

## Flash Floods



Floods are among the most frequent natural hazards in New Jersey, and among the most devastating in terms of human hardship and economic loss. As much as 90 percent of the damage related to natural disasters is caused by floods and associated debris flows. Most communities in the United States can experience flooding.

### What Causes Floods?

- Flooding occurs in known floodplains when prolonged rainfall over several days, intense rainfall over a short period of time, or an ice or debris jam causes a river or stream to overflow and flood the surrounding area. Melting snow can combine with rain in the winter and early spring; severe thunderstorms can bring heavy rain in the spring and summer; or tropical cyclones can bring intense rainfall to the coastal and inland states in the summer and fall.
- Flash floods occur within six hours of a rain event, or after a dam or levee failure, or following a sudden release of water held by an ice or debris jam, often catching people unprepared. You will not always have a warning that these sudden floods are coming.
- As land is converted from fields or woodlands to roads and parking lots, it loses its ability to absorb rainfall. Urbanization increases runoff two to six times over what would occur on natural terrain. During periods of urban flooding, streets can become swift moving rivers, while basements and viaducts can become death traps as they fill with water.
- Several factors contribute to flooding. Two key elements are **rainfall intensity and duration**. Intensity is the rate of rainfall, and duration is how long the rain lasts. Topography, soil conditions, and ground cover also play important roles. Most flash flooding is caused by slow-moving thunderstorms, thunderstorms repeatedly moving over the same area, or heavy rains from hurricanes and tropical storms. Floods, on the other hand, can be slow- or fast-rising, but generally develop over a period of hours or days.
- Floods can overwhelm communities in just a matter of minutes. By being proactive, your community can reduce flood risks.

### Flash Flood Safety Tips:

- Nearly 50 percent of all flash flood fatalities nationwide involve vehicles. Saving your life can be as easy as turning your car around when you see water on the road. Never attempt to drive through flooded roadways.
- Even in relatively shallow water, tires can act as flotation devices, lifting big vehicles and sending them downstream. It takes only two feet of water to float a 3,000-pound car.
- Beware that water covering roadways may hide washed-out bridges or gouged-out roadbeds. If you attempt to drive across, you may not be driving on a road.
- In rainy weather, be alert and stay tuned to local radio or TV.
- If you are in a low-lying area when flooding is occurring, get to higher ground quickly. And be sure to avoid canyons and washes that can channel swift water.
- Do not attempt to cross flooded roads or streams on foot. It can take as little as six inches of water to knock an adult off his or her feet. Furthermore, water may be flowing more rapidly than it appears.
- During stormy weather, do not camp or park vehicles along streams or washes.
- Be especially cautious at night when it is harder to see flood dangers.

## Six ways your town can be prepared:

### 1. Encourage residents to be prepared for a flood:

Every municipal building, business, and private residence should know their flood risk and how to stay informed about flood information.

### 2. Have an emergency plan that outlines procedures for every department and agency during a flood:

Establish a chain of command for management operations. In high-risk areas, it's a good idea to practice for emergency operations before a real flood occurs. Maintain infrastructure that presents flood risks. Take care of small stream crossing or culverts where floods might be more common. Watch for changes in the course of water in the community.

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### 4. Watch water flow during rainfall, especially on hard surfaces

Roads and parking lots speed water flow, which can be quite dangerous. Make sure water can flow into drainage systems adequately without causing damage. Encourage residents to reduce runoff by implementing rain gardens or other green systems.

### 5. Discourage construction in flood hazard areas...

or at least comply with floodplain development standards. Check flood insurance rate maps before planning any development.

### 6. Develop a mitigation plan to take steps now to prevent future floods

One key element of this plan can be a weather tracking system to alert residents to the potential of heavy rainfall and damaging winds to allow them to prepare and get to safer ground.



## Planning for the Future:

- The United States federal government has financial incentives for municipalities which implement flood preparation systems, but the policies must be in line with FEMA guidelines. Towns with programs in place for flood management also can provide incentives to individuals to get reduced flood insurance rates. Plans and programs must be updated, reviewed and enforced to match FEMA's updates.
- Your community may not be able to prevent floods, but the local government should be prepared for any flood related problems that arise. Accurate weather forecasts are paramount to flood preparation. New weather tracking systems have the capability to send out alerts by email and/or text to keep citizens up-to-date with accurate information. A flood might be an overwhelming occurrence, but your municipality can do a lot to keep its employees and residents safe.

FOR MORE INFORMATION, PLEASE CONTACT THE RISK CONTROL DEPARTMENT:

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