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Flood Preparedness and Response for Food Establishments

Planning Ahead

According to the National Archives and Records Administration:

- 43 percent of companies struck by disaster never resume operations.
- 29 percent of those that resume business fail within two years.

The high cost of paying staff that are idle, cost associated with loss of staff, added work and material costs related to the disaster, loss of inventory, other hard cash costs, lost business, lost customer loyalty, and lost customer confidence all take a toll.

Therefore, it is important to plan ahead and be prepared. You should consider the type of hazard(s) for which your business is most vulnerable and take precautions to

minimize the impact of such occurrences. Ask yourself what would you do if your establishment was exposed to floodwaters and lost power today? What would you do if the power outage lasts for an extended period of time? Would your business survive?

A food establishment manager (or person-in-charge) is responsible for conducting both initial and ongoing assessments to ensure consistent compliance with food safety requirements. The manager or person-in-charge also is responsible for ensuring all food service employees know where written procedures can be located and are trained on what actions to take as a part of the response procedures.

This document is designed to provide guidance in the development of emergency procedures for retail food establishments. Individual establishments can use this document to develop procedures that meet the needs of their facility. In the event disaster strikes, do you know what your organization's emergency procedures are?

Before a Flood

Floodwaters are contaminated and items coming into contact with floodwater must be handled properly to keep you and your customers from getting sick. Flooding may result in the loss of power, loss of safe water supply, and cause sewer backups that create the potential for an imminent health hazard.

The best way to minimize flood damage is to prepare in advance:

- Develop an emergency response plan. The plan should include a list of people to help in an emergency, such as a contractor, plumber, electrician and insurance agent. The plan should identify an alternative site for safe food storage, such as an approved cold-storage facility.



- Check into flood insurance. It takes 30 days for a policy to take effect. Standard insurance policies do not cover flood damage.
- Take an inventory of food and vital items. Discard old or unnecessary items. Examine refrigerator and freezer door gaskets and replace those that are worn. Organize the freezer compartment to minimize contamination from meat and poultry juices in the event of a thaw.
- Maintain thermometers in all refrigerators and freezers.
- Store your inventory, ware and supplies higher on the ground floor or on the second story above the anticipated flood level or at an off-site commercial location (no food storage at home).
- Store chemicals above possible flood levels in sealed containers. Chemicals should never be stored above any food products.
- Learn about sandbags and where to get them.
- Tie down loose items that can float to prevent them from being carried away by floodwaters.
- Safeguard electrical, natural gas and refrigeration equipment. Know how to properly turn off equipment, outside main gas valve, electricity at the main breaker, and the main water valve when flooding is imminent.
- Develop a plan for monitoring and maintaining sump pumps, downspouts, plumbing, grease traps, exterior surface grading, storm drains and other facilities that can contribute to flooding.
- Install sewer backflow valves. Flooding can cause sewage from sanitary sewer lines to back up into your business through plumbing drain pipes. Sewer backflow valves are designed to block drain pipes temporarily and prevent reverse flow of sewage in the lines. They should be installed by a licensed plumber or contractor who will ensure the work is done correctly with the appropriate permits and according to local codes.
- Know who to call and how to protect yourself in a flood emergency. Post a sign in a prominent location identifying the names and phone numbers of key personnel who can be contacted in the event of an emergency.
- Consider a plan to continue operation (a business continuity plan). The first public alert may be several days before a potential flood. The second stage of a public alert may come one to two days before a possible flood when you may need to start implementing more of your plan. The third and final stage of public alert may be the direction to evacuate and you have to close your business and leave the area.
- If evacuation is ordered, be sure to check all areas of the building to ensure everyone has evacuated.
- Close and lock all cash registers.
- Lock safe and cash.
- Secure and lock all pharmacy areas.



During a Flood

Your establishment must immediately close and stop preparing food if you have a flood, fire, no electricity, no hot water, no running water, contaminated water, sewage backup or any circumstances that may endanger the public's health. Floodwaters will carry many contaminants that are hazardous to health.

- Stay tuned to area news media for current flood and water information. Follow emergency instructions. Evacuate when told to do so.
- If you do have electricity, do not turn on wet electrical equipment to avoid electric shock, overheat, or fire.

If you do not have electricity:

- Never use a generator, charcoal or gas grill, or a camp stove indoors. Without proper ventilation, there may be toxic fumes (carbon monoxide) that may cause injury or death.
- As a safety precaution for utility workers, notify your utility company that you are using a generator.
- Keep track of the time a power outage begins. A power outage of two hours or less is not considered hazardous to perishable foods that were being held under safe conditions when the outage began.
- Perishable foods will keep for up to four hours in a well-insulated refrigerator, for one day in a half-full freezer, for two days in a full freezer that is kept closed or covered, and for two days with a 50 pound block of dry ice in a fully stocked 18-cubic foot freezer. Dry ice should be wrapped in brown paper for longer storage. As dry ice dissipates, it becomes carbon dioxide gas, which you should avoid breathing. **WARNING: Wear gloves or use tongs when handling dry ice, which registers minus 216°F and can instantaneously freeze skin.**

After a Flood

Once floodwaters have receded and cleanup begins, take the following safety precautions before reentering your establishment.

Reentry Procedures

Buildings affected by floods can pose serious hazards during reentry, even when waters have receded. Wet equipment and damaged gas lines can cause electrocution, burns and fires. It is safest to have professional technicians and your local building department check out the building before reentry.

- Return only when notified to do so by officials.
- Check your building for structural safety before entering.
- If you smell gas or suspect a leak, leave immediately. Call the gas company or the local fire department.
- Do not turn on the main gas valve. The main gas valve must be turned on by a licensed gas service technician.
- Do not use flooded equipment (gas/electrical), electrical outlets, switch boxes or power breaker panels until your local utility or other qualified personnel have checked them.
- Do not use gas or electrical hot water systems until they have been thoroughly inspected by a qualified technician.
- Do not use any equipment used in the operation unless directed by the manufacturer or a qualified service technician that the equipment can be cleaned and sanitized and put back into operation.
- Avoid wading in standing water as it may contain unseen hazards.
- Check for the presence of rodents, insects and other pests.

Flood Cleanup

The basic steps to cleaning up after a flood are listed below. The physical structure should be dried quickly in order to minimize the growth of bacteria and mold. You should not clean your premises until you have a safe water supply and a functioning waste disposal system. Consider hiring a professional water damage restoration company.

- Wear personal protective equipment, such as a face mask, rubber gloves and boots.
- Increase ventilation and decrease humidity by opening windows and doors. This will reduce odors and minimize mold and mildew growth. Fans, heaters and dehumidifiers can speed this process.
- Remove all water, mud and other flood debris.
- Break out walls and remove drywall, wood paneling, and insulation at least 20 inches above the high-water line.
- Before cleaning floors, remove and discard soaked carpets and carpet pads.
- Wash using soap and water, rinse and sanitize all food-contact surfaces, including sinks, cooking ranges and stoves, walk-in coolers, reach-in coolers, tables, wares, utensils, can openers and other equipment.
- Sanitize using an unscented bleach water solution by mixing one teaspoon of bleach to one gallon of water, or use a commercial sanitizer, soaking for 15 minutes and allowing to air dry.
- Thoroughly wash and sanitize all interior surfaces, floors, walls, equipment, countertops, etc. Take apart any equipment that can be dismantled and cleaned in pieces.
- Thoroughly clean the interior and exterior of refrigerators, freezers, walk-in coolers, reach-in coolers and display cases with soap, clean water and sanitizer.
- Porous plastic or wood items saturated by floodwater cannot be effectively cleaned and sanitized and should be discarded. Discard wooden cutting boards and paper and plastic articles that were exposed to floodwaters.
- Remove and replace all internal filters, purifiers and cartridges on equipment if not designed to be cleaned in place.
- Flush and clear pipes, faucets, coffee urns, beverage machines and other dispensing equipment for at least five minutes. Flush hot-water tank.



Damaged Food Products

Carefully evaluate which foods to discard. All foods and beverages exposed to floodwaters must be discarded, except for undamaged commercially prepared foods in all metal cans and retort pouches that are hermetically sealed (airtight). You cannot rely on appearance or odor to tell if a food will make you sick. **When in doubt, throw it out.**

- Discard dry goods such as packages of spices and coffee and paper, plastic, cloth, fiber or cardboard boxes or bags of food.
- Discard cans that have leaks, dents, punctures, holes, fractures, burst seams, rips or are open, bulging, swelling, crushed or rusted.

- Undamaged commercially-canned foods and retort pouches that are hermetically sealed can be saved even if completely soaked. Remove the labels and then wash the cans and pouches with soap and clean water. Rinse in a strong detergent solution using a scrub brush. Carefully clean areas around the lids and seams. Soak cans and pouches for 15 minutes in an unscented bleach water solution. Allow cans and pouches to air dry for one hour before opening. Canned foods and pouches need to have the contents relabeled with a permanent marker and contain all mandatory information, including the expiration date (if available).
- Discard foods and beverages that are in glass, plastic jars or bottles that have screw caps, crimped caps, snap lids, pull tops, flip tops, cork tops or twist caps because floodwater contamination can get under the lid and contaminate the food and beverage.
- Discard all fresh fruits and vegetables if they came into direct contact with floodwaters. They cannot be adequately cleaned and sanitized.
- Discard refrigerated foods, such as meat, poultry and eggs, if the refrigeration has been off longer than four hours.
- Discard frozen foods if the freezer has been off longer than one or two days, depending on the food volume and freezer capacity.
- Discard all ice in ice machines and run the ice through three cycles, discarding ice with each cycle, after cleaning and sanitizing the ice-making compartment and storage bins. Flush the water lines in the ice machine.

If food must be thrown away, document the type and amount of food and the reason for disposal, as well as dollar value loss, for insurance and regulatory records. Place all discarded foods in plastic trash bags. Place tied bags into dumpsters or trash cans that have tight-fitting lids to keep out pests. To throw away large amounts of food, contact your garbage disposal company or your local landfill for instructions.

Reopening Guidelines

Retail food establishments that have voluntarily closed during a flood should verify the following conditions before resuming preparation and/or sale of food products:

- Electricity and natural gas (if applicable) services are available.
- All power breakers have been properly reset as needed (especially at the hot water heater and automatic gas supply solenoid).
- Sanitary wastewater disposal system is available.
- Toilet facilities are fully operable.
- Safe drinking water supply is available.
- Hot and cold drinking water under pressure are available for handwashing.
- Handwashing facilities are fully operable and provided with soap and paper towels.
- Hot and cold drinking water under pressure are available for dishware washing.
- Dish sinks and dish machines are in good working order.
- All equipment and facilities are operating properly, including refrigeration capable of maintaining food temperatures 41°F or below and hot holding units capable of maintaining food temperatures at 135°F or above. Allow time for refrigerators to reach proper temperatures before restocking.
- Do not accept food or water from unsafe, unapproved or unknown sources.

- All foods and beverages are protected from contamination.
- All foods are discarded properly.
- All food contact surfaces are washed, rinsed and sanitized.
- Adequate and approved ventilation and lighting are available.
- Adequate and approved ventilation for gas-powered equipment is operable.

Upon reopening your facility, please contact your local environmental health agency or the North Dakota Department of Health for information and/or assistance. All food establishments must be in compliance with the Food Code prior to reopening.

Other Emergencies That May Arise

Your food establishment may not be directly affected by floodwaters; however, you may still be affected by other flood-related problems, such as no power, no water, no sanitary sewage disposal, etc.

- **Limited Water Usage** – Many areas outside a flood zone may be issued orders to cut back on water usage so that the “downstream” effect of overflowing sewage is reduced in the flood zone. It is normally difficult for a commercial food business to reduce water usage; however, if there are no other choices, use water wisely. Proper handwashing is required with hot, clean water; however, antibacterial hand sanitizers also can be used during emergencies. Switch to single use tableware and table service. Reduce processes requiring running water such as cold water dipper wells and cold water thawing.
- **Boil Water Order** – If a boil water order has been issued, it is not safe to open your food establishment.
- **Power Outage** – If you have no electricity or no gas, it is not safe to operate.

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