



# CITY OF SAUSALITO

## DISASTER PREPAREDNESS – EMERGENCY OPERATIONS PROGRAM

*“Preparing and Protecting our Community”*

## Effective Shelter Strategies During Emergencies/Disasters

### Shelter

Taking shelter is critical in times of disaster. Sheltering is appropriate when conditions require that you seek protection in your home, place of employment, or other location where you are when disaster strikes. Sheltering outside the hazard area would include staying with friends and relatives, seeking commercial lodging, or staying in a mass care facility operated by disaster relief groups in conjunction with local authorities.

To effectively shelter, you must first consider the hazard and then choose a place in your home or other building that is safe for that hazard. For example, for a tornado, a room should be selected that is in a basement or an interior room on the lowest level away from corners, windows, doors and outside walls. Because the safest locations to seek shelter vary by hazard, sheltering is discussed in the various hazard sections. These discussions include recommendations for sealing the shelter if the hazard warrants this type of protection.

Even though mass care shelters often provide water, food, medicine, and basic sanitary facilities, you should plan to take your disaster supplies kit with you so you will have the supplies you require. Mass care sheltering can involve living with many people in a confined space, which can be difficult and unpleasant. To avoid conflicts in this stressful situation, it is important to cooperate with shelter managers and others assisting them. Keep in mind that alcoholic beverages and weapons are forbidden in emergency shelters and smoking is restricted.

The length of time you are required to shelter may be short, such as during a tornado warning, or long, such as during a winter storm. It is important that you stay in shelter until local authorities say it is safe to leave. Additionally, you should take turns listening to radio broadcasts and maintain a 24-hour safety watch.

During extended periods of sheltering, you will need to manage water and food supplies to ensure you and your family have the required supplies and quantities.

### Essential Guidelines for Managing Water Supplies

1. **Allow people to drink according to their needs.** Many people need even more than the average of one-half gallon, per day. The individual amount needed depends on age, physical activity, physical condition, and time of year.
2. **Never ration water unless ordered to do so by authorities.** Drink the amount you need today and try to find more for tomorrow. Under no circumstances should a person drink less than one quart (four cups) of water each day. You can



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minimize the amount of water your body needs by reducing activity and staying cool.

3. **Drink water that you know is not contaminated first.** If necessary, suspicious water, such as cloudy water from regular faucets or water from streams or ponds, can be used after it has been treated. If water treatment is not possible, put off drinking suspicious water as long as possible, but do not become dehydrated.
4. **Do not drink carbonated beverages instead of drinking water.** Carbonated beverages do not meet drinking-water requirements. Caffeinated drinks and alcohol dehydrate the body, which increases the need for drinking water.
5. **Turn off the main water valves.** You will need to protect the water sources already in your home from contamination if you hear reports of broken water or sewage lines, or if local officials advise you of a problem. To close the incoming water source, locate the incoming valve and turn it to the closed position. Be sure you and other family members know how to perform this important procedure.
  - To use the water in your pipes, let air into the plumbing by turning on the faucet in your home at the highest level. A small amount of water will trickle out. Then obtain water from the lowest faucet in the home.
  - To use the water in your hot-water tank, be sure the electricity or gas is off, and open the drain at the bottom of the tank. Start the water flowing by turning off the water intake valve at the tank and turning on the hot water faucet. Refill the tank before turning the gas or electricity back on. If the gas is turned off, a professional will be needed to turn it back on.

## Water Sources

### Safe Sources

- Melted ice cubes
- Water drained from the water heater (if the water heater has not been damaged)
- Liquids from canned goods such as fruit or vegetable juices
- Water drained from pipes

### Unsafe Sources

- Radiators
- Hot water boilers (home heating system)
- Water beds (fungicides added to the water or chemicals in the vinyl may make water unsafe to use)
- Water from the toilet bowl or flush tank



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- Swimming pools and spas (chemicals used to kill germs are too concentrated for safe drinking but can be used for personal hygiene, cleaning, and related uses)

### **Water Treatment**

Treat all water of uncertain quality before using it for drinking, food washing or preparation, washing dishes, brushing teeth, or making ice. In addition to having a bad odor and taste, contaminated water can contain microorganisms (germs) that cause diseases such as dysentery, cholera, typhoid, and hepatitis.

There are many ways to treat water. None is perfect. Often the best solution is a combination of methods. Before treating, let any suspended particles settle to the bottom or strain them through coffee filters or layers of clean cloth.

Make sure you have the necessary materials in your disaster supplies kit for the chosen water treatment method.

There are three water treatment methods. They are as follows:

- Boiling
- Chlorination
- Distillation

These instructions are for treating water of uncertain quality in an emergency situation, when no other reliable clean water source is available, or you have used all of your stored water.

#### **Boiling**

Boiling is the safest method of treating water. In a large pot or kettle, bring water to a rolling boil for 1 full minute, keeping in mind that some water will evaporate. Let the water cool before drinking.

Boiled water will taste better if you put oxygen back into it by pouring the water back and forth between two clean containers. This also will improve the taste of stored water.

#### **Chlorination**

You can use household liquid bleach to kill microorganisms. Use only regular household liquid bleach that contains 5.25 to 6.0 percent sodium hypochlorite. Do not use scented bleaches, color safe bleaches, or bleaches with added cleaners. Because the potency of bleach diminishes with time, use bleach from a newly opened or unopened bottle.

Add 16 drops (1/8 teaspoon) of bleach per gallon of water, stir, and let stand for 30 minutes. The water should have a slight bleach odor. If it doesn't, then repeat the



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dosage and let stand another 15 minutes. If it still does not smell of chlorine, discard it and find another source of water.

Other chemicals, such as iodine or water treatment products sold in camping or surplus stores that do not contain 5.25 to 6.0 percent sodium hypochlorite as the only active ingredient, are not recommended and should not be used.

### Distillation

While the two methods described above will kill most microbes in water, distillation will remove microbes (germs) that resist these methods, as well as heavy metals, salts, and most other chemicals.



Distillation involves boiling water and then collecting only the vapor that condenses. The condensed vapor will not include salt or most other impurities. To distill, fill a pot halfway with water. Tie a cup to the handle on the pot's lid so that the cup will hang right-side-up when the lid is upside-down (make sure the cup is not dangling into the water) and boil the water for 20 minutes. The water that drips from the lid into the cup is distilled.

### Effectiveness of Water Treatment Methods

Methods	Kills Microbes	Removes other contaminants (heavy metals, salts, and most other chemicals)
Boiling	yes	no
Chlorination	yes	no
Distillation	yes	yes

### Essential Guidelines for Managing Food Supplies

#### Safety and Sanitation

Do:

- Keep food in covered containers.
- Keep cooking and eating utensils clean.



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- Keep garbage in closed containers and dispose outside, burying garbage if necessary.
- Keep your hands clean by washing them frequently with soap and water that has been boiled or disinfected.
- Use only pre-prepared canned baby formula for infants.
- Discard any food that has come into contact with contaminated floodwater.
- Discard any food that has been at room temperature for two hours or more.
- Discard any food that has an unusual odor, color, or texture.

### Don't

- Eat foods from cans that are swollen, dented, or corroded, even though the product may look safe to eat.
- Eat any food that looks or smells abnormal, even if the can looks normal.
- Use powdered formulas with treated water.
- Let garbage accumulate inside, both for fire and sanitation reasons.

Note: Thawed food usually can be eaten if it is still “refrigerator cold.” It can be re-frozen if it still contains ice crystals. To be safe, remember, “When in doubt, throw it out.”

### Cooking

- Alternative cooking sources in times of emergency include candle warmers, chafing dishes, fondue pots, or a fireplace.
- Charcoal grills and camp stoves are for outdoor use only.
- Commercially canned food may be eaten out of the can without warming.
- To heat food in a can:
  1. Remove the label
  2. Thoroughly wash and disinfect the can. (Use a diluted solution of one part bleach to ten parts water.)
  3. Open the can before heating.

### Managing Without Power

Here are two options for keeping food safe if you are without power for a long period:

- Look for alternate storage space for your perishable food.
- Use dry ice. Twenty-five pounds of dry ice will keep a 10-cubic-foot freezer below freezing for 3-4 days. Use care when handling dry ice, and wear dry, heavy gloves to avoid injury.