



Flood Preparedness

In advance, contact your resources to have air movers and dehumidifiers on standby to move into damaged buildings as soon as possible, in order to prevent mold from occurring.

Suggested Program Elements:

PROPERTY PROTECTION – A RISK MANAGEMENT PERSPECTIVE

Each property calls for individual attention, with thought first to the probability and extent of possible flood damage. Data should be developed on:

1. **Geography and Terrain.** Will water build up or drain away? Is the property in an old stream channel? Does the ground absorb water or not? What is the elevation above the nearest body of water? Are levees or diversion channels adequate and well-maintained? Are any close reservoirs subject to sudden water release?
2. **Flood Records.** Check with the U.S. Army Corps of Engineers or local authorities on past flood levels and their estimated frequency.
3. **Rainfall Records.** Check U.S. Weather Bureau records on extent of possible rainfall.
4. **Building Construction.** Are there low areas that could collect water? In basements or low areas, are sump pumps adequate? Are any construction materials especially subject to damage, such as high-grade hardwood floors?
5. **Location of Valuables.** Are computers or other important equipment subject to water damage in low or exposed locations?
6. **Salvage and Protection Equipment.** If floods can be expected, are adequate supplies of sandbags, portable pumps, mops, hot air dryers, etc. available? Are supplies inspected regularly?
7. **Plan.** Is an organized plan written to give directions on what to do in sequence, with contact information for maintenance personnel, suppliers of damageable materials, contractors of freeze-drying equipment to salvage critical books, records, etc.?



WHAT CAN PROPERTY OWNERS DO TO PROTECT THEMSELVES AGAINST AN IMMINENT FLOOD?

The steps that property owners and business operators can take to protect themselves against an imminent flood vary depending on a number of factors, including:

1. The time available between the warning and the onset of flooding. Longer warning times, up to about 8 hours, enable greater reduction of damages. More than 8 hours' warning time produces only slightly greater reduction of damages in most cases.
2. Availability of accurate information on the eventual height of flood waters. This may make the difference between raising furniture a foot or two, moving it to the second floor or moving everything out of the property to a safe area.
3. Capability and availability of appropriate assistance.
4. Preparations that have been made in advance to facilitate evacuation and protection of property.

Preparation Steps:

1. Decide whether to simply raise contents, move them upstairs or move them out.
2. Remove carpets (to ease cleanup as well as save them).
3. Remove or leave open all drawers, cabinet doors and room doors (they swell and stick shut).
4. Turn off gas and electricity to make building safe against fire and explosion and safe to return to.
5. Turn off water to help prevent loss of pressure in the system.
6. Remove furnace and gas burners to prevent clogging by sediment.
7. Remove motors from equipment that can't be moved, such as furnaces.
8. Unplug and wrap in plastic any appliances that can't be moved to keep out water/sediment and make cleanup easier. Disconnect gas lines to dryers and refrigerators to prevent breakage if the appliance floats.
9. Tie any unanchored propane or other tanks to a tree or other fixed object. If tank can be opened safely, fill it with water to prevent flotation.
10. If additional time is available and electrical power is disconnected, remove wall receptacles to prevent siltation. This will enable faster restoration of power after floodwaters recede.
11. Evacuate or raise the supplies and equipment that will be needed for cleanup such as mops, hoses, gloves, boots, detergents, lubricants, etc.
12. Stack sandbags away from the outside walls of property to prevent floodwaters from entering.



Additional Steps to Reduce Flood and Water Damage:

- 1. Check your sump pump.** Clean the sump pump and pit, and test the pump by pouring water into the pit. Consider having a spare submersible portable sump pump. Make sure the discharge hose delivers the water several feet away from the property to a well-drained area that slopes away from the property. If the hose outlet is too close to the foundation or on flat ground, the water may simply recycle down through the property drain tile. Don't run sump pump water into a rural septic system because the water may saturate the drain field. In cities, running sump pump water into the sanitary system may overload the system and cause sewage backup, plus it may be illegal.
- 2. Move valuables to higher locations.** Get irreplaceable items off the bottom shelves in the lower level of your property. Important documents and items can also be placed into ice chests and be sealed with duct tape.
- 3. Plug basement floor drains with removable grids.** A flexible rubber ball about 1.25 times the inside diameter of the pipe can be wedged into the drain to create a tight seal. The pressure might be quite high so brace the ball securely with a 2X4 against the ceiling. Hold a board or piece of plywood on the ceiling and slide the 2X4 against the bottom of the board to avoid damage to plaster ceilings. For a suspended tile ceiling, remove ceiling tiles to get access to the ceiling joists. Span a 2X4 across the two joists and wedge the vertical 2X4 between it and the ball. Some hardware stores sell a plug that has a rubber center that expands to fill the pipe when the top and bottom metal plates are squeezed.
- 4. Cover basement floor drains with permanent grids.** Place a partially inflated inner tube around the drain, and top it with a square or two of plywood (not particle board). The plywood must be larger across than the inner tube to cover it. Brace this in place just as with the ball on the drain. Be prepared for some seepage.
- 5. Reduce flooding from other drains.** Unbolt toilets from the floor and plug the outlet pipe using the same procedure as for floor drains. Shower drains can be plugged this way too. Most washing machines and basement sinks have their drain connections about 3 feet above the floor so may not overflow if the water doesn't get that high. If necessary, these drains can be disconnected and capped or plugged with braced rubber balls.
- 6. Keep water out of window wells.** Since windows can't withstand much pressure, build dams and contour the ground so water will naturally drain away from the property.
- 7. Downspouts.** Get downspouts down in place so that as water comes down they can carry the water away from the property.



- 8. Prepare appliances for flooding.** Shut off appliances at the fuse box or breaker panel. Put freezers, washer, dryers and other appliances up on wood or cement blocks to keep the motors above the water level. If high water is imminent and large appliances can't be moved, wrap them in polyethylene film, tying the film in place with cord or rope. The water will still get in, but most of the silt won't, so cleanup will be easier.
- 9. Shut off electricity.** Shut off electricity to areas of the property that might flood. Even if floodwaters are not reaching electrical outlets, the risk of electrical shock to someone working in a flooded basement is high with electric motors in the furnace, freezer, washer, dryer and other appliances. Shut off electrical breakers or unscrew fuses. Don't stand in water and turn off electrical switches. If this must be done, use a dry piece of wood or a plastic or rubber pole to do the switching, and stand on a block of wood or a plastic crate that doesn't conduct electricity. If floodwaters are getting close to the electrical entrance box, call the power supplier and have the electrical supply to the property disconnected. If the floor is damp but not really flooded, ground fault circuit interrupters reduce the risk of using electricity. In newer properties, interrupters can be identified by the buttons between the top and bottom outlets. They can be added to any outlet or in an extension cord to turn off the power if there is danger of water.
- 10. Move hazardous materials to higher locations.** This includes paint, oil, cleaning supplies and other dangerous materials.

Program Activities

Calendar:

- Annual program review
- Annual training for response personnel
- Quarterly exposure evaluation

Website Links:

- Federal Emergency Management Agency
<http://www.fema.gov>
- Disaster Resource Guide
<http://www.disaster-resource.com>
- Disaster Recovery Journal
<http://drj.com>
- Public Risk Management Association
<http://www.primacentral.org>

References:

- See other Trident Risk Control Services Guidelines:
- Emergency Preparedness Procedures
 - Building Utilization
 - Weather Catastrophes
 - Self Inspection Program

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