



TOWN AND VILLAGE OF HARRISON ENGINEERING DEPARTMENT



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FLOOD FACTS, TYPES OF FLOODING

As water falls to the Earth in the form of rain or snow, it seeps into the ground. But if the ground is frozen or the surface impervious (asphalt or concrete are two contenders) or the soil is already saturated and cannot absorb the water faster than it falls from the sky, problems arise.

Water running downhill into channels and streams begins to "pile up", eventually overrunning the sides of those channels. How quickly this happens depends on the strength of the precipitation and the slope of the land. Sometimes flooding causes deep water to move quickly, while other times, shallow water may linger, taking days to dissipate.

TYPES OF FLOODING

There are several types of flooding.

Overbank flooding: What most people think of when they hear the word "flood." Filled to capacity because of heavy rain or [melting snow](#), the water within a river overflows its banks and spreads across the land around it. Sometimes the area covered is wide and flat; water tends to spread out and be slow-moving, and may not appear to travel at all. Common in the [Midwest](#), this kind of flooding can take days to dissipate. In mountainous areas, where water flows together through steep valleys, the flood water tends to move faster and linger for a shorter duration.

Flash floods: Water from floods can take time to build up, allowing the population in an area time to be warned in advance. But sometimes flooding occurs quickly. [Flash floods](#) gather steam within six hours of the events that spawned them. They are characterized by a rapid rise of fast-moving water. Fast-moving water is extremely dangerous — water moving at 10 miles an hour can exert the same pressures as wind gusts of 270 mph (434 kph), according to a 2005 article in [USA Today](#). Water moving at 9 feet per second (2.7 meters per second), a common speed for flash floods, can move rocks weighing almost a hundred pounds. Flash floods carry debris that elevate their potential to damage structures and injure people.

Ice jam flooding: In cold temperatures, bodies of water are often frozen. Heavy precipitation can cause chunks of ice to push together and create a dam in what is known as ice jam flooding. Behind the dam, water begins to pile up, spilling over to the plains nearby. Eventually, the wall of ice breaks, and fast-moving water rushes downstream much like a conventional flash flood, destroying objects in its path. The water carries huge chunks of ice, which can increase damage to surrounding structures.

Coastal flooding occurs along the edges of oceans, and is driven predominantly by storm surges and wave damage. This kind of flooding is usually connected to hurricanes, [tsunamis](#) or tropical

storms. When low pressures occur in a storm over the ocean, they suck the water toward the center. As long as the eye is over deep water, problems are minimized, but as the storm moves toward land it carries a dome of water that can exceed 25 feet (7.6 meters) in diameter. When the dome reaches the shoreline, it can cause significant damage. At the same time, waves breaking along the shoreline assault beaches and structures, with destructive potential. In a [hurricane](#), 9 out of 10 deaths are caused not by wind but by fast-moving storm surge.

Engineering issues: Flooding may be caused by [manmade issues](#), as well. A weakly constructed dam could receive a more substantive battering than it was designed for and give way, creating a flash flood in the regions downstream.

IN CASE OF EMERGENCY

Fast- and slow-moving water can create significant problems for people who underestimate their power. According to the Environmental Protection Agency, attempting to drive through flood water is the leading cause of [flood-related injury and death](#). Six inches of moving water can cause you to lose your balance and fall. The best plan is to avoid flood water when at all possible and to make for higher ground.

There are a number of things you can do to prepare for a flood and minimize damage.

- Structures should not be built in a flood plain.
- Keep your furnace, water heater, and electric panel elevated, especially if you live in an area where flooding is likely.
- Put together an emergency kit and make plans with your family — something that is ideal for any emergency situation, not just flooding.
- If you find yourself under a flood warning, make sure to pay attention to radio or television warnings.
- If you have time prior to an evacuation, turn off utilities at the main switches and disconnect electrical appliances.
- Move furniture and important items to higher levels in your house and bring in any outdoor furniture.
- Avoid contact with flood water. It may contain oil, gasoline, raw sewage, or any number of undesirable materials.
- Wash your hands thoroughly with clean water before eating, and do not drink from contaminated sources.

Damage from a flood depends on a number of things, including how long the water remains before receding and how quickly it was moving. Pay attention to roadways, which could have been weakened or washed out, and may be unsafe. Be careful entering buildings; fast-moving water could have weakened structural supports. If your home was submerged for an extended period, watch for signs of mold, which can cause illnesses.