

Snohomish County Health Department advises you to follow health and safety precautions when preparing for, or returning home after a flood. This *Emergency Flood Sanitation* fact sheet addresses:

- **flood preparation**
- **water sanitation**
- **disinfection of a well**
- **food contamination**
- **sewage and garbage disposal**
- **electrical safety**
- **household effects**
- **building clean up**
- **important resources**



Flood waters might be contaminated and can make you sick if you drink it or eat flood-contaminated food. If you have an open sore or wound, keep the wound as clean as possible as soon as possible by washing with soap and clean water.

Parents, do not allow children to play in flood waters or with toys the flood water touched. Disinfect contaminated toys with a solution of 1 cup of bleach in 5 gallons of water. Wash children's hands frequently, and always before meals.

Shut off all electrical power and natural gas or propane tanks. Returning home in daylight is best. If you have to get there in the dark, use battery-powered flashlights and not candles or gas lanterns. Notify the gas company or the police/fire departments immediately if you smell gas or suspect a gas leak.



Do you have a safe drinking water supply? If you are on a public water supply, check with your local water Department for current conditions. If you are on a well or private water system, please read "Disinfection of a Well" on page 2.

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## FLOOD PREPARATION

1. Have emergency food, water and medical supplies in a convenient dry place. Food should require little cooking and no refrigeration.
2. Store water in thoroughly washed containers. Plastic containers such as soft drink bottles are best. Seal tightly, label them and store in a cool dark place. Rotate water every 6 months.
3. Keep liquid chlorine household bleach handy for use in disinfecting water and clean up.
4. Protect food freezers and refrigerators, particularly if they are in a basement. Units should be raised or removed entirely.
5. If water rises, protect the water supply equipment. Remove the electric pump to a safe location to protect the motor.
6. Remove the sump pump before water reaches the basement. The pump will be useful in later clean-up operations if you have kept it dry.
7. If time permits, turn off all utilities at the main power switch and close the main gas valve before you evacuate the building. Don't touch electrical equipment unless it is in a dry area.

## WATER SANITATION

**Drinking water** – Do not use water from a private water system that's been flooded. Use only boiled or treated water. Bring the water to a full rolling boil for 1 minute before using. Water for brushing teeth, washing dishes or foods, requires the same treatment as drinking water.

1. If you need large quantities of water, or if boiling is inconvenient because of fuel failures, use ordinary liquid household chlorine bleach to treat the water. Add 1/2 teaspoon to each 5 gallons of water, or 8 to 10 drops to a gallon of water. Double the amount of bleach for cloudy or colored water. Allow the mixture to stand for 30 minutes before using.
2. Once flood waters recede and power returns, the well will need to be disinfected.

**NOTE:** If you are on a public water supply and your area has flooded, check with your local water Department or company about current conditions. Boil your water for 1 minute if you see any indications of problems with water quality.

## DISINFECTION OF A WELL

1. Remove any debris that may have entered the well during flooding. Run the water until it becomes clear.
2. Roughly calculate the volume of water in the well. To do this, multiply the number of cubic feet of water by 7 1/2 to determine the number of gallons. (NOTE: For a 36-inch diameter casing, each foot of water equals about 50 gallons. For a 6-inch diameter casing, each foot of water equals about 2 gallons.)

3. Use liquid chlorine bleach (5 1/4 – 6 1/2% chlorine) in an amount equivalent to 1 gallon for each 1,000 gallons of water in the well. Do not use bleach with additives such as “fresh scent.”
4. Pour the required quantity of bleach into the well. Connect a garden hose to the nearest outside faucet and circulate the water through the hose and back into the well. This will mix the chlorine with the water and the pump will draw the chlorine to the bottom of the well. After you start smelling the chlorine in the water coming out of the hose, work the hose around to rinse the upper portion of the well with the disinfectant. (NOTE: If you cannot reach the well with a hose, you can rinse the upper portion of the casing by pouring chlorinated water down the inside of the case using a bucket. Mix 1 cup chlorine bleach per bucket of water.)
5. Draw water at every water outlet connected to the system until you smell a strong chlorine odor.
6. Allow the disinfectant to remain in the system overnight (24 hours is best).
7. Use one or more outside faucets to draw water out of the well to remove the chlorine. Flush the well thoroughly and repeatedly to remove the chlorine. Also flush all of the water lines.
8. After following this procedure and rendering the water completely free of disinfectant, you should wait a minimum of 7 days following disinfection of a drilled well prior to checking it for bacteria by sampling. Wait a minimum of 14 days following disinfection of a dug well before resampling. The bacteriological analysis will tell you if the underground source of water is safe to drink.

You can get water sample bottles and turn them in at the following locations:

- Snohomish County Health Department, Environmental Health Section, Room 104, located in the Rucker Building, 3020 Rucker Avenue, Everett WA, 98201
- American Printers/Edge Analytical, 16821 Smokey Point Blvd, Arlington WA, 98223

There is a sample analysis fee to test the water for coliform bacteria payable when you bring in the water sample. The cost is \$22 per sample.

### **FOOD CONTAMINATION**

1. Destroy foods, medicines, and cosmetics in cardboard containers or other packages that are not hermetically sealed, and which have been in contact with flood waters. This includes flour, cereal and other commodities in bags or packages. Cans should be rinsed in a dilute bleach solution before opening.
2. Discard fresh fruit and vegetables which have been contaminated.
3. Use only commercially pasteurized or canned milk that has not touched flood waters.
4. If the refrigeration is off for more than 4 hours, some foods may become unsafe for consumption. Contact us for advice, 425.339.5250.

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### **Environmental Health Division**

3020 Rucker Avenue, Suite 104 ■ Everett, WA 98201-3900 ■ fax: 425.339.5254 ■ tel: 425.339.5250

5. If the power is off, you can use dry ice from the nearest source (such as dairies) to preserve food for many hours.
6. When in doubt about the safety of any food or drug product, throw it out.

### **SEWAGE AND GARBAGE DISPOSAL**

1. Check your septic tank and pump it out after flood waters recede. You may need to replace your septic system if it is severely damaged or corroded.
2. If you use a temporary pit privy, put lime in the pit frequently to keep down odors and flies, and again when you abandon the pit.
3. Garbage should be taken to a county drop-box or transfer station for proper disposal.

### **ELECTRICAL SAFETY**

Wet or flooded fixtures and wires present a serious threat of fire or electrocution. To reduce the danger of electrical shock or fire, do not attempt to use electricity until it is thoroughly checked by a qualified professional.

### **HOUSEHOLD EFFECTS**

1. Use soap and water to thoroughly scrub all your household belongings made of wood, metal or of other hard substances, including glass and chinaware. Allow them to dry.
2. Thoroughly launder or dry clean clothing, bedding and other effects made of soft materials. Mattresses and stuffed furniture cannot be adequately cleaned, even with steam. Discard them.
3. Dry wet-washed items for 10 hours in direct sunshine when possible.
4. Wash your hands in soap and water immediately after handling objects you have recovered from the flood areas. Keep your hands away from your mouth while cleaning or otherwise handling these objects.

### **BUILDING CLEAN-UP**

1. Clear out trash and mud and remove from building. Arrange for a dumpster with your refuse collection company.
2. Flush with clean water with a hose under pressure, if possible. Do not use river water.
3. Scrub floors and walls and all other surfaces which people are likely to touch. Do this with soap and hot water. Rinse thoroughly with clean water. Drain off water.
4. After scrubbing flooded surfaces, use a disinfectant solution (1 ounce of household bleach to 4 gallons of water).

5. Open all doors and windows and allow the entire building and everything in it to dry thoroughly. Do not reoccupy the building for at least 10 hours after it's dry.
6. Check flues, chimneys, wiring and plumbing.
7. Check for weakened foundations, warped doors and windows.
8. Flood waters may carry a variety of germs and contaminants. Wash your hands frequently with soap and disinfected water to prevent the spread of disease. Wear gloves and boots at all times.
9. If sewage has overflowed within the residence, refer to the Snohomish County Health Department's "Guidelines for Cleaning Indoor Sewage Spills" for clean up procedures.

### **OTHER RESOURCES**

For more information regarding flood hazards and assistance, contact the following agencies:

**Snohomish County Department of Emergency Management**

<http://www.snohomishcountywa.gov/180/Emergency-Management>

720 – 80<sup>th</sup> St SW – Bldg A, Everett 98203

425.388.5060

Flood Information – 24-hr recording

- Skykomish, Snohomish, Snoqualmie: 425.388.3653
- Stillaguamish: 425.388.3702

**American Red Cross**

<http://www.snohomishcounty.redcross.org/>

Snohomish County Chapter, 2530 Lombard Avenue, Everett 98201

Phone: 425.252.4103

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