



Liability & Property Pool Workers' Compensation Fund

RISK CONTROL SOLUTIONS

A Service of the Michigan Municipal League Liability and Property Pool and
the Michigan Municipal League Workers' Compensation Fund

FLOODS AND FLASH FLOODS

INTRODUCTION

Floods are one of the most common and widespread of all natural disasters. Most communities can experience some degree of flooding after spring rains, heavy thunderstorms, or winter snow thaws. While most floods develop over a period of days, flash floods are like walls of water that develop in a matter of minutes. Intense storms and dam failures are two frequent contributors to the development of flash floods.

Municipalities are not immune to flooding. Like the citizens and businesses that they serve, municipal buildings and their contents may be lost if a flood occurs. In addition, the failure to develop a plan for coping with floods or flash floods may seriously affect a municipality's ability to deliver services. While municipal management cannot prevent floods, it can take steps to reduce the effects of flooding. It is critical, in fact, that municipalities protect their assets so that they are in a position to assist citizens during and after a flood.

In 2019 and 2020 many communities along the shores of the Great Lakes began to experience a different kind of flooding. The water levels of the Lakes began to rise to levels not seen in the last 30 years. This slow rising of the water levels in these areas began to flood nearby municipal facilities such as marina docks, waterfront walkways, and others.

While it may be possible to construct barriers to stop rising water levels in certain limited areas, these measures are very costly and likely require time-consuming permitting steps. There may not be any practical ways of lowering these water levels in many cases. But, municipalities should document the water levels reached with respect to waterfront structures and other areas so that future construction may take historic high-water levels into consideration. In this way new waterfront facilities can be built above previous water levels.

MITIGATION PAYS

Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency occurring, or lessen the effects of the occurrence. Investing in mitigation steps before a flood or flash flood will reduce the possibility of structural damage and resulting financial loss to the structure and contents.

The following are some mitigation or planning steps that municipal management should consider when preparing for floods:

❖ Purchase flood insurance

Pool members have flood coverage as part of their package. The policy covers “loss or damage caused by, resulting from or contributed to by flood waters, waves, tide or tidal water, the rising, overflowing, or breaking of boundaries of natural or man-made bodies of water, or the spray from any of the foregoing.” The limit is \$1 million for each occurrence and for the Annual Aggregate.

Pool members can obtain additional coverage under the National Flood Insurance Program. This coverage provides up to \$500,000 for each building and \$500,000 for the contents of each building. The coverage is on a per building basis. The current rate is \$0.28 per \$100 of valuation for the building and \$0.48 for each \$100 of valuation for contents. The coverage must be in place 30 days prior to any loss.


Insurance is only one means of addressing losses resulting from floods. Therefore, Pool members are also encouraged to review their potential exposures. The remainder of this checklist will help you to evaluate your flood readiness. If, after your review, you feel you need additional coverage, please contact your Pool Marketing Representative.

- ❖ Learn the history of your area. Ask the local emergency management office if your building or buildings are located in a flood plain.
- ❖ Know the difference between a flood watch and a flood warning and train your employees in the proper response to each.
 - Flood Watch: Flooding is possible. Listen to local weather radio. Be prepared to evacuate equipment, records and personnel.
 - Flood Warning: Flooding is already occurring or will occur soon. Take precautions at once.
- ❖ Review your community’s emergency plans. Make sure you have warning and evacuation plans for each of your facilities.
- ❖ Inspect each facility in areas subject to flooding.
 - Evaluate the structure’s ability to withstand the anticipated usual flood level.
 - Identify records and equipment that can be moved to a higher location.
 - Make plans to move equipment and records in case of flood.
 - Make certain that utility shut off valves are above the anticipated usual flood level.
 - Place electrical service equipment on upper floors of the building, above historical flood levels.
 - Make sure that each facility has emergency supplies available, including portable power equipment to run vital utilities.

- ❖ Consider flood proofing your facility. There are three basic methods:
 1. Permanent flood proofing measures are taken before a flood occurs and require no human intervention when flood waters rise. They include:
 - Filling windows, doors or other openings with water-resistant materials such as concrete blocks or bricks. This approach assumes that the structure itself can sustain the pressure of the water.
 - Installing check valves on sewer lines to prevent water from entering through service lines into the building.
 - Reinforcing exterior walls to resist water pressure and sealing walls to prevent or reduce seepage.
 - Building watertight walls around expensive equipment that cannot be moved from the facility.
 - Constructing flood walls or levees around the outside of the facility to prevent water from coming into contact with the exterior of the building.
 2. Contingent flood proofing measures are a combination of actions taken in advance and those that require additional steps as flooding occurs. These steps would include:
 - Installing watertight barriers to prevent water from passing through building openings.
 - Constructing movable floodwalls.
 - Installing permanent pumps to remove water.
 3. Emergency flood proofing measures are generally less expensive but require more advanced warning and do not meet the minimum requirements for waterproof flood proofing that the National Flood Insurance Program has established. Emergency methods include:
 - Building temporary walls with sandbags. Plan the sandbagging layout before a flood event.
 - Constructing a double row of walls and posts and filling the interior with soil.
 - Constructing a single wall of planks on top of each other.
 - Implementing backup systems including portable pumps to remove entering floodwater.
 - Implementing alternate sources of power including generators and battery powered emergency lights.

- ❖ Take steps to prevent the fires that can occur during a flood. Many floods indirectly cause fires that originate in electrical shorts, in flammable liquids floating on top of the water, and flammable gas escaping from broken pipes. The following practices can protect facilities from fire damage:
 - Extinguish all open flames or lights near or in a flood-exposed structure.
 - Protect all flammable gas piping that might be exposed to mechanical damage.
 - Install all shutoffs or disconnects so that they are accessible above the normally expected flood level.
 - Prevent water from entering buildings either by having no openings at lower levels or by sealing existing openings against water entry.
- ❖ Establish procedures to limit losses after a flood occurs:
 - Assign personnel to implement emergency flood plans for installing barriers, operating pumps, repairing damage, and disconnecting utility services.
 - Begin salvage as soon as possible to limit losses.
 - Restore protection systems, such as fire and burglar alarms, as quickly as possible.

***Contact MML Risk Management Services Staff/
or your Loss Control Consultant for more information.***

	Important Phone Numbers	
MML Risk Management Services		734.662.3246 or 800.653.2483
Loss Control Services		800.482.0626

Note:

***This document is not intended to be legal advice.
It only identifies some of the issues surrounding this topic.
Public agencies are encouraged to review their procedures with an expert
or a competent attorney who is knowledgeable about the subject.***