standards.

Objective 1.1: Maintain the City of Homer's participation in the NFIP so that low cost flood insurance is available to residents.

Action 1.1.1 *Annually review the requirements of the National Flood Insurance Program to conform to enrollment objectives and criteria.*

Responsible Parties: City of Homer, Planning Department, NFIP, FEMA, KPB.

2. Update the Flood Hazard Maps and map the City's watershed and drainage patterns. (Priority-High, Funding Dependent)

The existing flood plain maps were updated and adopted by the City of Homer in 2009. A thorough flood restudy is needed to resolve inconsistent elevations with emphasis on the Homer Spit, Beluga Slough and Beluga Lake. Consider a comprehensive watershed and drainage study that includes future hazards.

Objective 2.1: Obtain updated flood plain maps to include all current city limits, the Bridge Creek Watershed, the Homer Spit, Beluga Slough and Beluga Lake.

Action 2.1.1 *Encourage FEMA to restudy and remap the city with emphasis on the Homer Spit, Beluga Slough and Beluga Lake.*

Objective 2.2: Map the watershed and drainage patterns.

Action 2.2.1 *Acquire funds to develop a watershed and drainage management plan that identifies important natural water storage, low features critical to flood function and predicts future flood hazards.*

Responsible Parties: City of Homer, Alaska Department of Community and Economic Development, FEMA, Federal Insurance and Mitigation Administration, KPB.

3. Review flood events to determine mitigation strategies. (Priority-Medium)

Objective 3.1: Coordinate fact finding between Zoning and Planning and Public Works, Kenai Peninsula Borough and the State of Alaska DOT to map areas that experienced flooding.

Objective 3.2: Identify and evaluate high risk facilities and infrastructure to determine if changes need to be made to mitigate for future flood conditions.

Action 3.2.1 *Develop overlay map of existing infrastructure (drainages, culvert size, storm drains).*

Action 3.2.2 *Identify high risk city structures.*

Action 3.2.3 *Establish an annual inspection of all stormwater management (pubic and private) and order maintenance as needed.* CRS Credit for Stormwater pg 14).

Action 3.2.4 *Require maintenance logs on private and public stormwater plans.*

Responsible Parties: City of Homer, Alaska Department of Transportation, KPB-OEM.

4. Manage development in flood hazard areas (Priority-Medium)

Ensure, through adequate planning and zoning oversight that all development meets the intent of Chapter 21.41, Flood Prone Areas. In the future, the City may participate in the Community Rating System(CRS) which is a part of the National Flood Insurance Program (NFIP). The CRS reduces flood insurance premiums to reflect what a community does above and beyond the minimum flood standards.

Objective 4.1: Review Chapter 21.41 to ensure up-to-date requirements are being addressed.

> **Action 4.1.1** *Require developers/land owners to provide documentation of compliance with existing Flood Damage Prevention requirements if the project is located within a flood hazard area as defined by City Code.*
>
> **Responsible Parties:** City of Homer, Planning and Zoning Office.

Objective 4.2: Assure that flood loss reduction measures minimize the need for rescue and relief efforts associated with flooding, and to assure that flood loss reduction measures are consistent with retaining natural flood function.

> ***Action 4.2.1*** *Acquire land in high hazard area to restore or retain flood functions.* Aligns with the 1999 Homer Comp. Plan pg 4. CRS 420. KPB Mit. Plan pg 2-71.
>
> ***Action 4.2.2*** *Identify less hazard prone areas for development*. Suitability study and map 2008.
>
> ***Action 4.2.3*** *Create and maintain buffers and building setbacks from wetlands, creeks, shorelines and drainages.* KPB Hazard Mit. Plan p2-68. Landscape Suitability Map pg 49. Floodplain Management Higher Regulatory Standards, p3.
>
> ***Action 4.2.4*** *In the flood hazard areas and along the bluff, consider "relocatable structures" on skids or pilings versus permanent foundation structures.* Coastal Bluff Erosion Study, pg 11, 19.
>
> ***Action 4.2.5.*** *Require the anchoring of fuel tanks, manufactured homes, and accessory structures to resist flotation, collapse and lateral movement due to the effects of wind and water loads* per HCC 21.41
>
> ***Action 4.2.6*** *Preserve open space and/or relocate structures out of high risk areas.* 1999 Comp. Plan. CRS 420. Landscape Suitability Map pg 51.
>
> ***Action 4.2.7*** *Provide a means to regulate clearing, filling, grading, dredging, and other development which may impact flood, drainage and erosion damage.* Floodplain Management Higher Regulatory Standards p31, 59. Landscape Suitability Map pg 31, 33. HMP pg 18.

Action 4.2.8 *Minimize adverse impacts of alterations of ground and surface waters and natural flow patterns.* KPB HMP p 2-71. Landscape Suitability Map 45. Floodplain Management Higher Regulatory Standards p 13, 31 & 59.

Action 4.2.9 *Maintain requirements for stormwater control and mitigation through the enforcement of HCC 21.74 Development Activity Plan and HCC 21.75 Stormwater Plan*. Landscape Suitability Map pg 16 &52.

*Ac**tion 4.2.10** Integrate hazard identification, ecosystem protection, protection of community infrastructure and shoreline management into zoning and subdivision ordinances.* Coastal Bluff Erosion Study, . Floodplain Management Higher Regulatory Standards p 4 & 5.

Responsible Parties: City of Homer

F. Ash

Fresh volcanic ash may be harsh, acidic, gritty and smell like sulfur. Heavy ash-fall may reduce sunlight, causing a sudden demand and possibly brownout of electrical power. Ash can clog watercourses, sewage plants, and all kinds of machinery.

Objective 1.1: Protect equipment and personnel from the effects of ash.

Action 1.1.1 *Do not operate non-essential equipment.*
Action 1.1.2 *Protect office equipment such as copiers, fax machines, and personal computers.*
Action 1.1.3 *Allow employees to get home before an ash-fall occurs.*
Action 1.1.4 *Limit outdoor activity.*
Action 1.15 *Close doors, windows and vents.*
Action 1.1.6 *Do not run exhaust-circulating fans.*
Action 1.1.7 *Check and change (when needed) oil, oil filter and air filters.*
Action 1.1.8 *Wear respirator and eye protection during ash cleanup.*
Action 1.1.9 *Establish a communication system to alert employees*
Action 1.1.10 *Establish an email alert or a call-in voice recording.*

G. Technological Hazards

Technological hazards are manmade activities such as the manufacture, transportation, storage. the use of hazardous materials and our reliance on technology.

Objective 1.1: Reduce the community's risk of exposure to hazardous materials.

Action 1.1.1 *Install security systems where hazard materials are stored and/or transferred.*

Objective 1.2: Protect the community's water supply.

Action 1.2.1 *Install security measure at the city water treatment plant.*
Action 1.2.2 *Secure all remote pump facilities.*

Objective 1.3: Ensure that the city has reliable communication:

Action 1.3.1 *Create redundant/back-up capability for landline telephone system.*
Action 1.3.2 *Develop off-site backup information technology system.*
From: Tab 1, pg 3-2.
Action 1.3.3 ***Prepare for utility disruption.***
Action 1.3.4 ***Secure vital records and other important document.***

Objective 1.4: Protect the communities ability to operate in case of technological disruptions.

Action 1.4.1 *Encourage local businesses to have adequate cash on hand for emergencies.*
Action 1.4.2 *Encourage local businesses to establish a regular, off-site, computer back-up system.*
Action 1.4.3 *Encourage local businesses to participate in the State's Continuity of Business program through the Department of Homeland Security and Emergency Management.*

Responsible Parties: City of Homer, local businesses, ADHSEM, KPBOEM.

H. Biological, Chemical and Hazardous Materials

Liquid or solid contaminants may pose a threat to the community and can easily spread. Biological hazards include both man-made threats (bio-terrorism) and naturally occurring diseases (pandemics).

Objective 1.1: Limit the community's vulnerability to biological, chemical and hazardous material incidents.

Action 1.1.1: *Safely store biological, chemical and hazardous materials.*
Action 1.1.2: *Continue to require Fire Marshal certification for all commercial buildings.*
Action 1.1.3: *Monitor, in cooperation with the Department of Health, Public Health Center, spikes in illness that may indicate the spread of a natural or man-made pathogen among the population.*
Action 1.1.3*: Continue participation and leadership in the Community Based Emergency Planning Committee established by Public Health.*

Responsible Parties: City of Homer. Alaska Department of Public Health, KPEOEM, State Fire Marshal's Office and South Peninsula Hospital.

I. Economic

Economic disasters can result from uncontrollable natural events that have large effects on a region's economic base. Unfortunately, economic disasters also result from poor business practices, poor risk management and public policies.

Assessing Risk

The first step to long-term mitigation is understanding which economies are at risk and how to reduce those risks through public and private investments. Ways to quantify economic risks include:

- Monitor long-term supply and demand trends,
- Measure the diversity of end-product markets,
- Measure the size and diversity of base industries,
- Measure the growth rates in employment, income and gross sales,
- Monitor the relative dependence on imports,
- Assess the skill levels in the workforce,
- Reduce the cost and dependency of transportation and energy.

Objectives and strategies

> Public infrastructure, sensible regulations, public-private partnerships, efficient and coordinated service delivery, industry advocacy, marketing, economic analysis, and the dissemination of timely information all represent legitimate venues for government to promote economic development.

The following objectives define and direct the development of mitigation strategies: KPB Hazard Mitigation Plan.

> **Objective 1.1:** Reduce the susceptibility to damage and disruption by avoiding hazardous, uneconomic and unwise development in known hazard areas.
>
> **Objective 1.2:** Reduce unnecessary economic losses and promote positive economic development by incorporating hazard assessment and mitigation into land use and development decisions.

Chapter VI – Implementation & Maintenance Procedures

A. Implementation

The City of Homer will implement this plan by using mitigation actions within our Comprehensive Plan, the Capital Improvement Plan, and other plans to pursue our mitigation goals. Our various community plans will consider best mitigation practices to maximize the benefit to the community. We will consider projects that show they are cost effective by ensuring that for every dollar spent we will reduce loss of life or property damage.

We will use the following criteria to prioritize all community projects:

The Planning Commission will analyze and prioritize projects based on:

1. Life saving or personal safety issues
2. Projects will be coordinated with all community plans. For example: the Homer Comprehensive Plan, the Homer Capital Improvement Plan, the City of Homer All-Hazard Mitigation Plan, etc.

B. Maintenance

The City of Homer All-Hazard Mitigation Plan will be reviewed annually and will be updated at a minimum of every five years or 90 days after a Presidential declared disaster. The Director of Planning will be responsible for ensuring that reviews are completed, the planning commission and the general public will be notified of opportunities to review the plan by written invitation, use of newspaper, radio, television, brochures or flyers to advertise this opportunity and solicit involvement. Public involvement is essential to ensure that the mitigation goals, objectives and action items are addressing the community's need

Appendix A
Glossary of Terms

Base Flood Elevation (BFE) - the level of a flood having a 1% chance of occurring in any given year; also referred to as a 100-year flood. Designated on the Floodplain (FIRM) maps.

Community Rating System (CRS) – The Community Rating System is a voluntary program that each municipality or county government can choose to participate in. The activities that are undertaken through CRS are awarded point. A community's points can earn people in their community a discount on their flood insurance premiums.

Critical Infrastructure – Facilities that are deemed highly important to the health and welfare of the population and that are especially crucial during and after a hazard event. Critical facilities include, but are not limited to: shelters, hospitals, and fire stations.

Development – Any man-made change to improved or unimproved real estate, including but not limited to: buildings or other structures, mining, dredging, filling, grading, paving, excavation of drilling operations or any other activity which results in the removal of substantial amounts of vegetation or in the alteration of natural site characteristics located within the area of special flood or coastal high hazard per HCC 21.41.030.

Digitize – To convert electronically points, lines and area shown on maps into X and Y coordinates (e.g., latitude and longitude, Universal Transverse Mercator (UTM), for use in computer applications.

Disaster Mitigation Act – DMA 2000 (Public Law 106-390) is the latest legislation of 2000 (DMA 2000) to improve the planning process. It was signed into law on October 10, 2000. This legislation reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur.

Earthquake Swarm – A collection of earthquakes that is frequent in time. There is no identifiable main shock.

Emergency Operations Plan – A document that describes: how people and property will be protected in disaster and disaster threat situations; details who is responsible for carrying out specific actions; identifies the personnel, equipment, facilities, supplies, and other resources for use in the disaster; and outlines how all actions will be coordinated.

Federal Disaster Declaration – The formal action by the President to make a State eligible for major disaster or emergency assistance under the Robert T. Stafford Relief and Emergency Assistance Act, Public Law 93-288, as amended. Same meaning as a Presidential Disaster Declaration.

Federal Emergency Management Agency (FEMA) – A federal agency created in 1979 to provide a single point of accountability for all federal activities related to hazard mitigation, preparedness, response, and recovery.

Flood Disaster Assistance – Flood disaster assistance includes development of comprehensive preparedness and recovery plans, program capabilities, and organization of federal agencies and of state and local governments to mitigate the adverse effects of disastrous floods. It may include maximum hazard reduction, avoidance, and mitigation measures, as well as policies, procedures and eligibility criteria for federal grant or loan assistance to state and local governments, private organizations, or individuals as the result of major disaster.

Flood Hazard Area – The land covered by a flood having a 1% chance of occurring in any given year. See 100-Year Flood.

Flood Insurance Rate Map (FIRM) – The official map on which the Federal Insurance Administration has delineated the 100-Year Flood, the water surface elevation of the base flood and the flood insurance rate zones.

Flood Insurance Study – Flood Insurance Study (FIS) is the official report provided by the Federal Insurance Administration that includes the flood profiles and the water surface elevations for the estimated 100-Year Base Flood.

Flood Zones – Zones on the FIRM in which a Flood Insurance Study has established the risk premium insurance rates.

Hydrology – The science of the behavior of water in the atmosphere, on the earth's surface, and underground.

Infrastructure – The public services of a community that have a direct impact to the quality of life. Infrastructure refers to communications technology such as phone lines or internet access, vital services such as public water supply and sewer treatment facilities, and includes an area's transportation system, regional dams or bridges, etc..

Inundation – The maximum horizontal distance covered by flood waters, including those generated by Tsunami.

Katabatic Wind – Any wind blowing down an incline; the opposite of anabatic wind.

Liquefaction – The phenomenon that occurs when ground shaking causes loose soils to lose strength and act like a thick or viscous fluid. Liquefaction causes two types of ground failure: lateral spread and loss of bearing strength.

Mitigation Plan – A systematic evaluation of the nature and extent of vulnerability to the effects of natural or man-made hazards typically present in the area and includes a description of actions to minimize future vulnerability to those hazards.

One Hundred (100) Year Flood – The flood elevation that has a 1% chance or occurring in any given year. See Base Flood Elevation.

Preparedness – The steps taken to decide what to do if essential services break down, developing a plan for contingencies, and practicing the plan. Preparedness ensures that people are ready for a disaster and will respond to it effectively. Actions that strengthen the capabilities of government, citizens, and communities to respond to disasters.

Riverine Flooding – Flooding related to or caused by a river, stream, or tributary overflowing its banks due to excessive rainfall, snowmelt or ice.

Run-Up – The maximum vertical height of a tsunami in relation to sea level.

Seiche – An oscillating wave (also referred to as a seismic wave) in partially of fully enclosed bodies of water. May be initiated by landslide, undersea landslide, long-period seismic waves, wind and water waves, or a tsunami.

Seismicity – Describes the likelihood of an area being subject to earthquake.

State Disaster Declaration – A disaster emergency shall be declared by executive order or proclamation of the Governor upon finding that a disaster has occurred or that the occurrence or threat of a disaster is imminent. Along with other provisions, this declaration allows the Governor to utilize all available resources of the State as reasonably necessary, direct and compel the evacuation of all or part of the population from any stricken or threatened area if necessary, prescribe routes, modes of transportation and destinations in connection with evacuation and control ingress and egress from disaster areas. It is required before a Presidential Disaster Declaration can be requested.

Storm Surge – Rise in the water surface above normal water level on open coast due to the action of wind stress and atmospheric pressure on the water surface.

Subsidence – Sinking of the land surface, usually due to withdrawals of underground water, oil, or minerals.

Substantial Damage – Damage of any origin sustained by a structure whereby the cost of restoring the structure to its "before-damaged" condition would equal or exceed 50% of the recent market value of the structure.

Substantial Improvement – Substantial improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure prior to the "start of construction" of the improvement. See HCC 21.41.030.

Vulnerability – Describes how exposed or susceptible to damage an asset is. Vulnerability depends on an assets construction, contents, and the economic value of its functions. The vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power – if an electrical substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Other, indirect effects can be much more widespread and damaging than direct ones.

Vulnerability Assessment – The extent of injury and damage that may result from a hazard event of a given intensity in a given area. The vulnerability assessment should address impacts of hazard events on the existing and future built environment.

Watershed – An area that drains to a single point. In natural basin, this is the area contributing flow to a given place or stream.

Wetlands – Areas that are inundated or saturated frequently and for long enough to support vegetative or aquatic life requiring saturated or seasonally saturated soil conditions for growth and reproduction.

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CITY OF HOMER
HOMER, ALASKA

Howard

RESOLUTION 10-31

A RESOLUTION OF THE CITY COUNCIL OF HOMER, ALASKA, ADOPTING THE CITY OF HOMER ALL HAZARDS MITIGATION PLAN 2010 UPDATE AND REVISION AND AUTHORIZING THE CITY MANAGER TO FORWARD THE DOCUMENT TO THE KENAI PENINSULA BOROUGH, THE FEDERAL EMERGENCY MANAGEMENT AGENCY, THE ALASKA DIVISION OF HOMELAND SECURITY, AND OTHER ORGANIZATIONS AS APPROPRIATE.

WHEREAS, The Homer City Council recognizes the threat that natural and human generated hazards pose to its residents, their property, public infrastructure, and the health and safety of the community at large; and

WHEREAS, Planning for and implementing actions that avoid or mitigate the impacts of hazards before disasters occur reduces the potential for harm to people and property and saves taxpayer dollars; and

WHEREAS, An adopted All Hazards Mitigation Plan is required as a condition for future grant funding to the City for hazard mitigation projects; and

WHEREAS, The City has provided notice of the draft plan revision and opportunities to comment to its local partners in disaster mitigation, has participated jointly in the planning process with the Borough and other units of government, and held a hearing to solicit comments from the public.

NOW, THEREFORE, BE IT RESOLVED that the Homer City Council hereby approves and adopts the All Hazards Mitigation Plan 2010 Update / Revision.

BE IT FURTHER RESOLVED that the Council authorizes the City Manager to forward the Plan to the Kenai Peninsula Borough, the Federal Emergency Management Agency, the State Division of Emergency Management, and other organizations as appropriate.

PASSED AND ADOPTED by the Homer City Council this 12th day of April, 2010.

CITY OF HOMER

JAMES C. HORNADAY, MAYOR

ATTEST:

JO JOHNSON, CMC, CITY CLERK

Fiscal Note: N/A