NATURAL DISASTER KIT

Complete emergency preparedness

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Introduction

We live our lives peacefully. We go to work, take our children to school, go on vacation, go shopping, or maybe just get out and go for a drive. But there are the times that make us realize how fragile our lives are, or can be.

Emergencies, disasters, accidents and injuries can occur any time and without warning. You may have not experienced one yet, but are you willing to take the risk and ignore the possibility? My belief is that being prepared to handle emergencies is an individual as well as a family responsibility. You know it, because it's not the first time you take action to protect your loved ones.

Emergency planning procedures should cover your home, work, and recreation place. These procedures will help reduce the effects of disasters and emergencies and could even save someone's life. Your

safety, as well as the safety of your family, friends and co-workers, is of primary importance.

The purpose of this guide is to provide self-help information and disaster safety guidelines for you to use during times of disasters, emergencies, or catastrophic events.

In a major disaster or catastrophe, local government may be severely affected and may have to recover before it can provide basic services to the public. This action could take some time or it may never happen. During this period the citizens of the community must be able to function without government assistance.

I have studied the most important emergency situations that may occur and I'm ready to give you the proper instructions on how to be safe. I trust you'll keep this guide close to you at any time to protect yourself and the people that are close to you.

Have an emergency plan for your family

Families can–and do–cope with disaster by preparing in advance and working together as a team. Knowing what to do is your best protection and your responsibility. Don't worry, I'll help!

Step 1: Find Out What Could Happen to You

Contact your local emergency management or civil defense office and American Red Cross chapter — be prepared to take notes:

- Ask what types of disasters are most likely to happen. Request information on how to prepare for each.
- Learn about your community's warning signals: what they sound like and what you should do when you hear them.
- Ask about animal care after disaster. Animals may not be allowed inside emergency shelters due to health regulations.
- Find out how to help elderly or disabled persons, if needed.
- Next, find out about the disaster plans at your workplace, your children's school or daycare center and other places where your family spends time.

Step 2: Create a Disaster Plan

Meet with your family and discuss why you need to prepare for disaster. Explain the dangers of fire, severe weather and earthquakes to children. Plan to share responsibilities and work together as a team.

- Discuss the types of disasters that are most likely to happen. Explain what to do in each case.
- Pick two places to meet:
  1. Right outside your home in case of a sudden emergency, like a fire.
  2. Outside your neighborhood in case you can't return home. Everyone must know the address and phone number.
- Ask an out-of-state friend to be your "family contact." After a disaster, it's often easier to call long distance. Other family members should call this person and tell them where they are. Everyone must know your contact's phone number.
- Discuss what to do in an evacuation. Plan how to take care of your pets.

Step 3: Complete This Checklist

- Post emergency telephone numbers by phones (fire, police, ambulance, etc.).
- Teach children how and when to call 911 or your local Emergency Medical Services number for emergency help.
- Show each family member how and when to turn off the water, gas and electricity at the main switches.
- Check if you have adequate insurance coverage.

- Teach each family member how to use the fire extinguisher (ABC type), and show them where it's kept.
- Install smoke detectors on each level of your home, especially near bedrooms.
- Conduct a home hazard hunt.
- Stock emergency supplies and assemble a Disaster Supplies Kit.
- Take a Red Cross first aid and CPR class.
- Determine the best escape routes from your home. Find two ways out of each room.
- Find the safe spots in your home for each type of disaster.

Step 4: Practice and Maintain Your Plan

- Quiz your kids every six months so they remember what to do.
- Conduct fire and emergency evacuation drills.

Year	Drill Date
…….	…….
…….	…….
…….	…….

- Replace stored water every three months and stored food every six months.
- Test and recharge your fire extinguisher(s) according to manufacturer's instructions.
- Test your smoke detectors monthly and change the batteries at least once a year.

  Jan. July

  Feb. Aug.

  Mar. Sep.

  Apr. Oct.

  May Nov.

  June Dec.

- Change batteries in _____ each year.

  (month)

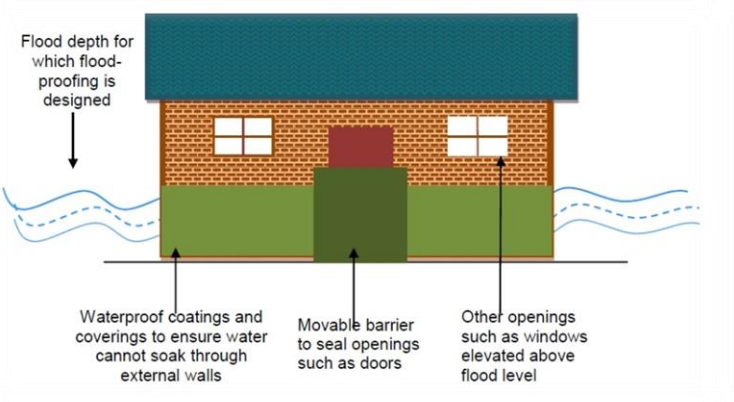
Flood Preparedness

Did you know that floods are the most common natural disaster in America? The Red Cross reports that, every year, floods take more than 100 lives and cause more than $4 billion in damages.

I've seen people with homes dramatically damaged by flood and it's really depressing, but that doesn't have to happen. That's why I developed a plan to successfully meet the inevitable.

Should your home or other structures be located in an area where flooding above first floor level is forecast, you may wish to do the following:

- ✓ Listen carefully to the forecast and determine how high the predicted flood level will be, then



allow an extra meter of coverage beyond that height

- ✓ Remove all valuables from basement, turn off and disconnect all power and gas lines and remove all electric motors from the furnace and appliances which will remain in the basement during the flooding period.
- ✓ Securely plug all basement drains and outlets such as: sewer drains, sinks, toilet bowls and laundry outlets to the sewer. It may be necessary to plug some outlets below the level of the weeping tile drains, in the primary sewer trap. Effective plugs can be made from wood or plastic bags. All plugs must be held in place by sandbags or other heavy materials, or held in place by braces securely fastened to floor joists.
- ✓ Move all possessions within the structure above the projected flood water level
- ✓ Prepare sandbag-wall around your property (see sandbag dykes)
- ✓ Remove lawn furniture
- ✓ Move smaller outhouses to higher ground and away from potentially eroding riverbanks.

Sandbag dykes

Construction of a sandbag dyke requires special procedures to achieve maximum strength and effectiveness. Should you choose to construct a sandbag dyke to protect your property in the event of a flood, the following tips may be useful.

1. Strip the sod or ground cover beneath the area for the proposed dyke and dig a "bonding trench" one sack in depth and two sacks wide as a foundation for the dyke structure.

2. To effectively provide protection from the forces of flooding water a dyke must be three times as wide at its base as it is high. A dyke intended to be one meter high must have a three meter wide base.

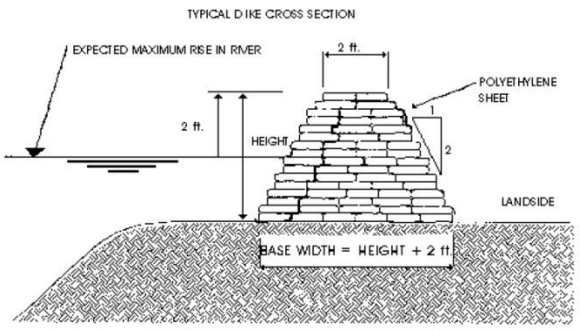
3. Sandbags should never be filled more than half-full and must be laid in alternating crisscross directions.

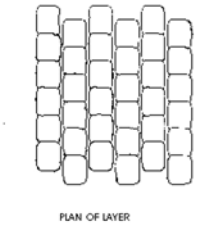
The base level should be laid parallel to the flow of the water. The second level should be laid perpendicular to the flow, with the third level again laid parallel, continuing to the intended height of the dyke.

Each successive layer is set back one-half sandbag width on both sides in each additional layer. A side view of a completed dyke would show a triangular cross section.

4. Individual bags need not be tied shut. Overlapping by successive bags will hold the sand in place. The method of keeping bag contents in place is called "lapping."

5. As individual bags are put in place, each must be tamped firmly to ensure maximum performance and strength in the finished dyke.





HEIGHT	BASE WIDTH
1.0	3.0
2.0	4.0
3.0	5.0
4.0	6.0

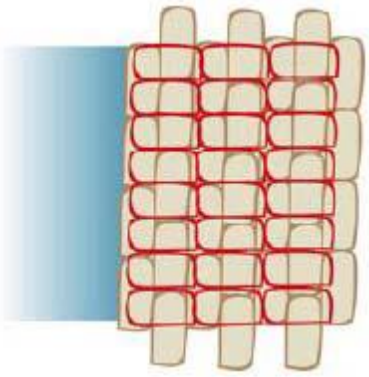
ALL DIMENSIONS IN FEET

The dike should be at least eight feet from building foundation. This prevents foundation damage and allows room for people and equipment to move. As well, this space allows more dike base width to be constructed should additional dike height be required.

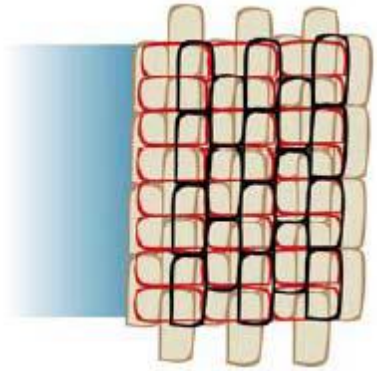
Lay first course/bottom layer of bags parallel to river/water with the closed side of bag against river flow direction.

The filled portion of the second bag sits over the empty portion of the previously placed bag. This is known as lapping.

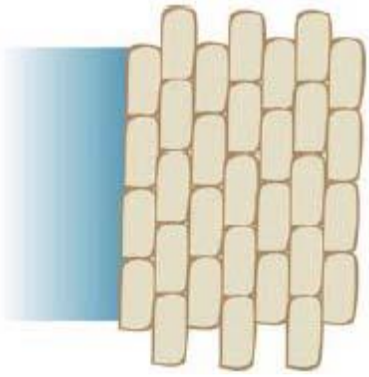
Drop the bags into place and tamp bags with feet to lodge them into place.
Offset the bags from the previous row in the same course to form a brick pattern



Second and remaining courses:
Rotate bags 90 degrees when laying second course of sandbags. Keep seal side of bag towards water/river. Ensure sandbags are well packed against each other and firmly in place.



Change direction of bag from parallel to perpendicular to the river for each course of bags.
Every second course of sandbags should be



set back a quarter (1/4) of a sandbag width, both on the river side and the land side of the dike, producing a step-like appearance. Weave the polyethylene sheet between the courses of sandbags as to have at least two layers of sandbags protecting the polyethylene sheet from debris punctures.

Maximum depth of the polyethylene sheet should be 3 sandbags or a quarter (1/4) of the cross section of the dike, whichever is less. If more height of polyethylene sheet is required, make polyethylene sheets overlap at least two feet.

Polyethylene Sheeting

Flooding Above First Floor Level

A reliable source of protection for the structure of your home and most other smaller buildings during severe flooding conditions is the proper use of polyethylene (plastic) sheeting. The following is a brief description of how, according to dyking engineers, an individual can provide protection to his or her home should potential flooding conditions be considered severe enough to require evacuation.

This system has been successfully used throughout Canada and the United States, and is recommended for structures located in areas where flood depth is anticipated to extend above the level of the structure's first floor. It is not considered necessary in areas where only basement flooding is expected.

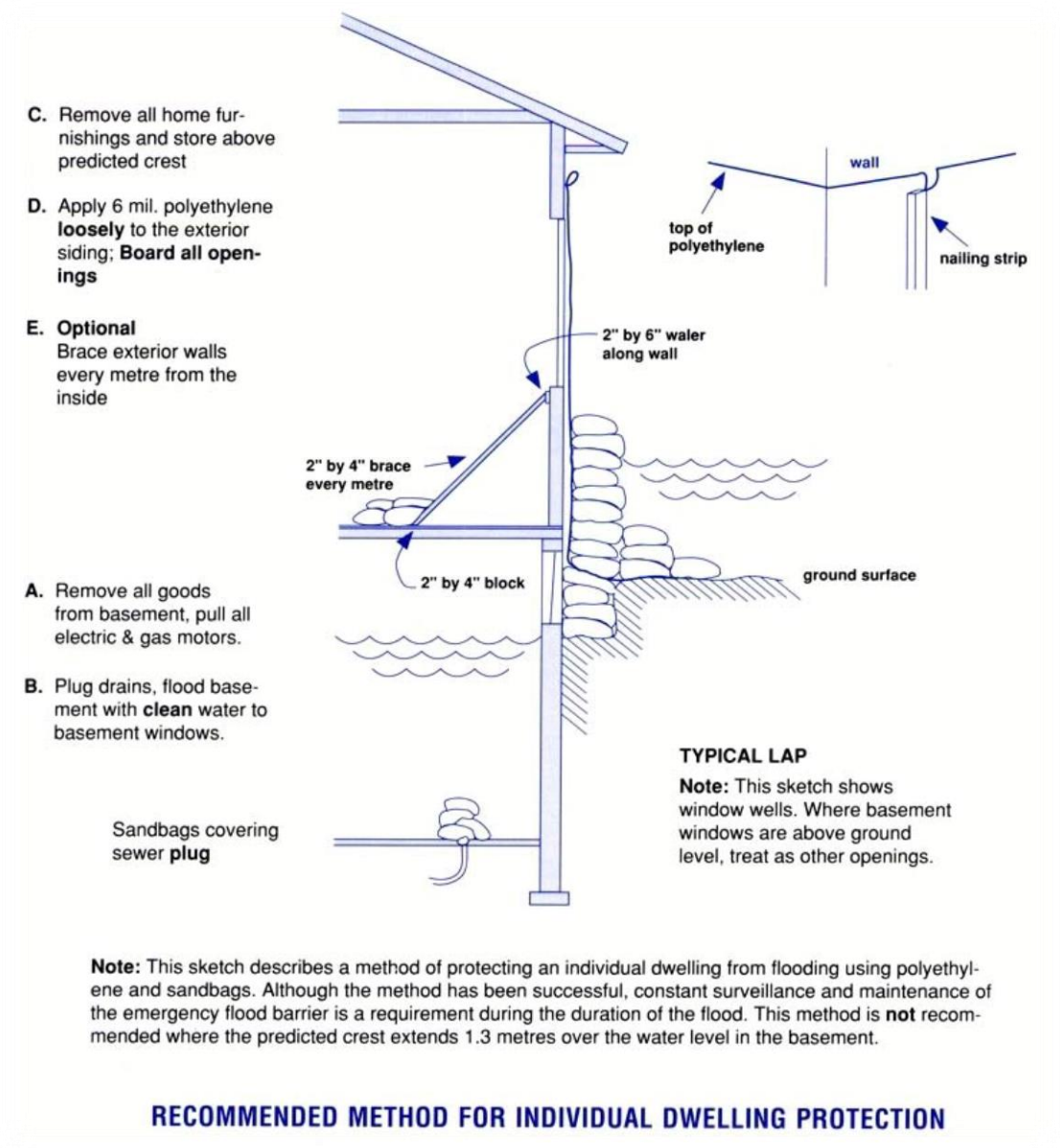
Polyethylene sheeting is intended to add extra protection to the building's structure, but "sheeted" buildings are not considered suitable to live in once the sheeting has been completed. Use this procedure only if evacuation is anticipated.

Procedure: The exterior lower levels of a home to be evacuated are wrapped in polyethylene sheeting, secured at joints with nailed strips of wood and anchored around the structure's foundation with sandbags or other heavy objects. For greatest protection, the use of 6-mil polyethylene sheets in 3 meter widths is recommended.

Step-by-Step Instructions:

Should your home or other structures be located in an area where flooding above first floor level is forecast, you may wish to do the following:

- ✓ Flood the basement with clear water from an outside tap through a basement window. Bring water level inside the basement to window casement level.
- ✓ Board up all windows, doors and other openings.
- ✓ For additional protection against the force of outside flood waters, brace the walls of the structure from the inside by nailing "two-by-six" lengths or planking one meter above the floor. Once the two-by-six "walers" are in place, add braces constructed from strips of two-by-fours, running at a 45 degree angle from the "walers" to the floor and hold in place with either sandbags, or wooden blocks nailed directly to the floor.
- ✓ Apply the polyethylene barrier loosely to the exterior walls of the structure, starting at a height of one meter above the predicted flood level. Allow an additional one meter at the base of the structure for anchoring. At joints in the sheeting, allow a minimum one meter overlap. Place sandbags around the house against the polyethylene. Stack the bags in an overlapping fashion and at least 10 bags high.
- ✓ At the base of the first stack of sandbags lift the remaining polyethylene sheeting up and cover the outside face of the initial sandbags, hold the plastic sheeting in place with a second wall of sandbags.



Note: This sketch describes a method of protecting an individual dwelling from flooding using polyethylene and sandbags. Although the method has been successful, constant surveillance and maintenance of the emergency flood barrier is a requirement during the duration of the flood. This method is **not** recommended where the predicted crest extends 1.3 metres over the water level in the basement.

RECOMMENDED METHOD FOR INDIVIDUAL DWELLING PROTECTION

Additional considerations to help you prevent flood damage include:

a. If eaves troughs are connected to the house sewer system, disconnect them and re-channel the flow to points more than 1.3 meters from the building's foundations. This will help reduce the flow of water into the community sewage system.

b. Dangerous chemicals such as weed killer, insecticides and corrosives should be removed to dry areas to reduce the dangers of chemical contamination, fires, explosions and personal injuries.

c. Buoyant materials should be removed from the basement to lessen the potential for damage to first floor components of the structure should the basement flood.

If you plug the basement sewer, be sure to remove the toilet bowl from any basement bathroom and plug that sewer drain securely as well.

If, through taste, color or odor you suspect your drinking water is contaminated, do not drink it. Contaminated drinking water may be purified by boiling, by adding purification tablets (if available), or by adding household bleach. In most situations adding two drops of normal strength bleach to each liter of water is recommended. Allow the treated water to stand for at least 30 minutes before drinking.

Electrical power

In any area where immediate flooding is anticipated, it is essential to shut off all electrical power. In an urban area homeowners are

advised to shut off the power by opening the main service switch. In a suburban or rural area the yard switch must be opened.

Entry into a flooded room or basement where electrical power is believed to still be active should never, under any circumstances, be attempted. When disconnecting the power source it is essential to be standing on a dry platform. Avoid approaching any master switch if it is surrounded by water.

The switch may be opened through the use of a non-conductive dry material such as a dry wooden stick or insulated tool of some sort. An additional precaution you are to consider if involved in rescue work, or if you are returning to property abandoned during a flood, concerns possible submerged electrical cables. In some flooded areas water levels may reach or submerge power bearing electrical cables.

When operating a boat in flooded areas extreme caution must be exercised to avoid coming into contact with "live" wires. If your

home is threatened by immediate flooding it is important not only to be prepared for the first line of flooding, but to make as many preparations as possible for the return to normal living once the flood has subsided.

Some things to consider include:

a. If appliances such as deep freezers, furnaces, washers and dryers cannot be moved above the anticipated flood level, then electrical controls and motors should be removed to prevent water damage and expensive repairs. If an electrical motor has been submerged in water no attempt should be made to operate it until a complete overhaul and cleaning has been completed.

b. All insulation of thermally insulated appliances must be replaced before operation if the appliances have been partially or completed submerged. These appliances include: water heaters, refrigerators, freezers and ranges. (Note: With the present cost of parts and labor, repairs to such appliances may not be practical.)

c. Electric baseboard heaters and portable heaters must be moved above water level. It is doubtful such items could be rendered safe for operation once submerged.

d. Portable electric appliances such as kitchen blenders and mixers, as well as power tools must be kept dry, or not operated until completely dried, cleaned and overhauled.

e. Radios, televisions, stereo systems and other home electronic systems must be moved above the flood level. Repairs to such items following submersion is not practical.

In order to prevent fires or dangerous short circuits all wiring in homes and other buildings which have been partially or completely flooded must be inspected before being placed back in service.

Gas fired appliances

Ideally, if enough advance warning is provided of a potential flood, you should have a professional contractor remove electric motors, burners and controls. If such help is not available, these are the steps you may wish to take:

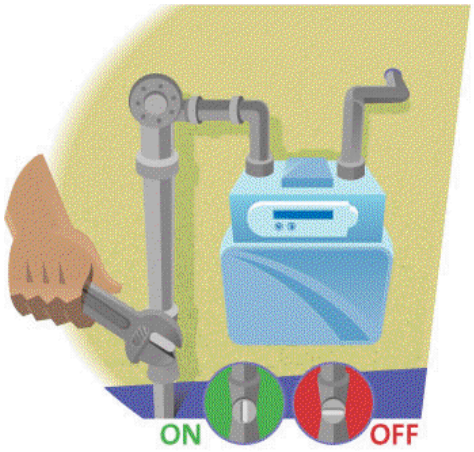
1. Shut off the supply of all electrical power to the appliance and leave it off.
2. Shut off the gas supply valve to the appliance. These valves are usually in the gas line near the bottom of the appliance.

3. On warm air circulating furnaces remove the electric fan motor and, if possible, the fan unit as well.

4. For a hot water circulating system, remove the circulating pump motor, but do not try to remove the pump unit from the piping system.

5. If advance warning time allows for the removal of gas fired clothes dryers, ranges and other such appliances it is essential to shut off the gas valve. It is also essential to cap the open end of the pipe leading from the valve to the appliance to prevent the back flow of flood water into the gas piping system. This may be accomplished by using plugs or pipe caps available at most hardware and plumbing stores.

6. If the hot water tank cannot be moved, do not drain. Shut off pipes leading to and from it and leave it in place.



Once the flood waters have subsided, do not attempt to place gas appliances back in service yourself. This work must be carried out by a licensed pipe fitter.

Oil fired appliances

As in the case of gas appliances, all work in preparing for a flood should be carried out by a professional. If this is not possible, here are some steps you may take to protect your home and property.

1. Shut off electrical supply to all equipment and leave it off.
2. Remove the oil burner and ignition transformer, or, if possible, remove the entire burner unit. If the complete burner unit is removed, cap the copper oil fuel line to ensure it is water tight. Turn off the fuel line at the tank.
3. For forced air furnaces, remove the fan motor and the fan unit, if possible.
4. On hot water boilers equipped with a circulating pump, remove the pump motor, but do not attempt to remove the pump from the piping system.
5. Remove the controls for the stack, high limit and fan.
6. If the height of the flood waters exceeds the top of the tank, damage may result as the floating tank exerts pressure on floor joists and components to the building above.

To prevent this consider the following:

a. Remove oil level gauge and plug opening with the proper sized threaded plug.

b. Fill the tank with oil.

c. Place at least 136 kg of weight on top of the tank. Sandbags are ideal. If the tank is only half filled, a minimum of 544 kg of sandbags will be required.

d. As previously noted, shut off valve at the base of the tank.

Propane tanks

Although located outside the structure, propane tanks can cause damage, potential for devastating explosions if ruptured and exposed to a spark. Such tanks are costly to replace as well. Because propane is considerably less dense than water, even a full tank is extremely buoyant.

Secure anchoring is a necessity for flood conditions.

Here are some steps for you to follow:

1. Turn off the valve at the tank.

2. Disconnect tubing to tank and securely plug it.

3. Fasten a cable, heavy rope or chain around the tank and secure the other end to a pole, building or substantial structure to prevent the tank from floating away.

Once the flood waters have gone down, call a propane installer to have the tank properly and safely re-installed and connected to the appliances for which it is a fuel source. Do not attempt to do the re-connection yourself.

If you must leave your home

If rising flood waters threaten the safety of you and your family and you must evacuate your home, here are some things you may wish to consider:

1. Ensure that each member of your family has warm clothing and waterproof outer wear.
2. Take waterproof footwear for each family member.
3. Make sure each family member has at least one blanket, rolled in plastic sheeting or a plastic shopping bag.
4. Ensure each family member has identification, especially the young children. Name tags on clothing, wallet cards and wrist bands are all useful.

5. Seal all personal documents and family papers in plastic.

6. Take a supply of all essential medications, especially for those on prescription drugs, for each member of the family. You should always maintain a minimum two week supply of prescription drugs.

7. Carry all items necessary for the care and feeding of any infants in the family, including diapers, feeding bottles and foods.

8. Bring hand towels and toiletry items for each person.

9. Take an AM transistor radio with extra batteries and a flashlight with extra batteries.

10. Determine a location to move to before leaving and make sure each family member knows where it is. Provide younger children with a note sealed in plastic stating the family's destination. This will reduce problems should the family be separated for any reason.

As you leave your home remember to do the following:

1. Lock all doors and windows and double check to ensure gas and other heating fuel sources are turned off, electricity is disconnected and the water is shut off at the main valve leading to the house.
2. Take extra care when driving. Familiar roads will appear drastically different when covered by flood waters.
3. Be on the lookout for damaged bridges, slides and washouts and be particularly alert for downed power lines.
4. Be alert for emergency personnel and signs providing evacuation route directions.
5. Obey officials who are directing traffic or involved in rescue or flood control operations. They are there to assist you and to make sure the situation is handled safely and effectively.

Returning home

Do not return home until emergency operations headquarters announces the emergency situation is over. Before returning make sure there is a safe water supply and adequate sewage disposal system in operation.

If you are in doubt, contact the local health unit office. If your home is in an area served by a public water supply it is quite possible safe drinking water will be available.

For detailed information concerning the potential contamination of food stuffs contact your local health unit. As a general rule, avoid possible health hazards by not eating food contaminated by (submerged in) flood waters. Health officials recommend disposal of the following food stuffs:

- non-liquid foods, including dried fruits; cereals; flour; shortenings; spices; packaged goods; meats (fresh and cured);
- canned goods (if damaged and showing signs of seepage);
- bottled food products (including home preserves and home canned goods); bottled drinks (potential for contamination to gather under the rippled edge of the caps); and
- leafy vegetables automobiles, trucks, farm equipment- diesel or gas.

If time allows, move all vehicles, recreational vehicles, farm equipment and other modes of transportation with gasoline or diesel engines to high ground. Flood control headquarters and the

local media will provide up-to-date information concerning anticipated flood crests. If the equipment cannot be moved, then seal it as much as possible. Some considerations include:

1. Drain all oil and replace with SAE 30, MS or DG, run engine for approximately 10 to 15 minutes.
2. Remove spark plugs and place one or two tablespoons of oil in each cylinder; re-install the plugs.
3. Remove the starter, alternator, carburetor, coil and battery.
4. Seal all openings, including distributor, carburetor, oil filter, air intake and exhaust. Use polyethylene tied tightly where possible, wooden plugs, rubber plugs or tightly wadded polyethylene.
5. Transmissions are well sealed against water, but secure any breather vents, filler tubing or air vents with plugs.
6. Cover exterior of transmission with heavy grease. Clutch plates should be left released.
7. Carry out as thorough a grease job as possible.

Once the waters have subsided the following procedure will reduce the damage caused by water intake to the engines:

1. Start the engine as soon as possible after the waters have receded, and allow to run for 10 to 15 minutes, or until normal operating temperature is reached. Drain the engine oil and replace the filter.

Refill with SAE 30, MS or DG. Start and run for another 10 to 15 minutes to circulate oil to all internal moving parts, drain this oil, replace filter and refill once again.

2. Remove and re-pack all sealed bearings.

3. Coat all exposed wear parts with a good quality multipurpose grease.

4. Have vehicle serviced by a reliable mechanic as soon as possible.

Personal responsibility

Although there are many municipal, territorial and federal agencies ready to provide aid should a devastating flood occur, it is the personal responsibility of each of us to be prepared to deal with disaster should it unexpectedly strike.

Basic Kit

- ✓ Water – at least two liters of water per person per day.
- ✓ Food – that won't spoil, such as canned food, energy bars and dried foods

- ✓ Manual can opener
- ✓ Flashlight and batteries
- ✓ Candies and matches
- ✓ Battery-powered or wind-up radio
- ✓ First Aid Kit
- ✓ Prescription medications, infant formula, other equipment for people with disabilities

- ✓ Cash
- ✓ Important documents
- ✓ Change of clothing and footwear
- ✓ Sleeping bag or warm blankets
- ✓ Garbage bags
- ✓ Toilet paper and other personal care supplies
- ✓ Gloves
- ✓ Small fuel-driven stove and fuel

Preparing a Basic Kit over a four-week shopping period

Week 1

Hardware store:

- Containers to hold the disaster supply kit (large plastic tub with lid, backpack, etc.)
- Flashlights
- 1 portable tool kit
- 1 roll of duct tape
- 1 utility knife 1 tarp (to cover a leaky roof if necessary)
- 1 battery operated radio
- Batteries for flashlights and radio

Purchase or gather from existing household supply:

- 1 blanket or sleeping bag for each member of the household
- 1 small pillow for each member of the household
- Towels
- Books or games for entertainment
- 1 local road map
- 1 set of extra clothing and shoes for each member of the household

Week 2

Grocery store:

- Cans of meat for each member of the household (i.e., tuna, chicken, corned beef)
- Cans of ready-to-eat soup for each member of the household
- Cans of vegetables for each member of the household
- Cans of fruit for each member of the household
- 1 box of heavy-duty garbage bags with ties
- 1 box of zip-lock food storage bags for storing important papers and small items
- 1 manual can opener

Week 3

Drug store:

- 1 toothbrush for each member of the household

- 1 large tube of toothpaste
- 1 bottle each of necessary over-the-counter and prescription medications
- 1 box of sanitary wipes or liquid hand sanitizer
- 1 package of sanitary napkins or tampons
- 1 bottle of shampoo
- 1 family size first aid kit

Week 4

Grocery store:

- At least 3 gallons of water for each member of the household, including pets
- Containers/boxes of quick energy snacks (granola bars, nuts, raisins, trail mix)
- 1 jar of peanut butter
- Large cans of juice (not concentrate)
- 1 package of assorted plastic utensils
- 1 package of paper plates & bowls
- 2 rolls of paper towels
- 1 6-roll pack of toilet paper

If needed:

- Purchase extra items for pets (carriers, food, leashes, toys, etc.) Purchase extra items for children (baby food, formula, diapers, coloring books, etc.)
- Purchase extra items for elderly or special needs family members (hearing aid batteries, medications, special food, etc.)

Wild fires

From all types of natural disasters that can hit at any time, wild fires are those that are doing this on a regular basis and with really bad repercussions.

Basically, there's no summer in the US, Africa, Asia or Australia without some big wildfires destroying vast areas of woods, many times killing or endangering species of animals, destroying man made or natural sites and, unfortunately, killing people as well.

That's especially because many human settlements or at least improvised sites (like camps, resorts, “summer houses” or just storing facilities) are placed dangerously close to an area that could host a wildfire.

Many times, people are caught in the cross fire (quite literally) and most of the time they're not in any way responsible for the disaster that's happening around them, as nature's mysterious ways can be blamed for that.

Wildfires occur on all continents, except Antarctica. Every summer (and, in some places, like the South of North America, during the winter as well), authorities and people have to fight wildfires that occur out of the blue. The fuel for wildfires comes from the woodlands, bush lands and grasslands it covers, so, in theory, a fire doesn't have a “reason” to stop burning as long as there's fuel.

There are many differences between wildfires, one of the most important being their scope. Mammoth wildfires can burn up to 100.000 acres before they're either stopped by people or by the

natural characteristics of the area the fire is covering. Still, most wildfires are burning on a surface of 0.25-0.50 acres and don't get the media attention that “rock star” fires get, especially during the summer, in states like Colorado.

So why do these horrible events take place? There are four main reasons for wildfires to take place. First, it's lightning. If a lightning strikes a tree or some shrubs, it can set them on fire. Combine that with the fact that the wood is really dry and there's no rain and you have the incipient causes for a huge fire that might stop only after destroying many thousands of acres of nature. In North America, lightnings are the number cause for wildfires.

Next, there are volcanic eruptions, but you rarely have that at a large global scale, because active volcanoes are very rare these days. Even so, on some small volcanic islands, where there's lots of vegetation and a few villages, one of these fires can cause the destruction of most human settlements and can produce unspeakable loss of human and animal life.

Rock falls can also cause wildfires. When rock tumble down a mountain, they produce lots and lots of sparks. This doesn't really matter if the air is humid and immediately cools the sparks down, but in an ultra dry environment, where there's basically no water, these sparks are equivalent of throwing a gallon of kerosene on a box of dynamite and setting it on fire with a torch.

Last, but definitely not least, there's self combustion. This happens when the inside temperature of the material-fuel-to-be becomes so high, that the material starts burning from the inside out.

Trees can self combust if they're highly dehydrated and they're exposed to sun light for so long. Do you remember those rather cruel childhood games with ants and a magnifying glass? Well, that kind of happens with a plant during a very hot and very dry summer.

Of course, let's not forget our fellow man, who can deliberately arson forests or grasslands, but the human causes of fires can also be accidental, let's say a not properly put out camp fire, depositing easy to ignite materials in a dangerous area and many other causes.

What should you do if you get caught in a wildfire?

Especially during the summer, wildfires can start off without any kind of warning and you can find yourself in its way without any notice. Even if during the morning all seems fine and great, just a small incident or increased temperatures during noon can cause a fire in the area you're in.

Ideally, before going camping or hiking, you should check how many fires occurred in that area- this information should be available on the website of the county or on leaflets or the website of the county fire department.

But it's really hard to anticipate this type of fire and you're better off just knowing how to save yourself and your party if the situation is of such nature. You, as an individual, are unable to handle a big fire all by yourself, and the maximum you can do is get your pretty self out of there as soon as possible- others have to put the fire out.

Tips for surviving a wildfire

1. **Move, move, move. Or go, go, go!** This is a very basic tip, but many people tend to ignore it, trying to think of more "complicated" ways of surviving. Usually, if you see a big fire coming your way, go the other way. If you have a car, this can be a sure way of saving yourself, although walking fast or biking can be equally useful. Either way, do not panic and do not think about staying in the same place for long.
2. **Look for an area with no vegetation.** In an area without trees or too much grass, the fire would not have on what to sustain itself and could stop burning fiercely in that area or even cool down entirely if it's not a big fire.
3. **If you're in a mountain area, move towards the back side of the fire and wind.** The fire tends to move "forward", so to say, and move its front from its initial point. Also, the fire moves in the direction of the wind, so if you're standing in a place positioned opposite its direction, you're safer.
4. **Avoid canyons.** Professionals consider canyons to be the most dangerous places for wildfires, as they are like these huge chimneys that host fires. If you're planning an escape route out of the fire's way, don't go through the canyon, as fire and smoke move faster through canyons and you might find

yourself trapped.

5. **If you get near a road and the fire is really close, lie down with your face down**. The fire will have a “hard time” burning over the road, as there's nothing to burn there. Still, be careful not to have any flammable materials near, like gas tanks, abandoned cars or fallen trees.
6. **Just as good as a road can be a ditch.** If there's no way of getting out of the incoming wildfire, find a ditch and lie, face down, on its uphill side.
7. **Find something that will protect you from the heat.** Many times, people are affected and sometimes killed by the extreme heat, not necessarily by the fire. So it's essential that you find a good shelter or proper materials to protect you from the heat. Having a special suit always helps, or if not try finding an emergency shed or an underground shelter, that are sometimes built in high risk areas.
8. As a general rule of thumb, t**ry to find any kind of depression to take shelter in**. These areas are much safer than flat ground or, even worse, higher ground. Of course, these depressions should have no fuel for the fire, so avoid those that have trees and tall grass or go there if you can remove them.
9. If for some reason you have to stay in an area, **make sure to get rid of all things “fuel”**, including gasoline, batteries, but

also trees, leaves or construction wood.

10. **If there's a body of water close by, go there.** This is again a very obvious advice, but not many people think about it. Worst case scenario, you can literally go into the water and wait for the fire to pass or use water from the lake/river.

Earthquakes

The crust of the earth is made up of seven masses called tectonic plates. They are in steady motion.

Accumulated stress builds up from the continental plates grinding, sliding or colliding against or slipping under each other. Pressure is released in a powerful explosion of energy that fractures the earth's surface, shakes the ground, causes the ground to roll, liquefies some soil and generates giant water waves.

When an earthquake will unleash its force remains unpredictable. Preliminary cracks may send off foreshocks before a main fracture. These foreshocks can occur months or minutes before the rapid

onset of the earthquake. An earthquake lasts for seconds or minutes, while aftershocks may occur for months after the main earthquake.

Powerful and widespread ruptures or shaking ground can cause buildings to move off their foundations or collapse; damage utility lines, other structures and roads; set off fires; and threaten the lives of people and animals. It is the damage to structures that presents the greatest risks to life and property.

Earthquakes create a trigger for other natural hazards such as landslides, tsunamis, avalanches, fires and flash floods.

The greatest likelihood of major earthquakes is in the western United States, particularly along the San Andreas Fault in California and up the Alaskan Coast, in the New Madrid Fault Zone in the Midwest, and in a few pockets on the East Coast, particularly in South Carolina and New England.

There is no seasonal or yearly cycle of occurrence. Earthquakes can happen at any time. Major earthquakes appear to occur in cycles of between 50 and 275 years.

How Earthquakes are measured

The Richter Scale provides a measure of the magnitude of the earthquake in terms of energy released, measured in equivalent tons of TNT. Each unit represents a 10-fold energy release.
An earthquake of Richter 2.5 or less is usually ignored. Dishes rattling and china shaking occur at 3.

The Modified Mercalli Intensity Scale is a more subjective accounting or survey of behavior and damage based on observation at the site. Depending on the intensity of ground vibrations, the elasticity of buildings and structures, and how well structures are connected to their foundation, falling or collapsing objects and structures accompany earthquakes. Structural instability, such as dam failures, can trigger flash floods. Fires have been the greatest cause of damage in the past. Offshore earthquakes may cause tsunamis.

Preparing for an Earthquake

You need to take the following steps:

1. Become familiar with earthquake terms.

Aftershocks: Tremors that occur in the hours or days after the initial earthquake shaking is over.

Epicenter: The place on the surface of the earth directly above an earthquake's first movement (focus).

Fault: A fracture in the earth's crust along which rocks have been displaced.

Focus: The point beneath the surface of the earth where the rocks first break and move, beginning the earthquake.

Intensity: An indication of an earthquake's apparent severity at a specific location, based on its effects on people and structures.

Magnitude: Size of an earthquake determined from the size of the seismic waves it generates as recorded by seismographs.

Mercalli Scale: The scale used to measure the strength of an earthquake as determined by people's eyewitness observations.

Tidal wave: This is a misnomer for a tsunami. Tidal waves occur from the interaction of the moon and large bodies of water. Waves you see rolling into the ocean shore every day are tidal waves. Tsunami: A seismic sea wave. An unusually large wave (or series of them) produced by an undersea earthquake or volcanic eruption.

2. Safeguard your home by:

Bolting bookshelves, water heaters and cabinets to wall studs.
Anchoring things so that they will not move or fall during an earthquake is the most important thing you can do to make yourself safe. Keeping things in place also means they will not break.

3. There are many ways to make the contents of your home and workplace less hazardous.

- Move cabinets and tall furniture so that if they fall they are not likely to hit people.

- Use steel angle brackets to anchor them to studs in the wall.

- Put heavy or breakable things on bottom shelves. You can even put “fences” or restraining wires to keep items from falling off open shelves.

- Put child-proof or swing-hook latches on bathroom and kitchen cabinets. At work, put strong latches on cabinets where hazardous items are stored.

- Use screw-eyes or tongue-in-groove hangers to mount mirrors or pictures instead of hanging them on nails.

- Be sure that ceiling fans and light fixtures are well anchored or have earthquake safety wiring.

- Anchor typewriters, computers, televisions, stereos and like items with heavy duty Velcro, at home and at work.

- Strap your water heater to anchor it to wall studs. You can buy metal strapping, called plumber’s tape or strap iron, in hardware stores. Use it to strap the heater at the top and bottom. This not only preserves your best source of water but also significantly reduces the fire hazard in your home by preventing a broken gas line.

Do not assume that anything is too heavy to move in an earthquake. When the ground is going up and down in waves, it bounces even the heaviest equipment into the air.

During an Earthquake

1. Get under a heavy table or desk and hold on, or sit or stand against an inside wall.
2. Keep away from windows.
3. If indoors, stay indoors.
4. If outdoors, stay outdoors away from falling debris, trees and power lines.
5. If in a car, stay in the car.
6. Many injuries occur when people act on their impulse to run. Train yourself to take cover where you are.

Responses Inside Buildings during an Earthquake

For most of us the biggest danger in an earthquake is not from a building collapsing, but from things inside the building falling or flying around while the building is shaking. Hazards found inside

buildings include overhead lights, ceiling tiles, cabinets, windows, furniture and equipment.

If an earthquake happens, the best thing to do is:

1. Drop, cover, and hold on.
Get under a table. If there are no tables, get under or down between rows of chairs or against inner walls.

2. Do not stand in a doorway. Buildings today have so much partitioning, much of which is temporary, that many doorways are actually weak points. Doorways are not a good solution in a group situation either.

3. If you have nothing to get under, sit down against an interior wall or next to a chair, holding on if possible.

4. If you are in bed, it's best to stay there, hold on, and pull the pillows over your head for protection.

5. If children are in another room, take cover in the closest safe place and call to them to do the same. Children will need you alive and

unhurt after the earthquake. Avoid the urge to run to protect your children, as that puts you in more danger of being hurt or injured.

Responses if you are Outside during an Earthquake

1. Outside, get away from buildings, walls, trees and power lines. If you cannot get clear of hazards, getting back inside a building is better than staying on the sidewalk. Sidewalks next to buildings are among the worst places to be.

2. In a car, ease off the accelerator and slow down carefully. Do not stop on or under overpasses and bridges if you can avoid them. Be aware of what traffic around you is doing and act accordingly.

3. If you live in coastal areas, be aware of possible tsunamis.

After an Earthquake

1. Take basic precautions immediately after an earthquake.
Expect aftershocks. Avoid using vehicles except in emergencies.

2. Check yourself for injuries and protect yourself by putting on shoes, work gloves and any other protective gear at hand.

3. If the electricity is off, turn on a flashlight.

4. Once you are sure that you're all right, check the people around you for injuries. You might ask loudly, "Is everyone okay?" This will also help calm people. The types of injuries that happen most often in an earthquake include cuts, bruises, fractures and physiological shock.

5. Check the entire building for structural damage and chemical spills. Check chimneys for cracks and damage. The initial check should be made from a distance. Have a professional inspect the chimney for internal damage that could lead to fire.

6. Right after an earthquake, hang up your phone. If the receivers are shaken off the hooks, these lines register as "open" in the system

and it overloads. You can help restore telephone service by hanging up your phone.

Tornadoes

What are tornadoes, and what causes them?

A tornado is a violently rotating column of air extending from a thunderstorm to the ground. The most violent tornadoes have rotating winds of 250 miles per hour or more.

They are capable of causing extreme destruction, including uprooting trees and well-made structures, and turning normally harmless objects into deadly missiles.

Most tornadoes are just a few dozen yards wide and only briefly touch down, but highly destructive violent tornadoes may carve out paths over a mile wide and more than 50 miles long. Although

violent tornadoes comprise only 2 percent of all tornadoes, they are responsible for nearly 70 percent of tornado-related fatalities.

Tornadoes develop from severe thunderstorms in warm, moist, unstable air along and ahead of cold fronts. Such thunderstorms also may generate large hail and damaging winds. When intense springtime storm systems produce large, persistent areas that support tornado development, major outbreaks can occur.

During the late spring, tornadic thunderstorms can develop in the southern High Plains along a “dry line,” the interface between warm, moist air to the east and hot, dry air to the west.

From the front range of the Rocky Mountains southward into the Texas Panhandle, slope flow of unstable air can cause tornadic thunderstorms to develop.

While generally smaller and not as frequent, tornadoes occurring west of the Rocky Mountains of the United States also cause damage and threaten lives annually.

Landfalling tropical storms and hurricanes also generate tornadoes.

Such tornadoes are most common to the right and ahead of the storm path or the storm center as it comes ashore. In 1967, Hurricane Beulah produced 148 tornadoes as it made landfall in south Texas.

While tornadoes can be highly destructive and are potentially deadly, timely precautions can save lives and reduce property damage.

Plan for a Tornado

Tornado–specific planning should include the following:

• **Learn about your tornado risk.** While severe tornadoes are more frequent in the Plains States, tornadoes have happened in every state. Contact your local emergency management office, local National Weather Service office, or American Red Cross chapter for more information on tornadoes.

• **Pick a safe place in your home where family members could gather during a tornado.** The safest place to be is underground, or as low to the ground as possible, and away from all windows. If you have a basement, make it your safe place. If you do not have a basement, consider an interior hallway or room on the lowest floor.

Putting as many walls as you can between you and the outside will provide additional protection. Less than 2 percent of all tornadoes are powerful enough to completely destroy a sturdy building. Make sure there are no windows or glass doors in your safe place and keep this place uncluttered.

• **Consider having your tornado safe place reinforced.** Additional reinforcement will add more protection from the damaging effects of tornado winds.

• **If you are in a high-rise building, pick a place in a hallway in the center of the building.** You may not have enough time to go to

the lowest floor. Center hallways are often structurally the most reinforced part of a building.

• **If you live in a mobile home, choose a safe place in a nearby sturdy building.** A sturdy building provides greater protection. If your mobile home park has a designated shelter, make it your safe place.

Mobile homes are much more vulnerable to strong winds than site-built structures. Prior to 1994, most manufactured homes were not designed to withstand even moderate winds.

• **Discuss how you would be warned of an approaching tornado.** Different communities have different ways of providing warnings. Many communities have sirens intended for outdoor warning purposes. Use a NOAA Weather Radio with a tone-alert feature to keep you aware of watches and warnings while you are indoors. Learn about your community's warning system.

Make sure all family members know the name of the county or parish where you live or are traveling, because tornado watches and warnings are issued for a county or parish by name.

• **Conduct periodic tornado drills, so everyone remembers what to do when a tornado is approaching.** Practice having everyone in the family to go to your designated area in response to a tornado threat. Practicing your plan makes the appropriate response more of a reaction, requiring less thinking time during an actual emergency situation.

• **Check with your work and your children's schools and day care centers to learn tornado emergency plans.** Every building has different safe places. It is important to know where they are and how to get there in an emergency.

• **Discuss tornadoes with your family.** Everyone should know what to do in case all family members are not together. Discussing disaster ahead of time helps reduce fear and lets everyone know how to respond during a tornado.

What to Tell Children

• **Find safe places in your home and classroom.** Make sure these places are away from windows and tall furniture that could tip over. In your safe place, get under something sturdy, or use a large, hard-

cover book to help protect your head and neck from flying or falling objects.

Locate safe places outside in case you are not able to go inside.

Frequently, children in schools are told to move to the inner hallways away from windows. Children need to know that a tornado safe place is not the same as a fire meeting place.

• **Wherever you are, if you hear or see a tornado coming, take cover right away.** Tornadoes can move quickly, blowing objects at very high speeds, even if they are a distance away. Protect yourself from flying debris by taking cover immediately.

• **If you're in a house or apartment building and a tornado threatens, go to the lowest level — a basement or storm cellar if possible. Once on the lowest level, go to the middle of the building away from windows, into a bathroom or closet if possible.** The safest place to be is under the ground, or as low to the ground as possible, and away from all windows. If you have a

basement, make it your safe place. If you do not have a basement, consider an interior hallway or room on the lowest floor.

Putting as many walls as you can between you and the outside will provide additional protection. Make sure there are no windows or glass doors in your safe place and keep this place uncluttered.

Get under something sturdy, such as a heavy table, hold on and stay there until the danger has passed. Being under something heavy will help protect you from falling objects. If tornado wind enters the room and the object moves, holding on with one hand will help you move with it, keeping you protected.

• **Use your other arm and hand to protect your head and neck from falling or flying objects.** Your head and neck are more easily injured than other parts of your body. Protect them as much as you can.

• **If you're outside in a car or in a mobile home, go immediately to the basement of a nearby sturdy building.** Sturdy buildings are the safest place to be. Tornado winds can blow large objects, including cars, hundreds of feet away. Tornadoes can change direction quickly and can lift up a car or truck and toss it through

the air. Never try to out-drive a tornado. Mobile homes are particularly vulnerable. A mobile home can overturn very easily even if precautions have been taken to tie down the unit.

• **If there is no building nearby, lie flat in a low spot. Use your arms and hands to protect your head.** Tornadoes cause a lot of debris to be blown at very high speeds, and you can be hurt by this debris if it hits you.

Dangerous flying debris can be blown under highway overpasses and bridges, or weaker overpasses and bridges could be destroyed. You will be safer lying flat in a low-lying area where wind and debris will blow above you.

Tornadoes come from severe thunderstorms, which can produce a lot of rain. If you see quickly rising water or flood water coming towards you, move to another spot.

How to Protect Your Property

• **Make a list of items to bring inside in the event of a storm.** Having a list will help you remember things that may be broken or blown away in strong winds.

• **Keep trees and shrubbery trimmed.** Make trees more wind resistant by removing diseased or damaged limbs, then strategically remove branches so that wind can blow through. Strong winds frequently break weak limbs and hurl them at great speed, causing damage or injury when they hit. Debris collection services may not be operating just before a storm, so it is best to do this well in advance of approaching storms.

• **Remove any debris or loose items in your yard.** Branches and firewood may become missiles in strong winds.

• **Consider installing permanent shutters to cover windows.** Shutters can be closed quickly and provide the safest protection for windows.

• **Strengthen garage doors.** Garage doors are often damaged or destroyed by flying debris, allowing strong winds to enter. As winds

apply pressure to the walls, the roof can be lifted off, and the rest of the house can easily follow.

What to Do Before a Tornado

• **Use a NOAA Weather Radio with a tone-alert feature to keep you informed of watches and warnings issued in your area.** The tone-alert feature will automatically alert you when a watch or warning is issued.

• **If planning a trip or extended period of time outdoors, listen to the latest forecasts and take necessary action if threatening weather is possible.** Knowing what weather could happen helps you be prepared to respond if necessary. Having a raincoat, umbrella, and disaster supplies kit available will make it easier to deal with severe weather if it occurs.

• **Watch for tornado danger signs.** Tornadoes may happen so quickly warnings can't be issued long in advance. Pay attention to weather clues around you that may warn of imminent danger.

- Dark, often greenish sky. Sometimes one or more of the clouds turns greenish (a phenomenon caused by hail) indicating a tornado may develop.

- Wall cloud, an isolated lowering of the base of a thunderstorm. The wall cloud is particularly suspect if it is rotating.

- Large hail. Tornadoes are spawned from powerful thunderstorms and the most powerful thunderstorms produce large hail. Tornadoes frequently emerge from near the hail-producing portion of the storm.

- Cloud of debris. An approaching cloud of debris can mark the location of a tornado even if a funnel is not visible.

- Funnel cloud. A visible rotating extension of the cloud base is a sign that a tornado may develop.

- Roaring noise. The high winds of a tornado can cause a roar that is often compared with the sound of a freight train.

Tornadoes may occur near the trailing edge of a thunderstorm and be quite visible. It is not uncommon to see clear, sunlit skies behind a tornado. They may also be embedded in rain and not visible at all.

What to Do During a Tornado

• **Listen to a NOAA Weather Radio or local radio or television stations for updated information.** Tornadoes can change direction, intensity, and speed very quickly.

• **Be alert to changing weather conditions.** Tornadoes accompany severe thunderstorms, and weather conditions can change rapidly. Large hail, blowing debris, or the sound of an approaching tornado may alert you. Many people say approaching tornadoes sound like a freight train.

What to Do During a Tornado WARNING

• **Listen to a battery-powered NOAA Weather Radio, regular radio, or television for updated information.** If the electricity should go out, you will still be able to receive emergency information.

• **If you are inside, go to your safe place to protect yourself from glass and other flying objects.** Tornadoes can change direction, intensity, and speed very quickly. The tornado may be approaching your area.

• **Get under a piece of sturdy furniture, such as a workbench or heavy table, and hold on to it.** Sturdy furniture will help protect you from falling debris. If tornado wind enters the room and the object moves, holding on with one hand will help you move with it, keeping you protected.

• **Use your other arm and hand to protect your head and neck from falling or flying objects.** Your head and neck are more easily injured than other parts of your body. Protect them as much as you can.

• **Stay away from windows.** Opening windows allows damaging winds to enter the structure. Leave the windows alone; instead, immediately go to a safe place. It is a myth that tornadoes cause houses

to explode due to changes in air pressure. Flying debris can shatter glass. Violent winds and debris slamming into buildings cause most structural damage.

• **If you're outside in a car or in a mobile home, go immediately to the basement of a nearby sturdy building.** Sturdy buildings are the safest place to be. Tornado winds can blow large objects, including cars and mobile homes, hundreds of feet away. Tornadoes can change direction quickly and can lift up a car or truck and toss it through the air; never try to out-drive a tornado. Mobile homes are particularly vulnerable.

A mobile home can overturn very easily even if precautions have been taken to tie down the unit.

• **If there is no building nearby, lie flat in a low spot. Use your arms and hands to protect your head.** Tornadoes cause a lot of debris to be blown at very high speeds, and you can be hurt by this debris if it hits you. Dangerous flying debris can be blown under highway overpasses and bridges, or weaker overpasses and bridges could be destroyed. You will be safer lying flat in a low-lying area where wind and debris will blow above you. Tornadoes come from severe thunderstorms, which can produce a lot of rain. If you see

quickly rising water or flood water coming towards you, move to another spot.

• **Avoid places with wide-span roofs, such as auditoriums, cafeterias, large hallways, or shopping malls.** Wide-span roofs are frequently damaged or destroyed in tornado winds, providing less protection and more risk of injury, than roofs over smaller rooms.

What to Do After a Tornado

• **Continue listening to local radio or television stations or a NOAA Weather Radio for updated information and instructions.**
Access may be limited to some parts of the community, or roads may be blocked.

• **Help a neighbor who may require special assistance — infants, elderly people and people with disabilities.** Elderly people and people with disabilities may require additional

assistance. People who care for them or who have large families may need additional assistance in emergency situations.

• **Help injured or trapped persons.** Give first aid where appropriate. Do not move seriously injured persons unless they are in immediate danger of further injury. Call for help.

• **Watch out for fallen power lines or broken gas lines and report them to the utility company immediately.** Reporting potential hazards will get the utilities turned off as quickly as possible, preventing further hazard and injury.

• **Avoid disaster areas.** Your presence might hamper rescue and other emergency operations, and put you at further risk from the residual effects of tornadoes.

• **Stay out of damaged buildings.** Tornadoes can cause great damage, creating further hazards. If you are away from home, return only when authorities say it is safe.

• **When entering damaged buildings, use extreme caution.** Moving through debris presents further hazards. Carefully watch every step you take.

Wear sturdy shoes. The most common injury following a disaster is cut feet.

Use battery-powered lanterns or flashlights when examining buildings. Battery-powered lighting is the safest and easiest, preventing fire hazard for the user, occupants, and building.

Examine walls, floors, doors, staircases, and windows to make sure that the building is not in danger of collapsing.

Look for fire hazards. There may be broken or leaking gas lines, or damage to electrical systems. Clean up spilled medicines, bleaches, gasoline, or other flammable liquids immediately. Fire is the most frequent hazard following other disasters.

Check for gas leaks. If you smell gas or hear a blowing or hissing noise, open a window and quickly leave the building. Turn off the gas using the outside main valve if you can, and call the gas company from a neighbor's home. If you turn off the gas for any reason, it must be turned back on by a professional.

Look for electrical system damage. If you see sparks or broken or frayed wires, or if you smell burning insulation, turn off the electricity at the main fuse box or circuit breaker. If you have to step

in water to get to the fuse box or circuit breaker, call an electrician first for advice. Electrical equipment should be checked and dried before being returned to service.

Watch for loose plaster, drywall, and ceilings that could fall.

Take pictures of the damage, both of the building and its contents, for insurance claims.

Use the telephone only for emergency calls. Telephone lines are frequently overwhelmed in disaster situations. They need to be clear for emergency calls to get through.

Hurricane

The words "hurricane" and "typhoon" describe a meteorological event known as a tropical cyclone. These storm systems are characterized by a zone of low pressure at the center and large thunderstorms that produce high winds and floods of rain.

These systems form almost exclusively in the earth's tropical regions, spinning in a counterclockwise direction in the Northern Hemisphere and clockwise in the Southern Hemisphere.

Scientists have identified seven major basins where these tropical storms typically form. Four major basins are in the Pacific (North Central, Northeastern, Northwestern, and South/Southwestern), three are in the Indian Ocean (Northern, Southwestern, and Southeastern), and one is in the Atlantic (Northern). In 2004, the first documented tropical storm formed in the Southern Atlantic, striking Brazil.

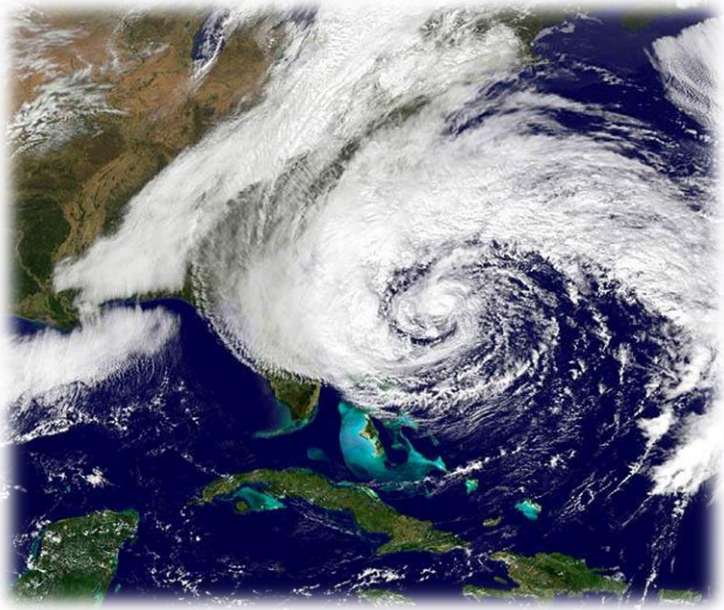
Hurricane seasons vary geographically, appearing in a region's late summer, where the difference in temperatures between the air and sea are at their greatest. The most deadly hurricane on record struck the Ganges Delta in Bangladesh, killing from 300,000 to a million people.

The Northern Indian basin has, since the early 1900s, been victim to the most and the most deadly hurricanes. Hurricanes are highly destructive of property. The recent Hurricane Katrina in the United States caused over $80 billion in property damages.

Local governments tend to take most preventive measures to limit the loss of life and property.

Most towns and cities create emergency plans, using sirens to alert citizens of coming danger.

Emergency broadcast systems are in place to keep people informed. And many communities store food, water, and medicines in case of power or water system breakdowns.



Most people who live on or near coastlines will experience a hurricane at least once during their lifetime.

For some, it is a frequent occurrence, and they are prepared to board up windows and doors and evacuate almost out of habit. But many of us need to know what to do in the event of a hurricane.

What Can I expect if a Hurricane is near my Area?

Luckily, hurricanes are easier to spot and prepare for than other natural disasters. With the advent of modern satellites, scientists are able to observe cloud formations and movement and reliably predict the direction and timing of the storm.

As the hurricane nears landfall and it is spotted on radar, meteorologists will let the public know it's coming. At this early stage, many things could change. The storm can change in intensity and direction fairly quickly, so the local weather service can keep tabs and inform the community as the storm moves. During this period, local governments and emergency services begin to activate emergency plans and procedures.

When they know the storm is coming their way, homeowners should begin to board up windows and doors and secure outdoor lawn furniture and equipment. As the storm

nears, you and your family should evacuate the area. No sense taking needless chances.

If you can't leave the storm, you should have stocked up on emergency supplies like plenty of fresh water, canned foods, candles and batteries, a battery-operated radio, and fuel for the generator. Water shortages can become life-threatening after a hurricane strikes, so it's a good idea to fill up every container you have - including your bathtub - with safe drinking water.

The single most important item you will need during and after a major hurricane is a medical kit containing bandages, medical tape, antibiotics, and scissors. This may save your life by preventing serious infections if you or your family are injured.

Long before the storm ever forms, you and your family should work out an emergency plan. Decide where to meet if people aren't home. Store essential supplies that can be used or easily moved to the car.

Decide in advance where you will take shelter, and who will be responsible for helping family members unable to care for themselves. Establish clear roles and responsibilities for shutting up the house and securing outdoor items. The better prepared your

family is, the less likely they are to be overwhelmed by the hurricane, and the more likely you will all survive with minimal injury or property damage.

What Will Happen During a Hurricane?

When it hits land, the hurricane can bring winds over 100 miles per hour that can pick up and throw objects around as if they were toys. Cars, roofs, large pieces of metal or wood, and other flying debris can smash into homes. There is little one can do in this situation, but finding the safest shelter is the best bet. You may not be able to prevent serious damage to your home, but you can protect your life.

Should the incoming hurricane grow a category 4 or 5, you will be advised to seek evacuate or, at the least, seek higher ground. Avoid trying to sit it out in your basement, as you might be trapped in a flood situation.

If you can or must evacuate your community, travel light. Take only those items that you will need over a 24-48 hour period. A change of clothes, drinking water, and food should be included in your evacuation gear.

As you drive to the nearest mass transportation outlet or in your own automobile, drive slowly and carefully. High winds and whipping rains will make it difficult to see, and accidents become very likely. Do NOT panic. This could also cause needless accidents and spread fearful behavior to other people in the same situation.

The hurricane will pass in a few hours, and you will mostly likely be allowed to return to your home. Don't worry: the terrible flooding that kept people from returning to New Orleans after
Hurricane Katrina was not the norm. Levees broke down, creating an abnormal situation.

What about After the Hurricane?

After a hurricane has happened, review your family's actions to see if your plan was reasonable and effective. Hurricanes are a fact of life in coastal areas, and you can benefit from your experience by preparing a better plan for the next time.

Communities can only decide AFTER the hurricane whether their emergency plan and procedures were adequate. One good indicator is low loss of life or injuries being reported. The level of property

damage will also be a sign of how effective emergency procedures were.

State, city, and local governments who go through a hurricane should take stock after the event to do what they can to improve their plan and procedures. Citizens should ask government representatives about the results of their performance reviews and insist on necessary improvements.

Emergency preparedness for hurricanes is everyone's business and everyone's responsibilities.

While governments are preparing to protect citizens' lives and property, individuals and families must plan their own solutions for personal health and safety and for protecting private property.

There is nothing anyone can do when nature decides to leash out its fury. There is no way to stop it so people should brace for the worse and seek shelter.

In order to minimize the loss of life, most towns and cities have created emergency plans.

Sirens are placed in strategic locations to announce a major evacuation; the emergency broadcast system is in place in the event that power and electricity has been cut off as well as stockpiles of food, water and medicine.

Those who live in the coastal communities will usually be battered by hurricanes. This happens between the months of June until November in the Atlantic and from May to November in the northern Pacific Ocean.

When this is first spotted on radar, the forecaster will already inform the public about it. There is no need yet to panic here since the weather conditions may change in the next few hours but if there are no improvements, it is time to activate emergency procedures.

The hurricane may pack winds exceeding more than a 100 miles per hour that can make cars, pieces of metal or wood cause severe damage to the home. Households can board up the windows and doors of the house with hurricane shutters and plywood.

People will rush to the supermarket to stock up on food, water and other essentials. These include candles, batteries for the radio and the flashlight as well as fuel for the generator.

All of these things are necessary especially water to prevent dehydration so every possible container must be used including the bathtub.

The most important which must never be forgotten is a medical kit. This should have bandages and some antibiotics to be able to treat anyone who is ill or injured until the person can be brought out to a medical facility for better treatment.

Should the incoming hurricane be classified as a category 4 or 5, residents are advised to evacuate and seek higher ground. It will be a good idea to travel light so only a few pieces of clothing, food and water must be brought into the vehicle.

The citizens are also advised to drive slowly and avoid panicking since this could cause accidents on the road. The hurricane will pass within a few hours. This is the only time that people will be able to go out or return to see how much damage was done.

It is only after assessing the damage that towns and cities can say whether the emergency preparedness procedures that were sent in place were effective or not. One indication that it works is if no casualties are reported. This is because a house or even a building can be repaired but the life of an individual can never be replaced.

The people who live in the household can rehearse the emergency preparedness plan to see if some improvements need to be made. This is because time is off the essence in order to be safe in this type of crisis.

Emergency preparedness is the key to ensure the survival of everyone present. People who live through this annually know what to do but those who are moving into the community should learn fast to be able to survive the onslaught of the hurricane.

Tsunami

Until December 2004, most of us thought of tsunamis as the makings of a good disaster movie, if we knew what "tsunami" meant at all. But with the awful devastation of 2004, we realized how much damage a tsunami can do.

What a Tsunami Is

Tsunamis are not large tropical storms caused by high winds. They are the result of undersea geological events like volcanoes, landslides, or earthquakes that occur with massive tectonic displacements.

Earthquakes that reach 6.5 or above (Richter scale) can produce devastating waves that move at up to 300 miles per hour, reach heights of 100 feet, and last from several minutes to several hours from first wave to last surge.

In the open sea, the tsunami may not be noticeable, but when they enter shallower waters, the begins to "pile up" on itself, creating a massive wave that can destroy tall buildings and even travel inland for miles with great power.

Where Tsunamis Strike

Coastal areas in the Pacific Ocean basin are the most frequent targets of tsunamis, reflecting the greater vulnerability related to the famous "Ring of Fire" where tectonic plates meet to form a great circle on the sea floor.

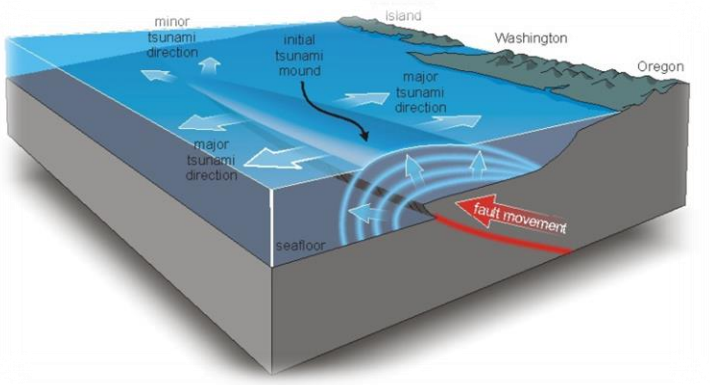
Japan has experienced many tsunamis. In fact, tsunami is a Japanese word. They've also hit Alaska and Hawaii in the Pacific Basin and Puerto Rico and the Virgin Islands in the Atlantic basin.

The Indian Ocean area has experienced many tsunamis as well, the 2004 tsunami taking more than 250,000 lives and destroying billions of dollars in property.

Preparing for a Tsunami Emergency

If you are in the water and feel a strong earthquake, leave the water immediately, getting as far from the beach as you can. Try to go to high ground, or go inland as far as possible if the ground near you is flat.

If you can see the incoming wave, you can't escape it. You simply don't have time. The best thing to do in that case is to get as high as you can as quickly as you can.



If you sense a strong earthquake and you are not at the beach, tune your radio to a local station that broadcasts during emergencies. They will notify the public in case a tsunami watch or warning has been issued, and they will let you know where emergency relief centers are.

At this point, you should know where your family members are. Make sure everyone knows about the alert. You should have an

agreed-upon meeting place in case you're not all in the same place when the emergency is announced. Your meeting location should be as far from the shore as possible but not so far that people can't get to it in time.

Be sure to prepare for family members with special needs. If your family includes elderly, ill, or small children, be prepared to have help for them or try to evacuate them early. You may also want to prepare to evacuate your pets as well, bringing emergency food and water for them.

You should have prepared emergency supplies in your home. Bring them with you when you evacuate. At least take fresh water, some food, and extra clothing. Most important, have a first aid kit in case of injuries.

If you have time, you might try to secure your house, but not at the risk of your own life. There is little you can do to protect your possessions from an incoming tsunami, so focus on saving lives first.

Tsunami Watch or Tsunami Warning

The two terms have important different meanings. When authorities issue a tsunami watch, it means that a tsunami is possible, but no

one has reported seeing one or a sighting hasn't been verified yet. A watch may include estimates for when and where a tsunami may strike.

When they issue a tsunami warning, it means that a tsunami has been reported and confirmed.
By the time they issue the warning, the tsunami could be close. The warning will also let you know where to expect it to strike and when.

During the Wave

If you are unfortunate enough to find yourself at the mercy of an incoming tsunami, climb onto a rooftop or the highest point you can reach. The more stable the building, the safer the support will be. But get as high as you can no matter what. Hold on as tight as you can to any stable and heavy object available. If you must, climb a tree.

If you've already been overtaken by the water, grab something floating that's large enough to support you and hold onto it until you can find stable ground or get help. Grab anything that seems firm and try to get out of the water. The current will be strong, and you

could be hurt by debris in the water. If you can get any part of your body out of the water, do so.

You have to accept that tsunamis, like most natural disasters, are uncontrollable. You will have the earthquake warning to give you time to escape.

Keep your head. Remain calm. The better prepared you are, the better your chances of surviving.

Nuclear attack – will you survive?

Your best hope of surviving a nuclear war in this century is knowing the basic facts about nuclear weapon effects and what you, your family, and small groups can do to protect yourselves. Our Government continues to downgrade war-related survival preparations and spends only a few cents a year to protect each American against possible war dangers.

The average American has far too little information that would help him and his family and our country survive a nuclear attack, and many of his beliefs about nuclear war are both false and dangerous.

Since the A-bomb blasted Hiroshima and hurled mankind into the Nuclear Age, only during a recognized crisis threatening nuclear war have most Americans been seriously interested in improving their chances of surviving a nuclear attack.

Unfortunately, at the moment some people still share two false general beliefs:

1. One of these false beliefs is that nuclear war would be such a terrible catastrophe that it is an unthinkable impossibility. If this were true, there would be no logical reason to worry about nuclear war or to make preparations to survive a nuclear attack.

2. The second false belief is that, if a nuclear war were to break out, it would be the end of mankind. If this were true, a rational person would not try to improve his chances of surviving the unsurvivable.

A good shelter can be the ticket to surviving a nuclear attack.

Since the Nagasaki bomb was not all that different from those that might be encountered in a limited war or terrorist operation, you could survive a similar blast even if you're just a mile from ground zero.

Of course the farther you are from ground zero, the better off you'll be. For this reason, one good survival strategy is to be away from areas that are apt to attract attacks. Washington, DC, New York City, or other big cities may be glamorous, but if the street crime isn't enough to turn you away, the nuclear threat probably should be.

Those living close to large harbors, military complexes, or other possible targets might also be in danger. Moving away from such areas will probably keep you safe from nuclear attack for the rest of your life.

What should you expect?

Extremely bright lights -more light than has been seen before.

Advice Nr.1

Do not ever, ever look toward a nuclear flash. The intense light will burn into your retina to create blind spots. This damage will make spots similar to those you see when you look at a bright light; only these won't go away.

Even if you don't look directly at the flash, the intense light reflected from light colored surfaces may still dazzle your eyes. If you're driving or doing anything that absolutely requires that you see, stop immediately; this will keep you from having to "drive by braille" when the bright light goes away and you're left in "snow blindness" for a short time.

Although such blindness will only be temporary, tooling down the road at 55 MPH or running a buzz saw while you're "in the dark" isn't too good of a survival strategy.

To avoid complete "snow blindness" when it is necessary to see to find your way to a safe place, you should close one eye. This will allow you to get off a road or into shelter so that one eye can "see"

with the eye you closed after the fireball is gone. If at all possible, however, you should cover both eyes at the first sign of the flash to avoid any chance of damage to them.

There are two immediate dangers you'll have to face after the initial flash of a nearby nuclear weapon. The first is the pulse of radiation following the light and the second is the blast wave traveling behind it.

You won't have much time to look for safety. Only a few seconds. Fortunately, of the whole spectrum of radiation given off by nuclear explosion, the visible light is given off first, thereby giving you a some time before the more dangerous thermal, gamma, and neutron radiation reach peak levels and start moving out from the blast.

This short grace period gives you time to take cover. Such quick action can be very effective in minimizing both radiation exposure as well as keeping you from getting burns from the thermal pulse.

Advice Nr.2

Stay down for two minutes. If the blast wave is going to be dangerous, it will pass through your area within this time. (Of course if there are multiple explosions, you'll have to wait until two minutes after the last flash.)

The blast wave will create several real dangers. Indoors, glass is the worst worry even some distance from the blast. Closer to ground zero, other flying debris like plaster or chunks of wood become equally dangerous and the blast itself can send YOU flying if you don't have the sense to get down.

Consequently, you should dive for cover behind something that will offer protection both from the thermal radiation as well as blast-hurled missiles.

Advice Nr.3

If you're out in the open when a flash alerts you to a nuclear attack, you might still have a chance. Diving into a ditch or other depression is the best strategy, but even if these aren't available, covering your head and lying with your feet pointed toward the blast can improve your chances considerably; such a position will keep you from being blown about and your shoes give good protection to your feet (which can withstand more abuse than your head to start out with).

Advice Nr.4

After the "two minute wait" for the blast wave to pass by, you should get up and head for permanent cover. Turn the radio to the stations to which you normally listen and try to find information. Meanwhile,

quickly make preparations to go to the best shelter you and your family can reach within 15 minutes.

At no time after an attack begins should you look out of a window or stay near a window. Under certain atmospheric conditions, windows can be shattered by a multi-megaton explosion a hundred miles away.

The sound of explosions - The thunderous booms of the initial explosions would be heard over almost all parts of the United States. Persons one hundred miles away from a nuclear explosion may receive their first warning by hearing it about 7-1/2 minutes later.

Loss of electric power and communications - If the lights go out and you find that many radio and TV stations are suddenly off the air, continue to dial if you have a battery-powered radio, and try to find a station that is still broadcasting**.**

What to do to save yourself and the others?

Stay in shelter

Curiosity and ignorance probably will cause many people to come out of shelters a few hours after an attack warning, if no blast or obvious fallout has endangered their area. This is dangerous, because several hours after almost all missiles have been launched the first enemy bombers may strike.

Cities and other targets that have been spared because missiles malfunctioned or missed are likely to be destroyed by nuclear bombs dropped during the first several days after the first attack.

Most people should stay inside their shelters for at least two or three days, even if they are in a locality far from a probable target and even if fallout meter readings prove there is no dangerous fallout. Exceptions would include some of the people who would need to improve shelters or move to better shelters.

People could rarely depend on information received from distant radio stations regarding changing fallout dangers and advising when and for how long they could go outside their shelters. Weather conditions such as wind speed would cause fallout dangers to vary

with distance. If not forced by thirst or hunger to leave shelter, they should depend on their own fallout meter readings or on radiation measurements made by neighbors or local civil defense workers.

Evacuation situation

Loading Procedure - Load the car with some items from each category, taking as much as can be safely carried and being careful to leave room for all passengers.

Survival Information: Shelter building and other nuclear survival instructions, maps, all available small battery-powered radios and extra batteries, a fallout meter and writing materials.

Tools: Shovel, pick, saw (a bow- saw is best), ax or hatchet, file, knife, pliers, and *any other tools specified in the building instructions for the shelter planned. Also* take work gloves.

Shelter-Building Materials: Rain- proofing materials (plastic, shower curtains, cloth, etc.) as specified in the instructions for the type of shelter planned. Also, unless the weather is very cold, a homemade shelter-ventilating pump or the materials to build one.

Water: Small, filled containers plus all available large polyethylene trash bags, smaller plastic bags and pillow cases, water-purifying material such as Clorox, and a teaspoon for measuring.

Peacetime valuables: Money, credit cards, negotiable securities, valuable jewelry, checkbooks, and the most important documents kept at home. (Evacuation may be followed not by nuclear war, but by continuing unstable nuclear peace.)

Light: Flashlights, candles, materials to improvise cooking-oil lamps (2 clear glass jars of about 1-pint size, cooking oil, cotton string for wicks, kitchen matches, and a moisture-proof jar for storing matches.

Clothing: Cold-weather boots, overshoes, and warm outdoor clothing (even in summer, since after an attack these would be unobtainable), raincoats and ponchos. Wear work clothes and work shoes.

Sleeping Gear: A compact sleeping bag or two blankets per person.

Food: Food for babies (including milk powder, cooking oil, and sugar) is the highest priority. Compact foods that require no cooking are preferred. Include at least one pound of salt, available vitamins,

a can and bottle opener, a knife, and 2 cooking pots with lids (4-qt size preferred). For each person: one cup, bowl, and large spoon. Also, a bucket stove, or minimum materials for making a bucket stove: a metal bucket, 10 all- wire coat hangers, a nail, and a cold chisel or screwdriver.

Sanitation Items: Plastic film or plastic bags in which to collect and contain excrement; a bucket or plastic container for urine; toilet paper, tampons, diapers, and soap.

Medical Items: Aspirin, a first-aid kit, all available antibiotics and disinfectants, special prescription medicines (if essential to a member of the family), potassium iodide, pare eyeglasses, and contact lenses.

Miscellaneous: Two square yards of mosquito netting or insect screen with which to screen the shelter openings if insects are a problem, insect repellents, a favorite book or two.

GETTING HELP

The atomic explosions that destroyed most of Hiroshima and Nagasaki were air bursts and therefore produced no deadly local fallout. So we cannot be sure how people would behave in areas subjected to both blast and fallout from surface bursts.

However, the reactions of the Japanese survivors are encouraging, especially in view of the fact that among them the relative number of horribly burned people was greater than is likely to be found among a population that expects a nuclear attack and takes any sort of shelter.

Radioactive fallout: a real danger

If a nuclear weapon has been detonated near the ground, there will soon be fallout raining into your area. In such a case you're probably better off hunkering down and waiting until the levels of radiation outside have dropped to safer levels. This is especially true if you

have a large stock of supplies and perhaps even a fallout shelter (even if it's only improvised in a corner of your basement); in such a case you'd be better off ignoring official orders to evacuate and going it alone. Such a tactic has the added benefit of permitting you to protect your home from looters who may try to take advantage of the confusion.

What is fallout?

Radioactive fallout is created when the suction wave of the blast carries matter upward with the vacuum created by the nuclear fireball as it rises. If the explosion is close to the ground, the matter sucked from the surface of the earth moves into the fireball and is incinerated by the intense heat. (This dust is the "stem" that gives ground bursts their mushroom shape.)

As the debris is pulled up into the nuclear explosion, it's exposed to the radiation produced by the chain reaction; this exposure induces radioactivity in the debris. As this molten, now radioactive debris continues upward, it cools off and solidifies into small particles which gradually fall back to earth. These particles are radioactive fallout.

Fallout travels upward a long way; it takes quite a while for it to fall back down. Even close to ground zero, it will take at least 15

minutes for large sand to pea sized pieces of fallout to return to the earth. Smaller pieces, falling farther downwind from ground zero, will take longer with the very smallest of particles remaining airborne for days, weeks, months, or even years as they are blown farther and farther by high altitude winds.

This lag time that it takes for the fallout to arrive on the ground is a big plus which many are unaware of. Because of the time needed before fallout can reach the ground, areas down range which will eventually receive dangerous levels of fallout will remain free of radioactive particles for up to several hours following a nuclear blast.

This gives you time to make last minute preparations or even travel to a safer location if you're caught away from home during the attack or even pick up the children from school if they are close by. You'll have at least 15-20 minutes and more likely an hour or more.

Because large particles of fallout will arrive before the smaller ones, you'll not have trouble spotting fallout unless you're so far down wind that only small particles will be arriving many hours or even days later. Large fallout will arrive in a variety of forms and color (due to its make up and depending on the material that was at

ground zero). White, gray, or even black ash or popcorn like particles could be encountered.

Regardless of its form, it will be falling from the air and will appear unlike any natural phenomena. You'll be able to recognize it for what it is. When the fallout starts to arrive, you must get out of it as soon as possible (and ideally -would be out of the open well before fallout started to arrive).

Advice Nr.1

If you are forced to be in the open, keep radioactive fallout off your skin and clothing by brushing it off. Cover your head and use a wet handkerchief over your face to keep from inhaling the dust if you don't have any other sort of dust mask available. Remember: any time spent in the fallout will greatly lower your chances for surviving. Get into a shelter of some sort as soon as you can.

Advice Nr.2

During the critical time before fallout arrives, it's important that you don't get side tracked since you don't know how much time you

really have. Do first things first. Let tasks slide that aren't essential. Remember, too, that communications will be disrupted, buildings may be destroyed, many people will be panicked and/or injured.

Be prepared to look out only for yourself and your family; trying to "save" everyone will only result in everyone's loss. While this seems harsh, those who haven't taken a few minutes to learn about how to survive a nuclear attack are going to be so ill prepared that they'll soon perish in any area where lethal amounts of fallout to come into the area they're in unless they are extraordinarily lucky.

If you really care about these people, you should try to tell them how to survive NOW, well before a nuclear attack; last minute teaching won't take place when the bombs have exploded and the fallout is ready to rain down. Once the attack has taken place, save yourself and your family and let those who have gambled with their future by not preparing to survive pay the piper.

During such a time of panic and confusion, you'll need to be careful you don't get sucked into unwise decisions or suggestions from others who don't have any real idea of what is going on. This will include many "authorities" who are completely ignorant of what a nuclear attack would be like. School officials, your boss, policemen, national guard troops, etc., may all be giving orders and instructions

which if followed could result in your death or the death of your loved ones. Ignore the chaos and go about your business of surviving as quickly as possible.

Advice Nr.3

If you're away from home and can't get back to your family shelter, don't seek shelter someplace which will gradually become packed with people. This includes all US "public fallout shelters" which, as most readers know, are currently only signs on public buildings (the exception to this rule are shelters created for Congress which have been and continue to be fully stocked). To put it bluntly, public shelters are potential death traps.

Advice Nr.4

If you travel a lot, or work some distance from your home, then a bugout bag of essentials would greatly improve your chances as well. This bag could be kept in a closet or locker at your place of work or in the trunk of your car. It could get you through the arrival of the fallout and then you could travel back to your home on foot to join your family weeks later.

Advice Nr.5

If you prepare ahead of time, you can minimize potential thermal pulse and blast damage to your home. One important point is to choose a home with a light colored roof and exterior paint (both are especially important on wood frame houses); light colors reflect both light and heat making your home more fire resistant to the thermal pulse of a nuclear weapon.

Avoid a weathered wood exterior on your home and don't paint it a dark color. Brick or stone facings are first choice both for the added shielding they give from radiation as well as their resistance to thermal damage.

Turn your home into an adequate shelter

Terracing around your home can also add a lot of shielding to a basement - creating a potential make-do shelter in the process. Such work can be very attractive and can even improve the value of your home if you sell it.

Some trees, shrubs, and grass are more fire resistant than others and should be considered for planting around your house. Evergreens

tend to be more flammable than deciduous trees and are best avoided in areas very close to targets (where a thermal pulse could set the trees on fire).

Your lawn shouldn't turn brown in the fall (Bermuda grass is especially bad about this). And be sure to keep dead bushes, piles of leaves, etc., well away from your house so that they can't start a fire following a thermal pulse. For the same reason, don't stack firewood next your home and keep the garage free of stacks of old newspapers and cardboard boxes.

Since a nuclear blast can turn windows into jagged daggers, it's wise to take some steps to minimize this danger. One way to help keep chunks of glass in the window is to place an "X" of tape across each pane of glass.

Cloth tape is best for this, but multiple layers of scotch tape, clear packing tape, or contact "paper" (which is actually plastic) over glass panes will also improve things if you're worried about how your windows look to the neighbors. Best bet is to replace glass in bedrooms or other areas where you may not be able to react quickly to an oncoming blast with plastic. Most hardware stores stock clear plastic that can be used in windows.

White reflects light; that means white drapes, curtains, or shades are more ideal than darker colored window coverings when it comes to reflecting a nuclear thermal pulse. These light colors will reflect much of the light and thermal pulse back out your windows and might even save you from having a fire indoors.

After the nuclear blasts have occurred, you should take a few steps to protect your home from further damage while you're in your shelter. If your area may have freezing weather while you're holed up, it's a good idea to drain the water out of your home's pipes to keep them from rupturing and damaging the inside of your house.

Patching up any light damage done to your house by a nuclear blast is also a good idea if it can be done quickly before fallout enters your area. Windows and doors can be sealed with large strips of plastic or duct tape to minimize the entrance of fallout dust.

Shutters or large sheets of plywood might be used to close up windows which might be easily used for entrance by looters who don't have the good sense to get out of the fallout once it starts to arrive. Doors and windows can even be nailed shut but be sure you leave several ways for you to escape from your home quickly should there be a house fire or similar disaster.

The likelihood of a nuclear attack is not discussed nearly as much as it was during the Cold War, but, unfortunately, it is still a possibility. But, with some advanced preparations and common sense tactics, you could survive and live to help rebuild your community.

Terrorism – What does it mean?

An alarming propensity for violence is being demonstrated in our world today. The tendency feeds on itself, enlarges and grows with each passing year.

Science and technology have produces many amazing weapons and explosive devices. Unfortunately, many of them have been stolen from legitimate governments or have been manufactured illegally. They are now being used by political subversives and terrorists.

Terrorism is not a new concept, and even though it has been used since the beginning of recorded history it can be relatively hard to define. Description would include a tactic and strategy; a crime and

a holy duty; a justified reaction to oppression and an inexcusable abomination. Obviously, a lot depends on whose point of view is being represented.

Terrorism has often been an effective tactic for the weaker side in a conflict.

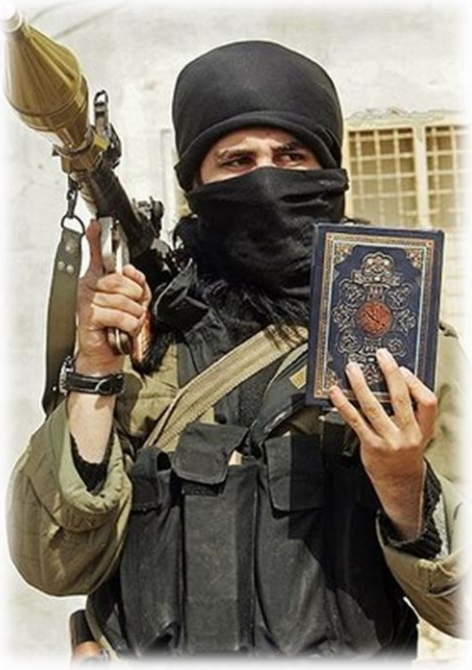
The United States Department of Defense defines terrorism as “the calculated use of unlawful violence or threat of unlawful violence to inculcate fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological.”

Within this definition, there are three key elements—violence, fear, and intimidation—and each element produces terror in its victims. The FBI uses this: "Terrorism is the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.

" The U.S. Department of State defines "terrorism" to be "premeditated politically-motivated violence perpetrated against non-combatant targets by sub-national groups or clandestine agents, usually intended to influence an audience.

Outside the United States Government, there are greater variations in what features of terrorism are emphasized in definitions. The United Nations produced this definition in 1992; "An anxiety-inspiring method of repeated violent action, employed by (semi-) clandestine individual, group or state actors, for idiosyncratic, criminal or political reasons, whereby - in contrast to assassination - the direct targets of violence are not the main targets."

The most commonly accepted academic definition starts with the U.N. definition quoted above, and adds two sentences totaling another 77 words on the end; containing such verbose concepts as "message generators" and 'violence based communication processes."



Less specific and considerably less verbose, the British Government definition of 1974 is"...the use of violence for political ends, and includes any use of violence for the purpose of putting the public, or any section of the public, in fear."

Terrorism is a criminal act that influences an audience beyond the immediate victim. The strategy of terrorists is to commit acts of violence that draws the attention of the local populace, the government, and the world to their cause. The terrorists plan their attack to obtain the greatest publicity, choosing targets that symbolize what they oppose.

The effectiveness of the terrorist act lies not in the act itself, but in the public's or government's reaction to the act. For example, in 1972 at the Munich Olympics, the Black September Organization killed 11 Israelis. The Israelis were the immediate victims. But the true target was the estimated 1 billion people watching the televised event.

The Black September Organization used the high visibility of the Olympics to publicize its views on the plight of the Palestinian refugees. Similarly, in October 1983, Middle Eastern terrorists bombed the Marine Battalion Landing Team Headquarters at Beirut International Airport.

Their immediate victims were the 241 U.S. military personnel who were killed and over 100 others who were wounded. Their true target was the American people and the U.S. Congress. Their one act

of violence influenced the United States' decision to withdraw the Marines from Beirut and was therefore considered a terrorist success.

There are three perspectives of terrorism: the terrorist's, the victim's and the general public's. The phrase "one man's terrorist is another man's freedom fighter" is a view terrorists themselves would accept.

Terrorists do not see themselves as evil. They believe they are legitimate combatants, fighting for what they believe in, by whatever means possible.

A victim of a terrorist act sees the terrorist as a criminal with no regard for human life. The general public's view is the most unstable.

The terrorists take great pains to foster a "Robin Hood" image in hope of swaying the general public's point of view toward their cause. This sympathetic view of terrorism has become an integral part of their psychological warfare and needs to be countered vigorously.

Preparing for terrorism

1. Wherever you are, be aware of your surroundings. The very nature of terrorism suggests there may be little or no warning.

2. Take precautions when traveling. Be aware of conspicuous or unusual behavior. Do not accept packages from strangers. Do not leave luggage unattended. Unusual behavior, suspicious packages and strange devices should be promptly reported to the police or security personnel.

3. Do not be afraid to move or leave if you feel uncomfortable or if something does not seem right.

4. Learn where emergency exits are located in buildings you frequent. Notice where exits are when you enter unfamiliar buildings. Plan how to get out of a building, subway or congested public area or traffic. Note where staircases are located. Notice heavy or breakable objects that could move, fall or break in an explosion.

5. Assemble a disaster supply kit at home and learn first aid. Separate the supplies you would take if you had to evacuate quickly, and put them in a backpack or container, ready to go.

6. Be familiar with different types of fire extinguishers and how to locate them. Know the location and availability of hard hats in buildings in which you spend a lot of time.

What to do to save yourself and the others?

As a first responder, safety is your most important concern.

You must protect yourself so that you can protect your fellow responders and the public.

If you do not arrive safely at the incident scene, or if you become injured or incapacitated in any way, you will not be able to provide the services required by the initial call for help.

Remember that the initial actions taken by the first responders will affect the final outcome of the incident.

It is important to keep in mind that:

Terrorism has no rules, either fight or die.

Terrorism on a plane

Identify a terrorist bomber before it comes to armed struggle. Look at who is boarding your plane. Watch for Red Flags - someone wearing an expensive suit but a military watch, extremely nervous passengers, people with neither carry-on bags nor luggage, someone wearing military boots with normal clothes, strange behavior. To save your life, it's best you tell someone in charge immediately.

The beginning of the flight is when you need to stay focused. Ninety percent of hijackings happen in the first 20 minutes because the plane is still full of fuel.

Don't panic. Control your breathing and heart rate. Try to stay calm.

The first thing the hijackers will do is stab a couple of people, slit their throats and then shake blood on nearby passengers. They are trying to control you with terror. The terrorists then urge everyone to the back of the airplane.

Why? Because they are afraid of passengers rushing and overpowering them. There are many more passengers than hijackers.

Do not go to the back of the plane. If you do this, you and everyone else are probably dead. You must take back the aircraft.

It's time to take action. How many hijackers and how many weapons? Where are they located on the aircraft? You are all leaders. What do people do when a leader gets up? They follow. Tell someone to help you. You must take back the aircraft at all costs. Together.

What about hostages? Would you risk the life of a passenger? How about your wife or child? Could you rush the terrorists if they have your seven-year old boy and they say that if anyone moves they will cut his throat? You must, because if you do nothing, he is going to die anyway.

In a hijacking the, passengers are divided up into hostages and

victims. Terrorists kill hostages to scare you and control you. So if you have a loved one who is taken hostage their best chance of survival is you fighting back.

If you get the chance of firing a gun, remember this: the most important thing is aiming. Do this quick exercise: hold your index finger up to a spot on the wall. Close one eye and then the other. Looking with one eye your finger will appear to jump while with the other eye it will stay on target. The eye that does not jump is the one you should aim with. Keep your eye on the front sight and align that with your target.

Items that you can use

You will need items that can be used as weapons. Prepare in advance. Always bring along a hardcover book, a newspaper, keys and a pen and ask for a blanket and two unopened soda cans. Keep a fairly heavy bag under your seat. These ordinary items are weapons **that can save your life.**

When the terrorist comes down the aisle as soon as he passes you throw your blanket over his face so he cannot see. Then knee him in the spine, pull him down and strangle him with the blanket until you get another passenger to help you restrain him.

To block knife slashes, wrap the blanket around your forearm. Hold the blanket out and catch the arm of the terrorist as he slashes at you. Then hold the knife arm wrapped up while other passengers take the terrorist down.

A hard cover book can block any stabbing attack. A heavy book can smash a hijackers nose, collar bone, Adam's apple or back of his head.

When on board, ask for two unopened cans of soda. A full soda can thrown at someone's temple can kill him. They can smash a terrorist's nose, knee cap or head. If everyone throws a full soda can at a terrorist he can be stoned to death. A full soda can wrapped up inside a blanket can be swung as a deadly mace.

A newspaper folded once or twice and stuck inside your shirt is body armor strong enough to stop most knife stabs. A rolled newspaper becomes extremely hard and can be used to smash the nose or stop the heart by hitting the arteries on the side of the neck.

A heavy bag kept under your seat can be used to block knife slashes, smash a terrorist or can be thrown into the aisle to trip him.

Stab a pen into the terrorist's eye, hand, throat, anywhere. Don't be afraid to do it. If you don't want to be a victim, make him one.

Keys can be stabbed through a terrorist's ear into his ear drum, gouge out his eyes, or even cut his throat.

A leather belt wrapped around your arm can stop knife cuts or the belt can be swung as a flail. Smash the buckle into a terrorist's face. Belts can quickly strangle terrorists and can also tie them up when they are disarmed and unconscious.

Terrorism on the ground

Do not go to the scene of a terrorist attack to watch. If you are on a bus or train be alert for unidentified packages or someone hurriedly getting off and leaving a package.

If this happens try to throw the package out a window. If you are on a subway system that has been attacked try walking down the tracks until you find an emergency ladder. If you are on a subway car or a bus that has been attacked first assess your own injuries then, if possible, help those around you.

Keep low to breathe the best air possible. Smoke inhalation is the number one cause of death after an explosion.

Stay out of the subway system and don't take buses until you feel secure again about using them. Terrorists sometimes strike the same targets twice to reinforce fear.

TERRORIST ALERT!

If someone comes into a building and puts a briefcase down and walks away get your family out first, then make a phone call to alert the restaurant of a possible bomb.

If a terrorist throws a hand grenade down in front of you don't run. You will be killed by flying shrapnel piercing vital organs or your head. Seek shelter behind a chair or table in the two to four seconds before the grenade goes off.

If there is no cover, fall face down with your feet facing the coming explosion. Pull your elbows into your sides to protect vital organs and cover your ears.

This will change you from a five or six foot tall standing target into a tiny six inch box on the ground. The blast may miss you entirely or flying shrapnel may hit the soles of your shoes. You will survive and that's what matters.

When facing a suicide bomber, you must first determine which type of detonation control he is holding.

A Remote Control Detonator looks like the button held by a photographer in a studio. The explosion is caused by pushing the button. You must grab his thumb so he can't press down.

The 'Dead Man's Switch' is similar to the safety pin on a grenade. If the terrorist is shot or killed or releases his grip, the bomb goes off. You must not let him open his hand.

As a last resort if you are behind a suicide bomber and can't see what type of detonator he is using you must use him as a cushion to save your life and the life of others. First grab the hand with the controller. Then kick him with your right leg in the back of his right knee. Then you are going to fall on him as he goes down. The explosion will go off under him. His body will protect yours.

You will probably be thrown fifty feet in the air, break a few ribs and suffer second degree burns – but live. A soldier in Israel stopped a suicide bomber in a café using this technique and survived.

In the end the only way terrorism is going to be stopped is if ordinary people start fighting back. We have to make terrorism more dangerous for the terrorist than for their victims.

Tough City Survival

I've come to realize that every city is an artificial construct. Cities formed as people came together to conduct business, participate in social interaction, and benefit from efficiencies in public services (such as schools, sewers, water, etc.) and a common defense.

Yet cities cannot survive alone. They need resources from the country; most notably, food, water and electricity. While electricity and water can sometimes be created or found within city limits, the acreage requirements of food dictate that no city could possibly feed its own people.

The city presents some serious risks during a crisis. The four most serious ones are:

1. Chaos - the collapse of social order (riots),
2. Failure of the water treatment and delivery systems,

3. Depletion of food supplies

4. Failure of the power grid.

This collapse of social order is perhaps the greatest risk of staying in the city during a crisis. What, exactly, would cause this collapse of social order? Lack of three things: food, water, and money. When people run out of food, some will begin ransacking their neighborhood, searching for something to eat.

It won't take long, then, for violence to take over in some cities. While certain regions will certainly manage to keep things under control and people will form lines at the local (depleted) Red Cross shelter, other cities will see an explosion of violence.

Imagine the gang-infested regions of L. A., Chicago, New York, St. Louis and New Orleans. Do you think those people are going to stand in line and wait?

They already have guns; now they finally get to use them. Pent-up racial tensions & hostilities will simply serve as justification for shooting people of the same or other color in order to get their food. Even if the food somehow gets into the cities, lack of money (due to the government not sending out checks) could cause the same thing.

Eventually, lack of money results in looting and mass theft. As the stealing balloons, it also results in a collapse of social order. The collapse of social order is also very dangerous because it doesn't require any "actual" collapse of the power grid, telecommunications, transportation or banking.

Will the water treatment facilities fail during a crisis? Many will. Some won't. The problem lies in figuring out whether yours will. Certainly, they depend on electricity, and testing conducted on some plants has already revealed weaknesses in the system.
In one such test, the water treatment plant released a fatal dose of fluoride into the water system when tested.

The computers thought they were 99 years behind in releasing minute doses of fluoride, so they made up the difference. If you happened to be downstream, drinking that water, you were dead.

Fluoride, no matter what misinformed dentists tell you, is actually a fatal poison. A major crisis likely to demonstrate this fact in more than one city.

The most important question here, though, is about what will happen when the water stops flowing (or if it is flowing, but it's not drinkable). As you are probably aware, while people can live without food for long periods of time (2-3 weeks), water is needed on a daily basis.

You can go 2-3 days without it, at most, but beyond that, you'll quickly turn to dust. That means people will do anything to get water, because to not have it means death. And guess where it's going to be the most difficult to actually get water? You guessed it: in the cities.

During the first day of the water crisis, many people still won't figure out what's going on. They'll figure it's a temporary breakage

of a water main and the government will get it fixed within hours. As those hours stretch into the next day, these people will get very worried.

By the second day, more and more people will realize the water isn't coming. At that point, you could easily see a breakdown of social order, as described in the previous section (as you can see, these things all tend to cause each other.).

People will begin their “search for water,” and the first place they’re likely to go is where they always go for liquids: the grocery store, the local Wal-Mart, the 7-11. The shelves will be cleaned out rather quickly.

Beyond that (because those liquids aren’t going to last long), you're going to see people engaged in a massexodus from the cities. They’ll take the gas they have left in their tanks and they'll leave the city in search of water.

Some will go to “Grandma’s house” out in the country where they might at least find a pond or stream to drink from. Others will simply go on an expanded looting mission, stopping at any house

they see and asking the residents (with a gun in their face, likely) if they have any water to "donate."

The food supplies will likely dwindle quickly as we approach a possible crisis due to people stocking up just in case. Once the crisis actually hits, expect to see breakdowns in the transportation sector that will result in major delays in food delivery. This means food may arrive in sporadic fashion in some cities (if at all).

Once this happens, food suddenly becomes really valuable to people (even though they take it for granted today). And that means any small shipment of food that arrives will be quickly grabbed and eaten or stored. It only takes one week without food to remind people how much they actually need it, so expect the atmosphere to be that of a "near panic" if food is delayed by as little as three days.

The level of panic will vary from city to city. Some cities or towns may experience very little difficulty receiving food. Others may face near-starvation circumstances.

Remember, the cities depend entirely on food shipped in from the farms and food processing companies.

Also, note that if there's a water problem as mentioned in the previous section, and the mass exodus begins, the highways may be jammed up at critical locations, causing gridlock for the trucking industry. If we're lucky, some trucks will continue to roll. If we're not, assume that nothing gets through.

A shortage of food ultimately results in the same behavior as a shortage of water. First, people eat what's in the pantry, then they loot the grocery stores. After that, with all local supplies depleted and no hope on the horizon, they leave the city and start ransacking nearby homes.

Some will hunt in nearby forests, but most city-dwellers don't know how to hunt. In any case, anyone with the means to leave the city will likely do so soon after their food shortage begins.

Nothing is as suddenly obvious nor has such a gigantic psychological impact as the failure of the power grid. When the electricity stops, almost everybody knows it at the same instant (unless it happens at night).

Naturally, during the first few hours of the power failure, if it occurs, people will assume it's a temporary situation. Maybe a tree fell on some power lines, or perhaps a transformer blew up somewhere nearby.

They'll sit tight and wait for the power to come back on.
What if it doesn't? Then the city faces a severe problem. Without power, obviously, everything shuts down.

Within hours, the looting begins in the more crime-ridden cities (we saw this in New York a few decades ago.). The longer the power stays off, the worse the social disorder.

The loss of power will bring the entire city to a halt. While vehicles may get around for a few more days (using whatever fuel they have left),

businesses obviously won't be operating. Houses that depend on electricity for heat will quickly reach Winter temperatures, freezing many occupants to death.

While those that depend on electricity for Air Conditioning will just as quickly reach Summer temperatures, resulting in death from heat stroke. Hospitals and police stations may have generators on hand, with a few day worth of fuel, but in short order, that will be depleted, too.

But the water treatment plant will almost certainly be off-line without power, causing all the events mentioned in the water section, above.

Let's face it! The power is the worst thing to be without in the city. If you have power, you can survive a food shortage, perhaps even a short water shortage. But without power, all bets are off.

If you have a “bug-out” vehicle stocked and ready to go (see below), this might be the time to bail.

What should you do?

If you've read the problems above, you believe they make sense, and you're intelligently frightened, you really have two strategies. You can:

* Stay and defend your house
* Bug out (leave the city and head for the hills)

Of course, you can begin by staying in your house and assessing the situation. You'll want to have a "bug-out" vehicle stocked and ready, just in case, if you can afford one, but you may never actually choose to bug out. You'll have to be the ultimate judge of this. Just remember that when you bug out, you face major risks and disadvantages. Among these:

1. You're severely limited in how much you can carry
2. You have limited range due to fuel
3. You expose yourself to social chaos, roadblocks, random violence, etc.

4. Your house will certainly be looted while you're gone
5. You run the risk of mechanical breakdowns of your vehicle
6. You must have a place to go that you know is in better shape than where you currently are.

In general, unless you have a specific, known safe place as your final destination, I don't advise people to bug out. Just “heading for the hills” is a very poor plan. You might not make it. But heading for Grandma’s house or some known, safe place could be a very good plan indeed, depending on whether Grandma is ready, willing and able to accept you!

For these reasons (and more), staying and defending your house is sometimes the only reasonable course of action, even if it seems dangerous. For the most part, looters and people looking for food are going to have plenty of easy victims, so if you show a little willingness to use force to defend your property, you’ll likely send people on to the next house.

That is, until the next house is already empty and you appear to be the last house on the block with any food and water left. If you're in a bad enough area, your neighbors may “gang up” on you and demand your supplies or your life. This is truly a worst-case

scenario, and unless you literally have a house full of battle rifles and people trained to use them (and the willingness to shoot your neighbors), you're sunk.

This is why the best situation by far is to keep your neighbors informed and help them get prepared. Then you (both your member and non-member neighbors) can act as a group, defending your neighborhood and sharing the supplies you have with anyone willing to help defend you.

When you have this kind of situation going, your neighbors realize you are their lifeline. You supply them with food and water, and they will help support you because they are, in effect, supporting their own lives.

The best situation is when your neighbors and other ward members have their own food and water supplies. That way, they aren't depleting yours, and they have a strong motivation for getting together with you defend your neighborhood.

Storing food is just as important in the city as in the country, but hiding it is far more important. That's because in the worst areas, marauders will be going from house to house, demanding your food or your life. If you're dumb enough to put everything you own in the obvious places, you might as well not buy it in the first place.

They will find it. To count on having any amount of food left over after the marauders break in, you'll need to hide your food.
One alternative is to plan on defending your home with force. If you have enough gun-wise people in the house, and enough firearms and ammo, you can probably pull this off. But most of us aren't nearly as experience with firearms as the gang members.

A better alternative might be to plan on bringing you supplies to your ward/stake building where all of the Saints can both pool and defend their resources. This of course will depend greatly on your local Bishop and Stake President.

Back to hiding: the best way to hide your food is to bury it. You'll need airtight containers, long-term food that won't rot and you'll need to plan ahead. Bury your food at night so nobody will notice, and make sure you don't leave the map on the refrigerator door! (Better to memorize it!)

Try to get the ground to look normal after you're all finished. You'll want to bury your food as early as possible because it gives the grass time to regroup over the spot. If you're in an area that snows, you'll have a great concealment blanket! Most food marauders won't go to the trouble to dig up food, especially if you insist you don't have any.

Best plan: Have some smaller amount of food stashed around the house, letting them find something. Better to give them something and send them on their way. The art of hiding your food is an ancient one. You've got to get creative. Use the walls, the floors, and the structure of the house.

If hiding your food is simply not an available alternative, then try not to advertise it. Keep it put away in your house or garage in as discreet a manner as possible. Don't make a point of telling people that you have a years supply (or more).

Boxes of food fit nicely under beds, behind furniture, in the attic, etc. Be Creative!!

To sum up the food storage, you really have three strategies here:

* Store it all in your house and plan on defending it by force.

* Bury it in your yard in case you get overrun by looters.

* Store part of it in your house, and hide the bulk of it.

* Relocate all of it as soon as you recognize a major disaster is in progress

One of the best ways to store food for burying, although it will only last 2-3 years in high-humidity areas, is to purchase 55-gallon good-grade steel drums.

Once you obtain the drums, dump in your grains or other food items. Then sprinkle some diatomaceous earth into the drum. You'll need about two cups to treat a 55-gallon drum, and it must be mixed in well. Diatomaceous earth is made from ground up sea shells, and it kills bugs by getting into their joints. This diatomaceous earth is food grade, and on the bag it says, “Fossil Shell Flour.”

Once you get these drums filled and sealed, you can then bury them in your yard. This is actually a HUGE UNDERTAKING and is a LOT more difficult than it sounds, since you’ll need to dig to a depth of around 5 or 6 feet in order to sufficiently bury these drums. You’re likely to attract a lot of attention unless you do it at night, and you’ll

definitely be removing a lot of dirt that you'll need to find some use for.

Because the drums are steel, they will also deteriorate unless you line the outside with plastic (a good idea) and treat the drums with some kind of protectant or oil. (Don't use WD-40.) Even Vaseline would work well, although you would definitely need a lot to coat a 55-gallon drum.

When you're all done, you should have your protected grains in 55-gallon drums, buried in your yard and protected against the humidity of the surrounding earth. It's a big effort, but then again, the food inside may save your life. You'll find it much more efficient to bury several barrels at once; side by side.

In reality it would be faster and easier to simply build a false wall in your garage and seal up your food behind the false wall. Sure, you might lose 2-3 feet of useable space in your garage, but the tradeoff is knowing everything is safe and sound.

Water can be stored in exactly the same way, although you might want to bury the barrel before you actually fill it with water. Make

sure you treat your storage water, rotate it or have filters on hand when you get ready to use it.

If you don’t have a yard, or it's not practical to bury your water, you’ll have to store water inside your house.

This can get very tricky because water takes up a lot of space and it's very difficult to conceal. It’s best to get containers made for long-term storage, but in a pinch, you can use almost any container: soda bottles, milk jugs (although it's very difficult to rinse the milk out), and even rinsed bleach bottles (in that case, you won’t need to add bleach).

But a lot of these containers will deteriorate quickly, and they may break easily. Also, consider what happens if your water may be subjected to freezing. Will your containers survive? Be sure to leave enough air space to handle the expansion.

In order to prepare yourself for the water shortage, assuming you’re going to stay in the city, stock at least six months of water at a minimum two gallons a day per person. That’s nearly 400 gallons of water if you have two people.

Of course, even with the best in-house preparations, you may find yourself depleted of water supplies. In this situation, one of your best defenses is to have a really good water filter (like the Katadyn filter) that can remove parasites and bacteria from the water. You can also treat your water in other ways (iodine, distillation, silver solution, bleach, etc.). Armed with these items, you can safely use stream or river water (or even pond water) for drinking.

Now, let's talk about force. No doubt, there are plenty of nice people in this country, and I think that in small towns and rural areas, people are going to find ways to cooperate and get along. I also think, however, that some cities will suffer complete social breakdown and violence will rule.

If you happen to be stuck in one of these cities, you're going to need to use force to defend your house. The section that follows discusses what I consider to be extreme responses to violence in the most dire situations. Hopefully, you won't find yourself in these circumstances, but if you do, the information below may be valuable.

Important: Do not use your lights at night. If you are stocking propane-powered lanterns, solar-powered flashlights, or other unusual supplies, using them at night will announce to everyone within line of sight that you have more than the “usual” supplies. Expect them to come knocking in your door.

At most, let a fire burn in the fireplace, but in general, avoid drawing attention to your house. Defending your house is a crucial element on your stay-in-the-city plan. Make your house your fortress, and hold drills to help other family members practice some of the more common activities such as hiding, defending, evacuating, etc. Some useful items for home defense include:

* A guard dog
* Pepper spray
* Firearms
* Smoke bombs (military-grade)
* Trip wires

Let's go over these: The guard dog is certainly a welcome addition to any family trying to defend their house.
Although he probably eats a lot of food, the investment is worth if. Dogs also tend to sleep light, so let them sleep right next to the food

storage areas, and make sure you sleep within earshot. If the dog barks, don't consider it an annoyance, consider it an INTRUSION.

Pepper spray is a great alternative to the firearm. It will incapacitate people and certainly give them a painful experience to remember. On the downside (potentially), it might just remind them that next time they come back for food, they better kill you first. So understand the limitations of pepper spray.

Firearms are useful for obvious reasons. In the worst-case scenario, when looting is rampant, you may have to actually shoot someone to protect yourself or your family. If you're squeamish about pulling the trigger under these circumstances, don't plan to stay in the city. Use the "bug out" plan instead.

Smoke bombs can be useful for covering a planned escape from your house. You can purchase high-volume smoke bombs that will quickly fill up any house with an unbreathable cloud of military-grade white smoke.

Trip wires are great perimeter defenses. They will give you early warning if someone is approaching. You can connect the tripwires to flares, shotgun shells, light sticks or other warning devices. This way, you can have an audible or visible alert, your choice.

In addition to these devices, you can make significant fortification-style improvements to your home. While none of these are very affordable, they certainly help defend your home:

* Replace glass windows with non-breakable Plexiglas
* Add steel bars to the windows
* Replace all outside door locks with heavy-duty deadbolts
* Replace all outside doors with steel doors, preferably without windows
* Remove bushes and other shrubs where people might hide
* Black out the windows entirely to avoid light escaping at night (similar to what residents of London did during the WWII bombing raids)
* Build secret hiding places for food, coins, or even people

* Create escape hatches or passageways
* Rig pepper-spray booby traps

These aren't as absurd as they might at first sound. Many people living in rough cities already have steel bars covering their windows, and removing extra bushes and shrubs is a well-known tactic for making your home a safer place.

To light your home when there's no electricity, try the following:

* Use LED flashlights and rechargeable solar-charged batteries.
* Use propane-powered lanterns. Be sure to purchase extra mantles and store lots of propane.
* Purchase quality oil lamps from Lehman's and stock up on oil.
* Buy extra candles.
* Purchase lots of olive oil. Not only can you cook with it (and besides, it's a lot healthier than corn or vegetable oil), olive oil also burns as a clean candle fuel. You can float a wick in a jar half-full of olive oil and light the wick.

Viola, a home-made candle. Olive oil is a fantastic item for your storage anyway because even if you purchase all the grains in the world, you'll still need cooking oil, and you obviously can't buy powdered cooking oil. Well-stored olive oil can last for thousands of years.

No matter how you felt or thought about gun control in the past, it's time to face disaster-induced reality. The gun-control politicians (and the people who supported them) have placed Americans in a situation where not only can the police not protect us in a timely manner, but we cannot lawfully defend ourselves.

Criminals unlawfully have firearms; citizens lawfully don't. Intentionally or otherwise, gun-control supporters have created a situation where an unfortunate number of innocent men, women and children are going to be in danger during a crisis simply because they could not obtain the tools of self-defense.

It also happens that the cities where the rioting will likely be the worst are precisely the cities where firearms are most likely to be banned from lawful ownership (and where criminals may wield near-absolute power for a while.).

Perhaps when society recovers from it, we can review the fallacy in the cause / effect logic that keeps people voting for gun-control laws, but in the meantime, millions of people are going to have to resort to breaking the law in order to protect their families. And yes, you too will have to resort to breaking the law if you are to acquire a

firearm in an area where guns are entirely banned from private citizens (like New York, Los Angeles, etc.).

After the disaster hits, if the rioting gets really bad, we're going to see local police begging law-abiding citizens for help. Your firearm will be a welcome addition to the force of law and order, believe me. No local cop is going to mind you having a handgun if you're manning a roadblock protecting a neighborhood of families with children.

Act responsibly, tell them what you're doing, and they'll probably give you a big thanks. But if you're carrying a gun while you smash a window of the Wal-Mart and walk off with a stereo; well that's a different story. Be prepare to get shot.

See, cops don't mind private ownership nearly as much as we've all been led to believe. I know, I work with law enforcement officers in a small town, and I ask them about topics like this. When the crisis hits, they'll be more than happy to have your cooperation. We're all going to need as many law-abiding gun-toting citizens as possible in order to fend off the criminals and establish some degree of order.

One More Reason To Move Out

If you really feel you need a firearm to protect yourself and your family, your best bet may be to move to a city or state where people are a lot more accepting of firearms. You'd be surprised what a difference the locale makes. Check the gun laws in any state you're considering moving to.

Obviously, “cowboy” states like Arizona, Texas and Wyoming will have fewer restrictions on firearms (and, interestingly, they have less of a problem with gun violence). States where the population is more dense (like California & New York) tend to have much greater restrictions on private ownership of firearms.

If you’ve decided to BUG OUT!

Some basic pointers:

* Don’t try to bug out in a Chevy Geo. You will likely need a big heavy 4x4 truck in order to go off-road and around stalled vehicles

* Get something that can carry at least 1000 pounds of supplies. A big 4x4 pickup will do nicely! Yes, it requires more fuel, but you can carry the fuel as cargo.

* Don’t bug out unless you can have someone ride shotgun, literally. You will need an armed passenger in case you run into not-so-nice people

What to take

* Your 96 hour kits for each person in the vehicle
* 20 gallons of water
* 40 gallons of extra fuel or more (and a full gas tank)

Where to go

As mentioned earlier, if you have a designated place of refuge (Grandma’s house, a cabin in the woods, etc.), head straight for it. If not, you’re basically driving anywhere you can go, so try to head for an area that forested and near a creek or river where you can get some water.

As you can see, the very nature of a major disaster means that if only one or two major infrastructure components goes down, the ripple effect will quickly create a much worse scenario. It seems there is very little room for “mild” effects unless they are miniscule. The most likely scenario at this point clearly points to massive disruptions, severe shortages in food and water, loss of power in

some areas, and a breakdown of social order in certain areas where the population density is high.

But you can survive anything, with proper preparation and practice.

Final thoughts

Disasters happen. Whether you are ready for them or not.

No one can predict when a disaster will strike. One could happen in your city or town, maybe in your neighborhood, or even on your very street.

Disasters happen without warning. And they have no regard for your life, or the lives of those you love.

The flood doesn't care if it washes away your home, leaving you with no shelter, no water, and no food.

The raging fire isn't concerned about whether or not you can find a safe route for your family out of harms way.

That invading foreign army does not lose any sleep worrying about whether or not you have what you need to **survive a disaster** when you have to flee into the wilderness.

What you need to remember is that you are not helpless. Not if you prepare BEFORE a disaster happens. And by following my guide you will ensure your safety and the safety of your family.