



## EMERGENCY FLOOD SANITATION

Snohomish Health District advises the public to follow health and safety precautions when preparing for, or returning home after a flood. This Emergency Flood Preparation information sheet contains general information on: **flood preparation, water sanitation, disinfection of a well, food contamination, sewage and garbage disposal, electrical safety, household effects, building clean-up, and a list of other important resources.**



Flood waters can possibly be contaminated. Practicing simple hygiene can help eliminate much risk of serious illness from flood waters. Direct skin contact with flood water does not, by itself, pose a serious health risk, however; eating and drinking from flood water contaminated items may pose a serious risk. If you have an open sore or wound, it is critical to keep the wound clean as possible by washing with soap to control infection.

Parents need to help children avoid waterborne illness from contaminated flood waters. Do not allow children to play in flood waters or with toys exposed to flood water. Toys that have come into contact must be disinfected (use a solution of one cup of bleach in five gallons of water.) Always wash children's hands frequently (and always before meals.)

It is also critical to shut off all electrical power and natural gas or propane tanks. Returning home during daylight hours is best, however, if you must return in the dark use battery powered flashlights rather than candles or gas lanterns. Notify the gas company or the police/fire departments immediately if you smell gas or suspect a gas leak.

Potable drinking water is critical to maintain after a flood. If you are on a public water supply, check with your local water district for current conditions. If you are on a private water system (well), please reference the section titled "**disinfection of a well**" for instructions.



Snohomish Health District wants to ensure a safe preparation and homecoming following a flood disaster. Please call Snohomish Health District, Environmental Health Division at 425.339.5250 for further help/information.



ENVIRONMENTAL HEALTH DIVISION  
Water and Wastewater Section  
3020 Rucker Ave, Suite 104  
Everett WA 98201-3900  
425.339.5250 FAX: 425.339.5254

**PUBLIC HEALTH**  
ALWAYS WORKING FOR A SAFER AND  
**HEALTHIER COMMUNITY**

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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 great. Seal tightly, label them and store in a cool dark place. Rotate water every six months.
3. Keep liquid chlorine household bleach handy for use in disinfecting water and in clean-up.
4. Food freezers and refrigerators should be protected, particularly if in basement. Units should be raised or, if possible, removed entirely.
5. If water rises, protect water supply equipment. Remove electric pump to a safe location to protect motor.
6. Remove sump pump before water reaches basement. 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 if evacuating. Don't touch electrical equipment unless it is in a dry area.

### WATER SANITATION

1. **Drinking Water** - Private water systems that have been flooded should not be used until water is boiled or treated. Bring the water to a full rolling boil for one minute before using. Water used for brushing teeth, washing dishes or foods, requires the same treatment as drinking water.
2. In the event that large quantities of water are required, or boiling is inconvenient because of fuel failures, ordinary liquid household chlorine bleach can be used. Add one-half teaspoon to each five gallons of water, or eight to ten 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.
3. 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 been subject to flooding, check with your local water district or company as to current conditions. Boil your water for one minute if there are any indications of problems.

### 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

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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 a strong chlorine odor is perceptible.
6. Allow the disinfectant to remain in the system overnight (24 hours is preferable).
7. Use one or more outside faucets to draw water out of the well to remove the chlorine. The well should be thoroughly and repeatedly flushed to remove the chlorine. All of the water lines should also be flushed.
8. After following this procedure and rendering the water completely free of disinfectant, you should wait a minimum of seven (7) days following disinfection of a drilled well prior to resampling. You should wait a minimum of fourteen (14) days following disinfection of a dug well prior to resampling. This bacteriological analysis will indicate whether or not the underground source of water is safe for consumption.

Water sample bottles may be obtained at the Snohomish Health District, Environmental Health Section, Room 104, located in the Rucker Building, 3020 Rucker Avenue, Everett, or at the South County Clinic, 6101 200th Street SW, Lynnwood. Water bottles must be brought in to the Rucker building. There is a sample analysis fee to test the water for coliform bacteria, payable when the water sample is brought in.

### 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. Fresh fruit and vegetable products which have been contaminated should be discarded.
3. Use only commercially pasteurized or canned milk that has not been subject to flood waters.
4. If the refrigeration is off for more than 4 hours, some foods may become unsafe for consumption. Contact the Snohomish Health District Food Section at 425.339.5250 for advice.
5. If the power is off, dry ice obtained from the nearest source (such as dairies) may be used 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. Septic tanks should be checked and pumped out if necessary after flood waters recede. Drainfields should need replacing only if severely damaged or eroded.
2. If temporary pit privies are used, lime should be used in the pit frequently to keep down odors and flies, and again when the pit is abandoned.
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 thoroughly checked by a qualified professional.

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### HOUSEHOLD EFFECTS

1. Effects made of wood, metal or of other hard substances, including glass and chinaware, should be thoroughly scrubbed with soap and hot water and then allowed to dry.
2. Clothing, bedding and other effects made of soft materials, should be either thoroughly laundered or dry-cleaned. Mattresses and stuffed furniture cannot be adequately cleaned, even with steam, and should be discarded.
3. Wet-washed effects should be dried for 10 hours. Whenever possible, drying should be done in the direct sunlight.
4. Wash your hands in soap and water immediately after handling objects which have been 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. Arrangements for a dumpster, if needed, should be made with your refuse collection company.
2. Flush with clean water - if possible with a hose under pressure. Do not use river water for this.
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, a disinfectant solution (one ounce of household bleach to four gallons of water) should be used.
5. Open all doors and windows and allow the entire building and everything in it to dry thoroughly. Do not reoccupy building for at least 10 hours after the drying has been completed.
6. Check flues, chimneys, wiring and plumbing.
7. Check for weakened foundations and 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. If you can, wear gloves and boots at all times.
9. If sewage has overflowed within the residence, refer to the Snohomish Health District's "Guidelines for Cleaning Indoor Sewage Spills" for cleanup procedures.

### OTHER RESOURCES

For more information regarding flood hazards and assistance, you may want to contact the following agencies:

#### **Snohomish County Department of Emergency Management**

[http://www1.co.snohomish.wa.us/Departments/Emergency\\_Management/](http://www1.co.snohomish.wa.us/Departments/Emergency_Management/)

3509 109<sup>th</sup> Street SW, Everett 98204

Phone: 425.423.7635

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