

DISASTER PREPAREDNESS

FOR SURVIVAL



Prepared by Harry Smedes PhD

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Purpose

This report was prepared (1) as an expansion of material I teach in my University (SOU) course on Volcanoes and Earthquakes, in which I address earthquake preparedness; and (2) because of my interest in and concern about the full range of natural and man-caused disasters that might befall a community.

The realization that we must rely on ourselves and neighbors during the initial period of a disaster prompted me to enroll in, and complete training in the **CERT** program, which stands for **Community Emergency Response Team**.

In the event of natural or man-made disasters we should be prepared to make it on our own for a period of days or, perhaps, weeks. The **key to survival is preparation - -physical, mental, emotional, and spiritual**. During such emergencies, we cannot count on being able to reach police, firemen, ambulance, doctors, or hospitals; we may not have electrical power supply.

Roads may be blocked, bridges out, phone communication out. Even cell-phone towers may be destroyed and cell phones inoperable. Radios (run by "ham" radio operators) may be the only medium. Traditional sources of food, fresh water, and medicine may not be available. For several days or weeks we may have to rely on ourselves, family, and neighbors, so get involved in the planning.

1. Become informed- - the goal of this report- - but don't stop learning here. Although there is a commonality of responses among many, nevertheless there are significant differences among the natural and man-caused disasters. Begin to learn about the specific threats including those that are more-likely to occur in your area. A wealth of information far more extensive than this report is available - -make use of it.

2. Be prepared to **adapt this and other information to your personal circumstances**.

3. Praise and prayer are especially indispensable during and after times of disaster and tragedy.

In my teens, I was awarded the Eagle rank in the Boy Scouts program. The Scout Motto, Oath, and Law have stayed in my mind and formed the framework for my work and my life ethic; they are: "Be prepared"(motto). "A Scout is trustworthy, loyal, helpful, friendly, courteous, kind, obedient, cheerful, thrifty, brave, clean, and reverent"(Scout Law). "On my honor I will do my best to do my duty to God and my country and to obey the Scout Law; to help other people at all times; to keep myself physically strong, mentally awake, and morally straight" (Scout oath).

With this motto, oath, and law in mind, I offer this report as an aid in being prepared. There will be times when we will need to be brave.

We should always be prepared and be helpful, courteous, friendly, and kind to others who may be injured, frightened, or who may become refugees and find themselves unprepared.

We should be obedient to the officials in times of disaster

We must always be reverent, loyal, and obedient to God.

Prayer is an essential element before, during, and after any disaster.

I urge you to study this report as a guide to help you cope with and survive a disaster. Although comprehensive, you may decide to add some things that are relevant to special circumstances unique to you or a family member and to delete items deemed inappropriate for your needs. Use this material as a starting point for making your own amended list. Check it and revise it as needed from time to time. Examine the Appendix for additional useful information.

I suggest that you use a yellow highlighter to mark in the guidelines the features and the items in the lists and that are relevant to you.

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A. WHAT TO DO BEFORE A DISASTER

In times of disaster, the hardest hit are the elderly, the very young, and those with health problems. Therefore, the **best preparedness is to start now to improve your health** by means exemplified by the following 8 rules of health, namely: nutritional diet, fresh air, sunshine, rest, moderation, exercise, fresh water, and trust in God

Whatever the disaster may be, they all have many features in common. The lists for food, first-aid supplies, tools, documents, and for planning are universal. Those sections comprise about twenty percent of the report. More detail is provided in the Appendix, which comprises another twenty percent. The rest deals mainly with guidelines for planning and actions to take before, during, and after a disaster.

A.1. MAKE PLANS AND START ACTIVITIES

If evacuation is required, the amount of time you have before leaving will depend on the hazard. For a weather condition, such as a hurricane which is being monitored, you might have a day or two to get ready. However, many disasters do not allow time for you to gather even the most-basic necessities, which is why **planning ahead is essential**.

a. PLANS

- Talk with your family about disasters that could happen in this region.
- Make an emergency plan - - **now**. Discuss the issues and plan with family, co-workers, and neighbors. Discussions ahead of time as part of a family plan can help allay fears, confusion, and panic during the disaster. Your family may not be together when disaster strikes, so plan how you will contact one another.
- Start a "Buddy Squad" to check on elderly or disabled neighbors during and after disasters such as extended power outage, earthquakes, or winter storms. Also check on children who may be home alone.
- Make plans for any family member or neighbor that has a disability or a special need which may require that you take additional measures to protect and aid them in an emergency.
 - Consider how to warn hearing-impaired people
 - Mobility-impaired people may need help getting out of a building or to a shelter.
 - Single working parents may need help in planning.
 - People without cars may need help to make arrangements for transportation.
 - People who do not speak or understand English well may need help in planning for and responding to emergencies. Check with community and cultural groups for help and suggestions.
 - Those with special dietary or medicinal needs should have an adequate supply of their special food and medicine.
- Be prepared to deal with the emotional needs of family members and neighbors. See **COPING** in the Appendix.
- Complete a **contact card** for each family member (see sample in Appendix). Have each member keep the card handy in a wallet, purse, backpack, etc. You may want to send one to school with each child, to keep on file.
- Draw a floor plan of your home. Use a separate sheet of paper for each floor. Mark 2 escape routes from each room.
- Plan what to do - - assign responsibilities and tasks. Designate alternates in case someone is absent.
- Create a plan to get away. Establish meeting places and alternate sites in the event you are separated. Choose one site right outside your home, in case of a sudden emergency such as a fire or earthquake. Choose at least one outside your neighborhood in case you cannot return home or are asked to evacuate your neighborhood. Include your

- pets- - if it's not going to be safe for you, it won't be safe for them.
- Determine and become familiar with the best exit route and alternate routes from home and work
 - Make a map of the routes.
- Every family member must know the address and phone number of the meeting locations.
- Review family plans and any company, school, or community plans there may be.
- Make sure that everyone in the household knows where emergency information and supplies are kept.
- Each person should keep a card in the wallet or purse listing the family physician name, all medicines used, allergic reactions, blood type, and any other relevant medical information.
- Plan for pet disaster needs by:
 - Identifying shelters
 - Gathering pet supplies of food and water
 - Ensuring that your pet has proper ID and up-to-date vet records
 - Providing a pet carrier and leash
 - Take a picture of your pet, with you in the picture, and a description
 - If you have large animals (horses, etc.), have trailers and vehicles available for transporting them. If transportation is not possible, decide whether to move them (walk or ride) to a shelter or turn them loose outside.
- Make a calendar checklist to remind you when to check lists, smoke alarms, maps, etc., and rotate supplies and water
- Make copies of key information for everyone to carry with them at all times. Keep the information updated.(A.3)
- Know the emergency plans at school and work. Talk to the staff at your children's schools and your employer about emergency plans and protocol.
- Study to learn about edible wild plants and herbs. **Learn which ones do not go well together or with certain medication you may be taking.**
 - Learn the poisonous "look-alikes".
- Discuss with your neighbors about sharing the use of equipment such as chain saws, generators, 4-wheel-drive vehicles, tractors, etc.
- If the Neighborhood Watch Program isn't active in your neighborhood, rally your neighbors to start one or something comparable.
- If you have children in school, ask the school officials:
 - How will the school communicate with families during a crisis?
 - Does the school have adequate food, water, and other basic supplies?
 - Is the school prepared to shelter-in-place if necessary?
 - Where does the staff plan to take the children if they must leave the area?
- If you are an employer, make sure that you have adequate supplies on hand and an emergency plan that incorporates essentials from this list. Instruct employees in the plan and escape routes.
- Make an inventory of all household furniture, equipment, computers, TV sets, file cabinets, bookcases, clothing, etc. In case of fire, this list will be invaluable in filing insurance claims. **Keep this list some place other than the house.**
- Make a list of prized possessions and photos that you could evacuate if given some advance notice. Prioritize so that you can take the most- important things if you can only take a few things or if there is not time enough or carrying capability (for example, if you must leave on foot).
- Keep critical papers in a safe-deposit box at the bank or in a fire-proof safe at home.
- Learn how to make fires and shelters, and how to cook and otherwise survive in the

A.1.b. ACTIVITIES

A.1.b.1. GENERAL

Most disasters and emergencies have many preparedness needs in common. This section deals with those general - - or universal - - activities of preparedness. Those that are unique to a specific disaster are listed in following sections (b.2 - b.13).

- Smoke detectors.
Install smoke detectors on each level in the house, especially near bedrooms. At a minimum, there should be a smoke detector in each hallway and corridor between the sleeping areas and the rest of the house, and a detector in the center of the ceiling directly above each stairway.
Additional measures include mounting one detector on the ceiling or wall in each bedroom. Because smoke rises, the detectors should be mounted high on a wall or on the ceiling. Wall-mounted units should be 6-12 inches from the ceiling. Ceiling-mounted detectors should be placed as close to the center of the room as possible, or at least 12 inches from a wall. Avoid placing them near air-supply ducts and windows, and between bedrooms and the cold-air return.
Keep the detectors dusted and clean, using a vacuum cleaner to remove dust and cobwebs. Use lithium batteries that can last up to 10 years.
Use the test button to check them once a month. As a reminder, change your smoke alarm battery the same day you set your clocks for daylight saving time and back to standard time (twice a year).
Never disable a smoke detector!
- Fire extinguishers. Buy 5 lb. fire extinguishers of the refillable type and have them checked annually. Read the instructions and make sure that every family member knows how to use them. Place them at key points throughout the house (kitchen, garage, near fireplace, etc.). Mount fire extinguishers in easy-to-reach places.
ABC type is best because it suits most types of fires. A is for ordinary combustibles such as paper, cloth, wood, rubber, and many plastics. B is for flammable liquids such as oil, gasoline, some paints, laquers, grease, and solvents. C is for electrical equipment such as cords, wiring, fuse boxes, and electrical equipment. The only other type is type D, which is for combustible metals such as magnesium and sodium.
- There should be at least two exits from each room, especially bedrooms. If there is only one door out of a bedroom, an escape ladder should be kept in each such bedroom. Make sure that everyone (especially children and elderly) knows how to install and use it.
- Check and review provisions, fire extinguishers, smoke detectors, etc.
- Instal a HEPA (High Efficiency Particulate Air) filter in your central heating and cooling system
- Buy a portable HEPA filter to take to an internal room where you are seeking shelter-in-place (Appendix) at a time of hazardous fumes when you cannot evacuate.
- Make drawings of escape routes, including escape via ladders and make sure that each family member understands the drawings. Place a copy of of the drawings at eye level in each child's room
- Drive or walk your planned evacuation route and alternate routes. Check map periodically in the event that there are changes in road conditions.

- Conduct earthquake, fire, and other disaster-reponse drills as a family. Practice evacuating your home at least twice a year (under different weather conditions and times of day or night).
- Be sure that your emergency kits (A.2. a-e) are prepared and checked regularly.
- Learn how to and then make tinder for emergency fire starting. Practice starting a fire by the flint-and-steel method and the steel wool and battery method. (See FIRE in the Appendix).
- Follow instruction from authorities.
- Get involved. Take the disaster training offered by CERT - - the program of Community Emergency Response Team in your city, a program sponsored by FEMA and local fire departments. Information about the Grants Pass chapter of CERT: www.JOCOCERT.org . For Jackson County, it is www.ashlandcert.org.
- Have each family member know where and how to turn off gas, electricity, and water. If special tools are needed, have them handy at the sites of the turnoff valves.
- Make sure that all the family know emergency phone numbers and that they should not use the telephone for those numbers or for other calls except during a serious emergency. Post a copy of emergency-contact information on the refrigerator and others in your disaster-supplies kit and your purse or wallet. Make sure to include out-of-state contacts - -it is often easier to call out of state than within the affected area during an emergency.
- Teach children how to make long-distance phone calls and how and when to call 911, police, and fire departments.
- Consider purchasing a propane tank and generator for use in any emergency where the electrical power is cut off. Place it at least 30 feet from the house, if possible.
- Realize that cash registers, ATM machines, and internet transactions may not work.
- Be prepared to deal with the emotional needs of family members.
- Take a first-aid course, including CPR.
- Make an itemized inventory of all your personal property, including furnishings, clothing, cameras, computers, and other valuables.
- Take pictures or videos of your home, inside and out, as well as contents.
- Take a photo of your children and of your pet, each with you in the picture.
- Learn to tie knots.
- Get a compass and learn to use it - - practice. (see Appendix).
- Create a “shelter-in-place” plan.(see Appendix). There are circumstances when staying put and creating a barrier between yourself and potentially contaminated air outside can be a matter of survival. This is one aspect of the process known as sheltering-in-place. This would be done in case of a hazardous spill nearby, nuclear events, or terrorist attacks when you were advised not to evacuate (a rare occurrence). (Appendix).
- Try to keep a full tank of gasoline in your car(s), especially if an evacuation seems likely. Gas stations may be closed or unable to pump gas because of a power outage. Plan to take only one car per family to reduce traffic congestion and delay.
- Prepare survival kits as suggested in section A.2. of this report.
- Learn where to find water in the wild (see Appendix).
- Learn how to purify water (see Appendix)
- Study the basic rules for where to camp and how to build a shelter (see Appendix).
- Learn how to use your signal mirror (heliograph). (see Appendix)

A.1.b.2. HOUSE FIRE AND WILDFIRE

In addition to the above general items of PLANS AND ACTIVITIES above, consider the following for fire:

Homeowners, you must assume responsibility for protecting your property against fire.

Fire needs three fundamental elements to occur: Heat, Fuel, and Oxygen.

If you remove any one of these elements, the fire will go out or fail to start in the first place. Fuels include vegetation, your home structure, and the combustible elements around your home.

If you can remove fuels or make them unavailable to the fire, then your home will not likely ignite.

The key to wildfire safety is to create separation among fuel sources, thus preventing the fire from spreading from one source to another.

- If you have a shake(wood) roof, replace it!
- Move all flammable liquid such as gasoline, painting and cleaning products. Keep them away from the house in a detached garage or outside storage shed. Keep them away from heat sources such as the water heater and furnace.
- Do not leave the room when using the stove burners, especially when warming food. Fats and grease are highly susceptible to ignition if left unattended. In case of a grease or pan fire, smother the flame with the lid to the pan or use a fire extinguisher - -
do not throw water on a grease fire.
- Keep a pan lid nearby the stove in case a fire starts in an overheated pan and keep handles of pans turned in while cooking
- Keep baking soda on hand to extinguish stove-top grease fires
- Do not leave a portable heater unattended in a room around children.
- Keep matches and lighters out of reach of children and do not allow them to use matches or lighters to light candles, especially in their bedrooms.
- Keep combustibles away from cooking surfaces and other hot surfaces, even if the heating elements are not in use.
- Never smoke in bed. Extinguish smoking material in sturdy, non-tip ashtrays - - do not throw them into trash cans or waste baskets.
- Sleep with the bedroom door closed. This gives you extra minutes of protection from toxic fumes and fire.
- Make sure that windows are not nailed or painted shut. Make sure that security gratings on windows have a fire-safety opening feature so they can be easily opened from the inside.
- Teach each family member never to open doors that are hot.
- Keep a whistle in each bedroom to awaken household members in case of fire.
- Be sure that rugs, carpets, etc. are properly secured to prevent tripping.
- Dispose of hot ashes from the fireplace or wood stove in metal containers, not in combustible paper bags, plastic buckets or trash cans. Keep the containers of hot ashes outside, far away from the side of the house and off of wood decks and patios. Ashes and briquettes can stay hot for several days.
- Do not ever use charcoal or unvented appliances inside your home.
The carbon monoxide produced can be fatal.
- For washing machine and dryer, check to see that they are properly grounded.
- For dryer, check vent hose and line to ensure that they are clean and not plugged with lint. An unobstructed airflow is needed.
- Make sure that the lint filter is clean and not plugged.
- Stay with your barbeque grill while cooking. Never leave it unattended as long as it is hot.
- When burning debris, always have water and suppression tools near the burn site.
- Park vehicles away from tall grasses.

- Do not use extension cords in place of permanent wiring. If you cannot avoid using a number of power cords, be sure to use power strips with circuit breakers.
- Inspect extension cords for frayed insulation, exposed wires, or loose plug ends
- Make sure outlets have cover plates and no exposed wiring.
- Do not overlook tripped circuit breakers- - they may indicate a dangerous condition.
- Unplug small appliances such as toasters and curling irons when not in use.
- Have your chimney and heating system checked annually.
- Rags or combustibles soaked with flammable liquids or oil should be discarded in metal containers with lids, not in trash cans and left lying around. They can spontaneously combust.
- Clean out storage areas - - Don't let trash such as old newspapers and magazines accumulate.
- Hold regular fire drills. Teach all family members to crawl low along the floor in a smoke-filled room. Smoke rises and the good air is near the floor. Practice crawling down the stairs feet-first for safety - - do it with your eyes closed as though smoke has concealed everything.. Learn to use escape ladders. Keep track of how quickly you can get out and clear of the house. You may only have 2 minutes to escape!
- Alternative heating sources. It is best to avoid using portable heaters of any kind. However, the safest type is a permanently-sealed oil-filled radiator that has a thermostat switch. Be careful when using alternative heating sources such as portable electric heaters or, especially, kerosene heaters. Check with local fire department on the legality of using kerosene heaters . If used, be sure to fill them outside, and be sure they have cooled before refilling.
Place portable heaters at least 3 feet away from flammable material and be sure that the floor and nearby walls are properly insulated..
- Within 100 feet of the house, remove dead plants and brush, low branches of trees and shrubs; mow grass to 6 inches. These are all called "ladder fuels". Maintain this fire-safe condition.
- Remove leaves and needles from yard, gutter, roof, and deck.
- Keep decks free of flammable lawn furniture, door mats, etc.
- Construct a fire-protection fuelbreak along your driveway, 15 feet on each side.
- Make sure that there is turn-around space for large fire trucks.
- Trim branches along your driveway to at least 14 feet high and 14 feet wide so fire trucks can enter.
- Trim tree limbs to 6 to 10 feet above ground level (or 1/3 the height of small trees), and prune the trees. This, along with other items above, eliminates the "ladder fuels" that otherwise would enable ground fire to travel upwards and produce crown fires.
- Trim so that trees are at least 10 feet apart in the zone up to 100 feet from the house.
- Trim tree limbs that are near or overhanging the roof and keep a 15- clearance (Josephine County) or 10 feet (Jackson County) between stovepipes and branches.
- Change foliage to fire-resistant plants (Appendix). Thin small trees and keep larger ones. Keep hardwoods and drought-resistant pine as a priority.
- Propane tank should be at least 30 feet from house and cleared of debris beneath and in a 10-foot radius around the tank.
- Install a large, clearly visible and legible address at the entrance to your property so that emergency responders can find you. Numbers should be at least 3 inches high and against a contrasting background.
- Keep firewood at least 100 feet away from the house.
- Provide an emergency water supply system such as a small pond, cistern, swimming pool, or hydrant. (See B.2, below).
- Have a garden hose handy that can reach any area of the home and other structures on the

- property, and the roof.
- Consider buying a portable gasoline-powered pump in case electrical power is cut off, if you haven't purchased a propane generator as suggested in the general list above.
- Make plywood covers for windows and attic vents. Store in convenient, readily accessible places. In lieu of boarding up the attic vent, cover inside of it with 1/8" metal mesh to prevent embers from entering.
- Board up beneath exterior steps and other places where embers might lodge, or screen those areas with 1/8" metal mesh.
- Install fire sprinklers if practicable. It should be easy to do so at least in the garage.
- Keep firefighting tools handy (axe, shovel, rake, etc.)
- Equip chimneys and stovepipes with a spark arrester (Contact local fire department for exact specifications).
- Inspect chimneys at least twice a year and have them cleaned at least once a year.
- Keep furnace and fireplace dampers in good working order.
- Consider installing protective shutters and/or heavy fire-resistant drapes.
- Keep a ladder handy that can reach the roof.
- Be aware of Fire Season Regulations and restrictions for use of gas-powered lawnmowers, weed-eaters, and trimmers; open fires; barrel burning; off-road vehicle use, etc.
- Alternatives to open burning include:
 - Use chipper for tree limbs and branches (check the DEQ 35% wood-chipper tax credit), but remember that chips can be a source of fuel for fire if placed on pathways or if not kept moistened when used as landscape or garden mulch.
 - Compost the leaves.
 - Take yard debris to Rogue Transfer and Recycling or equivalent facility in your area.
- Always drown your campfire until it is cold to the touch
- Teach children about fire safety.

A.1 b.3. EARTHQUAKE

Moderate to strong earthquakes occur frequently in California, and to a lesser extent in Washington and Oregon. "THE BIG ONE" refers to a future disastrous earthquake certain to originate from abrupt release of accumulated elastic strain energy along the Cascadia Subduction Zone which lies off the west coast of the Pacific Northwest. Forty or more devastating earthquakes from that source have occurred **every 300 to 350 years or so, and will surely recur**. The last one is precisely dated as January, 1700 - - **over 300 years ago!**

Although some loss of life is caused by collapse of structures, far more usually are killed by fire and by massive landslides.

Principal seismic (earthquake) hazards are:

1. Ground motion - -shaking, differential settling, liquefaction, slides, ground lurching, mud flows, and avalanches.
2. Ground displacement along the ruptured fault (vertical or horizontal displacements), rock-falls, avalanches, mudflows, and open cracks.
3. Flood from failure of dams.(see A.1.b.6 and B.6))
4. Fires (see A.1.b.2 and B.2).

FORESHOCKS: Many damaging earthquakes are preceded by smaller earthquakes in the 5-day period beforehand.

AFTERSHOCKS: In the hours and days after a strong earthquake, there is a high likelihood of additional earthquakes that generally are weaker, but sometimes stronger than the main shock. Buildings weakened by the main shock may be collapsed by the aftershocks.

Where you live affects how intensely the ground will shake. Regions which have been affected by

past earthquakes are more likely to be affected again. Sites of soft materials such as artificial fill or poorly consolidated moist mud, clay, and sand will experience stronger shaking than will areas of bedrock, and result in liquefaction of the soil.

Steep, unstable ground is apt to slide during an earthquake, especially if wet..

Damage caused by earthquakes results from:

- Size (magnitude/energy) of the quake.
- Distance from the epicenter . Intensity diminishes with distance.
- Duration of shaking.
- Type of soil or bedrock. When loosely packed wet sand is shaken during an earthquake, it may flow like a thick liquid in a process called **liquefaction** whereby the soil loses strength and structures atop that soil will tilt and sink into the ground chaotically. Structures on well-indurated bedrock suffer much less damage than those on weak rock or soil.
- Type of building. Unreinforced masonry buildings are especially susceptible to damage as are buildings that are not adequately secured to their foundations. Well-built wooden frame houses tend to fare better.

In addition to the general items of PLANS and of ACTIVITIES (A.1.b.1 above), consider the following:

- Conduct a home hazard hunt, looking for and correcting hazardous conditions.
- Check your home, school, and workplace to locate protected places in the event of a quake. ID the danger zones in each room. Learn where the safe spots are and reinforce the knowledge by physically placing yourselves in those locations. This is a very important step for children and elderly - acting out what they are taught helps them remember what to do in case you are not beside them at the critical time.
- Automatic garage openers will not work if the power is out, so check to see if you have a manual override. Install one if not present.
- Move or secure things that would fall - books, potted plants, and heavy objects that could fall and injure you or block your exit. Other examples include:
 - Place heavy objects as low as possible on low shelves or on the floor.
 - Anchor the water heater and refrigerator to the wall with “plumber’s tape” (perforated metal straps) so they won’t fall over, injure someone, spill, flood, or block an exit. Attach propane tank feet (stand) to the floor and wood-burning stoves to the floor and wall. (See Appendix)
 - Store hazardous chemicals and breakables carefully near or on the floor, preferably in cabinets with secure clasps.
 - Secure wall hangings with special hooks. Best if securely fastened to wall studs with screws, lag bolts, or with molly bolts.
 - Don’t hang anything over the bed or on the wall alongside the bed.
 - Bolt bookcases and china cabinets to wall studs with angle brackets.
 - Secure computers and monitors so they cannot be shaken off the desk.
 - Put latches on cabinet doors, especially in the kitchen, so that cabinet doors can’t be shaken open and contents thrown to the floor. Several types are available including child-proof, push latch, and hook-and-eye latches.
- Have flexible-pipe fittings installed by a professional to avoid gas or water leaks. Flexible fittings are more resistant to breaking by seismic vibrations.
- Have suspected defective wiring, leaky gas lines, and inflexible utility connections repaired by a professional.
- Check the roof. Make sure that all tiles are secured and check chimney - - loose tiles or bricks are likely to fall during an earthquake.

- Make sure that the house and garage wooden sills are bolted to the concrete foundation. You may need an expert to determine this.
- In garage, barn, or other outbuildings, strengthen connections between posts and beams with metal "T-straps".
- Install a surge protector (not just a power strip) to protect your computer from power surges.

A.1.b.4. TSUNAMI

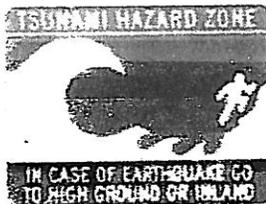
A tsunami (soo-nah'-mee) is produced by some submarine earthquakes. Tsunami is a Japanese word for *harbor wave*. It is caused by vertical offset along a submarine fault (or by landslides into the ocean, or by some volcanic eruptions beneath or into the ocean). The offset of the blocks of the oceanic crust causes an earthquake and may produce one or more waves that travel as much as 600 mph and may be 100 feet or more in height when they reach land.

At first, the ocean may retreat, leaving a wide stretch of beach exposed. That is followed by an onrushing wave whose powerful force can devastate coastal structures. Or the ocean may advance onto the land and then retreat. Ten-ton blocks of rock have been known to have been moved more than one thousand feet by the force of the waves.

Tsunamis are of concern only along the coast and nearby low-lying areas, and up the estuaries and lower reaches of coastal rivers.

Tsunamis caused by an undersea earthquake near the Oregon coast could reach land within 5 to 35 minutes.

- The best preparedness for anyone living in coastal areas or who plans to visit or vacation there is to know the tsunami evacuation routes, marked by signs as shown below.



- Become familiar with tsunami evacuation routes when you first visit a coastal area - - don't wait until the earthquake hits.
- Contact local officials to find out which areas are most vulnerable to tsunami hazard, which ones are safest, and which routes are best for evacuation from where you might be staying or visiting.
- Tsunamis are infrequent, so don't let the remote possibility of one ruin your enjoyment of the beach.
-

A.1.b.5. SEVERE WEATHER

In this area (Rogue Valley), severe weather emergencies have been related mostly to cold weather and thunderstorms. Changing weather patterns may expose us to tornadoes, severe drought, or other storm conditions in the future. However, when traveling elsewhere, you may encounter such conditions; hence they are addressed here.

In addition to the general items of PLANS and ACTIVITIES, above, consider the following:

- Weather-strip windows and doors.
- Install storm windows.
- Install window shades, blinds, draperies, awnings, solar screens, or louvers on windows. These can reduce heat entering or leaving the house by as much as 80%.

Severe winter storms

The following terms help to identify a winter-storm hazard:

Freezing Rain is rain that freezes when it hits the ground. It forms a coating of ice on roads, walkways, trees, and power lines.

Sleet is rain that turns into ice pellets before reaching the ground. It also causes moisture on roads, etc., to freeze and become slippery.

Winter Storm Watch advises that a winter storm is possible.

Winter Storm Warning advises that a winter storm is occurring or soon will occur.

Blizzard Warning advises that winds greater than 35 mph and lots of snow are expected within 3 hours.

Frost/Freeze Warning means that temperatures below freezing are expected.

- Have extra blankets on hand
- Ensure that each family member has a warm coat, mittens/gloves, hat, and water-resistant boots. See "CLOTHING" in the Appendix for details of layering clothing.
- Check battery-powered equipment and make sure that you have plenty of spare batteries.
- If you use propane or oil for heat, make sure that you have good supply of fuel.
- Check your food supply and stock up on basic items.
- Have your car winterized before winter season starts, and always keep fuel tank full and be sure that the antifreeze is correct.

Extreme heat and drought.

Although excessive or prolonged heat can affect anyone, it is more likely to affect children, elderly people, and those with health problems. Consideration should also be given to your pets and animals. People in urban areas are subject to greater heat than rural areas, and problems tend to be greater in the city.

Extreme Heat is defined as temperatures 10 degrees or more above the average high temperature for a region and lasting for several weeks.

Heat Wave is a prolonged period of excessive heat and humidity.

Heat Index is the number of degrees (F) that indicates how hot it really feels when relative humidity is added to the actual air temperature. Exposure to full sunshine can increase the heat index by 15 degrees F. (See Appendix for chart).

Heat Cramps are muscular spasms and pain caused by heavy exertion in hot weather.

Heat Exhaustion occurs when people exercise or work heavily in a hot, humid place where body fluids are lost through heavy sweating. Blood flow to the skin increases, causing blood flow to decrease to vital organs. The result is a form of mild shock. If not treated, they victim may suffer heat stroke.

Heat Stroke is a life-threatening condition in which the body's temperature-control system stops working because of excessive exertion in hot and humid conditions. Then the body temperature can rise so high that brain damage and death may result if the body is not cooled quickly.

Sun Stroke is another form of heat stroke caused by excessive exposure to the sun.

Excessive hot, dry conditions can result in dust storms, low visibility, and breathing problems; it can cause trees and garden crops to wither and die. Food shortages and resulting famine may occur. Water levels drop in wells, and reservoirs dry up. In urban areas, an increased health problem can occur when stagnant atmospheric conditions trap pollutants, thus adding contaminated air to hot temperature.

Most forest fires occur on hot days. Their smoke can be carried great distances and adversely affect people with asthma or other respiratory weaknesses.

A heat wave combined with drought is the most complex of all natural hazards and it affects more people than any other natural disaster.

Before hot weather occurs:

- Insulate around air conditioner and its ducts
- Weatherstrip windows and doors.
- Instal storm windows.
- Instal window shades, blinds, solar screens, or equivalent covering on windows that face the sun.
- Study first aid for symptoms and treatment of sunburn, heat cramps, heat exhaustion, and heat stroke.

Tornadoes

Tornadoes are the most-violent of storms. They evolve from and generally occur at the trailing edge of violent thunderstorms and can destroy neighborhoods in seconds. They are slender funnel-shaped clouds that extend from the thunderstorm to the ground, and whose whirling winds are as much as 300 miles per hour. At times they are clearly visible whereas rain or low-hanging clouds nearby can obscure them. They advance at speeds of 30 to 70 miles per hour

The path of damage and destruction ranges from a few tens of yards to more than a mile wide and 50 miles long.

Some tornadoes form so rapidly that little or no warning is possible. Before the tornado hits, the wind may die down and the air become very still. A cloud of dust and debris marks the location of the tornado even if a funnel is not visible.

Warning signs include:

- Dark, often green-colored sky
- Large hail
- Large, dark, rotating cloud
- Loud roar, resembling a train
- Warnings on radio and TV

Hurricanes

Thunderstorms can be associated with high winds and hurricanes. All Atlantic and Gulf of Mexico coastal areas are subject to hurricanes. Parts of the southwest US and the Pacific coast experience heavy rain and floods each year from hurricanes.

The Atlantic season usually lasts from June to November, peaking from mid-August to late October. Climatic conditions are changing, and the locales and times of occurrence of hurricanes seem to be changing or expanding.

Hurricanes can cause severe damage to coastlines and structures hundreds of miles inland. They are classified into 5 categories on the basis of wind speed, air pressure, and damage potential. Categories 3, 4, and 5 are considered major - - 5 being most severe. Categories 1 and 2 are dangerous and require caution.

Terms for hurricane hazards include: Sustained Winds, Tropical Depression, Tropical Storm, Storm Surge, Storm Tide, Hurricane/Tropical Storm Watch, Hurricane/Tropical Storm Warning, Hurricane.

If a hurricane is approaching: .

- listen to radio and TV for information
- Make sure your emergency kits are ready and you have a good supply of water.
- Secure your home, close shutters, etc., and secure outdoor objects or bring them inside.
- Follow instructions for flood and for fire.
- Evacuate if you live in a mobile home, live in a high-rise building, on the coast, in a floodplain, near a river, an inland waterway, or if instructed by authorities to do so.
- Moor your boat if you have enough time.

Thunderstorms and lightning

The principal cause of death by thunderstorms is drowning due to the associated flash floods (see FLOODS,below). Some thunderstorms morph into tornadoes, and, although they have been less-likely to occur in the northwest than elsewhere in the United States, weather and storm patterns seem to be changing, so be prepared..

Lightning occurs with all thunderstorms and can electrocute, cause electrical failure, split and collapse trees, burn buildings, and ignite grass and forest fires. In mountainous regions, forest fires are a high risk during electrical storm (see WILDFIRES).

Hail associated with thunderstorms can be very destructive.

Whereas some thunderstorms can be seen approaching, others hit without warning. When thunderstorms are forecast or skies darken, look and listen for the following:

- Dark, towering, anvil-shaped, or threatening clouds.
- Increasing wind.
- Flashes of lightening.
- Thunder.

Preparation for such storms is similar to many other emergency, and relies heavily on the emergency kits.

A.1.b.6. FLOOD

Any low-lying area has the potential for flooding, which may occur by torrential rains. In urban areas, flooding would occur if the storm-sewer system is overwhelmed or destroyed .

Past history provides clues to the likelihood of such flooding and to its extent. Areas downstream from dams, and sites near high piles of mine refuse or other unconsolidated material that is only quasi-stable, are potential sites of flooding if the dam should break during an earthquake or water overload, or if excessive moisture from rain or melting snow liquifies the refuse in the pile or landfill (dump).

Flooding is a main consequence of hurricanes. If you should be traveling or visiting in an area when hurricane warnings are given, expect flooding to ensue.

See the section on hurricanes

Steps to take include the following:

- Find out if you are in a flood-prone area.
- Identify any dams or levees in your area.
- Purchase flood insurance if you are in a flood-prone area. Flood damage and loss are not covered under a homeowner's policy

- Make sure you have the emergency kits listed in section A.2).
- If you are in a flood-prone area, take steps to reduce the risk of flooding. Store materials such as sand bags, plywood, plastic sheeting, and lumber to protect your property.
Ask the local building department for information on how to protect the home.
- Make plans on just how and where to use the stored materials.
- Plan how you would evacuate from your home or place of work if there were to be threat of flooding.
- Plan where to go and learn the safest route and alternate routes.
- Review your lists of emergency kits (A.2.) And decide what materials you should take if (a) on foot or if (b) by car.

NOAA (the National Oceanic and Atmospheric Agency) Weather Radios give warnings about the potential for hazards such as floods. The terminology is:

FLOOD WATCH OR FLOOD FORECAST - Rainfall isn't heavy enough to cause rivers to overflow their banks.

FLOOD WARNING - - Flooding is occurring or is likely to soon.

FLASH FLOOD WATCH - - Heavy rains are occurring or are expected and may cause sudden (flash) flooding in specific areas.

FLASH FLOOD WARNING - - Flash flooding is occurring or is imminent at designated areas.

A.1.b.7. LANDSLIDE, MUDFLOW, AND AVALANCHE

These processes and resulting deposits commonly are caused by earthquakes or excessive moisture such as heavy rain or rapid melting of snow. They can be expected in areas of steep slopes, mountainous areas that have been logged by clear-cutting, and places where the slopes and earth material have been steepened by human action such as bulldozing to make logging, mining, and other dirt roads, and homesites.

A landslide is the rapid down-hill movement of rock and soil on unstable steep slopes under the influence of gravity.

A mudflow is a flowing mass of predominantly fine-grained unconsolidated earth material, water, clay, and rock debris possessing a high degree of fluidity during movement. The consistency is similar to that of ready-mix cement. As the water content increases, the mass becomes a muddy stream. As fluidity decreases, it grades into an earthflow. If large fragments are common, the term debris flow is used..

An avalanche is a large mass of snow, ice, soil, rock, or mixtures of those materials, falling, sliding, or flowing very rapidly under the force of gravity. The movement is turbulent. Velocities may sometimes exceed 300 mph.

All of these processes are especially likely at times of excess rain on steep slopes, rapid melting of a heavy snow pack, **earthquakes**, and, development on land which, without the development would be less likely to be unstable. The mounting pressure to develop on land without evaluation of the geologic hazards has led to increased occurrences of earth movement and destruction of homes.

- To determine whether your rural or mountain home site is likely to experience such hazards, it is desirable to have a geologist examine the area. Some information may be available from the State Department of Geology and Mineral Industries (DOGAMI), and from their maps and the staff's personal familiarity of the area in question. Other states have comparable Agencies and services.
- If your site is vulnerable there may be evidence of past hazardous earth movement- - landslides, etc.

- Air photos often are very helpful in showing locations of such earth movement
- Protection is a site-specific issue.
- Watch for evidence of slight movement of the ground which could indicate that conditions are slowly building up to a landslide. Features such as:
 - New cracks in plaster, brick, or foundations
 - Slowly widening cracks in the ground or pavement.
 - Water seepage onto the surface of the ground in new locations
 - Outside walls or stairs begin to pull away from the building
 - Small slides, flows, or progressively leaning trees
 - Fences, power poles, or trees begin to tilt
 - Underground utility lines break
 - Bulging appears at the base of a slope.
 - Unusually high water bill may indicate leakage which could saturate the ground and facilitate catastrophic earth movement

A.1.b.8. PANDEMIC DISEASES

“Epidemic” means a disease is spreading rapidly and extensively among many individuals in an area. It refers mainly to contagious diseases that spread rapidly.

“Pandemic” means widespread, general, universal. In medicine, “pandemic” means epidemic over an especially wide geographic region. A flu pandemic occurs when a new flu virus arrives that we have little or no immunity to, and for which there is no vaccine. The disease spreads from person to person, causes serious illness, and can sweep across the country and the world in a very short time.

There is concern that the avian flu virus (H5N1) spreading across Asia is a significant threat to human health and survival. This virus or “bird flu” raises concerns about a potential human pandemic. It can be transmitted from birds to mammals and in some cases to humans, and it continues to evolve, making it impossible to prepare specific vaccines. Most cases in humans have resulted from contact with infected poultry or surfaces contaminated by bird feces.

Our community can have a significant effect on halting the spread of communicable diseases such as influenza, if we all do what we can to prevent the spread of disease and to be prepared if we should need to stay away from public places for awhile.

- Take care of your health. **A strong immune system is critical for warding off disease.** Follow the eight rules of health, namely:
 - Trust in God.
 - Nutrition - - eat lots of fresh fruit and vegetables.
 - Exercise. Even if you are in wheelchair, there are exercises you can do.
 - Fresh air.
 - Sunshine.
 - Fresh water.
 - Temperance - - moderation in all things.
 - Rest.
- Stay home when you are sick. If possible, stay home from work, school, or errands. You’ll help prevent those around you from catching your illness.
- Clean your hands often with soap and water for at least 20 seconds under running water, or use an alcohol-based hand cleanser.
- Avoid touching your eyes, nose, or mouth. When you unknowingly touch something that is contaminated (a doorknob, for example), you spread the germs when you then touch your eyes, nose, or mouth.

- Cover your cough with a tissue when coughing or sneezing. If no tissue or handkerchief is available, cough or sneeze onto your upper sleeve - - not your hands.
- Avoid close contact with people who are sick, and with people **if you are sick.**
- Make sure you have medical supplies (see First-Aid Kit in section A.2), including multivitamins and rehydration solutions, especially for children.
- West Nile virus is spread by mosquitoes, so protect yourself by :
 - wearing long pants and long sleeves
 - making proper use of insect repellent
 - taking extra precautions at dusk and dawn.
- If you are a victim of the disease, you probably will be quarantined and would need to shelter-in-place (see Appendix)

A.1.b.9. HAZARDOUS CHEMICAL SPILL

By law, hazardous material is “any product that corrodes other materials, explodes or is easily ignited, reacts strongly with water, is unstable when exposed to heat or shock, or is otherwise toxic to humans, animals, or the environment.” They can be chemical or biological agents of solid, liquid, or gaseous form, or radioactive substances. They include such things as explosives, flammable gases and liquids, poisons or poisonous gases, corrosives, caustics, nonflammable gases, oxidizers, water-reactive materials, and radioactive material.

Hazardous materials of a wide variety are used in industry; they are transported, stored, or used in Josephine and most other counties, especially those along the interstate. Most materials are transported by truck but some is by rail and by pipeline.

If hazardous materials are released accidentally or intentionally (Terrorist Activity), information will be provided by authorities on radio and TV stations about how to protect yourself and family. Chemical or biologic substances, if released, can pose a threat to the environment or health. These substances are used in industry, agriculture, medicine, research, consumer goods, nuclear- power reactors, and the military. They can cause death or serious injury, long-lasting health effects, and damage to buildings, homes, and other property.

Although there is no way of predicting accidents, certain areas are at greater risk than others. Such sites include locations near interstate highways, power plants, and places that manufacture, store, or dispose of chemical wastes.

During a hazardous-materials emergency, you probably would be ordered to evacuate if you were in the region of likely exposure. In the rare event that you could not evacuate, then you would need to shelter-in-place, that is, to stay in your house, office building, or school as your shelter.(see Appendix). Shelter in the place where you are at the time of the order. This is not the same as going to an evacuation shelter, so your emergency kits would be needed.

Many hazardous chemicals are routinely used and stored in homes. Around the house, you should store substances in their **original marked and labeled containers.** Material such as gasoline for power mowers should be stored in approved containers and in places where they pose no threat of spillage or excess heat.

Before an incident:

- Learn to detect the presence of a hazardous substance. Many do not have an odor but some can be detected by reactions such as burning or watering eyes or nausea., or by an oily or foam appearance where spilled.
- Review and practice the evacuation plans you prepared (A.1.a).
- Find out what warning signals will be given.
- Have your emergency kits fully stocked.

- Hazardous chemicals typically found in a home include:
 - Cleaning products such as **bleach, which is corrosive and reacts with ammonia, any acid, or vinegar to form a flammable vapor.**
 - Oven cleaner, which is a skin irritant, caustic, and an inhalation hazard.
 - Laundry detergent, which is harmful if swallowed, and an irritant to skin.
 - Aerosol cans, which may explode if heated, and whose contents may be flammable, irritant, corrosive, toxic, or poisonous.
 - Hair spray, which probably contains alcohol and is flammable. The propellant of aerosol types is flammable.
 - Perfume and some deodorants are flammable.
 - Nail polish and removers, which are flammable
 - Paint, varnish, and paint thinner are flammable.
 - Gasoline is flammable and an irritant to skin and (the vapors) to eyes.
 - Diesel fuel is combustible and a suspected carcinogen
 - Most pesticides and herbicides are poisons - -some are known carcinogens.
 - Most chemical fertilizer is a poison, caustic, and an oxidizer. They are explosive when mixed with hydrocarbons such as diesel.
 - Lighter fluid.
 - Propane tanks. Exposure to heat may cause venting or ignition of vapors.
 - Oily rags will spontaneously combust when stored in other than airtight containers.
- Limit the amount of hazardous materials to the minimum
- Store hazardous materials in a separate locked cabinet if possible.
- Get rid of hazardous materials as soon as they are no longer needed
- Do not store potential reactants together, such as oxidizers with flammables, or bleach with ammonia.

A.1.b.10. EXPLOSIONS

Explosions often are caused by earthquakes and fires. Some are caused by lightning, hurricanes, severe storms, spontaneous combustion, truck and train wrecks, and sabotage.

- Be aware of the location of storage tanks of gasoline and propane.
- Make sure your emergency kits are complete
- If your building explodes, follow guidelines for earthquakes (A.1.b.3) and for house fire (A.1.b.2)

A.1.b.11. NUCLEAR ACCIDENT

Radioactive material is used as fuel at nuclear power plants. The spent nuclear fuel is stored onsite until it can be moved to a repository or to a plant that reprocesses it. Each power plant has on-site and off-site emergency-response plans.

Although closely monitored and regulated, construction and operation of a nuclear power plant and of incoming shipment of radioactive fuel rods and outgoing shipment of spent (but still highly radioactive) fuel, an accident is possible, though unlikely.

The greatest danger from an accident at a nuclear power plant is exposure to radiation. If handled improperly or accidentally released into the environment, radioactive material can be dangerous because of the harmful effects of radiation on the body. The longer the exposure, the greater the risk, and although radiation cannot be detected by sight or smell, it is easily detected by scientific instruments.

Although the casks used for shipping have passed exhaustive and rigorous tests, many people view as the most-likely hazard that of the transportation of nuclear material across the country to and from the power plants. Their concern centers on the possibility of an accident en route, near some community.

There are strict federal and state regulations, inspections, and emergency plans for nuclear power plants.

- Find out where nuclear plants are located (Appendix)
- If you live near such a facility you should:
- Become familiar with the evacuation plans and other procedures that would come into play in the event of an accident.
 - Learn your community's warning systems.
 - Learn emergency plans for any place you might happen to be, such as at home, work, school, nursing home, shopping center, or store.
 - Rehearse your emergency shelter-in-place plan.
 - Check to see that all emergency kits are ready.

A.1.b.12. NUCLEAR ATTACK

- Follow general guidelines given for nuclear power plant accident, above.
- Find out if there are any fallout shelters in your community
- During periods of increased threat, increase your disaster supplies to be sufficient for at least two weeks.
- Be sure to put **potassium iodide** in your first-aid kit.

A.1.b.13. TERRORIST ACTIVITY

Acts of terrorism include threats, assassination, kidnapping, hijacking, bomb scares and bombing, cyber attack, nuclear weapons, radiological dispersion devices, incendiary devices, chemical weapons or explosive devices, and the use of biological agents. Therefore, some of the guidelines in other sections apply, e.g. explosions, fire, pandemic diseases, and hazardous chemicals.

Although terrorist attacks may occur anywhere, the high-risk areas include military and civilian government facilities, international airports, large cities, high-profile landmarks, large theaters, packed athletic stadiums, large concerts, other large public gatherings, water and food supplies, and major corporate centers.

Some of the suggestions here apply to robbery and vandalism as well as those activities listed above. For some specific terrorist actions, see details in sections on explosions, fire, nuclear events, and hazardous chemicals.

Chemical-weapons attacks include chemical gas clouds and poisoned water supplies, crops, or other food sources such as processed food and milk. The chemical agents include cyanide, mustard gas, sarin gas, VX and theon gas.

Biological agents include anthrax, tularemia, botulism, bubonic plague, septic plague ("black death"), pneumonic plague, and numerous kinds of viruses.

You may be alerted to the potential exposure to biologic agents, as in the case of the anthrax sent in letters in 2001. If so, pay special attention to the guidelines below.

- Pay attention to official instruction given by radio and television.
- Know your routines, what mail you expect, what your neighbors look like and what cars they drive.
- Know when deliveries are made and who makes them. When the routine is changed, ask if that is something to report to the police.
- Be aware of your surroundings. Move or leave if something doesn't "feel right".

- Be careful when traveling - - don't accept packages from strangers, don't leave your luggage unattended, and report any unattended luggage.
- Know where emergency exits are located in the buildings you are in frequently, and plan how to escape from them in the event of an emergency.
- Be aware of heavy or breakable objects in your immediate area that could fall or break during an explosion.
- Make sure that your street and home are well-lighted.
- Be sure that every external door has a sturdy dead-bolt lock. Key-in-the-knob locks alone are not sufficient. Keep your yard clear – prune shrubs so that they do not hide doors or windows.
- Cut tree limbs that could be used to climb to gain entry to an upper-level window.
- When away from home on a trip, use timers to turn lights on and off at different parts of the house, to give the impression that you are home. **Lights burning 24 hours a day signal an empty house.**
- Give an extra key to a neighbor rather than hiding it somewhere around the outside of the house.
- Teach family and friends to be aware when opening mail. Signs of suspicious mail are listed in B.13, below.
- Do not put sensitive information on a computer that is always connected directly to the internet through cable or DSL line.
- Put a firewall between your office machines and the internet.
- Assume that every floppy or program you get from the outside has viruses, unless you are absolutely positive otherwise.
- Regularly use virus scan programs to catch a virus before it gets into your computer system.
- Separate business from pleasure - - if you want to run downloaded software, do it on your home computer. **Insist that your staff does the same.**
- Never download or run a program from the Web or one received as an e-mail attachment unless it comes from a reputable known source.

A.2. MAKE SURVIVAL KITS

You should have several kinds and sizes of survival kits - - one for a quick “grab-and-go”, one for the car, one for the office, and one for long-term isolation (2 weeks or more). In you need to evacuate at a moment's notice and take essential items with you, you probably will not have a chance to search for supplies you need. The “Grab-and-Go Kit” (A.2.a) serves that need.

Take stock of supplies you already have on hand that would be helpful in a disaster. Involve the whole family in collecting and assembling supplies of food, water, medicine, and emergency tools listed in the kits a-e, below. Because of the likelihood of being isolated for days or weeks, you will also need the larger kits (A.2.b, c, d, e).

In each section I emphasize that you should **tailor the kit to your family**. For each kit, take into account your family's specific/unique medical, physical, dietary, and morale needs.

Review the contents of your kits at least every 6 months. Family needs may change for medical or other reasons and result in a need for supplies not previously relevant, or for deletion of some supplies or food types no longer appropriate.

See section A.4., below, for important suggestions on storing the kits.

A.2. a. GRAB- AND- GO KIT

This is a small duffel bag, day backpack, or similar carrier that contains the minimum items that you would need for overnight or up to 72 hours, when you don't have time or capacity to carry the larger kits such as listed separately(b, c, d, e) . This is for when you must flee quickly on short notice. When you have time to gather more items, add the GRAB-AND-GO KIT to those materials in kits 2.b-e.

Consider having **similar kits in each car and at your work place.**

You should tailor your kit to your specific needs.

Suggested items include:

Addresses of insurance companies. Policy numbers

Binoculars.

Blanket. Small plastic emergency mylar packet

Coat, jacket or sweater

Clothing. Change the kind of clothing in the kit from time to time so that it is appropriate for the season/weather. Put in plastic bag and into the fanny pack

Fanny pack

Fire-starter kit (see Appendix)

First-aid kit (small) of a few bandaids, adhesive tape, antibiotic ointment, and antibacterial hand soap, imodium.

See items marked with * in list for first-aid kit, below.

Flashlight

Food. High-protein bars

Hand sanitizer

Keys for house and extra set of car keys.

Kleenex

"Light stix"

List of key phone numbers

Medicine - - prescription and other. List of medications you take, as well as a few day's supply.

Money (extra cash and coins for emergency purchases, newspapers, and pay phones).

Plastic garbage bags

Radio

Rain coat

Toilet articles - - essential ones only

Water -- several bottles

Vitamins, "Juice Plus", etc

Whistle

A.2.b. CAR KIT

Duplicate the items in the GRAB-AND-GO KIT, above (a.2.A), and add the following items to a kit that is kept in your car. If you have more than one vehicle, make duplicate kits for each vehicle.

5 lb. refillable ABC fire extinguisher.

Set of jumper cables.

Several quarts of motor oil.

Maps.

Sunglasses

Short rubber hose for siphoning

Emergency flares and distress flag/sign

Tool Kit

Space blanket
Water
Gloves
Flashlight
First-aid kit
Food
"Come-along" hand winch
Duct tape

A.2.c. FIRST-AID KIT

You can buy first-aid kits but it may be more-practical to assemble your own, **tailored to your needs**. If you purchase a kit, add items as needed. I recommend the first-aid book by Dr. Weiss, "Wilderness 911" (full reference in section D at the close of this report).

The following list is for a major first-aid box that would be kept in a safe place in or near the house. Keep a smaller selection of these(*) in your car and in your Grab-and-Go kit (a, above).

Recommended items include:

- Alcohol - - rubbing alcohol
- Ankle wraps
- Antacid
- * Aspirin, acetaminophen, or similar pain reliever
- * Antibiotic ointment such as bacitracin cream or neosporin
- Anti-diarrheal medicine such as immodium. (see Appendix).
- * Antiseptic, antiseptic spray or cream, or hydrogen peroxide
- * Artificial tears for rinsing eyes
- Bandages:
 - * Assortment of adhesive bandages and bandaids
 - * 2x 2 inch gauze pads (10)
 - * 3x 3 inch gauze pads (10)
 - * Roller gauze bandages - - 2- and 3-inch roller bandages. (3 rolls of each)
 - Elastic bandages ("ace")
 - Non-stick sterile pads (several sizes)
 - * Hypo-allergenic adhesive tape
 - Seri strips (surgical tape)
 - Triangle, for slings (4)
 - Board for use as improvised litter (see Appendix)
- Bandanas
- Batteries, for hearing aids
- Benadryl tablets
- * Blanket. "Space blanket"
- Blanket, wool
- Bleach (10%)
- Blood-pressure device (sphygmomanometer); cuff or wrist type
- Burn ointment
- Chalk.. Mix with charcoal and/or clay for antidiarrheal treatment
- * Charcoal, powdered, activated, and capsules
- * Chemical packs, heat packs and cold packs (Appendix)
- Clay
- Cloth - - washcloth for use with soap
- * Cold pack (see chemical packs in the Appendix)

- Contact-lens solution
- * Cortisone ointment or cream, such as hydrocortisone or cortaid
- Cotton, balls and sheets
- * Cotton-tipped swabs, such as “Q-tips”
- Cough drops
- CPR barrier such as a face shield
- Dental kit:(see below)
- * Disinfectant for cleaning wounds
- Ear plugs
- Emery boards
- Emetic (to induce vomiting). (see appendix)
- Enema supplies, such as “Fleet” brand
- Eye cup
- * Eye dressing or pad
- * Eye dropper
- * Eye wash
- First-aid manual
- * Flashlight dedicated to the kit.
- * Germicidal hand wipes or waterless alcohol-based hand sanitizers.
- Glasses. Extra pair of eye glasses or contact lenses
- Gloves - - Disposable plastic, latex-free nitrile
- * Gauze ,sterile pads 4x4 and 4x8
- Headlamp
- Hearing-aid batteries
- Heat packs such as *Hotties* which can give up to 18 hours of heat by shaking the inner pouch.
- Hydrogen peroxide.
- Iron supplement tablets
- Laxative
- * Lotion for hands, chapped skin, lips, sunscreen
- Lysine (for repair of tissues)
- * Medicine - - prescription medicine (ask Dr. for “Vacation over-ride” for extra amount to keep in kit. Replace with fresh pills periodically as you do with food).
- MMS solution and citric acid powder
- Moleskin for blisters on feet
- Needles and thread (see” tools”, below)
- * Over-the-counter medicine. Check expiration dates and replace as needed
- * Pain reliever acetaminophen such as Tylenol
- Pain reliever gel such as Biofreeze. 6 packets
- Pen and notepaper
- Petroleum jelly or other lubricant
- * Phone numbers - - emergency medical numbers
- Pins. safety pins (see “tools”, below)
- * Prescription medicine (see “medicine”, above)
- Poison oak/ivy block and soap
- Q-tips. See “cotton-tipped swabs”, above.
- Razor blades, single edge
- Snake-bite kit. (Appendix)
- * Soap, bar
- Sun screen lotion (see Lotion, above)
- Soft-stool capsules

- Thermometer, medical (oral and rectal)
- “Tiger balm” or similar cream, oil, etc for sore muscles. Appropriate herbal medicine
- Tongue depressors and wooden applicator sticks
- Tools: Basic first-aid tools such as:
 - * fingernail clippers
 - magnet (for removing steel splinters)
 - magnifying glass
 - medical (EMT) scissors (can cut seat belts and other tough material)
 - mirror (small)
 - * nail file
 - * nail clippers
 - needles and thread
 - razor blades - - single-edge(“safety”)
 - * safety pins, assorted sizes
 - * scissors
 - * tweezers,
- Toothache drops (benzocaine)
- * Towellettes, disinfectant
- * Vitamins

DENTAL KIT

Some of these items are listed for the general first-aid supply. A duplication is advisable so that dental needs are all together. These materials can be purchased at drug stores, grocery, and herb shops.

- Benzocaine
- Dental mirror
- Tongue blades to help hold back cheek, lips, and tongue for visibility
- Spatula for mixing the filling material
- Cotton rolls
- Q tips, long
- Emery board to file sharp or jagged edge of broken teeth
- Eye dropper
- Explorer (pick)
- * Floss such as GUM brand called *soft pick*
- Gauze sponges, 2x2
- Glass mixing pad (buy at a glass store. A sheet of glass can be cut into several 4x4 pads to be used in several colleague’s kits)
- Hot-water bottle
- Hydrogen peroxide 3%
- Ice bag
- Lysine to help tissue heal
- Rubbing alcohol
- Super glue to repair denture temporarily
- Toothache medication for temporary relief of pain
- Tylenol, Extra-strength for pain relief
- Antibiotic (need prescription)
- Oil of cloves for toothache pain (1 to 2 drops 3 times daily)
- Zinc oxide to mix with oil of cloves for temporary cement filling
- Echinacea capsules for antibiotic properties (infection/abcess)
- Goldenseal capsules “ ” “ ”
- Garlic (fresh is best) poultice for abcess

- Charcoal-activated, powder, poultice for abscess
- Sage leaves to be chewed for infections of mouth (add dry leaves on sore gums)
- * Tea Tree oil for antiseptic/antibacterial. Apply to affected area
- Stevia to inhibit bacteria that cause tooth decay.
 - Use also as sweetener (30 times sweeter than sugar)
- Tree resin (pine pitch) for tooth and gum infections. Apply with Q tip

A.2.d. FOOD AND WATER -- SUPPLY KIT

GENERAL COMMENTS

Everyone should have basic supplies on hand to survive for at least 3 days if an emergency occurs. Keep in mind that you may well be in need of emergency supplies for much longer time, so plan accordingly.

- First, use perishable food from the refrigerator, pantry, and garden
- Next, use the food from the freezer. To limit the number of times you open the freezer door, post a list of contents on the door. In a well-filled, well-insulated freezer, food will usually still have ice crystals in their centers (that is, safe to eat) for at least 2 days after the power is off. Check to make sure that the freezer door is still in good condition and shuts tight.
- Finally, begin to use non-perishable food and staples.
- Check and replenish water, perishable food, and medicine periodically (at least every 6 months). Use foods before they go bad, and replace them with fresh supplies. Place new items behind or below older ones (as the grocer does).
- Make a schedule for “rolling over” the supplies - -take the older food out and use it in your normal daily cooking, and replace it with fresh items.
 - USE WITHIN SIX MONTHS: powdered milk (boxed), dried fruit, dry crisp crackers, potatoes, trail mix, compressed food bars, water (if you filled your own containers, otherwise go by expiration date on the container).
 - USE WITHIN ONE YEAR: canned fruit and fruit juices, soups, and vegetables, ready-to-eat cereal and uncooked instant cereals, peanut butter and jelly, hard candy and canned nuts.
 - MAY BE STORED INDEFINITELY (in proper containers and conditions): wheat and dried corn, vegetable oils, baking powder, salt, instant coffee substitute (e.g. Roma), herb tea, non-carbonated soft drinks, rice, soybeans, and dry pasta.
- Keep the food kit in a cool, dry, dark place.
- Open boxes carefully so you can close them tightly after use.
- Wrap cookies and crackers in plastic bags and keep air-tight.
- Put sugar, dried fruits, and nuts into air-tight containers to protect them from insects.
- Inspect all stored food for signs of spoilage before use. Discard canned goods that have become swollen, dented, or corroded. Also, discard any opened food that has been at room temperature for 2 hours or more. **“IF IN DOUBT, THROW IT OUT”.**
- If activity is reduced, healthy people can survive on half their normal food intake, and even without food for many days - - **but not without water**. For most people, *except children and pregnant women*, food may be rationed safely.
- If possible, eat at least one well-balanced meal each day.
- Drink enough liquid to enable your body to function properly, that is, 2 quarts (½ gallon) a day (just for drinking). In hot weather, children, nursing mothers, and ill people will require even more -- perhaps twice the amount.
- Medical emergencies may require more than the 2 quarts/person/day.

- Take in enough calories to enable you to do any necessary work. Basal metabolism, just to keep the body functioning without doing anything, requires calories equal to your age times 10.
- Include vitamin, mineral, and protein supplements in your stockpile to ensure adequate nutrition.
- Pay attention to persons with special diets or allergies, and special needs for babies and the elderly.
- Canned dietetic foods, juices, and soups may be helpful for ill or elderly people.
- Familiar foods are important - - they boost morale and give a feeling of security in times of stress. Include foods that they will enjoy and that are also high in calories and nutrition.
- Best choices are foods that do not require water, cooking, special preparation, or refrigeration.

WATER

Never ration water (from a public source) unless ordered to do so by authorities.

Drink the amount you need today and try to find sources for more water for tomorrow. You can minimize the amount you need by reducing activity and staying cool, if practicable.

Under no circumstance should anyone drink less than 1 quart of water per day.

If your water supply is limited, avoid foods high in fat and protein, and don't eat salty food. Eat salt-free crackers and canned food with high liquid content. However, if weather is hot and you perspire much, you will need some salt. I recommend sea salt – it has not been processed, contains 80 or more essential chemicals, and much less is needed to accomplish the task.

Water should be stored in food-grade quality containers such as 2-liter soda bottles with tight-fitting screw-cap lids. Store water in thoroughly washed plastic, glass, fiberglass, or enamel-lined metal containers. Never use a container that once held toxic substances.

Seal tightly, label with date and contents, and store in a cool, dark place.

For emergency, you can treat water by adding 16 drops of regular household bleach to each gallon of water. Do not use bleach that is scented, “color-safe”, or with added cleaning ingredients. For water treatment supplies and equipment, see Appendix.

Quantity of water to be stored:

Concern about terrorist sabotage of water supplies has resulted in the admonition recently (early 2008) that each person should have a 30-day supply of fresh water - - each person. That is, **30 gallons per person!** Previously, checklists advised that you should have one gallon per person per day for three days for drinking, cooking and sanitary needs. That is, 3 gallons per person.

I would be cautious and go for the 30-day supply if possible. If not practicable to store 30 gallons per person, store as much as you can and rely on sources listed in the Appendix (solar still, etc.).

Those whose water supply is from a private well probably will be safe in using that water. However, if power goes out and you do not have a backup generator, you may wish you had stored some water in large jugs.

Caution: When you are camping, keep the area where food is stored, cooked, and eaten away from the tent or site where you sleep. Do not eat in the sleeping area or take food into that area (tent, tarp shelter, etc). Bears or other animals may go after the food, and if you are in their way they will resent it !. Keep food in containers that will help prevent animals from detecting its scent - - I have found that bears can devastate a food site. If practicable, hoist the food container to the middle of a rope tied up high between 2 trees, out of reach of bears. Although bears can climb trees, they are not apt to get food stashed in this manner. See A.4. , STORING OF SUPPLIES.

FOOD

Breakable, soft, or fragile food can be carried in clean 1-or 2-quart (#10 can) or gallon cans which can, in turn, serve as pots for cooking (see “mess kit” in A.2.d, below).

Food: General - - ready-to-eat, non-perishable, high-protein, high-calorie foods that you enjoy. Commercially canned food may be eaten out of the can without heating, but if you do heat it, open the can first.

- Baby food cans or bottles, and formula
- Beans
- Broth packets ,vegan (makes a good hot drink)
- Candy. Glucose sweets such as hard candy
- Canned ready-to-eat food, and manual can opener
- Cereal (dry) , granola
- Coffee substitute such as Roma
- Crackers
- Fruit, canned
- Fruit, dried
- Granola bars or other energy bars
- Juices, canned or bottled (glass)
- “Juice Plus” capsules and “Complete” for making nutritious drinks.
- Milk such as powdered soy milk
- Pasta
- Peanut or almond butter
- Pet food
- Sea salt
- Soup. “Cup-of-soup” packets are easy to prepare
- Sugar or substitute such as *stevia*
- Tea, herbal
- Trail mix
- Vegetables, canned
- Vitamins
- Water, bottled (Appendix) Keep a 30-day supply per person, if possible.
(i.e., at least 15 gallons).
- Special food for persons on special medical diets.

A.2.e. BASIC TOOLS AND SUPPLIES

There may be some duplication with other lists, in part because the same things need to be in more than one kit, and in here. Others are duplicated for alphabetic searching, such as backpack and pack, jacket and coat . (Other than such useful duplications, please excuse any unnecessary ones).

As with the other lists, **modify this list** for family members with special needs, such as infants, elderly, disabled, those in a wheelchair, those needing oxygen, etc. Include consideration for pet’s needs.

Schedule periodic checkups of all supplies, especially those that may deteriorate with time (e.g. batteries)

Make sure that each person knows how to use each piece of equipment

- Axe and splitting maul. Extra handles.
- Backpack, large Kelty type and smaller daypack. (Appendix)
- Bags, small plastic garbage bags and ties
- Batteries
- Binoculars
- Blankets or sleeping bags and pillows for each family member.

Books. Including Bible and books for children

Boot grease. "Snow-seal" or "Hubbards", for example. Include a brush for application.

Boots . Sturdy, leather with composition soles.(see item for sox).

Broom (short handle)

Bucket, plastic, with lid and biodegradable plastic bags for a temporary toilet
(see "b. sanitation and hygiene supplies", above)

Bungee cords , several

Camera.. To document damage. Disposable type is fine.

Candles. Liquid paraffin type burns for 100 hours or more- - they are odorless and smokeless.
Other types include cans of "Hurricane candles"

Can opener (manual, non-electric).

Can opener - - GI type P61

Clock or watch. (wind-up type with alarm)

Cloth: washcloths or towelling (for bathing, see "Towels", below)

Clothing (extras). Complete change of clothes; warm set for each family member. Long-sleeved shirt, long pants, rain gear, thermal underwear and clothing for "layering". When packing clothing, it is preferable to include layers rather than one warm coat or jacket. Better to use poly-, silk, or other non-cotton fabric since cotton loses all insulating qualities when wet .Wet cotton shirt and jeans wick heat away from the body, so they are good for summer but not winter or cold nights. (Appendix)

Cook stove with bottles of propane or other fuel.

Comfort items for children such as toys, books, and games; and for adults, books

Compass. Learn how to use it

Copies of important papers (see List, below)

Day pack (see Packs in the Appendix)

Detergent, concentrated, for washing clothes. Dishwashing liquid.

Diapers

Documents: (see section A.3, below), Keep in waterproof packet.

Duct tape and plastic sheeting or large garbage bags for sheltering-in-place
(see 1. "Make Plans" and Appendix)

Filter. (See "water filter", below, and Appendix)

Fire extinguisher (refillable). ABC type Teach each person how to use it.
(See section A.1, above).

Fire starter kit (see Appendix)

First-aid supplies. Preferable to have as separate kit (see above)

Fishing line and hooks

Flashlights and spare batteries. Check periodically. Hand-crank type desirable. Extra bulbs are not needed if you use the LED flashlight,

Foil, aluminum

Food (see separate kit A.2.d).

Food and water for pets

Fuel for cooking stove

Games

Gasoline drum

Gloves . heavy work gloves and non-allergenic plastic or rubber gloves

Goggles. Some are affixed to mask

Ground cloth, waterproof

Hand sanitizer

Hats, warm for winter, wide brim for sunny days. Stocking cap.

Helmet ("hard hat")

Hiking stick (staff) Better balance with 2 per person if carrying heavy load and/or traveling over rough or gravelly terrain

Hose: several feet of tubing for use with a solar still

Hygiene products (see section at close of section A.2.e, below).

Insect repellent [without DEET is preferred] (Appendix)

Jackets or heavy winter coat

Knee pads

Knife. Folding wilderness type, and “hunting knife”.

Knife. All-purpose type (a mini toolbox) such as the Swiss army knife.

Light, battery and hand-crank type

Lime, chlorinated, for decomposing sewage in latrine and to discourage insects and animals

List (medicines and dosages, addresses, phone numbers, meeting places, copies of insurance papers,,the PLAN). Keep in waterproof packet. See section e, below.

Lotion: for hands, sunscreen, etc

Map of local area in case evacuation is necessary. Have it laminated for waterproofing or at least have it in a waterproof case..

Mask. Dust mask to help filter contaminated air

Matches in water tight container. Water-proof matches in case standard ones are ruined

Mattress pad, rolled foam pad

Medicine dropper

Mess kit or pots and pans. Cast-iron cooking utensils are great for wood-burning stove but too heavy and bulky to carry. See note in A.2.d, above regarding the use of tin cans to carry food and then use for cooking. Wire bails can be attached to cans. Remove paper labels. When finished, the cans can be cleaned or disposed of (buried) if no longer needed.

Mirror for personal use and for signalling.

Money (extra cash and coins for emergency purchases, newspapers, and pay phones).

Traveller’s checks

Mosquito netting

Mosquito repellent (see Insect repellent, above)

Oil lamps and jars of lamp oil

Oil for chain saw if you have a chain saw.

Pack (see Backpack, above)

Paper plates, cups, and plastic utensils

Paper towels

Pencils, pens, paper

Pet supplies such as leash, portable carrier, medications (make sure your pet has a securely fastened collar and ID tag).

Plastic, biodegradable plastic bags for use with toilet bucket
(see “ Sanitation and Personal Hygiene Supplies”, above) (Appendix)

Plastic lidded containers

Plastic sheeting . See Appendix

Plastic wrap for covering food

Pressure cooker.

Propane or other fuel for camp stoves.

Q-tips

Radio (hand-crank type) Get one that has flashlight, cell-phone charger, and NOAA Weather station

Raincoat

Rope, 100 feet of nylon cord; several shock cords (“bungee cords”).

Rope, cotton clothesline road for lashing an outdoor shelter.

Saw. Crosscut, bow saw, chain saw, or wire saw such as the “Commando saw”.

Scarf (“muffler”)

Scissors

Shampoo, concentrated.

Shoe laces. One extra pair for shoes and one extra pair for boots.

Shoes (sturdy)

Signal flare (automobile highway flares are good)

Signal Mirror (learn how to use it)

“Silverware” plastic or metal knife, fork, spoon

Sleeping bag and mat (some are self-inflatable)

Sling shot

Solar still material (Appendix)

SOS pads for scrubbing pots

Sox, for boots, need light-weight inner pair and heavier wool outer pair. Cotton sox hold body heat in (good for cold weather) whereas silk etc wick body temperature away from the body (good for hot weather). (see Clothing, above)

“Space blanket”

Stove, small hiker’s stove that uses butane or propane bottles.

Storage containers. To reduce the load, put food in plastic containers instead of glass. These won’t break as glass will. Screw-on tops are best because the press-on/pull-off type commonly make a spilled mess when you try to take off the lid. Plastic tubs can be stacked in a space-saving manner.

Stove . plate-steel wood stove with a cooking surface, fire-brick lined. You should install this stove outside so that it is accessible if your house is destroyed by fire or earthquake.

Stove. Small backpack stove and fuel bottle (propane or butane). Pressure-type fuel stoves (gasoline, etc.) can flare up, so don’t lean over them or use them in a tent.

Sunglasses

Tape: duct tape, electrical tape, packing tape

Tarp. Plastic tarp with grommets for tying corners down to make a tent shelter. Size depends upon size of family. See appendix on how to make shelters.

Tent. Can use the tarp material.

Toilet. 6-gallon bucket, toilet seat, biodegradable plastic waste bags and ties, and enzyme packets

Toilet paper, moist towellettes

Tools: axe, tool kit (screw drivers, pliers, wrench, nails, screws, etc.), bow saw or “commando” wire saw for logs, pry bar, short-handled pick, folding shovel. See separate items in this list.

Towels and washcloths for bathing

Toys

Trash bags

Tubing (see “hose”, above)

Tube tent unless using tarp for shelter

Washboard, small

Water. At least one gallon per person per day. At least a two-weeks supply (14 gallons per person) See DEHYDRATION in the Appendix

Water filter. See Appendix for different styles

Whistle, to signal for help

Wire (coil)

SANITATION AND PERSONAL- HYGIENE SUPPLIES

This duplicates some items of other lists, but serve as a summary of hygiene supplies.

Brush

Bucket, medium-sized plastic bucket with tight lid. Biodegradable plastic bags.(Appendix)

Comb

Contact lens solution for cleaning

Dental floss and picks such as *SOFT PICK* (GUM brand) slender plastic tooth picks.

Deodorant

Feminine supplies

Hand sanitizer. (See “soap”, below)

Lip balm (see Lotions above and in Appendix)

Mirror

Nail clippers and emery board

Razor and shaving cream or soap

Shampoo. Baby shampoo is good because it doesn't hurt if it gets in the eyes.

Soap, bar and liquid. Alcohol-based hand wash

Toilet (see above)

Toilet paper

Toothbrush and toothpaste

Towels

Towelettes - -moistened

Wash cloths

A.3. DOCUMENTS AND KEYS

Make sure that you keep these items in a watertight container:

Cash and coins

Credit cards

Emergency contact list - -addresses and phone numbers (Appendix)

Identification, personal ID including names, ages, sex of each family member (Appendix)

Phone numbers

Keys: extra set of house and car keys and safe-deposit-box key

Map of the area , marking rendezvous sites and phone numbers of places you might go

Photos of each member of the family and each pet, in case any get lost

Photo of pets should include you in the picture, and give description of pet, and your phone number

Pets: for pets, a list of “pet-friendly”places and boarding facilities or veterinarians who could shelter a pet in case of an emergency. Include 24-hour contact numbers

Copies of the following are safest if mailed to a relative, to prevent identity theft:

Bank and credit-card account numbers and addresses

Birth certificate

Contracts

Credit cards (see Bank, above)

Deeds

Driver's license

Health records of pets, including vaccination records

Immunization records

Insurance policies

Inventory of household goods

Marriage certificate

Medical records including blood type . Vaccination records and other medical history

(also, see Prescription..., below)
Medical devices such as pacemakers - - list of the style and serial numbers
Non-prescription medicine name and dosage
Passports
Prescription numbers; medicine names ,dosages, times per day, allergic reactions, and any other instructions
Social security cards
Stocks and bonds
Titles for car and house
Wills

A.4. STORING OF SUPPLIES

Because fire or earthquake damage may prevent you from reaching your basic supplies of food, medicine, and other kits, find or make a safe, dry, cool place for them outside the home (e.g. a cinderblock, reinforced shed or root cellar). Make sure that the root cellar has strong supports and shoring to prevent collapse.

The site should be waterproof and secure against insects, rodents, and theft. If food is not properly packaged, bears could be tempted to try to get the facility open, and could damage it and/or remove the food.

If a small shed is used, make sure that it is in a place where no trees, power lines, etc. could fall on it. If the shed or root cellar is locked to deter theft, each family member should know where the key has been concealed nearby.

Caution: I repeat - - bears or other animals may go after the food ,and if you are in their way they will resent it. Keep food in containers that will help prevent animals from its scent - - I have found that they can devastate a food site !

B. WHAT TO DO DURING AND AFTER A DISASTER

B.1 GENERAL

This section is organized according to types of disasters. There is a large degree of commonality of responses among most disasters. However, for your convenience, there is some duplication here from one chapter to the next, and some cross-referencing so that you will have full information even if you are reviewing the recommended response for a specific disaster only.

Priorities are

1. Try to stay calm
2. First aid
3. Construct shelter
4. Procure water
5. Procure food
6. Positive attitude.

If you have made plans, practiced evacuation, prepared kits, studied first aid, and made other general preparations, you will be better able to survive a disaster. Do your part and trust in God to direct your response to the emergency. You will be less likely to panic and your actions and attitude can be a calming influence on others.

- Turn on the radio to get the latest emergency information if a wildfire or tornado, etc. is on its way toward you.
- Be ready to evacuate.
- If short notice, take the GRAB-AND-GO KIT. If more time is available, take larger kits via auto or backpack.
- In the event of evacuation on foot and in the woods, it is desirable to have the following hanging around your neck on lanyards so that they are easily accessed and not likely to be lost: compass, whistle, pen knife, and wrist watch.
- It is natural to be afraid -- children and adults. Children usually will become frightened, tearful, and clinging to parents.
 - Tell the children that you understand why they are frightened.
 - Comfort them. If you are not the parent, tell them that their parents know where they are or where they may go. Let them know that they are safe with you and that you will look after them.
 - Encourage them to talk about their fears. Help them sort out what is real and what is unreal. They will be less frightened of things they understand.
 - Return to routine as soon as possible.(see section on Coping in the Appendix).
- Because you are calm and knowledgeable, parents (and other adults) will look to you for advice and as an example of what to do and how to act.
 - Sometimes, parents get angry or upset when their children act frightened.
 - Help the parents understand their child's behavior.
 - Tell the parent that the behavior is natural and normally will not last.
 - If the child continues to be upset for a long time, the parents should seek professional counseling.
- **If you smell gas, do not use your telephone - -cell phone, cordless phone, or any other kind of portable communication and electronic devices that have a battery. These can spark and be a source of ignition, as can matches, lighters, or any open flame appliances, and electrical switches.**
- In the first few days after a disaster, leash your pets when they are outside. Familiar scents and landmarks may be altered and cause your pet to become confused, frightened, and lost.
- Behavior of pets may change after the emergency, Normally quiet and friendly pets may become aggressive or defensive. Be patient with them.

B.2. HOUSE FIRE AND WILDFIRE

HOUSE FIRE DURING A HOUSE FIRE

- Have one person go to a neighbor to phone 9-1-1 and your fire responder (if you are rural).
- Evacuate if in immediate danger of fire.
- Close all doors and windows to prevent drafts. Close door behind you if you evacuate.
- Turn on a light in each room for visibility so that it could be spotted even in heavy smoke.
- Close gas valves and turn off all pilot lights.
- Place valuables that would not be damaged by water in a pool or pond.
- Make sure that the gate is open, and that the driveway and entryways are clear so that fire trucks can enter
- If you are in bed when you hear the smoke alarm, roll out of bed and stay low- - below smoke and gasses that could be fatal.
- Don't waste time getting dressed or looking for valuables or pets. Just make sure that other family members are safe.

- Crawl quickly to the door. Use the back of your hand to feel the door for heat. If you feel heat on the door, hinges, or doorknob, do not open it. Crawl your way to the alternate exit.
- Block smoke by placing blankets or rugs at the bottom of the doors and over heating vents.
- Go directly to the planned safe meeting place.
- If your clothes catch on fire, STOP -DROP-ROLL.
- Once you are outside, stay out.

AFTER A HOUSE FIRE

- If your house burned, whether it is homeowner's or renter's insurance, notify your insurance agent promptly. If you are a renter, contact the manager or owner promptly
- Leave items undisturbed until insurance adjuster arrives.
- After the insurance adjuster has seen the house, sort out undamaged items but do not discard anything (unless it is hazardous) until the insurance agent clears you to do so.
- After a fire, call professionals to inspect your home for safety.
- Be careful when entering a burned area. Hot spots can flare up without warning.
- Check the roof and attic immediately and extinguish sparks or embers.
- Photograph the damage, inside and out.
- Keep receipts for lodging, meals, and other expenses that may be covered by insurance.
- Make an inventory and check it against original inventory list that contains data such as brand names, serial numbers, price paid, and date purchased. Identify all missing or damaged goods.
- Do whatever is necessary to protect your belongings from further damage or theft.
- If your home is unsafe or uncomfortable (from smoke, etc.) you will need to stay somewhere else for awhile. First, secure the house against vandalism or theft, then bring your GRAB-AND-GO Kit with you.
- If identification or medical items have been destroyed, replace them promptly and give your temporary address to insurance agent, mortgage company, postal service, newspaper delivery service, family, friends, and bank.
- Firefighters may have cut holes in the roof or walls. You may temporarily cover holes in exterior walls but don't do other repairs or moving of material.
- Before the utilities can be reconnected, a licensed professional must inspect the property.
- If you have no insurance, contact the Red Cross, Salvation Army, or church groups that can provide temporary shelter, food, clothing, eyeglasses, and medicine.
- If you are with burn victims or are burned yourself, call 9-1-1; cool and cover burns to reduce chance of further injury or infection. For burns and other injuries, check first-aid manual that is in the section on FIRST-AID KIT ((A.2.b)

WILDFIRE

DURING THE WILDFIRE

Rural homes usually have driveways and roads that are narrow and slow to travel. During a wildfire, time is a crucial factor. EVACUATE EARLY and stay out of the evacuation region until authorities give the OK to re-enter.

Follow the advice given above for house fire. In addition:

- The heat from a forest fire can ignite curtains, etc, in advance of the flame front.
- Embers can blow a mile or more from the fire front, and can ignite material in their path. A "blizzard" of embers and firebrands can pile up around the house and be more destructive than the forest crown fires.
- If wildfire is approaching and you have time to change clothes, put on long pants, long-sleeved shirts, jackets, goggles, hardhat, and boots to guard against heat. Your evacuation route may be close to (near) the extreme heat.

- Wear cotton or wool long pants because poly, rayon, etc. will melt, stick to your skin, and burn you severely.
- Do not wear short-sleeved shirts or synthetic fabrics.
- Back your car into the garage; keep windows closed and key in the ignition, ready to go in a moment's notice.
- Disengage the automatic garage-door opener and it will become manual. This is in the event that power is off and the automatic opener won't work. You may need to get vehicles away from the house.
- If adequate water is available, place sprinklers on the roof, but don't turn them on until fire is an immediate threat because you will need to conserve water pressure.
- You cannot outrun a wildfire. If in imminent danger and cannot evacuate as planned, crouch in a pond or river, cover head and upper body with wet clothing. If water is not nearby, look for shelter in a cleared area or among a bed of rocks. Lie flat and cover your body with wet clothing.
Breathe the air close to the ground through a wet cloth to avoid scorching your lungs or inhaling smoke.
- Fill sinks, tubs, garbage cans, and other large containers with water and position them around the house. They may be useful for dowsing small local flameups.
- Keep doors and windows closed but unlocked.
- Put combustible outdoor furniture into the garage or far away from the house.
- Move furniture away from windows and sliding glass doors.
- Wet all shrubs within 20 feet or more of the house.
- Make sure that the CAR KIT is in the car.
- Park your vehicle in an area clear of vegetation, close all windows and vents, cover yourself with blanket or jacket, and lie on the floor of the vehicle.
- If on foot, go to an area clear of vegetation such as a ditch or other depression. Lie face down and cover up as much as possible.
- In a disastrous forest fire in Montana, when a change in the wind brought the fire to them the only firefighter who survived had dug a hole and buried himself - - with only his cloth-covered nose above ground. This knowledge could save a life.
- If you don't have enough advance notice to evacuate, stay inside the house, away from outside walls and windows. It will get hot in the house, but it will be much hotter and more dangerous outside.

AFTER THE WILDFIRE

If you live in an area of wildfire, fire officials will determine when it is safe for you to return to your home.

When you return home:

- Check exterior and roof immediately, and extinguish all sparks, embers, and smoldering places.
- Watch for downed power lines and other hazards.
- Check propane tanks, regulators, and lines before turning gas on.
- Check carefully for smoldering fires or pockets of embers.
- Check inside the attic.
- Continue to keep all doors and windows closed.
- For at least 12 hours continue to check house, yard, and outbuildings for burning embers.

B.3. EARTHQUAKE

DURING AN EARTHQUAKE

- Try to remain calm. Other people may be looking to you for example and help. Be an example of leadership. By having discussions and training/drills, panic will be reduced when an earthquake does occur.
- You may experience a shaking that starts out gentle and, within a few seconds, grows so strong that it knocks you down; or you may be jarred first by a violet jolt and then feel the shaking. In either case, you will find it very difficult or impossible to walk and to move from room to room.
- When you feel an earthquake, look around, look above, see what could hurt you, what could save you from injury.
- If inside during an earthquake, stay there. Move only a few steps (no more than 10 feet) to a safe spot. Keep away from things that might fall.
- Do not try to move until the shaking stops, then leave in a calm, orderly manner - - just like you practiced.
- If you are in bed, lie down on the floor alongside the bed.
If you are at a desk, lie down on the floor alongside it.
Alongside any large object (bed, desk, sofa) has highest likelihood of protecting you from harm.
Protect your eyes by pressing your arm against your face.
- Do not stand in a doorway.
- If possible, you should lie down alongside a desk, bed, or other bulky object, not under it or on the bed- - and stay out of doorways. School children are instructed to “Duck, Cover, and Hold” for protection - - Duck under the desk, Cover your eyes with one hand and Hold onto a desk leg with the other hand to keep the desk from moving and leaving you uncovered. In some instances this procedure could be fatal, with the desk legs collapsing and the desk crushing the child, whereas lying alongside the desk could have protected the child lying in the resulting open space in the form of a triangle lean-to.
- If there are no large objects to lie down alongside of, get against an interior wall that is a strength-bearing wall.. The corner of two walls is even better, and a small bathroom or closet is least likely to have the ceiling collapse or walls cave in on you. .
- Protect your eyes.
- If you are in the kitchen, move away from the refrigerator, stove, and overhead cupboards.
- If you are outdoors, stay there but keep away from buildings, trees, or overhead electrical lines that may fall. Drop to the ground (or else you may be shaken so hard that you fall and may be injured). Beware of falling bricks, glass, and other debris.
- Keep away from high towers with water (or chemical) tanks.
- If you are in a stadium, auditorium, or theater, get on the floor between the rows and cover your head with your arms. Don't try to leave until the shaking is over.
- If you are trapped under debris:
 - Do not light a match
 - Do not move about or kick up dust.
 - Cover your mouth with clothing or handkerchief to keep dust out of lungs.
 - Shout only as a last resort because shouting can cause you to inhale dangerous dust and chemicals
 - If possible, use a flashlight to signal your location to rescuers.
 - Use a whistle
 - Tap on wall, floor, or pipe so rescuers can locate you.
 - Repeatedly give 3 whistle blasts, or 3 taps

- If you are in a vehicle, quickly pull over to a clear location and stay in the car.. Keep the seatbelt fastened until the shaking has stopped, then proceed with caution. If you are on a forest road or along a tree-lined roadway and cannot quickly drive into a clear location, get out of the car and lie down alongside it in what will be the “triangle of life” and protected from trees that may fall . Stay away from bridges, overpasses, and tunnels. Move as far as you can out of the normal traffic flow. Avoid stopping under trees, light poles, and power lines.
- If you at or near the coast, go to higher ground as soon as the shaking stops because it may be followed by a tsunami.
- Don’t go back inside after the quake because there may be aftershocks as strong as the initial tremor.
- If your house or office is damaged, do not go back in until an engineer, fireman, or other expert has examined the building.
- If you are in a high-rise building, do not use the elevator. Do not be surprised if the fire alarm and sprinkler systems come on.
- If you are on a sidewalk near buildings, get away quickly or duck into a doorway to protect yourself from falling bricks, glass, etc.
- If you in a crowded store or other public place, do not rush for the exits. Move away from display shelves and cabinets containing objects that could fall.
- If you are in a wheelchair, stay in it and move to cover, if possible. Lock your wheels and protect your head with your arms.
- If you are in the mountains, try to stay away from unstable slopes and cliffs and be alert for falling rock and other material loosened by the earthquake.
- Remember your rendezvous plans and follow them, just like you practiced.

AFTER AN EARTHQUAKE

Be prepared for aftershocks and decide where you will take cover when they occur.

Many times buildings are weakened by the main shock but remain standing. Once weakened, they may collapse from further shaking by aftershocks, whether those aftershocks are stronger or weaker than the main shock.. They may occur intermittently for several days or more.

- Protect yourself by putting on clothing that covers your body and head, sturdy shoes and work gloves
- After the shock, if you were alongside the bed, on the floor, quickly put on shoes or slippers because there is apt to be broken glass on the floor.
- If you smell gas, shut off the meter, but not unless you do smell gas. If you shut off the gas, the gas company must turn it back on, not you. It may be days or weeks before they are able to do so.
- Take a head count to make sure everyone is accounted for.
- In accordance with **plans** you have made, deal with family emotions.
- Check for injuries and administer first aid if appropriate.
- Use telephone only in case of severe injury.
- Check on your neighbors and offer help if needed.
- When it is deemed safe to re-enter the building, check for damage and hazardous conditions. Have them corrected promptly.
- If extensive structural damage is noted, have a professional inspect the building to see if it is safe to occupy. Be especially cautious about damaged chimneys - - they may be weakened and could topple during an aftershock.
- If there are damaged or downed electrical lines, shut off power at the main.
- Stay away from downed lines even if power appears to be off.

- Clean up any spilled inflammable liquids and any potentially harmful materials and medicines that may have spilled..
- Anticipate that, when you open closets or cupboards, objects may fall on you.
- Make sure that all phones are hung up because telephones off the hook tie up the phone network during a time of special need.
- Follow directions for house fire(above), checking appliances, wiring, etc.
- If sewer lines are damaged, plug drains to prevent sewage backup.
- Check supplies of emergency food and water, medication, and first-aid supplies.
- Replenish expired supplies, fire extinguishers, and batteries.
- Anticipate tsunamis.

B.4. TSUNAMI

DURING A TSUNAMI

When an earthquake occurs, the first tsunami could reach shore in a few minutes - perhaps even before a warning is issued. Therefore, whether a siren is sounded or not, if you feel an earthquake, assume that a tsunami will follow. The following are recommended:

- If you see a sudden rise or fall of coastal water, it is likely that a tsunami is coming. Do not wait to check or investigate because the next wave may be a large tsunami. Instead, grab your appropriately named GRAB-AND-GO KIT and immediately go to high ground.
- Follow the signs that mark tsunami evacuation routes (sign is shown in A.1.4, above).
- If your vehicle is parked and hooked to a travel trailer which has jacks down and sewer and electrical features attached, don't take time to disconnect all those features. Leave the trailer. If it takes more than a few minutes to separate the vehicle from the trailer, don't even take the vehicle - - just start running or catch a ride with someone headed for high ground.
- After you have reached high ground, turn on the radio to see when you can safely return.
- Bridges may be damaged
- Do not ever go to the beach to watch for a tsunami - - they move faster than a person can run.
- Traffic impedes safe and timely evacuation of coastal areas.
- Take your battery-powered or hand-crank operated radio from your GRAB-AND-GO KIT, and turn to the NOAA weather station for instructions during the tsunami emergency. Bulletins broadcast by that station could save your life.

AFTER A TSUNAMI

- Stay away from the flooded area until officials say it is safe to return.
- Large areas may be flooded
- Stay away from the water and any debris in it or washed up by it.
- Be aware that drinking water might be contaminated.
- Sewage might be strewn on the surface.
- Other health hazards may include dead animals - -and people. Thousands may be dead from drowning or by injuries from being smashed by the waves.
- To the best of your ability, assist those in need of first-aid or emotional comfort.

B.5 SEVERE WEATHER

DURING HIGH HEAT

- Insulate around air conditioners and air conditioning ducts.
- Buy a fan to use to circulate cool air.
- Slow down and avoid strenuous activity. If you must do strenuous activity, do it during the coolest part of the day, which usually is from 4 to 7 AM.

- Stay indoors as much as possible. If there is no air conditioning, stay on the lowest floor, out of the sunshine and use a fan.
- Drink plenty of fluids even if you don't feel thirsty.
- Alcoholic beverages may seem to satisfy thirst but they cause dehydration.
- Reduce water use. Watering the lawn and washing the car waste water.
- Conserve water and re-use whenever possible.
- Repair leaking faucets and pipes. This will save water and money.
- Place a brick or other large, solid object in the flush tank of the toilet to reduce water used when flushing the toilet.
- Vacuum the air-conditioner filters frequently during periods of high use. It will run more efficiently, thus conserving energy and reducing water needed to produce it.
- Do not exercise too much or stay long in the sun or in an overheated place because heat-related illnesses or death could occur. The body's internal thermostat produces perspiration that evaporates and cools the body. In extreme heat and high humidity, evaporation is slower and the body must work harder to maintain healthy temperature.
- Study the Heat Index chart in the Appendix for effects of high heat.
- Eat well-balanced, light meals and drink plenty of water. Consult your physician before increasing your fluid intake if you have epilepsy, heart, kidney, or liver disease, and are on fluid-restrictive diet.
- **Avoid food that is high in protein** because protein increases metabolic heat in the body.
- Take salt tablets only if specified by your physician, especially if you are on a salt-restrictive diet.
- Dress in loose-fitting, light-weight, light-colored clothing that reflects heat and sunlight and helps maintain normal body temperature.
- Protect face and head by wearing a wide-brimmed hat when in the sun.
- Avoid sunshine. If in the sun, use a sunscreen with a high SPF (Sun Protection Factor) rating.
- If sunburn occurs, take a shower using soap to remove any oils that are blocking skin pores. If blisters form, apply dry sterile dressings.
- Avoid temperature changes. A cold shower immediately after coming in from outside heat may sound good, but could result in hypothermia. (A friend of mine died from such action at age 40).
- Heat cramps are painful spasms caused by dehydration, which usually occur in leg and abdominal muscles. To treat, apply firm pressure on cramping muscles or gently massage. Get patient out of the heat and gradually rehydrate by giving sips of water to drink.
- Heat exhaustion symptoms are heavy sweating, weakness, weak pulse, and cold, clammy skin. Fainting and vomiting may occur. Lay victim down in a cool place, loosen clothing, and apply cool, wet cloths. Give frequent sips of water. If nausea occurs, discontinue the water sips. If vomiting occurs, seek medical help.
- Heat stroke (sun stroke) is serious and delayed treatment can be fatal. Symptoms are high temperature (106 or higher!), rapid pulse, and hot, dry skin. Victim probably will not sweat and may become unconscious. Call 9-1-1 or get to a hospital quickly.
- See Heat Index chart in the Appendix.

AFTER HIGH HEAT

- Get plenty of rest and beware of exhaustion
- Drink plenty of water
- Replenish emergency supplies
- Tend to pets and livestock
- Make sure that family members' health is OK.

DURING EXTREME COLD

- Listen to radio and TV for weather information.
- Eat regular meals and drink lots of fluids to avoid dehydration.
- Avoid caffeine and alcohol.
- Use sand or rocksalt to cut the ice on walkways.
- If you have to be out and walking around where there is ice, wear special spiked crampons that fit over shoes or boots.
- Dress warmly - wear layers of clothes, warm gloves, scarf, and jacket.(see CLOTHING in the Appendix)
- See WIND-CHILL FACTOR in the Appendix.
- Know the winter-storm designations, which are:
 - Cold air, heavy snow, strong winds which increase the chill factor.
 - Heavy snow: predicted 4 inches in less than 12 hours.
 - Storm watch: storm is approaching.
 - Blizzard: heavy snowfall and high winds. Low temperature.
 - Flurry: reduced visibility.
 - See other terms in A.1.b.5 for winter storms
- Power may be out for long periods of time.
- Watch for signs of frostbite
- Avoid overexertion when shoveling snow.
- Watch for signs of hypothermia which include uncontrollable shivering, loss of memory, disorientation, slurred speech, disorientation, drowsiness, and apparent exhaustion.
- Conserve fuel by closing heat to some rooms.
- Maintain ventilation if using kerosene heaters, to avoid toxic fumes.
- Drive only if necessary, and then use great caution, carry the emergency Car Kit, and keep a window slightly open to prevent buildup of carbon monoxide.
- If you get stranded in your car:
 - Be careful not to waste battery power.
 - Turn on an inside light so that rescuers can find you - the inside light is less drain on the car battery than headlights would be.
 - Exercise to maintain body heat. If you don't have a "space blanket" in your car kit, use material such as seat covers, floor mats, and road maps for insulation.
 - Run the engine and heater for about 10 minutes each hour to keep warm. Clear snow from the tailpipe as needed.
 - Turn radio on for short periods only, to save the battery

AFTER EXTREME COLD

Check to ensure that emergency supplies are restocked.

Be aware of exhaustion, and get lots of rest if possible.

Check for any weather damage to home structure, plumbing, and vehicles.

Make sure that family members, pets, and other animals are OK

DURING A TORNADO

If you see a tornado or receive a tornado warning, seek shelter immediately.

- In contrast to a hurricane, the safest place is the basement, storm cellar or lowest level in the building.
- If there is no basement, shelter in an interior room
- Stay away from windows, doors, and outside walls

- Go to where there are the greatest number of walls between you and the exterior of the building
- Do not open windows
- Mobile homes - - even if tied down- - offer little protection
- If you are caught outside, away from a building:
 - Lie flat in a ditch or depression
 - Be aware of possibility of flooding
 - Stay away from overpasses or bridges
 - Do not try to outrun a tornado in an urban or congested area; instead, leave the car and go to a shelter immediately
 - Watch for flying debris. Cars can be tossed around - -yes, even a cow!. Most deaths and injuries are from flying debris.

AFTER A TORNADO

Because the disruption is similar in many respects to damages from other violent storms, earthquakes, and floods, follow health and cleanup guidelines of those sections.

- Look for injured persons and offer assistance.
- Check house and surroundings for damage
- Clean up debris.
- Cooperate with authorities if evacuation is called.

DURING A HURRICANE

Most hurricane deaths are caused by flash floods which can flood communities with a wall of water in hours. Therefore, the guidelines for floods (B.6.) should be followed. In addition, consider the following:

- Before the approaching hurricane starts buffeting your house, shut off all utilities, including water.
- During the storm, the flooding can overrun the drinking-water systems and render the water undrinkable.
- The safest place to stay is in a first-floor bathtub, with a mattress pulled over you.
- The second-best place is a first-floor interior room.
- Do not take refuge in the basement - - it probably will become flooded.
- For high wind in general, check trees around the house, especially near windows and roof, and check for anything that might blow around and cause damage or injury.

AFTER A HURRICANE

Follow the guidelines given above for floods, earthquakes, landslides, etc. In addition, consider:

- After the hurricane has passed, the National Guard probably will come. Nevertheless, you will likely be on your own for a few days, so the guidelines for preparedness kits are crucial.
- As with floods, earthquakes, landslides, mudflows, and avalanches, it is important to start the cleanup as soon as practicable.
- Take care of injured persons.
- Avoid contact with or consumption of any water except that which is in your emergency kits.

DURING THUNDERSTORM AND LIGHTNING

If you are at home when a storm is approaching, follow the guidelines given for a tornado and hurricane. In addition, consider the following:

- Do not handle any electrical equipment or telephones because lightning could follow the wires to you.
- Avoid bathtubs, water faucets, and sinks because metal pipes can transmit electricity.
- If outside, try to get into a car or building.
- If no car or building is available, go to an open space, away from trees, and lie down or squat low to the ground as quickly as possible.
- Be aware of the likelihood of flooding in low-lying areas.
- Stay away from tall objects such as towers, power poles and lines, telephone poles and lines, trees, and fences.
- Stay away from rivers, lakes, reservoirs, and other water bodies.

AFTER THUNDERSTORM AND LIGHTNING

A person who has been struck by lightning does not carry an electrical charge that can shock another person, so help them.

- Call 911 for help. Give all pertinent information.
- Look for burns where lightning entered and exited the body.
- If heart has stopped beating, give CPR (cardiopulmonary resuscitation) until medical help arrives and takes over.

If your house is struck by lightning, follow all procedures given in the HOUSE FIRE section. Remember to check on and help neighbors who may need special assistance (infants, elderly persons, and people with disabilities).

If you drive after a storm, be watchful for downed branches, trees, power lines, and debris in the road.

B.6 FLOOD

DURING A FLOOD

- If you see the possibility of a flash flood, move immediately to high ground. Don't wait for instructions to evacuate.
- Never enter flood waters or go around flood warning signs and barricades. Water may be deeper than you think - - 2 feet of water is enough to float a car. and can carry a vehicle away quickly. 12 inches of flood water can knock you down.
- Stay clear of power lines and other electrical wires.
- Avoid contact with flood water because it is apt to be contaminated with chemicals and sewage.
- Thoroughly clean and disinfect anything that comes in contact with flood water.
- If flood water is about to enter your house, move yourself and critical documents to an upper floor.
- Be alert for leaks of gas and for other hazardous materials.
- If you have time, secure all outdoor equipment, furniture, etc. that might be swept away.
- If you are caught in flood water, try to get a hold of some floating object that would serve to keep you afloat.
- If you have been evacuated, register at a designated shelter and remain there until safe to go home.

AFTER A FLOOD

- If you have suffered flood damage, call the insurance agent who services your flood insurance policy.
- Before entering a building, check for structural damage. If not safe, do not enter.
- Do not use an open flame inside a flood-damaged building until certain that there are no explosive gases or fumes.
- Take pictures of the damage and save all damaged items for inspection by the insurance claims adjuster.
- Cover broken windows and holes in roof or walls to prevent further water damage.
- Start cleanup immediately to help reduce health hazards.
- Throw out food and medicine that have come in contact with flood water.
- Until the public water system has been declared safe, water for drinking should be boiled.
- Take damaged furniture and appliances outdoors to hose off and dry, but keep them out of the sun to prevent warping.
- Shovel mud out while it is still moist, to give floors and walls a chance to dry.
- Clean metal items promptly and then wipe them with oil or a WD40 -soaked cloth to minimize rusting.
- Dry all clothes and household fabrics before brushing off the mud/dirt. Then wash.
- If the carpet and carpet padding are removed promptly, there is the possibility that they can be saved after cleaning.
- Authorized repair personnel should check all utility systems and appliances before you turn them on.

B.7. LANDSLIDE, MUDFLOW, AND AVALANCHE

DURING LANDSLIDE, etc.

- Move away from the path of the landslide or mudflow. An avalanche generally gives no warning to allow time to get out of its way, so avoid steep, unstable slopes.
- If escape is not possible, curl into the fetal position (a tight ball) and protect your head.

AFTER LANDSLIDE, etc.

- Stay away from the affected area because there may be additional slides.
- Check for injured and trapped people near the slide area without going into the slide debris, and direct rescuers to the locations of the injured or trapped people.
- Watch for dangers such as downed power lines, broken electrical, water, gas, and sewer lines and damaged roads.
- Watch out for snakes and wild animals.
- If the damage was to your property:
 - Replant damaged ground promptly to prevent erosion, because erosion due to the loss of ground cover can lead to additional landslides, mudflows, etc. in the near future if there are flashfloods or heavy rain.
 - Have a geotechnical expert evaluate the hazards and design corrective measures to reduce the risk of future earth movement.

B.8. PANDEMIC DISEASES DURING PANDEMIC DISEASES

- Follow precautions given in A.1.b.8
- Try to avoid other people
- Watch for announcements of impending repeat or other pandemic disease.
- Replenish emergency kits

AFTER PANDEMIC DISEASES

When the pandemic is declared to be over, you may go about your normal activities. However, the event should emphasize the importance of keeping fit and following good health and sanitation protocols.

B.9. HAZARDOUS CHEMICAL SPILL DURING A SPILL

- If there is news of a hazardous-materials incident in your community, listen to radio or watch TV for further information and instruction.
- If there is an incident of chemical spill in your neighborhood, most often you will be evacuated to a shelter. If that is not possible for some reason, then you will have to shelter-in-place (see Appendix).
- If you witness a hazardous transportation accident, spill, or leakage, get away from the site - - stay uphill, upwind, or upstream. Try to get at least ½ mile away (about 10 city blocks). Call 9-1-1.
- If you are in a vehicle, stop and get into a building. If you cannot, then stay in the car, close the windows and vents, and shut off heat or air conditioning.
- Do not touch any of the spilled substance.
- Try not to inhale any gases, fumes, or smoke - - cover your mouth with a cloth while leaving the area

AFTER A SPILL

- If you have been evacuated, return only when authorities deem it safe.
- Until advised that the danger is over (spill cleaned up), maintain the SHELTER-IN-PLACE as described in the Appendix.
- Move away from the scene and help keep others (including animals) away.
- Do not walk into or touch any of the spilled substances.
- Try not to inhale fumes, gasses, or smoke. If possible, cover mouth with a cloth while leaving the area
- Stay away from the scene until the HAZMAT team has identified the material.
- Try to stay upstream, uphill, and upwind of the accident scene.
- Don't try to care for victims until the substance(s) have been identified and authorities indicate that it is safe to go near the victim. Then move victim to fresh air and call for emergency medical care.
- Use disposable plastic or rubber gloves to remove victim's contaminated clothing and shoes and then seal them in plastic bags.
- Cleanse victims by pouring cold water over skin and eyes for at least 15 minutes, unless instructed not to use water because of the particular chemical(s) involved.
- If ordered to evacuate, return only when authorities say it is safe. Follow instructions about safety of food and water.
- Use disposable plastic or rubber gloves to clean up and dispose of chemical residue carefully, following instructions from officials regarding cleanup methods.
- If you have contacted any spilled chemicals, wash thoroughly with soap and water; remove contaminated clothing and shoes and seal them in a plastic bags.

- Contact the HAZMAT team for further instruction that may be specific to the composition of the chemicals involved.
- If you had to shelter-in-place, follow relevant guidelines above and replenish supplies.

B.10. EXPLOSIONS

DURING AN EXPLOSION

- Explosions give no warning, so you will have no time to prepare.
- Try to protect your head and eyes and get to a safe place in the building or outside.

AFTER AN EXPLOSION

- When debris has stopped falling, leave the building quickly
- Watch for obviously weakened floors or stairs
- Do not stop to retrieve personal items
- Do not use elevators
- If you are outside, stay away from windows and walls. Get away from buildings
- Move away from sidewalks or streets that may be used by rescuers or other evacuees from the building
- If you are trapped in debris, follow guidelines for earthquakes.
- As you exit a building be alert for falling debris
- Assist anyone injured or dazed by the experience. Apply first aid as appropriate

B.11. NUCLEAR ACCIDENT

DURING A NUCLEAR ACCIDENT

- When you hear a siren or tone alert, that does not mean that you are to evacuate.
- Promptly turn on the local radio station to see if it is a test or a real radiation emergency or some other emergency such as fire, flood, tornado, etc.
- Do not call 911.
- If advised to go indoors, do so, and close all windows, doors, etc. as practiced.
- If advised to evacuate:
 - Stay calm and do not rush.
 - Listen to emergency information on your radio.
 - Close and lock windows and doors.
 - Turn off air conditioning vents, fans, and furnace.
 - Close the fireplace damper.
 - Take your emergency kits with you- - at least the GRAB-AND-GO Kit.
 - Use your car or make arrangements to carpool with neighbors.
 - Keep car windows and vents closed
 - Listen to emergency radio station for instructions.
 - Follow evacuation routes.
- If advised to stay home:
 - Bring pets inside.
 - Shelter-in-place as practiced (Appendix).
 - If coming in to the house, shower and change clothes, seal them in a plastic bag.

AFTER A NUCLEAR ACCIDENT

When authorities announce the “all clear”, the event is over and it is safe to go about your normal routine.

- If your home is near the site of the accident, have it checked for residual radioactivity by using a geiger counter or scintillometer. You may need to call upon a medical radiation specialist .
- If some places are sealed off, do not attempt to enter.
- If you think you were exposed to radiation, seek medical attention

B.12. NUCLEAR ATTACK

This section addresses the specific terrorist or war event dealing with nuclear devices (aka bombs!)

DURING A NUCLEAR ATTACK

If an attack warning is issued, take cover immediately

Even if you are not close to the nuclear explosion, you may be affected by radioactive fallout.

- Do not look at the fireball of the nuclear explosion - - it will blind you
- Lie flat on the ground and cover your head before the shock wave from the blast hits you
- Take shelter in the middle of a large building or in the basement
- Build a shelter-in-place (Appendix)
- Fallout radiation loses intensity rapidly, so stay in your sheltered space for two weeks, after which the radiation is only one percent of its initial level.
- Make use of your emergency kits (A.2)
- Listen to the radio for official information and follow instructions, including the signal to come out of the shelter.
- Remember that the more shielding you can provide, the better protected you will be.
- Wind can carry the radioactive cloud for hundreds of miles.

AFTER A NUCLEAR ATTACK

- It might be necessary for those in the areas of highest amount of fallout to remain sheltered for a month.
- People in most areas affected could be allowed to come out of the shelter in a few days and, if necessary, evacuate to unaffected areas.
- Follow radio instructions about what to do and places to avoid
- Have medical personnel check to see if you or your family members have received any radiation and, if so, what should be done.
- Start taking your **potassium iodide tablets** (First-Aid Kit) to prevent thyroid damage.
- Follow guidelines for nuclear accident, above.
- Check for structural damage
- Stay away from damaged areas.

AFTER TERRORIST ACTIVITY

Depending on the nature of the terrorist attack, you may need to do cleanup and follow health guidelines given for earthquakes, floods, explosions, nuclear accidents, chemical spills, etc.

If you have may have been exposed to chemical or biologic agents:

- Shower with soap and water.
- Bag the mail and give it to the authorities.
- Notify the police.
- Give the authorities the names of everyone who was in the room when and where the mail was delivered.
- Follow all precautions stated by the authorities.
- Seek medical attention if you become sick

C. APPENDIX

ANCHORING A WATER HEATER, STOVE, AND PROPANE TANK

For earthquake preparedness, it is important to anchor these items as shown in the diagrams.

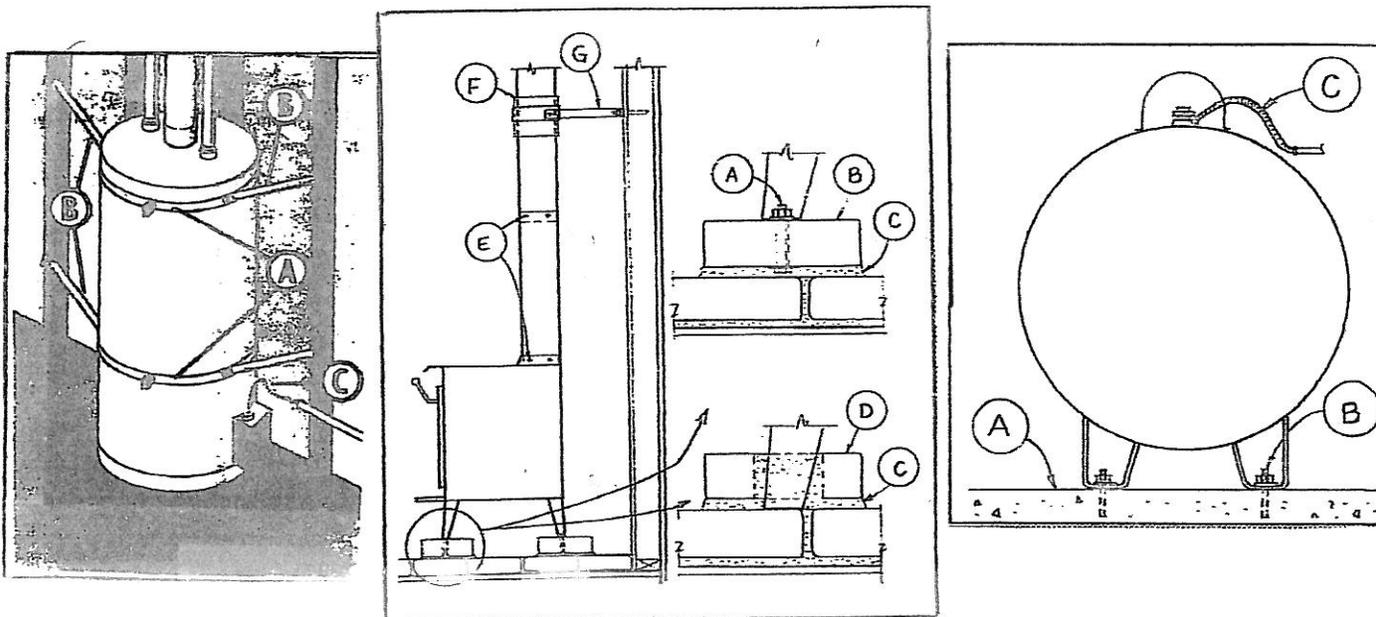
Water heater: Wrap a 1 ½ inch wide, 16 gauge metal strap ("plumber's tape") around the tank as shown (A,B).. Fasten to a 2x4 stud in the wall using a 5/16 x 3-inch lag screw. Be sure that a flexible pipe (C) is used to connect the gas or electrical supply to the heater

Stove : For a stove on a brick hearth, anchor it with 3/8" diameter bolts (A) through a ½" hole to a new brick (B). Grout the brick to the existing hearth with 1" of new grout (C). Or, build an 8-inch square brick pad without grout all around each stove leg(D). Provide at least 1 inch of grout all around the legs and fill the pocket completely with grout.

Use sheet-metal screws (E) at flu exit and between stovepipe sections. Use with a pipe clamp (F) at the radiation shield (F) braced to the wall with tension ties such as Simpson WTT187 or equivalent(G), attached to a wall stud with 3/8x3-inch lag screws.

Propane tank: Mount the tank on a 6-inch thick concrete pad (A) using four ½" diameter bolts (B) embedded at least 3" into the concrete.

Use a flexible hose connection (C) between the tank and the rigid supply line



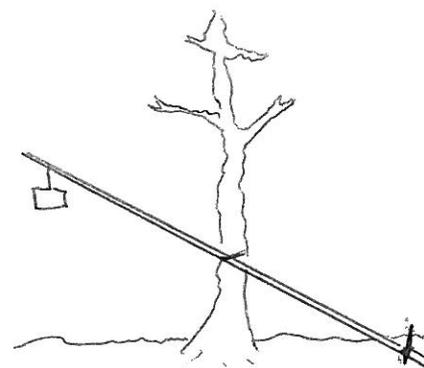
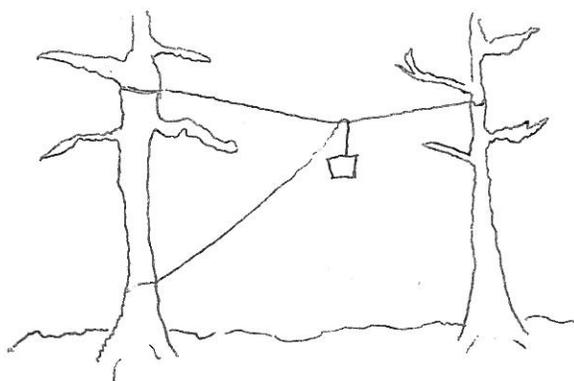
ANTI-DIARRHEAL MEDICINE:

- Imodium A-D , a liquid, is best; side effects are uncommon.
- Pepto Bismol reduces number of bowel movements, but has no effect on other symptoms; and contains aspirin-like substance that may produce side effects.
- Mixture of charcoal, clay, and/or chalk is helpful
- Kaopectate is not very effective

CAMPING When selecting a camp site:

- Try to pick a site on cleared, level, well-drained, dry ground
- Stay out of low spots such as gulleys, depressions, dry river beds (“dry wash”).
- Avoid windy spots (judge by bent foliage) and have tent entrance facing away from the wind.
- Select shady site sheltered from prevailing winds but not so close to trees as to be endangered by falling dead wood.
- Position camp fire close enough to the tent so that the smoke keeps insects out but doesn’t blow into the tent.
- Position fire far enough away to prevent setting the tent on fire
- Make sure that the ground around the campfire or fire pit is free from any flammable material.
- **Don’t let children wander away from the camp site.**
- Extinguish fire completely when finished with it. Be sure that the ashes are cool to the touch.
- To prevent flooding during a rain storm, dig a small ditch around the perimeter to catch the water. This is referred to as “ditching” the tent.
- Keep everything packed, ready to evacuate quickly in case of danger.
- Keep food away from the tent in which you sleep. See suggestions for storing food (p.26 & 32).
- Do not eat in the sleeping area or your sleeping bag. That will attract bears and other critters.
- Air your sleeping bag or blankets and let clothing dry in the sun or near the fire, but don’t let boots get too hot.
- Do not cover the sleeping bag with plastic because it will cause moisture to condense on its underside, and get the bag wet.
- Place a ground cloth plastic sheet under a foam pad or self-inflating mattress pad.
- Don’t completely cover your head while sleeping - - breathing into the bag causes moisture from your breath to condense onto the bag and getting your head wet.

Suggested ways to store food out of the reach of animals



CHEMICAL PACKS For first aid treatment, it is desirable to be able to apply hot or cold packs to a wound, as applicable. Emergency packs consist of chemicals in a plastic pouch. By shaking or massaging the pack, the chemicals either produce heat (thermal packs) or draw heat away (cold packs). Some heat packets can be placed in gloves, held in the hand, placed in the sox, or placed in pockets.

CLOTHING:

For cold weather and severe winter storms, dress with layers of clothing, as follows:

- Layer next to skin should be cotton vest or long-sleeved thermal top. Clothing should be close-fitting but not constricting. Use material that will absorb moisture and wick it away from the skin. For underpants, wear cotton shorts. Use thermal underwear only if it is below freezing or if you will be inactive for long periods.
- Second layer should be a loose-fitting and light-weight shirt that will keep neck and wrist warm and have sleeves can be buttoned or rolled up. Use a hat that has flaps to keep ears and neck warm. In hot weather, this serves as the outside layer and adds a windproof shell. Pants should be loose enough to allow ease of movement. Suspenders make a good substitute for a belt and will prevent chafing at the waist that a belt produces, especially when carrying a backpack.
- Third layer is a wool pullover or lightweight fleecy jacket. The fleece or pile acts to wick moisture away from the body while keeping the body warm. If actively moving, remove this layer to prevent overheating. In milder weather, this becomes the outside layer.
- Outer layer should include a wind-resistant and waterproof jacket. The jacket must have vents. Synthetic breathable fabrics let sweat evaporate and keep the rain out.
- Sox : The inner pair should be lightweight breathable fabric such as cotton, and should not have web or ridge pattern that would cause discomfort. The outer pair of sox should be thick to insulate the foot and pad them against the boots. If you wear only one pair, get one that has an upper part for comfort, and thick soles for insulation and padding.

Boots should be lightweight, with tough heavy-duty soles. Be sure to keep them waterproofed with boot grease, wax, silicone spray, or wax-type spray. Silicone is better than wax to prevent the leather from cracking when extremely cold.

COMPASS . A compass is essential for following directions in the wilderness and for locating yourself if lost. A map - - preferably a topographic map - - is also essential.

Keep in mind that the compass needle points to the magnetic pole, not the geographic or true north. In SW Oregon, that angular difference, called declination, is about 18 degrees. Therefore, when you want to travel due north, you must sight along the compass when its needle points to N 18 W when unsure how to calculate the true direction, draw a sketch. When you are traveling along a course following N on the compass, you are actually heading N18E.

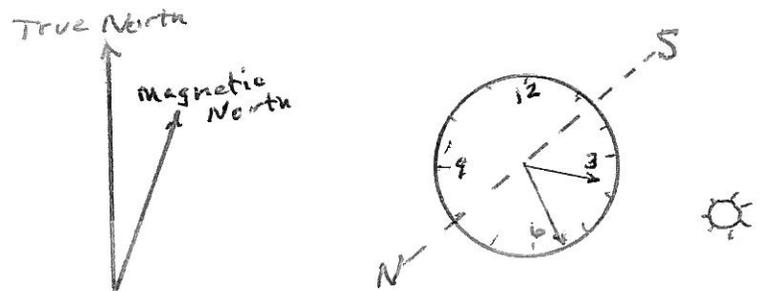
It is customary to read directions by (A) 90 degree quadrants, such as N70E, S15W, etc.

(A) For all quadrant readings on the compass, subtract the declination (18 degrees) to get true bearing. For example, reading of N60E is really N42E; S60W is really S42W.

(B) For all full-circle readings on the compass, subtract the declination (18 degrees) to get true bearing. For example, a reading of 180 (magnetic south) is really 162 (SSE); 0 degrees (magnetic north) is really 318 (NNW).

To be certain, draw a sketch

A simple way to locate south approximately is to point the hour hand of your watch toward the sun. South lies approximately half way counterclockwise between the hour hand and 12.



CONTACT CARDS Make a copy of this to keep in the documents kit.

OUT-AREA CONTACT

Name _____

Phone (day) _____

Phone (evening) _____

LOCAL CONTACT

Name _____

Phone (day) _____

Phone (evening) _____

REUNION LOCATION

Name _____

Phone (day) _____

Phone (evening) _____

Emergency Plan

Out-of state contact

Name _____
City _____
Phone (day) _____ (evening) _____

Local contact

Name _____
Phone (day) _____ (evening) _____

Nearest relative

Name _____
City _____
Phone (day) _____ (evening) _____

Family work numbers

Father _____ Mother _____ Other _____

Emergency phone numbers

In a lif-threatening emergency, dial 911 or the local medical services system number _____
Police _____ . Fire Dept. _____ . Hospital _____ . Sheriff _____

Family Physician

Name _____	Phone _____
Name _____	Phone _____
Name _____	Phone _____

Reunion locations

1. Right outside your home _____
2. Away from the neighborhood, in case you cannot return home. _____

Address _____
Phone _____
Route to try first _____
Alternate route _____

Make cards similar to these for each family member. Keep a copy in the wallet, purse, and car, and give one to a relative, neighbor, or other friend.

COPING Disasters can have an emotional toll that is added to that of the stress of financial loss, damage to your home, and loss of personal belongings. People of all ages may have emotional trauma and special needs. .

- Extreme grief, sadness, and anger are normal reactions.
- Talking about your feelings helps one to recover.
- It is OK and, in fact healthy, to accept help.
- Do not blame yourself or feel inadequate if you couldn't assist in a rescue effort.
- Eat regular, healthy meals.
- Exercise,
- Get plenty of rest.
- Spend time in meditation and prayer.
- Use support groups of church, family, and friends.
- Be ready for future events by restocking the emergency kits.

Children are especially vulnerable. The following list briefly addresses some common physical and emotional reactions of children, and how to deal with them.

CHILDREN OF ALL AGES

- Hug and touch your children
- Calmly, firmly, and honestly give them facts about the disaster and resulting trauma.
- Encourage them to talk about their feelings.
- Spend extra time at bedtime with your children.
- Involve your children by giving them specific chores for which they are capable, to help restore family life.
- Re-establish a schedule for work, play, meals, and rest.
- Before a disaster, involve the children in developing and practicing a family disaster (as in section A.1.a. and b.

INFANTS UP TO 2 YEARS OLD

- When very young children experience a trauma, they don't have words to describe their feelings about the disaster event.
- Infants may react to trauma by being irritable, or crying more than usual
- Comfort and calm them by cuddling and hugging.
- Sing a favorite song or tell a favorite story.

AGE 2 TO 6 YEARS

- Preschool children often feel helpless and powerless in the face of an overwhelming event.
- They are too young and too small to protect themselves or others.
- Let them help in whatever way they can so that they feel like part of the solution.
- Talk to them and comfort them.
- Be calm, honest, and caring to the child. Their understanding of the situation helps them to be calmer.
- Preschoolers cannot understand the concept of permanent loss, and they view the consequences as reversible.
- They may reenact the disaster event over and over again.

AGE 8 TO 10 YEARS

- The school-age child can understand the permanence of loss.
- Reactions vary from guilt, feelings of failure, anger, and intense preoccupation with details to fantasies of playing rescuer.

AGE 11 TO 18 YEARS

- Responses begin to resemble adults' reaction to trauma.
- They combine some childlike reactions with others that are more consistent with adult reactions.

- Some teenagers become fearful of leaving home.
- They may feel unable to discuss their emotions with relatives.
- Unfortunately, survival of a disaster in some minds is equated with a sense of immortality.
- A teenager may react by becoming involved in dangerous, risk-taking behavior such as reckless driving or alcohol or drugs.

DEHYDRATION. Because our bodies cannot store water, we must drink frequently. If we do nothing we need at least one quart per day. We need more if we work or if the weather is hot. Sweat cools the body and water is needed to break down and help digest food. The human body is about 75% water. Small losses are sufficient to seriously affect health, as shown in the following chart of dehydration:

<u>loss of 1-5 % water</u>	<u>loss of 6-10 % water</u>	<u>loss of 11-12 % water</u>
thirst	dizziness	delerium
lethargy	dry mouth	swollen tongue
lack of appetite	blue skin	deafness
impatience	tingling in limbs	twitching
flushed skin	slurred speach	dimming vision
increased pulse rate	difficulty breathing	skin shrivels
nausea	inability to walk	inability to swallow
weakness	blurred vision	death

EMETIC: (A substance to induce vomiting) .

The best and safest is common salt in warm water. Large amounts of water should be taken and the effect may, if needed, be reinforced by tickling the back of the throat with a finger. Another common emetic is syrup of ipecac. Some recommend lobelia tea

FIRE-RESISTANT PLANTS

Although even fire-resistant plants and trees can burn, they don't readily ignite from a flame or other ignition sources and don't contribute significantly to the fuel and, therefore, the fire's intensity.

Most deciduous trees and shrubs are fire resistant. They have characteristics as having moist and supple leaves; little dead wood; do not tend to accumulate dry, dead material within the plant; and by having sap that is water-like and without strong odor.

Most conifers are highly flammable. They and other flammable vegetation have fine, dry, or dead material within the plant such as twigs, needles, and leaves; the leaves, stems, and twigs contain volatile waxes, turpines, or oils; the leaves have a strong smell when crushed; the sap is gummy, resinous, and has a strong odor; and many have loose or papery bark.

Both ornamental and native plants can be highly flammable. Such types should not be planted near the house. Examples are ornamental juniper and native shrubs such as bitterbrush, manzanita, sagebrush, and ceanothus.

Fire-resistant trees include Western Larch, Sugar Pine, Ponderosa Pine, Bigleaf Maple, Sunset Maple, Norway Maple, Horsechestnut, Eastern Redbud, Mountain Alder, Flowering Dogwood, Birch, Beech, Western Catalpa, Ash, Common Hackberry, Honey Locust, Kentucky Coffee Tree, Chokecherry, Walnut, Oregon White Oak, American Sweetgum, Pin Oak, Crabapple, Red Oak, Aspen, Cottonwood, Black Locust, Willow, and European Mountain Ash.

Examples of fire-resistant ground cover, perennials, and shrubs are Carpet Bugleweed, Ice Plant, Kinnikinnick, Mock Strawberry, Mahala Mat, Hens and Chickens, Snow-in-Summer, Wild Strawberry, Yellow Iceplant, Japanese Pachysandra, Creeping Phlox, Creeping Thyme, Sedum, Periwinkle, Yarrow,

Sea Thrift, Chives, Basket-of-Gold, Heartleaf Bergenia, Sun Rose, Sedges, Daylillies, Coreopsis, Coral Bells, Fireweed, Hosta Lillies, Cranesbill, Iris, Red-hot Poker, Evening Primrose, Blue Flax, Penstemon, Lupine, Lamb'sEar, Cotoneaster, Creeping Holly, Daphne, Oregon Boxwood, Salal, Rhododendron, Azalea, Privet, Grapeholly, Yucca, Vine Maple, Burning Bush, Rocky Mountain Maple, Oceanspray, Mock Orange, Spirea, Sumac, Flowering Currant, Wood's Rose, Snowberry, and Lilac.

FIRE-STARTER KIT

There are several kinds of matches on the market. Some are waterproof, others will stay lit in a wind. To start a fire without matches, one can use techniques such as those below. Keep the listed material in a **kit**, ready for use when needed.

1. Steel wool and a 9-volt battery
2. Flint and high-carbon steel
3. Magnesium stick and knife
4. Magnifying glass
5. Bow drill

Each method uses tinder made of wood shavings; charred cotton cloth; punk from the pithy core of mullein stalks, elderberry, or sunflower; dry twigs, dry grass, dry moss, or jute fiber from cords. Have a pile of fine, dry kindling ready before trying to start the fire by one of the methods.

1. Touch a small wad of 000 (triple zero) steel wool across the poles of the 9v battery. It will ignite immediately, at which time you quickly place it in the tinder of fine dry charred material and blow on it gently. Wrap the glowing charred cloth in the dry tinder (grass, etc.) and transfer to a pile of fine kindling .

2. Strike a piece of flint, chert, quartz, or quartzite downward toward the charred cloth with a piece of high-carbon steel and catch the sparks on the charred cloth. Then wrap, blow gently, and transfer to a pile of fine kindling.

3. This method involves the use of a small stick of magnesium in place of the flint of method #2.

4. Use a magnifying glass to focus the sun onto the charred cloth. When it starts burning, wrap it in dry grass as above. In place of a traditional magnifying glass, one can be improvised by using the lens of your glasses, filling the concave side with water to make a lens; or by putting water into a clear plastic bag and holding it so that it forms a double-convex lens.

5. This method requires the greatest degree of practice and skill. It is too involved to attempt to describe here, but can be found in survival books and on the internet.

To char the cotton cloth:

- Place small strips or 2x2 inch squares of cotton cloth in a can or other container
- Place a lid on it that has a small hole in the center
- Heat the container until smoke ceases to pour out the hole in the lid
- Let the container cool, then remove the fragile charred remains
- Keep the charred pieces (char) in a container or small plastic bags for ready use when needed.
- Don't wait until you need to start a fire before making the char

HEAT INDEX CHART

The National Weather Service has devised the Heat Index (HI) as a measure of how hot it feels when relative humidity is added to the actual air temperature.

On the Heat Index chart on the **next page**, the HI is at the intersection of the row for temperature and the column for relative humidity.

The area above the solid curved line represents a level of HI that is likely to cause increasingly severe health problems if there is continued exposure and/or physical activity.

HEAT INDEX

AIR TEMPERATURE (°F)	RELATIVE HUMIDITY (%)																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
140	125																				
135	120	128																			
130	117	122	131																		
125	111	116	123	131	141																
120	107	111	116	123	130	139	148														
115	103	107	111	115	120	127	135	143	151												
110	99	102	105	108	112	117	123	130	137	143	150										
105	95	97	100	102	105	109	113	118	123	129	135	142	149								
100	91	93	95	97	99	101	104	107	110	115	120	126	132	138	144						
95	87	88	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136				
90	83	84	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113	117	122		
85	78	79	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97	99	102	105	108
80	73	74	75	76	77	77	78	79	79	80	81	81	82	83	86	88	88	87	88	89	91
75	69	69	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80
70	64	64	65	65	66	66	67	67	68	68	69	69	70	70	70	70	71	71	71	71	72

LATRINE (TOILET):

- Toilet bucket (“luggable loo”), porta-potties, and biodegradable bags, and enzyme packets are very convenient and easily transported in your car.
- Several 5-gallon plastic buckets with tight-fitting lids can be stored for use as makeshift toilets.
- A regular toilet seat can be purchased from the hardware store or improvised from other available material.
- If water is off but the sewer lines are unaffected, toilets can be flushed with stored water.
- If sewer lines are broken, the toilet can be lined with a plastic bag, or a plastic bag in a bucket can be substituted. Use the biodegradable bags and enzyme packets described in the first-aid kit.
- In the wild, the latrine is a pit or trench dug to about 2 ½ feet deep, 1 foot wide, and 4 feet long.
 - Soil removed from digging the trench should be placed nearby so that you can shovel some back in after each use.
 - When waste and soil are about 1 foot below ground surface, cover the remaining depth completely.
 - It is desirable to sprinkle chlorinated lime (not quick lime) after each use to aid in decomposition of waste and to keep animals away from it.
 - The latrine should be placed at a distance down-wind from your camp site, and away from and lower than nearby any stream or pond.
 - For assurance of finding your way to the latrine and back in the dark or in fog, run a rope “hand rail” from the tent to the latrine.

LITTER for carrying injured person. If standard medical litters such as Stryker or KEP are not available, one can be improvised in several ways as long as the victim is kept secure.. The first three basic types involve 2 sturdy poles.

(1) Use shirts , pants, or jackets. Button the shirts or jackets and turn them inside out, leaving the sleeves inside. Then, pass one pole through the sleeves on the right side and one pole through the sleeves on the left side.

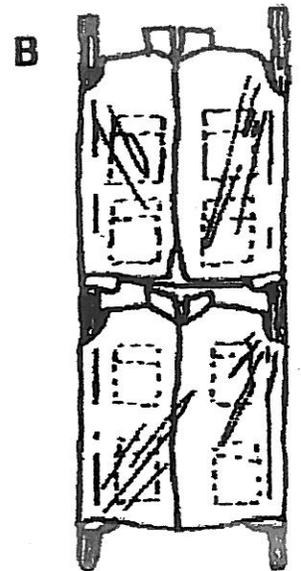
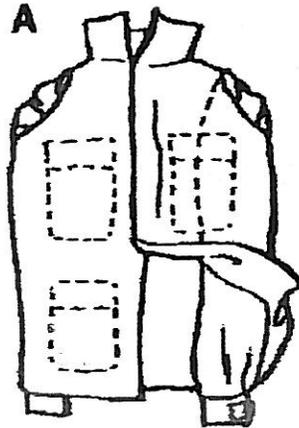
(2) Open a blanket on the ground and lay one pole lengthwise across the middle. Then fold the blanket over the pole. Place the second pole across the middle of the folded blanket and fold the free edges of the blanket across and to the firstpole. Friction between the layers keeps the blanket from loosening.

(3) Use bags, bedticks, and sacks. Cut holes in the two corners of the closed end. Place the sacks lengthwise so the open ends are facing each other. Slide the poles through the holes. Overlap the open ends of the sacks about three inches to provide extra strength in the middle of the litter.

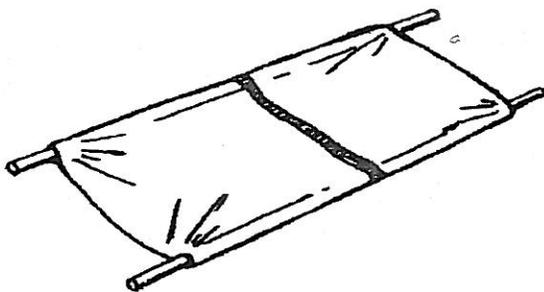
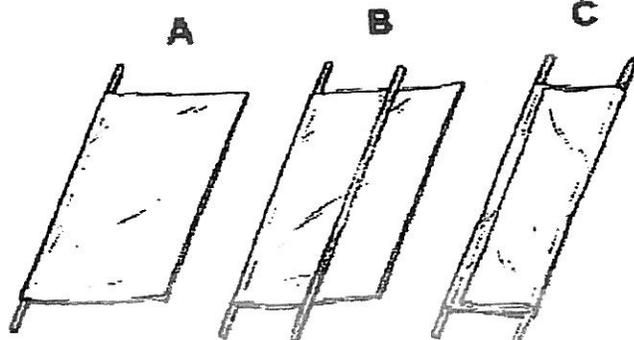
(4) If poles are not available, roll a blanket, tarp, poncho, or similar object from both sides toward the center. Grip the rolls to carry the victim. This method is not to be used if there is suspected spinal injury.

Improvised litters for emergency use.

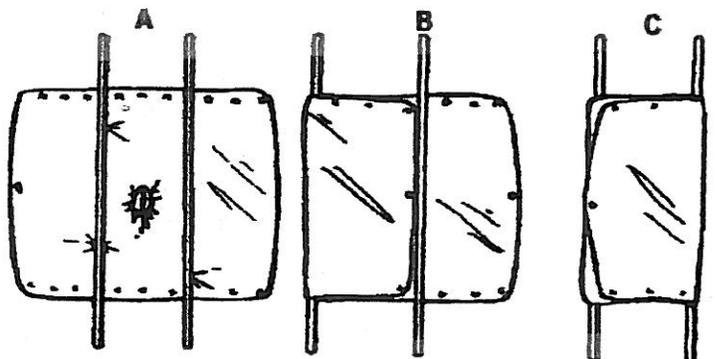
Shirts or jackets



Blanket



Sacks

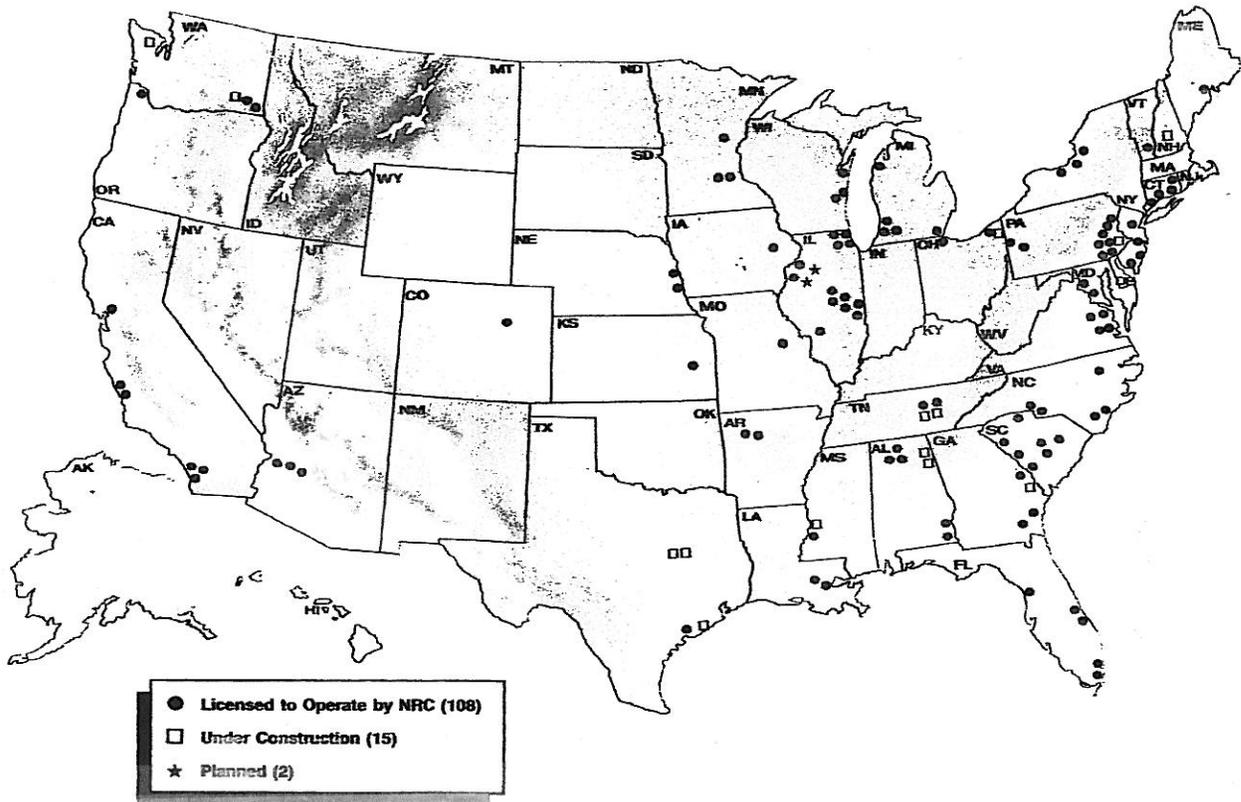


Poncho

MIRROR (See SIGNAL MIRROR)

NUCLEAR POWER PLANTS

Existing and planned nuclear power plants are indicated on the following map:



PACKS:

Principal useful types are the backpack, day pack, and belt pack.

The day pack should be strong and have a frame, padded back. It should be big enough for one day's supply of food, water, clothing, rain gear, etc.

The backpack should be waterproof, strong, adjustable, have a frame, and padded back. It must have adjustable shoulder straps and waist band that has a quick-releas mechanism. The waist strap is a hip band that transfers the weight to your legs via the pelvis.

It is desirable to have several outside pockets for quick access to items such as water and first-aid material. The backpack should be packed so that it is balanced. Heavy items should be uppermost, the weight bearing directly downward and not pulling your shoulders back or making you slouch forward. However, do not place fragile items at the bottom!

You need to be able to access items such as raingear, food, etc., without having to pull everything out. A CERTS-type backpack facilitates this because it can be opened out flat, exposing everything at once. The Kelty-type pack can carry heavy loads but it requires that you empty everything out to get at the bottom-most item.

Careful consideration should be given to the essential nature of what goes in, item by item. You may be carrying the pack for a long distance, so weight is critical. Select items that have multiple uses.

The belt pack is sort of a backward fanny pack, in that its contents ride in front of the body. It is convenient for personal items such as water, sun glasses, notebook, lip balm, sunscreen, and tissue, whereas bigger and less-frequently used items are in the day pack.

The belt pack cannot be worn when carrying the larger backpack because it would be in the way of the backpack hip belt.

PLASTIC SHEETING for shelter and for chemical barrier

Rolls or sheets of VisQueen or similar heavy plastic can be used for making a lean-to, tent, or other shelter, and for covering windows etc in needed for sheltering-in-place, described below.

SHELTERS: Tarps, plastic sheeting, etc. can be used to make a tent or other shelter to protect you from heat, cold, and rain. Poles make a simple frame over which the tarp or plastic can be layed and anchored at the ground by stones or improvised wood stakes.

SHELTER-IN-PLACE

Normal shelter-in-place refers to the need to rely on emergency supplies of food when power is out and when you cannot get to some place that has supplies or shelter. In another case, shelter-in-place is needed when you are quarantined because of infectious disease. In rare events of toxic gas dispersion when you cannot evacuate, shelter-in-place has the added need for sealing all vents, windows, and doors.

For normal sheltering-in-place, you would simply make use of your emergency supplies of food and water.

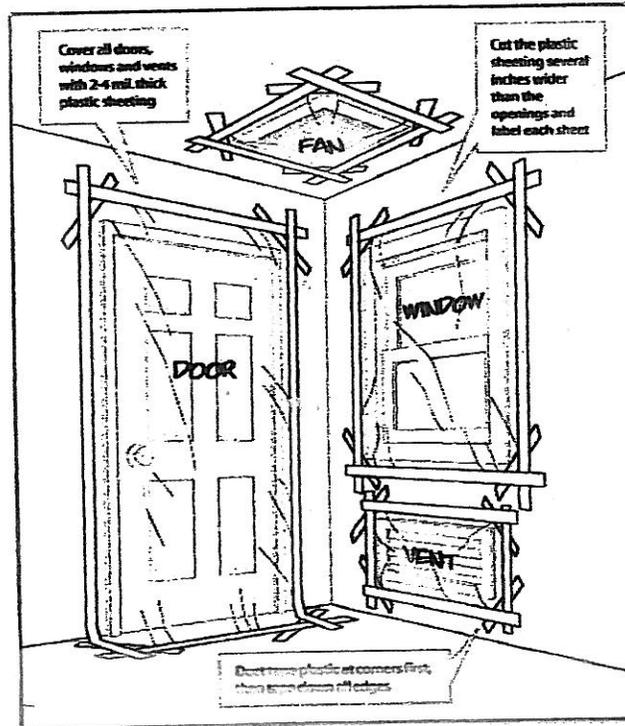
Preparation for sheltering-in-place due to toxic gas .Prepare and store the following for ready use:

- Cut and label plastic sheeting for each window, door, vent, or other opening.
- Several rolls of duct tape for sealing the plastic sheeting.
- Towels for placing under each door to seal against outside air.
- Kits listed in A.2

Procedures for in-place shelters. Seal house so contaminants cannot enter.

- Stay inside the enclosed building.
- If possible, bring your pets inside but do not risk your safety for your pet.
- If your pets cannot be found within a minute or two, you must shelter-in-place without them.
- Close and lock all windows and doors to the outside.
- Close drapes, shades, or curtains over all windows.
- Push wet towels under the exterior doors to provide a seal against outside air.
- Turn off heating and air-conditioning systems and close vents and fireplace damper.
- Use the pre-cut and labeled plastic sheets and duct tape to seal any opening that could allow outside air to enter, including bathroom exhaust fans, dryer vents, etc.
- While sheltering, stay away from windows.
- Select one room as your shelter room. Below ground level is safest - - in basement. A shelter in a first-floor interior room can also provide the necessary protection.
- Close off unnecessary rooms such as storage and laundry and extra bedrooms.
- If gas or vapors enter the building somehow, take shallow breaths through a wet cloth or towel.
- Have a phone (cordless, cellular, or battery-operated as well as the hard-line phone) in your designated shelter room. If one type is disabled, the other may work.
- Listen to emergency alert radio stations and follow instructions.
- Do not attempt to go outside or to drive unless specifically told to do so by authorities.
- Once the emergency has passed, ventilate your entire house to remove any residual hazardous fumes.
- Do not call the school or try to pick up your children. They will be safer sheltering-in-place at school than they would be riding in your car.
- In the first few days after the disaster, leash your pets when they go outside because familiar scents and landmarks may be altered and your pet may become confused and lost.
- Pets that normally are quiet and friendly may become aggressive or defensive for a time until they recover from their confusion and fear

An example of sealing windows , doors, and vents is shown below



SIGNAL MIRROR

Any mirror or piece of shiny metal or glass can be used to signal on sunny days. The type that can be most accurately “aimed” at the rescuer has hole in the center covered by a red screen. The procedure is to place the back of the mirror about 2 inches from your eye and then reflect the sun onto your hand (through the hole) or onto a nearby object. Looking through the center hole a red spot will be seen. Then move the spot to the target. The spot shows the object to which you are signaling.

SNAKE BITE:

- Remain as still and quiet as possible. This is the hardest part!
- Have the victim lie down if possible
- Have someone call 911 or take the victim to the doctor or hospital promptly, if possible
- Keep the bite area lower than the level of the heart to limit circulation of the venom.
- If the bite is on the arm or leg, tightly bandage the limb a few inches above the bite (between it and the heart). The bandage should be tight enough to slow the flow of blood but so tight as to stop all circulation in the limb- - it constitutes a loose tourniquet
- Loosen the band 15 seconds every 10 minutes.
- Keep the bandage on until the physician removes it.
- Do not use the cut-and suction method, use only the suction method. Use suction tubes such as Cutter brand or use a syringe with the tip removed. Continue the suction for ½ hour.
- If no suction apparatus is available and none can be improvised (as from an injection syringe), suck the venom and spit it out. Do this **only** if you have no cuts or sores in your mouth and you cannot get the victim to a doctor quickly..
- Keep the victim warm and calm.
- A charcoal poultice applied promptly is of great benefit.
- Do not give alcohol or hot liquids to drink.
- Swallow ½ glass of water containing one teaspoon of powdered charcoal. Drink another every 15 minutes.
- Do not eat any food until the danger appears to be past.

SOLAR STILL

Pure water can be obtained by distillation by solar heat as shown in the diagram below.

- Choose a sunny, private location at a site of easily dug material
- Dig a steep conical hole about 2x2 to 3x3 feet wide and 2 or 3 feet deep.
- Place a glass jar or bucket in the bottom, with a length of flexible plastic tubing running from it to the surface.
- Chop grass and green leaves and place them around the bucket.
- Place a clean sheet of clear plastic over the hole.
- Put a rock in the center so that it will cause the plastic sheet to sag in the center, to an inch or so above the mouth of the bucket
- Secure the plastic sheet with dirt, rocks, or wooden stakes.
- As the sun heats the greenery, moisture will be evaporated from it and will rise to the plastic sheet
- The condensed water will run down the sloping plastic and drip into the bucket.
- As needed, more greens can be added to prolong the functioning life of the still.
- Moisture will be drawn from the earth as well as the green plant material, and together they will yield as much as 3 pints of pure water in 24 hours.

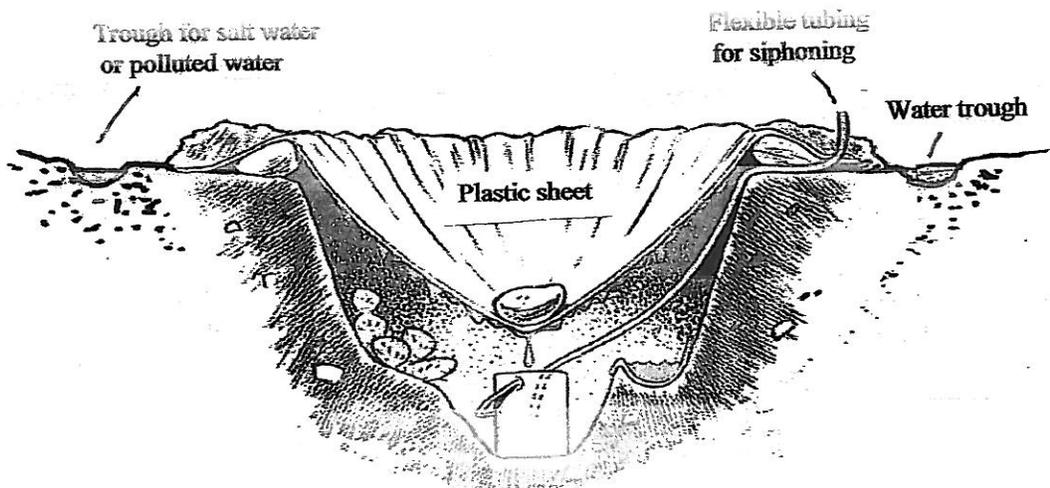
To purify polluted or salt water as an additional source for the still:

Type A.

- Make a bowl-shaped shelf in the wall of the pit, as shown.
- Line the bowl with plastic and fill it with contaminated water.
- Evaporation and condensation will purify it and drip it into the bucket.

Type B:

- Make a trough about 10 inches wide and 3 inches deep outside the hole and about 10 inches from the lip of the pit.
- Pour polluted or salt water into the trough, making sure not to spill any around the rim where the plastic sheet touches the soil,
- The water will soak into and be filtered by the soil.
- The water will be evaporated when it soaks into the wall of the pit (below the plastic sheet) and will condense on the sheet and drain into the container.



AMOUNT OF WATER NEEDED : Numerous reliable reports recommend 2quarts (½ gallon) of water per person per day just for drinking. Another 2 quarts should be planned for washing and cooking.(For example, see the National Geographic “Complete Survival Manual” in section D, below)

WATER CONTAINERS: Because of the danger of bisphenol A (BPA) - - a chemical found in plastics used for many bottles - - consider the following, especially for infants and children because BPA may disrupt neural and behavioral development in fetuses, infants, and children:

1. Always avoid plastic with no. 7 printed in the triangle on the bottom of the container.
Safe numbers are 1, 2, and 5.
2. Do not microwave food in any type of plastic container
3. Use ceramic, enamel, or glass plates.
4. Take a close look at canned food because of inner plastic linings; the chemicals in the plastic can leach into the food.

WATER SOURCES Drink water you know is not contaminated. If necessary, suspicious-looking water such as cloudy water from faucets, streams or ponds, can be used after treatment (see below). If treatment is not possible, put off drinking water as long as possible, but do not become dehydrated. If the water is off in your home, you can use that which is in the plumbing system.

Safe sources:

- melted ice cubes
- liquids from canned fruit or vegetable juices
- toilet tank (not the bowl) unless you have added any chemicals to the tank.
- water from water heater and water drained from pipes.
- To use the water that is in the hot-water tank, be sure that the gas or electricity is turned off. Open the drain at the bottom of the tank. Start water flowing by turning off the water intake valve and turn on a hot-water faucet.
- To use the water in your pipes, let air into the plumbing system by turning on the faucet that is at the highest level (.e.g. second floor). A small amount of water will flow out, then obtain water from lower faucet (e.g. basement).
- Rainwater.
- Ponds and lakes if filtered or boiled.
- Natural springs and seeps.
- Streams and rivers if filtered or boiled.

Unsafe sources:

- radiators
- boilers (from home heating systems)
- water beds
- toilet bowl or flush tank
- swimming pool or spa
- water from the condensation produced by an air conditioner or “swamp cooler” air conditioner. That water may contain mold that has grown around the moist parts of the equipment,

Other

- Do not drink carbonated beverages instead of water.
- Caffeinated drinks and alcohol dehydrate the body, which increases the need for water.

Commercially-bottled water.

- Keep water in original container and do not open any until you need to use it. Observe the “use by” dates.

Preparing your own water containers.

- Buy food-grade water storage containers or re-use 2-liter plastic soft-drink bottles. Not plastic jugs or cardboard containers that held milk or fruit juice in them. Milk products and fruit sugars cannot be adequately removed from those containers, and they provide an environment for bacterial growth when water is subsequently stored in them.

- Cardboard containers leak easily and are not designed for long-term storage of liquids.
- Do not use glass containers because they might break, and they are heavy.
- Before filling, clean thoroughly with dishwashing soap and water. Rinse completely so there is no residual soap. Sanitize the plastic soda bottles by adding a solution of 1 teaspoon of non-scented liquid household chlorine bleach to a quart of water. Swish the solution in the bottle so that it reaches all surfaces. After sanitizing, thoroughly rinse out the solution with clear water.
- Fill the bottle to the top with regular tap water. is from a commercially treated from a water utility with chlorine, you do not need to add anything else to the water. If the water is from a well or source not treated with chlorine, add 2 drops of the chlorine bleach to the water.
- Replace the water every 6 months if not commercially bottled water.

WATER TREATMENT, FILTERS, AND PURIFIERS:

Methods are

boiling at least 5 minutes

chlorination by adding 16 drops of household bleach (containing 5.25% hypochlorite) per gallon water.

distillation, including solar still (below)

special filtering and purifying devices.

Filters and purifiers range in price from a few dollars to several hundred dollars depending on the rate and amount of water to be treated. and include brands and types such as:

“Katadyn” purifier water bottles - -several styles, some filtering as small as 0.2 microns

“SteriPEN”, uses UV light to sterilize water

“First Need XL” Purifier

“Aquagear” Water Filter Bottle with Disinfection tablets

Colloidal silver solution

“Lifeguard” water container and filter (0.3 micron)

Purification tablets such as “Potable Aqua”, Katadyn Micropur”

Iodine tablets

Check internet and camping stores for more examples

WIND-CHILL FACTOR. Movement of cold air by wind greatly increases the cooling effect of the air.

This cooling is referred to as the windchill factor. Results are shown in the following table. If you are wet, the risk of wind chill increases even more because of the evaporation of moisture from your clothing added to by the heat of your body.

Wind speed	Temperature (F)										
	20	10	0	-10	-20	-25	-30	-35	-40	-45	
calm											
	Equivalent chill temperature										B
5 mph	16	6	-5	-15	-26	-31	-36	-42	-47	-52	C
10mph	3	-9	-22	-34	-46	-52	-58	-64	-71	-77	D
15 mph	-5	-18	-31	-45	-58	-65	-72	-78	-85	-92	
20mph	-10	-24	-39	-53	-67	-74	-81	-88	-95	-103	
25 mph	-15	-29	-44	-59	-74	-81	-88	-96	-103	-110	
30 mph	-18	-33	-49	-64	-79	-86	-93	-101	-109	-116	
35mph	-20	-35	-52	-67	-82	-89	-97	-105	-113	-120	
40mph	-21	-37	-53	-69	-84	-92	-100	-107	-115	-123	
	A	B	C		D						

A Warm outer clothing is necessary.

B Skin begins to freeze if exposed to air for longer than just briefly.

C Outdoor travel is dangerous. Exposed skin can freeze in one minute.

D Exposed skin is apt to freeze in less than 30 seconds.

D. SOURCES FOR SOME OF THE TEXT

This material used in this guide was compiled and modified from numerous oral and written sources, including:

- >Discussions with participants at the weekly Disaster Preparedness meetings which were held for 6 months at North Valley SDA Church .
- >Training at the Ashland CERT program.
- >Material I presented during my courses (G120)on Volcanoes and Earthquakes at Southern Oregon University.
- >Discussions during my presentations at Preparedness Fairs sponsored by the LDS Church in Central Point (2005), in Medford (2007) and in Grants Pass (2008)).
- >Presentations and discussions at the Disaster Preparedness program sponsored by Wolf Creek Fire Department, December, 2008.

BOOKS , REPORTS, AND NEWSPAPER GUEST PRESENTATIONS:

- “Adventist Disaster Response” manual, 2007, 97 pp.
- “After a Fire- - Put the Destruction Behind You” SYNDISTAR, Inc. brochure #PB-FP113, 4 pp.
- “Are You Prepared?” Jackson County Integrated Fire Plan: Wildfire Home Safety Instruction Video (DVD) Prepared by the U.S.Forest Service, National Assoc. of State Foresters, Bureau of Land Management, Bureau of Indian Affairs, Fish and Wildlife Service, National Park Service, and the U.S. Fire Administration. (One hour and five minutes running time).
- “Are You Ready”, An in-depth guide to citizen preparedness. FEMA, August 2004, 206 pp.
- “ Are You Ready For a Fire?”, American Red Cross brochure ARC 4456, Rev. Sept. 1998, 2 pp.
- “ Be Red Cross Ready”, American Red Cross, brochure number A1719, 2006, 4 pp.
- “Cascadia Peril 2009” Full-Scale Earthquake and Tsunami Exercise. A statewide multi-agency event. Preliminary plans, 2008
- “CERT Disaster Kit For Personal Use”: Ashland Fire and Rescue, Oregon
- “Community Emergency Response Team [CERT] Participant Handbook , 1994, 269 pp.
- “Community Mitigation For Pandemic Flu” - - (1)Individuals and Families, 4 pp.; (2) Faith-Based and Community Organizations, 6 pp.; Jackson County Emergency Preparedness, 4 pp.
- “Complete Survival Manual”,Michael Sweeney and others: National Geographic, 2008, 400 pp.
- “Disaster Planning Guide” Liberty Mutual Insurance Co. Report LIB-insert 0606-F, 6 pp.
- “Disaster Preparedness For You and Your Household”, Benton County Oregon, Nov. 2006, 39 pp.
- “Earthquake Preparedness” FEMA brochure 240, April 1993, 8 pp.
- “Earthquake Safety Checklist”FEMA brochure, 7 pp.
- “Emergency Survival Kits in Case of Terrorism”, GetReadyGear, www.getreadygear.com, 2008, 2 pp.
- “Edible and Medicinal Plants of the West”, Tilford, Mountain Press Publishing Co, 1999, 239 pp.
- “Edible Wild Plants - -A North American Field Guide” Elias and Dykeman, Sterling Publishing Co., 1990, 286 pp.
- “Emergency Essentials: Tips for Preparedness”, compiled by Larry Barkdull, Shadow Mountain, 2003, 132 pp.
- “Emergency Preparedness Checklist”: Red Cross and FEMA, brochure no. ARC 4471, 1991. 4 pp.
- “Emergency Supply List”, U.S.Department of Homeland Security, READY-R-0406-03, 2 pp.
- “EQSERVICES” www.seismo-watch.com/EQSERVICES?Preparedness/EQDrills.html. 2006, 2 pp.
- “Josephine County Family Emergency Preparedness Handbook - - What You Need to Know BEFORE Disaster Strikes”, Josephine County Emergency Management, 53 pp.
- “Family Earthquake Safety Home Hazard Hunt and Drill”, FEMA brochure 113 September 1996, 6p.
- “Family Health Book”from the Mayo Clinic
- “Family Medical Guide”from the American Medical Association

- “Ready Book”, Compiled by a working group comprised of Ashland CERT, Jackson County Preparedness, Vulnerable Populations, and HPP. Revised, .2009
- “Reducing the Risks of Nonstructural Earthquake Damage, A Practical Guide”, FEMA 74, September, 1994, 131p.
- “Southern California Earthquake Preparedness Project” brochure extract June 1985, 8 pp.
- “Survival Tools to Shelter-in-Place”, GetReadyGear, www.getreadygear.com, 2008, 4 pp.
- “The Johns Hopkins Medical Handbook - - The 100 Major Medical Disorders of People Over the Age of 50”, by Margolis and Moses, 1992, 638 pp.
- “The Next Big One” Guest Opinion in Mail Tribune by Professors Dittmer and Smedes, 1998
- “The Backpacker’s Handbook”, Hugh McManners, DK Publishing, Inc., 1995, 160 pp.
- “Seismo-Watch” , www.seismo-watch.com/EQSERVICES/Preparedness/EQDrills.html, 2006, 2 pp.
- “Taking shelter From the Storm”, FEMA brochure FEMAL-233/June 2005. 5 p[p.
- “The Safe Home Guide”, State Farm Insurance Co. F7-2172.7, (no date). 7 pp.
- “The Science of Juice Plus” by Richard E. DuBois, MD
- “Together We Prepare Oregon”, American Red Cross disaster preparedness booklet, 28 pp.
- “When Disaster Strikes”, Josephine County Family Emergency Preparedness Handbook
- “When Disaster Strikes - -A Guide to Emergency Management and Homeland Security” L.A.W. Publications, 2003, 30 pp.
- “When There is No Dentist - -Simple Home Remedies” Prevention, Hygiene/Nutrition, Diagnosis, Treatment, and Dental Care Kit; unknown author. From health manual of Peaceful Valley Lodge, 2003, 18 pp.
- “Wilderness 911, A Step-by-step Guide for Medical Emergencies and Improvised Care In the Backcountry”. Eric A. Weiss, MD, The Mountaineers, 1998, 240 p.
- “Wildfire - -Are You Prepared?” Josephine County Integrated Fire Plan brochure. 5 pp.
- “Wildfire: Are You Prepared?” : Rogue Valley Fire-Prevention Cooperative brochure, 11 pp.
- “Winter Storms Require a 72 Hour Kit”, GetReadyGear, www.getreadygear.com, 2008, 3 pp.
- “Y2K: Are You Compliant?” : SDA Remnant Ministry, Talent, Oregon. 29 pp.
- “Your Survival: The Complete Resource for Disaster Planning and Recovery”, . Dr. Bob Arnot, Hatherleigh Press, 2006, 148 pp. + DVD

E. SOURCES FOR SOME OF THE EQUIPMENT AND SUPPLIES

The following are examples of the kinds of places that sell equipment or supplies listed in the kits (A.2.a-e, above).

Antique shops	Grocery stores
Army-Navy surplus stores	Harbor Freight Tools (Medford)
Big 5	Hardware stores
Big R (White City)	Herb Pharm (in Williams)
Bi-Mart	Herb Shop
Cabela’s catalog	Magellan catalog
Dollar Store	Recreational Equipment Inc. (REI) catalog
Drug stores	Rite Aid
Emergency Essentials catalog (Orem, Utah)	Sunshine Natural Foods
Farmers Building Supply	Walgreen’s
GI Joe	Wal Mart
Grange Coop	

In addition, there are endless lists of suppliers on the internet under various general and specific headings.