Typical Problems that Arise in Floods

Before a Flood Occurs

It is important for a property owner to understand the risk of flooding on the property. The different maps and community programs described previously and knowledge of previous history of flooding on the property can be helpful in determining areas likely to flood. Having a National Oceanic and Atmospheric Administration (NOAA) Weather Radio with both battery backup and tone alert features that can sound a warning of pending floods at any time is recommended.

Supplies that should be kept are drinking water, nonperishable foods, first aid kit, and copies of prescriptions for medication. Fuel tanks of cars and trucks should be kept full. Responders working in floods should be vaccinated against common diseases transmitted in flooded environments.

If there is time before evacuation, all utilities should be turned off at the main switch to reduce the risk of electrocution. Electrical equipment should not be handled unless it is in a dry area, and persons handling such equipment should wear well-insulated rubber footwear and gloves. It is advisable to turn off the main supply to individual houses even if the entire community's electrical supply has been cut because this allows the individual property owner to assess the safety of turning on the electricity again.

Flash floods occur swiftly. Immediate action is necessary at the sound of a flash flood warning or the roar of approaching waters. Those at risk should head for the nearest high ground. Animals should also be moved if taking the time to do so does not compromise human safety. Check valves should be installed in building sewer traps to prevent floodwater from backing up in sewer drains.

During a Flood

Drivers should not attempt to drive over a flooded road. If a car stalls while in flowing water, it should be abandoned. Animals should be taken from the car if doing so does not endanger human life. Cars act as traps in the face of a raging flood. Water flowing at 20 knots and covering the tires of a car (2 feet deep) is powerful enough to move any size vehicle.

Humans should not attempt to cross a flowing stream of water that is higher than the knees. If horses are evacuated, they should not be ridden through swiftly moving, deep water, especially if they are not used to being around water.

After a Flood Has Occurred

Food or feed that has come in contact with floodwaters should not be used. If a "boil water" order is in effect, the precaution should be followed until officials indicate that tap water is safe to drink. The order should also be followed for animals' drinking water. Wells should be flushed out and the water tested before humans or animals drink it. Water can be disinfected by adding six drops of household bleach per gallon of water or by using iodine water purification tablets per manufacturer's directions.

Persons and animals should stay on firm ground and not wade through water or muddy areas. Floodwater may carry electrical currents from underground wires that have become exposed. Also, walking though flood debris can be hazardous, both because of sharp objects and because of spilled chemicals. Another potential source of electrocution is flooded car batteries. These should be removed with great caution both to avoid electrocution and to avoid contact with acid.

If a basement has been flooded, it should be pumped out gradually to prevent the walls' collapse caused by water pressure on the outside of the walls. One third of the floodwater should be drained each day to minimize further structural damage. Mud should be shoveled out while it is still moist, and rugs and carpets should be dried thoroughly. It is especially important to remove mud from barns because horses and livestock develop problems with their feet if they stand in deep mud for too long.

Temporary repairs necessary to prevent further losses should be made, including repairs to fencing to keep animals confined. Substantially damaged structures should be raised above the base flood elevation when they are reconstructed.

After floods it is not uncommon for snakes or rats to be trapped inside buildings or barns. Snakes typically go to high places (e.g., above doors and cupboards). Care should be exercised when looking for snakes. Most of them slide away peacefully if given an obvious opportunity to exit.

Disinfection of wells

After floods wells are commonly contaminated with bacteria, which have to be killed before the water is safe to drink again. The bacteriologic counts of wells can be tested in certified laboratories. The local health department is the best source of information on which labs these are.

When a bored or dug well needs disinfection, the amount of water in it should be calculated to determine the amount of bleach required. The bleach should be added to 10 gallons of water, which is then poured into the well. It is important that the bleach come into contact with all surfaces of the well. If possible the sides and bottom of the well should be scrubbed. Once the bleach solution has been added, the well should be sealed and all faucets connected to the well should be opened. Water should be allowed to flow until there is a smell of bleach in it. Once this occurs, the faucets should be turned off and everything be left standing for 12 to 24 hours. After this wait faucets should be opened again until the water that flows no longer smells of bleach. At this point the well should be safe. It is best to test the water in the well periodically for bacteriologic and other contamination after it has flooded because the flood may have affected the groundwater supply.

Table 7-5 Bleach treatment for a bored or dug well

Diameter of well feet (/)	Number of cups 5.25% laundry bleach per foot of water	Number of cups of 70% chlorine granules per foot of water
3	1.5	1/16
4	3	1/8
5	4.5	3/16
6	6	1/4
7	9	3/8
8	12	1/2
10	18	3/4

Data from Centers for Disease Control and Prevention: *Flood: a prevention guide to promote your personal safety,* Atlanta, 1994, CDC.
Use 3 cups of laundry bleach or 2 ounces of 70% chlorine granules per 100 gallons of water. To calculate the amount of water in a well, use Table 7-6.

Table 7-6 Water volume in a well

Diameter of well (feet)	Gallons per foot of water
3	0.37
4	0.65
5	1.0
6	1.5
8	2.6
10	4.1
12	6.0

Data from Centers for Disease Control and Prevention: *Flood: a prevention guide to promote your personal safety,* Atlanta, 1994, CDC.

For drilled wells the amount of water and bleach should be determined and the bleach solution should be poured into the well. Then the well should be sealed again and, using a hose, water should be pumped back into the well by spraying the walls and casing. Once the well has been cleaned, the water should be flushed the same as in bored wells.