

DEALING WITH SEPTIC SYSTEMS POST DISASTER

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Disasters

- ▶ Hurricanes & Flooding
- ▶ Wildfires
- ▶ Winter Weather
- ▶ Earthquakes
- ▶ Power Outages



Flood



Before the Flood

- ▶ Maintain your septic system.
- ▶ Know your septic system and take pictures or keep documents of the following to reference later if there is damage:
 - ▶ Septic tank location.
 - ▶ Septic system records or drawings.
 - ▶ Electrical components.



Before the Flood

- ▶ Make sure the land around the manhole covers is sloped downwards away from the septic system.
- ▶ Turn off electricity to the system at the circuit breaker.
- ▶ Turn off your pump at the circuit box if you have a pressure distribution or mound system.
- ▶ After the power is off, waterproof all electrical connections.
- ▶ Plug all drains in the basement.
- ▶ Reduce water use in the house.
- ▶ Seal the manhole and inspection ports if possible to keep out excess water.



Before the Flood

- ▶ If the soil absorption field is saturated, its ability to accept wastewater effluent is reduced or eliminated. This can result in sewage backing up into the house.
- ▶ The ability of saturated soil to treat wastewater is reduced or eliminated and can result in wastewater being returned to groundwater, where it can contaminate your private drinking water supply.
- ▶ It may be desirable to pump the tank to remove the sewage, but the tank must be properly anchored in the ground. This is not mandatory, but can help with reducing the amount of sewage that backs up into the home. If pumped, some sewage solids will remain in the tank and could mix with floodwaters that enter the tank, but it will be much less than if the tank isn't pumped.
- ▶ Be sure your septic tank is at least half full to prevent it from collapsing or floating
- ▶ Turn off water softeners to prevent them from regeneration.



During the Flood

- ▶ Eliminate all non-essential water use and flush toilets as little as possible if evacuation is not needed.
- ▶ If the drain field becomes covered with water, do not use the system and avoid contact with any standing water that may contain sewage.
- ▶ Try to find other toilets if your septic system is damaged.
- ▶ Do not use the septic system until the soil has adequately dried to allow sewage to be absorbed. This may take several weeks after flood waters recede.



Signs of Problems

- ▶ Sinks drain slowly
- ▶ Toilets drain slowly
- ▶ Floor drains overflow
- ▶ Sewage becomes visible outside the home



After the Flood

- ▶ Rope off your septic system. There is danger of collapse for septic tanks.
- ▶ Stay out of the area if sewage backs up. If the entire building is contaminated, abandon the building until all affected areas have been cleaned.
- ▶ Clean the area and disinfect the floor. Use a chlorine solution of a half cup of chlorine bleach to each gallon of water to disinfect the area thoroughly.
- ▶ If the septic system is above the flood point have the tank pumped by a permitted liquid waste hauler/pumper.



After the Flood

- ▶ Have your septic tank professionally inspected and serviced if you suspect damage. Signs of damage include settling or an inability to accept water. Most septic tanks are not damaged by flooding since they are below ground and completely covered. However, septic tanks and pump chambers can fill with silt and debris, and must be professionally cleaned. If the soil absorption field is clogged with silt, a new system may have to be installed.
- ▶ Be sure to pump both the tank and lift station. This will remove silt and debris that may have washed into the system. Do not pump the tank during flooded or saturated drainfield conditions. At best, pumping the tank is only a temporary solution. Under worst conditions, pumping it out could cause the tank to try to float out of the ground and may damage the inlet and outlet pipes.



After the Flood

- ▶ Do not have the septic tank pumped under flooded conditions. Pumping it out could cause the tank to float out of the ground. Recently installed systems may pop out of the ground.
- ▶ Avoid using the system and do not dig around the septic tank while the soil is flooded.
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After the Flood

- ▶ The home cleaning process will likely result in the discharge of high amounts of disinfectants and cleaners into the septic tank. It is best to pump the tank a second time (if floodwaters were previously pumped) to allow the system to work properly and avoid discharging these chemicals into the soil treatment portion of the system.



After the Flood

- ▶ Do not compact the soil over the soil absorption field by driving or operating equipment in the area. Saturated soil is especially susceptible to compaction, which can reduce the soil absorption field's ability to treat wastewater and lead to system failure.
- ▶ Examine all electrical connections for damage before restoring electricity.
- ▶ Be sure the septic tank's manhole cover is secure and that inspection ports have not been blocked or damaged.
- ▶ Check the vegetation over your septic tank and soil absorption field. Repair erosion damage and sod or reseed areas as necessary to provide turf grass cover.



After the Flood

- ▶ Flooding of the septic tank will have lifted the floating crust of fats and grease in the septic tank. Some of this scum may have floated and/or partially plugged the outlet tee. If the septic system backs up into the house check the tank first for outlet blockage. Clean up any floodwater in the house without dumping it into the sink or toilet and allow enough time for the water to recede. Floodwaters from the house that are passed through or pumped through the septic tank will cause higher flows through the system. This may cause solids to transfer from the septic tank to the drainfield and will cause clogging.
- ▶ Locate any electrical or mechanical devices the system may have that could be flooded to avoid contact with them until they are dry and clean.
- ▶ Aerobic plants, upflow filters, trickling filters, and other media filters have a tendency to clog due to mud and sediment. These systems will need to be washed and raked.



After the Flood

- ▶ Reduce water use until the system is inspected:
 - ▶ Avoid sending basement sump pump water into the septic system.
 - ▶ Re-route water from roof gutters away from the drain field area.
 - ▶ Take short showers.
 - ▶ Limit laundry and dishwashing.
 - ▶ Turn off the water while brushing teeth, shaving, or rinsing dishes.
 - ▶ Do not flush the toilet each time it's used for liquid waste



After the Flood

- ▶ If you have a pressure distribution system and your pump was not removed, a septic system service professional will need to inspect and repair the pump.



Professional Inspection

- ▶ Open all parts of the system and see if debris entered the system. All sewage tanks should be pumped and cleaned out.
- ▶ Check the tanks for water tightness and structural defects.
- ▶ Make sure that inspection ports are free of blockage and damage. Replace and secure septic tank manhole covers as needed.
- ▶ Check the drain field and the area over the septic tank for depressions and damage from fallen debris. Repair with sod or seeding to provide good plant cover.
- ▶ Make sure wastewater moves between the parts of the system as intended.
- ▶ About a month after the system is restarted, schedule a follow-up visit to check for proper operation.



Wildfires



Before the Fire

- ▶ Maintain your septic system.
- ▶ Document locations of key components with fire-resistant markers, such as rocks, concrete blocks, or bricks.
- ▶ Know your septic system and take pictures or keep documents of the following to reference later if there is damage:
 - ▶ Septic tank location.
 - ▶ Septic system records or drawings.
 - ▶ Electrical components.



Before the Fire

- ▶ Turn off electricity to the system at the circuit breaker.
- ▶ Turn off your pump at the circuit box if you have a pressure distribution or mound system.
- ▶ After the power is off, wrap control panels, plastic risers, and lids with a durable flame-resistant sheet plastic



During the Fire

- ▶ Eliminate all non-essential water use and flush toilets as little as possible if evacuation is not needed.
- ▶ If the drain field becomes covered with water, do not use the system and avoid contact with any standing water that may contain sewage.
- ▶ Try to find other toilets if your septic system is damaged.



Possible Issues

- ▶ Saturation of the ground due to water usage
- ▶ Damage to the absorption area due to heavy equipment usage



After the Fire

- ▶ Rope off your septic system. The manhole and tank covers may be damaged and could cause falls.
- ▶ Stay out of the area if sewage backs up. If the entire building is contaminated, abandon the building until all affected areas have been cleaned. A septic system service professional should be contacted to inspect and repair the system if it was flooded.
- ▶ Reduce water use until the system is inspected:
 - ▶ Avoid sending basement sump pump water into the septic system.
 - ▶ Re-route water from roof gutters away from the drain field area.
 - ▶ Take short showers
 - ▶ Limit laundry and dishwashing
 - ▶ Turn off the water while brushing teeth, shaving, or rinsing dishes
 - ▶ Do not flush the toilet each time it's used for liquid waste.



Winter Weather



Before the Winter Weather

- ▶ Check for and repair any leaking plumbing fixtures.
- ▶ Let the grass in your lawn get longer.
- ▶ Consider wrapping your pipes with heat tape if you have high-efficiency appliances. Make sure the land around the manhole covers is sloped downwards.
- ▶ Avoid compacting the soil around the system. Never allow vehicle traffic or livestock above the tanks or on the drain field.



Before the Winter Weather

- ▶ Check with a septic system service professional before doing any landscaping.
- ▶ Consider adding more insulation to the system if your system is new, you have had issues with freezing in the past, or you have a mound system. Contact a septic system service professional for more information.
- ▶ Check for open, broken or uncapped risers, inspection pipes, or manhole covers and contact a septic system service professional for repairs.
- ▶ Check for any water pooling near the drain field and contact a septic system service professional for repairs.



During Winter Weather

- ▶ If you will be gone for more than a week leave the heat on in your home and consider having someone come by and run warm water.
- ▶ Eliminate all non-essential water use and flush toilets as little as possible if evacuation is not needed.
- ▶ Limit all traffic above and near the system during freezing temperatures.
- ▶ Avoid removing or compacting snow above the system.
- ▶ If you feel the system starting to freeze use warm water and spread out your laundry and dishwasher schedule. Do not leave water running.



During Winter Weather

- ▶ If you will be gone for several months, follow the steps listed above and check with a septic system service professional about having your septic tank pumped.
- ▶ If your septic system freezes call a septic system service professional. Do not add anything to the system, start a fire, or pump the tank.
- ▶ If you hear water constantly running into a pump tank or the pump turning on and off your system may be frozen. Shut off your pump and call a septic system service professional.
- ▶ If your septic system cannot be repaired, contact a septic system service professional about using the septic tank as a holding tank.



After Winter Weather

- ▶ Always contact a septic system service professional for an inspection after winter ends. Whether or not the system is frozen, an annual spring inspection is always recommended. The ground may be saturated from snow melt and could cause the system to flood.
- ▶ If you experienced issues with your septic system freezing contact a septic system service professional about installing insulated pipes or adding insulation to manhole covers.



Earthquake



Before the Earthquake

- ▶ Maintain your septic system.
- ▶ Know your septic system and take pictures or keep documents of the following to reference later if there is damage:
 - ▶ Septic tank location.
 - ▶ Septic system records or drawings.
 - ▶ Electrical components.
- ▶ Mark system components with a marker such as a rock, stake, or pin flag.
- ▶ Turn off electricity to the system at the circuit breaker.
- ▶ Turn off your pump at the circuit box if you have a pressure distribution or mound system.



During the Earthquake

- ▶ Eliminate all non-essential water use and flush toilets as little as possible if evacuation is not needed.



After the Earthquake

- ▶ Rope off your septic system. The manhole and tank covers may be damaged or missing.
- ▶ Stay out of the area if sewage backs up. If the entire building is contaminated, abandon the building until all affected areas have been cleaned. A septic system service professional should be contacted to inspect and repair the system if it was flooded.
- ▶ Check for changes in how the septic system functions. Be on the alert for changes in how appliances drain, wet or unusually green spots in your yard, odors from your system, activated alarm lights and buzzers, and/or a change in sounds from mechanical components. Contact a septic system service professional if any of these issues occur.



After the Earthquake

- ▶ Reduce water use until the system is inspected:
 - ▶ Avoid sending basement sump pump water into the septic system.
 - ▶ Re-route water from roof gutters away from the drain field area.
 - ▶ Take short showers
 - ▶ Limit laundry and dishwashing
 - ▶ Turn off the water while brushing teeth, shaving, or rinsing dishes
 - ▶ Do not flush the toilet each time it's used for liquid waste.



Power Outages



Before the Outage

- ▶ Maintain your septic system.
- ▶ Know your septic system and take pictures or keep documents of the following to reference later if there is damage:
 - ▶ Septic tank location.
 - ▶ Septic system records or drawings.
 - ▶ Electrical components.



During the Outage

- ▶ Gravity based systems should operate normally during a power outage. If there are signs of damage call a septic system service professional.
- ▶ If you have a pressure distribution or other system/components that require electricity, reduce water use and see the guidance below on temporary toilets. Wastewater will collect in the system during the power outage.
- ▶ Reduce water use until the system is inspected:
 - ▶ Take short showers.
 - ▶ Limit laundry and dishwashing.
 - ▶ Turn off the water while brushing teeth, shaving, or rinsing dishes.
 - ▶ Do not flush the toilet each time it's used for liquid waste.



After the Outage

- ▶ If needed, contact a septic system service professional and follow the steps below.
- ▶ Turn off power to the system at the circuit breaker and unplug all power cords.
- ▶ Inspect your system and contact a septic system service professional if any of the issues below are found.
 - ▶ Damaged piping, risers or manway covers
 - ▶ Exposed electrical wiring to control boxes
 - ▶ Unlevel ground
 - ▶ Damage to the disposal field
 - ▶ Odor or visible evidence of sewage
 - ▶ Exposed septic system components
 - ▶ Settling or breakage away from pipe
 - ▶ Exposed electrical wiring to pumps
- ▶ If your system has a pump, it may have a high-water alarm that may sound when the power is restored. You can silence the alarm if it has a silence switch option. If the alarm remains activated for more than 24 hours, contact a septic system service professional.
- ▶ Continue to reduce water use for several days.



After the Outage On-Demand Systems

- ▶ If the pump is controlled by float controls and is off for more than six hours, follow these steps:
 - ▶ Turn off power to the pump at the circuit breaker while the power is out.
 - ▶ When the power is back on, turn the pump on for 5 minutes and off for 6 hours. The pump may automatically turn off during the first manual dosing.
 - ▶ Reduce water use and continue the 5-minute pumping every 6 hours until the pump turns off automatically.



After the Outage Timer Systems

- ▶ The timer system will eventually correct itself once power is restored but be sure to reduce water use for several days. If the system does not correct itself, contact a septic system service professional.



Sources of Information

- ▶ EPA
- ▶ CDC
- ▶ NEHA



Questions

