

FLOOD Safe

Information About Flood Disaster Mitigation and the National Flood Insurance Program

A publication of FEMA, Alaska Division of Homeland Security & Emergency Management, and Alaska Division of Commerce, Community, and Economic Development

Helpful Contacts

Local

Mat-Su Borough Floodplain Management
www.matsugov.us/CodeCompliance/floodplain.cfm
745-9853

Kenai Peninsula Borough
Floodplain Management
www.borough.kenai.ak.us/KenaiRiverCenter/agencies/floodplain/floodplain.html
260-4882 ext. 234

Seward Bear Creek Flood Service Area
www.sewardbearcreekfloodservicearea.org
224-3340

City of Cordova Emergency Flood Information
www.cityofcordova.net/floodinfo.htm

City of Valdez Floodplain Management
www.ci.valdez.ak.us/economic_development/flood.html

State

Alaska Division of Homeland Security and
Emergency Management
(800) 818.7811
www.ak-prepared.com

Alaska Department of Commerce, Community
& Economic Development
269-4583
www.commerce.state.ak.us/dca/nfip/nfip.htm

Federal

FEMA Region 10
www.fema.gov/about/contact/regionx.shtm

FloodSmart
(888) 435-6637
www.floodsmart.gov

FEMA Flood Information
www.fema.gov/hazard/flood/index.shtm

Storm & Flood Warnings:
National Weather Service
www.nws.noaa.gov

Build On Higher Ground



The Talkeetna Ranger Station is elevated above the floodplain on an elevated foundation and pad.

Talkeetna, AK — Talkeetna, Alaska is a small community with many rustic log homes and businesses that were established in the days when gold brought people to this part of the country. It is located where the Talkeetna and Chulitna join the Susitna River (interesting note: “na” means river). This was where steamboats once brought heavy mining equipment and essential supplies. Today, the great mountains in nearby Denali National Park are the attraction that brings visitors from around the world.

In 1995, when the National Park Service made the decision to build a new Ranger Station in Talkeetna, they faced a very basic challenge. The town is in a floodplain, and had experienced flooding during severe storms in 1942, 1971, and 1986. High ground in downtown Talkeetna was simply not available.

To protect the investment, the Park Service decided to add fill to the selected building site, creating a raised pad. The design of the new building also included a sturdy concrete foundation that raises the building floor level well above the Base Flood Elevation (BFE), as required by the Matanuska-Susitna

Borough Floodplain Management Ordinance.

The BFE is the level of high water that is calculated to have a 1% chance of occurring during any given year. People sometimes call this the “hundred year event,” but it’s important to be aware that big floods are sometimes repeated after a short interval. Past performance is no guarantee of future behavior when it comes to storms and rising rivers.

Take Additional Precautions

In August, 2006, heavy rainfall caused the rivers to overflow once again. Many volunteers placed sandbags to protect part of the town from floodwater, but many homes near the river still suffered damage.

The staff at the Ranger Station, well aware of the possibility of extreme high water, lifted valuable items such as books, files, computers and other equipment, and put them on desks and tables. During this flood, the building stayed high and dry. The elevated pad and raised foundation were effective. Next time the river rises, though, the staff will once again move the valuables. Alaskans know to expect the unexpected.

Why Do I Need Flood Insurance?

Everyone is at risk. Flooding is America’s most common natural disaster, yet it’s not covered by most homeowners insurance. The risk is real. You can live miles away from water and still experience flooding. Nearly 1 in 4 flood insurance claims are paid on policies in low-to-moderate-risk areas. That’s partly because it doesn’t take a major body of water, or even a major storm, to cause a flood. Anything from a broken sewer line to a slow moving rainstorm can cause flooding. Bottom line, your home has a 26% chance of being damaged by a flood over the life of a 30-year mortgage. (In High-Risk Areas)

Flood insurance is affordable

The problem may be widespread, but the solution is simple. About 100 private insurance companies nationally offer affordable flood insurance backed by the federal government. Policies are available to homeowners, condo owners, apartment owners, renters and business owners alike.

If you live in a low or moderate-risk area, a flood policy can cost just over \$100 a year. That’s less than 30 cents a day to protect your property against a natural disaster that causes more than \$2 billion in property damage in the U.S. every year. Fortunately, even in the most high-risk areas, the cost of flood insurance is around \$500 a year.**



FEMA

Myths and Facts about the NFIP

Who Needs Flood Insurance?

Everyone in a participating community of the National Flood Insurance Program (NFIP) can and should buy flood insurance. Flood insurance is available for sale to more than 85% of Alaskans. In some instances, people have been told that they cannot buy flood insurance because of where they live. To clear up this and other misconceptions about National Flood Insurance, the NFIP has compiled a list of common myths about the program, and the real facts behind them, to give you the full story about this valuable protection.

Flood insurance is available anywhere within the corporate limits of any of these Alaska cities and boroughs that do participate in the National Flood Insurance Program:

Anchorage, Aniak, Bethel, Cordova, Delta Junction, Dillingham, Emmonak, Fairbanks North Star Borough, Fort Yukon, Galena, Haines, Homer, Hoonah, Juneau, Kenai Peninsula Borough, Ketchikan Gateway Borough, Kotzebue, Koyukuk, Kwethluk, Land and Peninsula Borough, Matanuska-Susitna Borough, McGrath, Nenana, Nome, Northwest Arctic Borough, Petersburg, Shishmaref, Sitka, Skagway, Togiak, and Valdez.

Myth: You can't buy flood insurance if you are located in a high-flood-risk area.

Fact: You can buy National Flood Insurance no matter where you live if your community participates in the NFIP. The Program was created in 1968 to make federally backed flood insurance available to property owners who live in eligible communities. Flood insurance was then virtually unavailable from the private insurance industry.

Myth: You can't buy flood insurance immediately before or during a flood.

Fact: You can purchase National Flood Insurance at any time. There is usually a 30-day waiting period after premium payment before the policy is effective, with the following exceptions:

- If the initial purchase of flood insurance is in connection with the making,

increasing, extending, or renewing of a loan, there is no waiting period. Coverage becomes effective at the time of the loan, provided application and payment of premium is made at or prior to loan closing.

- If the initial purchase of flood insurance is made during the 13-month period following the effective date of a revised flood map for a community, there is a 1-day waiting period. This applies only where the Flood Insurance Rate Map (FIRM) is revised to show the building to be in a Special Flood Hazard Area (SFHA) when it had not been in an SFHA. The policy does not cover a "loss in progress," defined by the NFIP as a loss occurring as of 12:01 a.m. on the first day of the policy term. In addition, you cannot increase the amount of insurance coverage you have during a loss in progress.

Myth: Standard homeowners insurance policies cover flooding.

Fact: Unfortunately, many home and business owners do not find out until it is too late that their homeowners and business multi-peril policies do not cover flooding. The NFIP offers a separate policy that protects the single most important financial asset, which for most people is their home or business. Homeowners can include contents coverage in their NFIP policy. Residential and commercial renters can purchase contents coverage. Business owners can purchase flood insurance coverage for their buildings and contents/inventory and, by doing so, protect their livelihood.

Myth: Only residents of high-flood-risk areas need to insure their property.

Fact: All areas are susceptible to flooding, although to varying degrees. If you live in a low-to-moderate flood risk area, it is advisable to have flood insurance. Between 20 and 25 percent of the NFIP's claims come from outside high-flood-risk areas. Resi-

dential and commercial property owners located in low-to-moderate risk areas should ask their agents if they are eligible for the Preferred Risk Policy, which provides very inexpensive flood insurance protection.

Myth: National Flood Insurance can only be purchased through the NFIP directly.

Fact: NFIP flood insurance is sold through private insurance companies and agents, or through the NFIP directly, and is backed by the federal government.

Myth: Federal disaster assistance will pay for flood damage..

Fact: Before a community is eligible for disaster assistance, it must be declared a federal disaster area. Federal disaster assistance declarations are issued in less than 50 percent of flooding events.

Myth: The NFIP does not cover flooding resulting from the overflow of rivers or tidal waters.

Fact: The NFIP defines covered flooding as a general and temporary condition during which the surface of normally dry land is partially or completely inundated. Two properties in the area or two or more acres must be affected. Flooding can be caused by:

- Overflow of inland or tidal waters, or
- Unusual and rapid accumulation or runoff of surface waters from any source, such as heavy rainfall, or
- Mudflow, i.e., a river of liquid and flowing mud on the surfaces of normally dry land areas, or
- Collapse or subsidence of land along the shore of a lake or other body of water, resulting from erosion of the effect of waves, or water currents exceeding normal, cyclical levels.

For more information about the NFIP and flood insurance, call 1-800-427-4661, or contact your insurance company or agent. For an agent referral, call:

1-888-435-6637 • TDD 1-800-427-5593 or visit

<http://www.fema.gov/business/nfip>

Why Do I Need Flood Insurance? - Continued from Page 1

Disaster aid is not often available

Many people don't think they need flood insurance because they believe federal disaster assistance will bail them out. But floods are not always declared a federal disaster area. And even when they are, aid is usually in the form of a loan which must be paid back with interest.

Flood insurance, on the other hand, pays for all covered losses, and unlike loans, that money doesn't have to be paid back. You can cover your home's structure for up to \$250,000, and its contents for up to \$100,000. For businesses, structural coverage is available up to \$500,000, and up to \$500,000 for contents. Don't count on others to bail you out. Take the initiative to protect your home and business.

Flood insurance policy holders who have suffered Substantial Damage to flood-insured structures in the recent Alaska floods may be eligible for some extra help to cover the added costs they incur in rebuilding.

Increased Cost of Compliance Program (ICC) coverage is available on NFIP policies written or renewed on or after June 1, 1997. The ICC is designed to help policy holders take the steps required to reduce future flood damages by bringing their home or business into compliance with their com-

munity's floodplain ordinance. An additional \$30,000 of ICC coverage is available for buildings that the city or borough has designated as suffering substantial damage. You may be eligible to get ICC assistance if your flood-insured home or business has been damaged by flooding to the point that repairs will cost 50 percent or more of the building's pre-damage market value.

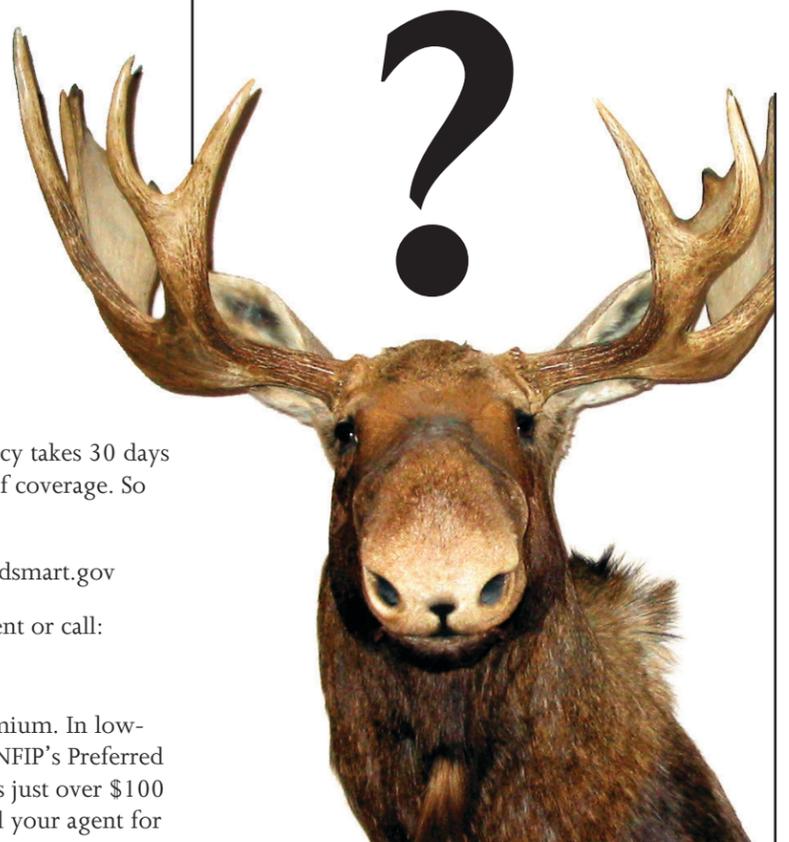
Head for cover

Don't wait until it's too late. A policy takes 30 days from application to effective date of coverage. So look into flood insurance today.

To assess your risk, visit www.floodsmart.gov

For more information call your agent or call: 1-888-435-6637.

**Based on the average policy premium. In low-to-moderate-flood-risk zones, the NFIP's Preferred Risk Policy is available for as low as just over \$100 per year for those who qualify. Call your agent for more details.



Raising Your Alaska Home Above The Flood

One strategy for avoiding flood damage is to raise your house to an elevation likely to be safe from future flood events. This is a big job, requiring the services of specialty contractors who can safely lift the structure and add a new support system or foundation. Here are several questions to answer before launching into such a project:

How high should I raise the house?

It's essential the first-floor elevation meets or exceeds the regulatory requirements for your location. The State Floodplain Manager and the State Hazard Mitigation Officer recommend building at least 2 feet above the Base Flood Elevation (BFE). Consult with your local building officials to determine your BFE and the required elevation for your home. You'll need to hire a licensed surveyor to establish a "benchmark" at your building site. Building higher than the minimum requirement may also be a good idea, since the accuracy of estimates of high water during future floods cannot be guaranteed.

How will the house be supported?

There are several ways to build an elevated foundation for your home. In some areas it's typical to use sturdy posts, or wood, steel or concrete piling. When installed deep into the earth, they provide a very stable system to support the house. Another solution is to build a tall foundation using steel-reinforced concrete or reinforced and filled concrete block. This type of support system must be designed to allow flood water to pass under the building. In parts of Alaska, the Triodetic support system has provided a cost-effective solution. This uses metal tubes and special connectors to form a geometric network of interconnected triangles. The Triodetic system allows floodwaters to pass under the building, leaving permafrost undisturbed, and provides resistance to strong earthquake forces.

Who can design a raised foundation system for my home?

Hire an architect or structural engineer with arctic structural design and foundation design experi-

ence. You may also need to employ the services of a soil engineer to ensure a stable structure. The new foundation will need to do more than simply hold the house high above the ground. It must also be able to resist powerful horizontal forces from wind, water, large floating objects and earthquake forces. Strong connections between the foundation and the house must be part of the design. Be aware, also, that an elevated house is more exposed to wind pressures. To survive, all of the building components must be strong and extremely well connected to each other. Any weak link may allow a house to come apart during a storm or earthquake.

How can I find a good contractor to do the lifting and foundation construction?

It is very important your foundation contractor be able to work well with the house lifting specialty contractor. Ask about past experience with this sort of collaboration. The best way to find good contractors is to ask neighbors who have already been through this process. If they had good experience, they may be able to provide a reference. It still makes sense to check further into the background and qualifications of anyone you interview about the job. Ask for more references to make sure the contractor has more than one satisfied customer, and check with the State of Alaska at the following website to confirm the contractor has a valid license and insurance:

<http://www.commerce.state.ak.us/occ/search1.htm>

Building material suppliers are often familiar with contractors who have good reputations. Professional associations can also be a good source of information about qualified local contractors:

International Association of Structural Movers www.iasm.org

Pile Driving Contractors Association www.piledrivers.org

Alaska State Home Building Association www.buildersofalaska.com



Shishmaref house on Triodetic foundation

Flood Preparation and Safety

THE RISK IS REAL.

The first step in protecting your home and family is purchasing flood insurance. But even after you're covered, there are still a few things you can do to maximize your coverage and assure your safety. Be prepared before a flood. Floods can happen anytime and anywhere. And they can happen fast. So whether you live near the water or not, you should always be ready. Here are some important things you can do to prepare.

- Copy your most important documents (mortgage papers, deed, passport, bank information.) Keep copies in your home and store originals in a secure place outside the home, like a bank safe deposit box.
- Take photos of your most valuable possessions (furniture, musical instruments, electronic equipment.) Store copies with other documents.
- Save and store receipts for any expensive household items (appliances, electronic equipment, etc.) so that you have proof of original cost.
- Make an itemized list of other possessions, such as clothing, books, small kitchen appliances, etc.

You don't have to note every item and its cost, but the more comprehensive your list, the better.

- Flood insurance only covers basement equipment essential to the structure of the building, such as a furnace and water heater.
- Review your policy and ask questions to make sure you have the proper level of protection.
- Have an emergency plan
- Provide your insurance agent, employer, and family with emergency contact information, so that you can be reached after a flood.
- Put aside an emergency kit equipped with a large flashlight, spare batteries, candles and waterproof matches.
- Keep a minimum 7-day supply of non-perishable food and bottled water on hand as most of Alaska is remote and it takes time for help to arrive.
- Include a battery-powered radio in your emergency kit. Even if you never experience a flood, you'll be glad to have this kit during a power outage.

- Visit www.disasterhelp.gov for more info.

Be safe during a flood

- Hopefully, you never have to experience a flood firsthand. But if you do, there are a few things you can do to stay safe.
- Don't walk through a flooded area. Just six inches of moving water can knock you down.
- Don't drive through a flooded area. Just two feet of water can lift and move a car, even an SUV. More people drown in their cars than anywhere else during a flood.
- Keep away from downed power lines and any other electrical wires – electrocution is often a major cause of death in floods.
- Watch out for animals who've lost their homes during a flood. Animals may seek shelter in your home and aggressively defend themselves.

For more rural Alaska flood preparation tips visit:

www.matsugov.us/CodeCompliance/documents/DidYouKnowThatDuringAFlood.doc

Secure Fuel Tanks



What You Can Do

This flyer will offer you a few ideas on how to strengthen your fuel tank support system and secure the tank so that ground shaking or flood conditions will be less likely to cause a failure.

Are You At Risk?

The use of raised fuel tanks to provide gravity flow to oil heaters is common throughout Alaska. Most parts of the State are vulnerable to earthquake or flooding disasters, and during past events many heating oil tanks have tipped over or slid from their supports. When that happens, there is considerable risk of other kinds of damage, ground and water contamination and loss of heating capacity.

Types of Support Structures

There are three main types of tank support structures that are found in Alaska: hand-built wood support, timber cradle support and fabricated steel support systems.

Many failures of the wood support systems occur because of inadequate cross-bracing, weak fasteners or wood deterioration from rot or insect damage.

Improving the diagonal bracing, adding gussets and using steel connecting plates, bolts and other sturdy fasteners can sometimes help. Be aware that wood fibers often split or tear when subjected to powerful earthquake forces.

A timber cradle support may provide safety at low cost. Strength and stability are provided by the broad base and the criss-cross stacking of the timbers. The timbers need to be pressure treated and should be 6" by 6" or larger. Each layer is spiked to the last with large spikes, pins or bolts that are driven into pre-drilled holes to prevent splitting. The tank must be strapped to the cradle with two steel bands. In a flood prone area, the bottom timbers should be fastened to the ground with sturdy helical ground anchors or several long rods (driven into the ground at an angle so they will not pull out during a flood).

Steel support systems are available from many fuel supply companies and other sources though most are poorly designed with improper height to width ratios, making them top-heavy. They are generally fabricated with welded angle iron or

heavy gauge pipe to provide rigidity and strength.

To be safe during an earthquake or fast moving flood, a steel tank support must be designed with a wide footprint and good diagonal bracing. Stability can also be improved by securely bolting the steel support system to 6" by 6" pressure treated wood timbers or railroad ties on the ground. Again, in flood areas, fasten the timbers with ground anchors, and make certain that the tank is banded to the support stand.

Additional notes

Be sure to install a shutoff valve at the tank outlet so the flow of oil can be turned off in case of a fuel line leak or rupture. The line between the tank and house should include a flexible loop of copper tubing to reduce the possibility of a rupture and oil spill. Also, it's important to protect both the tank and fuel line from heavy falling objects or any other source of damage (snow sliding from the roof, moose, bears, children, etc). Since fuel spill contamination is so difficult and expensive to remedy, consider adding back-up safety with a containment area under the tank. A soil or sand berm with a fuel resistant liner will catch spills before the oil enters the ground, groundwater, wells, septic systems, etc. Finally, try to ensure that the tank fill cap and vent are located above the level of any possible flood.

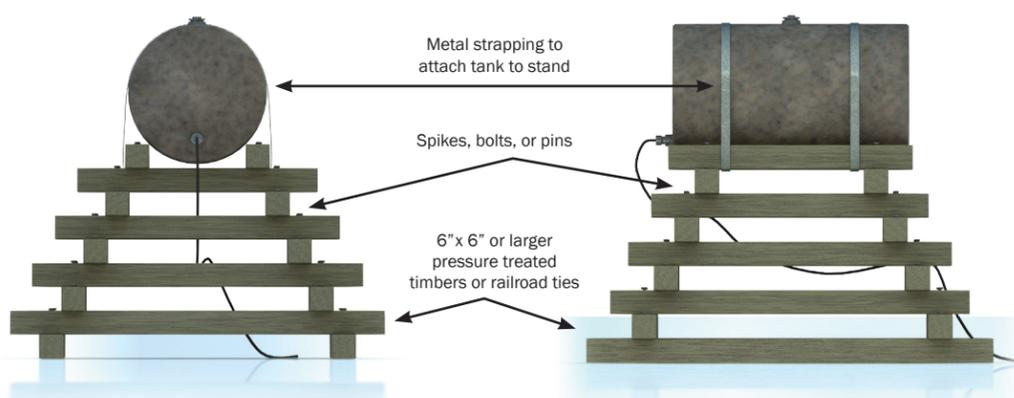
More Information

The project presented in this flyer represents what is commonly known as Non-Structural Mitigation. This means that the damage prevention project did not require changes to your buildings foundation or support structure. FEMA has produced a comprehensive guide called "**Reducing the Risks of Nonstructural Earthquake Damage.**" This guide offers a great deal of information to get you started in strengthening your home against earthquake damage. It, along with other earthquake mitigation information, is available free from FEMA Publications Distribution by calling (800) 480-2520 or on the web at:

<http://www.fema.gov/plan/prevent/earthquake/homeowners.shtm>

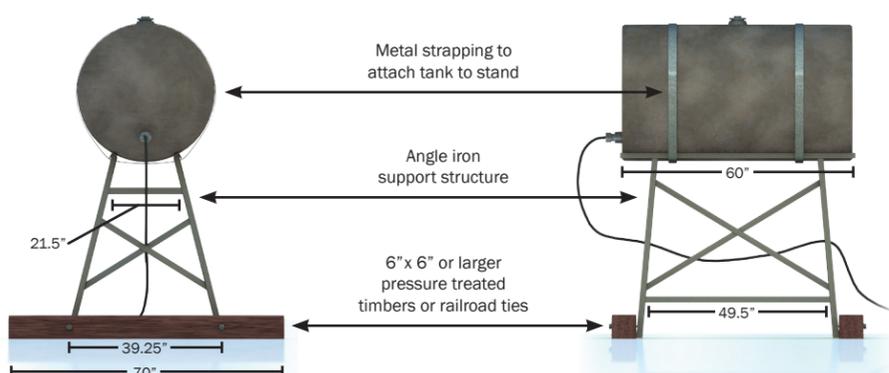
Additional resources are available at:

<http://www.ak-prepared.com/homelandsecurity/citizenpreparedness.htm>



Timber Cradle Fuel Tank Stand

This diagram shows how to build a timber cradle that is likely to withstand large earthquakes. The design uses commonly available materials and can be built by almost anyone. This stand is designed to support the average size fuel tank (300 gallons) at a typical height of 4 feet.



Steel Fuel Tank Stand

This diagram shows how a steel tank support can be improved to withstand large earthquakes. These supports are commercially fabricated using welded angle iron, and typically support 300 gallon tanks at heights of 3-5 feet. A wider base and bolting the support to pressure treated timbers provides more stability.

- Be sure to contact your city or borough officials to obtain the flood elevation at your site and for floodplain development regulations.