KETCHIKAN GATEWAY BOROUGH
1900 FIRST AVENUE, SUITE. 126 ● KETCHIKAN, ALASKA 99901
● 907/228-6610 ● fax 907/288-6698
planning@borough.ketchikan.ak.us
Department of Planning and Community Development – Development Review

October 10, 2009

Dear Ketchikan Gateway Borough Resident:

This letter is being sent to you for informational purposes, our records show that your property is very likely located in or near to a floodplain. Currently the Ketchikan Gateway Borough (KGB) Planning Department has a Certified Floodplain Manager (CFM) on staff. One of the CFM's duties is to work on ways to improve the accuracy and accessibility to information that pertains to the floodplain, in an effort to better educate and assist its citizens about developing and living in floodplains. Please take the time to read the information below, and if you have further questions, or would like additional information, a variety of contact information has been supplied at the end of this document.

Overview

The Ketchikan Gateway Borough features several large streams that are susceptible to annual flooding events that pose threats to life and safety and can cause significant property damage. These streams are Whipple, Ketchikan, Schoenbar, Hoadley, and Carlanna Creeks. A significant amount of development in the Borough is also along a coastal flood plain. The coastal flood plain runs along the properties that abuts salt water; the base flood elevation (BFE) is being defined in the Borough as being at or below the 22- foot Mean Lower Low Water Level (MLLW).

Recent Flooding Events

Very little information is available concerning historical floods in Ketchikan, since records of past floods are meager and, in most cases, non-existent. A multitude of information is available however, relative to the flooding that occurred in October 1973 when Carlanna Lake dam failed. Damage estimates for this event exceeded the two million dollar figure. Other floods which have occurred have generally been confined to slight over bank flooding and erosion. High flows occur primarily as a result of the intense precipitation which may occur anytime during the fall and winter months. The greatest potential for rainfall is in the fall. During the winter months, rapid snowmelt can contribute heavily to high flows. River stages can rise from normal levels to extreme flood peaks in a relatively short period of time. Floods are of comparatively short duration, characterized by high velocities in the main channel and lower velocities in over bank area.

Occasional flooding along Ketchikan Creek has also occurred in past years. Some information is available relative to the flooding that occurred in December 1982. Over bank flows during this flood caused some damages in the upper reaches of the creek. Most, high velocity flows associated with low tides caused scouring around the bridge and building piles near the mouth of the creek. One building collapsed when the piling settled and another building was damaged by differential pile settling and was later condemned.

A recent incident occurred during the winter of 2008, in the Hawkins Street and Denali Street area. Due to lack of subdivision standards and adequate drainage plans, a large section of earth gave way and collapsed, condemning three properties and damaging a few others. This area was not mapped by FEMA as a flood hazard area and does not meet Federal Emergency Management Agency's (FEMA) definition for a "natural disaster," therefore this incident was not eligible for the National Flood Insurance Program (NFIP) coverage. Fortunately this incident did not cause any loss of life only property, but provided a lesson about providing adequate drainage in neighborhoods and future subdivisions.

A number of other small floods have occurred; however, flooding has been confirmed primarily to slight over bank flooding and erosion. The hydropower dam upstream survived the October 1973 and December 1982 floods without damage.

Causes of Flooding in the Ketchikan Gateway Borough

Flooding occurs when climate (or weather patterns), geology, and hydrology combine to create conditions where river and stream waters flow outside of their usual course and flow beyond their banks. In Ketchikan, the combination of these factors, augmented by ongoing development, may create chronic flooding conditions. The Deer, Dude, John, Mahoney, Diane and other mountain's snowmelts provide a continuous water source for most of the year, and can contribute significantly to the development of flooding.

Flooding is most common from October through April, when storms from the Pacific Ocean bring intense rainfall to the area. Larger floods result from heavy rains that continue over the course of several days, augmented by snow melt at a time when the soil is near saturation from previous rains. Frozen topsoil can also contribute to the frequency of floods.

Riverine flooding and urban flooding are the two types of flooding that primarily affect Ketchikan. Riverine flooding is the overbank flooding of rivers and streams. This is a natural process in which sediment and nutrients are added to fertile floodplain areas. Urban flooding results from the conversion of land from woodlands and valleys to parking lots and roads, through which the land loses its ability to absorb rainfall. Additionally, coastal areas along Tongass Narrows are susceptible to extreme tides, high winds, and possible tidal surges and tsunamis.

Factors affecting flooding are natural obstructions to the flood flows including trees, brush, and other vegetation growing along the stream banks in floodplain areas. Man-made encroachments on or over the stream, such as roads and bridges, can also create more extensive flooding than would otherwise occur. During floods, trees, brush and other vegetation growing in the floodplain impede flood flows, thus creating backwater and increasing flood heights. Trees and other debris may be washed away and carried downstream to collect at the bridges or other obstructions. As flood flows increase, masses of debris could break loose and surge downstream until another obstruction is encountered. In general, obstructions restrict flood flows and result in overbank flows, unpredictable areas of flooding, possible destruction of the bridge and any pile supported structures and an increased velocity of flow immediately downstream.

Flood Insurance

Ketchikan Gateway Borough participates in the National Flood Insurance Program (NFIP) that makes available federally backed flood insurance for all structures, whether or not they are located within the floodplain. More than 25 percent of NFIP claims are filed by properties located outside the 100-year floodplain, also known as the Special Flood Hazard Area (SFHA). Following the purchase of flood insurance, NFIP imposes a 30-day waiting period, so residents should purchase insurance before the onset of the rainy season to ensure coverage during the flooding season.

Membership within NFIP - and the availability to Borough residents of flood insurance - requires the Borough to manage its floodplain in ways that meet or exceed standards set by FEMA. NFIP insures buildings with two types of coverage: structural and contents. Structural coverage includes walls, floors, insulation, furnace and other items permanently attached to the structure. Contents coverage may be purchased separately to cover the contents of an insurable building. Flood insurance also pays a portion of the costs of actions taken to prevent flood damage.

Floodplain Understanding and Regulation

Maintaining the flow capacity in streams that cross Borough properties requires cooperation and assistance to prevent flooding and bank erosion. Following are some suggestions and information for understanding the

ways that floodplains function and how the Borough regulates the floodplain in order to protect property and lives, while affording Borough citizens the ability to obtain floodplain insurance.

Do not dump or throw anything into ditches or streams: A plugged channel cannot carry water, and when it rains, the excess water must go somewhere. Trash and vegetation dumped into a stream degrades water quality of both the stream itself and its receiving waters, and every piece of trash contributes to flooding. Please report any observations of the dumping of debris or other objects into streams, drainage ways, or rivers to the Ketchikan Gateway Borough Code Enforcement Official at 228-6621.

Remove debris, trash, loose branches and vegetation: Keep banks clear of brush and debris to help maintain an unobstructed flow of water in stream channels. Do not, however, remove vegetation that is actively growing on a stream bank. Streamside vegetation is tightly regulated by local, state and federal regulations. Before undertaking any removal of streamside vegetation, contact the Borough Planning Department at 228-6610. Please report any observations of the clearing of vegetation or trees on stream banks to the Ketchikan Gateway Borough Code Enforcement Official at 228-6621.

Obtain an Elevation Certificate, Flood Hazard Development permit and / or building permit, if required: To minimize damage to structures during flood events, the Borough requires all new construction in the floodplain to be resistant to flood forces, constructed 'With flood-resistant materials and flood-proofed or elevated so that the first floor of living space, as well as all mechanical and services, are at least one foot: above the elevation of the 100-year flood.' These standards apply to new structures and to substantial improvements of existing structures. The Borough defines a substantial improvement as *any reconstruction, rehabilitation, or addition to an existing structure, the cost of which exceeds 50 percent of the structure's appraised or market value*. Additionally, most other types of development within the floodplain also require a FEMA permit and hydraulic/hydrology study, such as grading, cut and fill, installation of culverts, bridges, riprap ,and other bank stabilization techniques. The Borough's staff are available to undertake site visits, when requested, to review flood, drainage and sewer issues. Contact the Ketchikan Gateway Borough Planning Department at 228-6610 for further information and prior to undertaking any activity within the floodplains.

Recognize the natural and beneficial functions of floodplains to help reduce flooding: Floodplains are a natural component of the Ketchikan Gateway Borough environment. Understanding and protecting the natural functions of floodplains help reduce flood damage and protects resources. When flooding spreads out across the floodplain, its energy is dissipated, which results in lower flood flows downstream, reduced erosion of the stream bank and channel deposition of sediments higher in the watershed and improved groundwater recharge. Poorly planned development in floodplains can lead to stream bank erosion, loss of life and property, and degradation of water quality.

Reduce risk of damage to homes: Practical and cost-effective methods for reducing or eliminating the risk of flooding are available to property owners whose homes have experienced damage from flooding in the past, or may experience damage in the future. Such techniques include elevation of the home, relocating the home to higher ground, flood-proofing and protecting utilities. For further information, contact the Ketchikan Gateway Borough Planning Department at 228-6610.

Borough Floodplain Information Services: The Borough Planning Department can determine the relationship of a particular property to the floodplain, including: 1) whether the property is located within the Special Flood Hazard Area; 2) Flood Insurance Rate Map (FIRM) Zone for property; 3) Base Flood Elevation for a property, if available, and 4) whether the property is located within the Floodway. We also have floodplain maps available. Contact the Ketchikan Gateway Borough Planning Department's CFM at 228-6610 for further information.

Flood Safety Tips

Following is a list of important considerations that should be followed during times of flooding:

Prepare an evacuation plan: Before the floodwaters hit, develop an evacuation plan among all members of a household that includes a meeting place outside of the house, as well as an escape route out of the floodplain and away from floodwaters.

Do not walk through flowing water: Drowning is the number one cause of flood deaths, mostly during flash floods. Currents can be deceptive; six inches of moving water can knock you off your feet. If you walk in standing water, use a pole or stick to ensure that the ground is still there.

Do not drive through a flooded area: More people drown in their cars than anywhere else. Don't drive around road barriers; the road or bridge may be washed out.

Stay away from power lines and electrical wires: The number two flood killer after drowning is electrocution. Electrical current can travel through water. Report downed power lines to Ketchikan Public Utilities or the Ketchikan Police Department

Shut off gas and electricity and move valuable contents upstairs: Be prepared in advance with a detailed checklist because warning of an impending flood may provide little time for preparation prior to evacuation.

Look before you step: After a flood, the ground and floors are covered with debris including broken bottles and nails. Floors and stairs that have been covered with mud can be very slippery.

Be alert for gas leaks: Use a flashlight to inspect for damage. Don't smoke or use candles, lanterns or open flames unless you know that the gas has been turned off and the area has been ventilated.

Important Contact Information

1) Ketchikan Gateway Borough Planning Department
   Phone: (907) 228-6610
   E-Mail: planning@borough.ketchikan.ak.us
   Web: http://www.borough.ketchikan.ak.us
2) Ketchikan Gateway Borough Code Enforcement
   Phone: (907) 228-6621
3) Alaska Division of Homeland Security & Emergency Management
   Phone: (907) 428-7000
   Web: http://www.ak-prepared.com/
4) Alaska Department of Fish & Game
   Phone: (503) 225-5195
   Web: http://www.state.ak.us/local/akpages/FIS H.GAME/adfghome.htm
5) United States Forest Service
   Phone: (907) 225-3101
   Web: http://www.odf.state.akr.us/
6) National Marine Fisheries Service (NMFS)
   Phone: (206) 526-6150
   Web: http://www.nmfs.noaa.gov/(and) http://www.nwr.noaa.gov/
7) Alaska District Corps of Engineers
   Phone: (907) 753-2712
   Toll Free: (800) 478-2712
   Web: https://www.nwp.usace.army.mil/
8) Department of Homeland Security
   www.fema.gov