

Hurricane Preparedness (or, what I learned from Ike and Harvey)

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Here are my notes from the aftermath of Hurricane Ike. Hope it helps you stay prepared for emergencies! (*Updated 2019,2020 after Harvey; updated 2021 after the Big Freeze*).

1. **BE PREPARED.** I was at one time both an assistant leader for the Boy Scouts and Girl Scouts (a consequence of boy/girl twins). I was a Girl Scout for over 20 years, starting as a girl, so I take preparedness seriously. I had gasoline in approved cans, a full tank in the car, candles, matches, flashlights, battery and crank radios, water for drinking, water for cooking, water for flushing (a bathtub full), UHT milk, food, frozen water bottles in the freezer (for when the power goes out), and a generator at my farm. (Clorox bottles are great for water storage – put just a capful of Clorox in a full bottle of water and it keeps indefinitely – let it air out before drinking and **DO NOT USE** “splashless” Clorox). What I did forget was to grind my coffee the night before, so we made coffee using a mortar and pestle! By being prepared (and being one of the lucky ones that was without electricity for only 3 days), I never had to stand in line at the grocery store or park in a long line at the few open gas stations.

2. **"Run from the water, hide from the wind".** Texans survived Ike because in large numbers they heeded the evacuation orders. Only about 150 had to be rescued. Nevertheless, people died because they did not evacuate in time. Some died because the power being off made their medical equipment quit. All would have been offered free transportation had they dialed "311". Why they didn't get out, no-one knows. But many houses were completely washed away (particularly on Bolivar peninsula). Storm surges kill more people than wind. Flooding can trap you for days. See the before/after images at <https://www.usgs.gov/science-explorer-results?es=hurricane+ike> What do those show? the front row of beach houses were often completely demolished (some with their stilts still showing). The second row of beach houses, if they are still standing, show a lot of sand covering their stilts. The front part of the beach is gone and piled up farther inland. That's the power of a storm surge. Even a cinder block club house had huge portions of its walls gone. Have a supply of water/food/flashlights **UPSTAIRS** (I have a friend who is still living upstairs, two years after Harvey!) And oh yeah, **FLOOD INSURANCE is critical.** Note the most dangerous side of the eye is the one where the wind is onshore (East of the eye on the Gulf coast or North of the eye if the Atlantic coast) – the surge and rain will be worse there. And the surge is worse if the moon is new or full, because the tides are higher.

3. **NEVER RUN GENERATORS INDOORS,** or even in an attached garage! A family died in Houston from carbon monoxide poisoning from a gas-fired generator, and several others had to go into a hyperbaric (high pressure oxygen) chamber. CO is a silent killer! It binds to your red blood cells and doesn't let go, even when you get back into the fresh air. A carbon monoxide detector is an inexpensive way to protect your family (get one with your smoke alarm). Similarly, don't use propane stoves or BBQ pits or turkey fryers indoors.

HURRICANE CHECKLIST (and to keep on hand normally)

Item (think about what you will need for days stuck at home without electricity or water)	Details	# normally on hand	# for hurricane prep
Flashlight and headlamp	LED is better	2 each	2-3 each person
Rechargeable bar light	LED is better	1	2-3
Candles (in glass jars), Coleman or oil lamps;	Use safely!	1-2	3-4
Matches (especially waterproof or "strike anywhere")	Store safely	1-2 boxes	2-3 big boxes
Batteries (<i>all sizes you use</i>) (<i>if you have a spare 12V car battery charge it too</i>)	AA, AAA, whatever you need	12 each	36 each
Charge all rechargeable appliances; charge all external battery supplies (<i>for phone, etc</i>)	Small external rechargeable battery packs	1 per person	2-3 per person
Fill up car tank with gas and any extra gas cans you have (<i>store in garage but not in house</i>)	Approved gas cans only	5 gal can	10 - 15 gallons (stabilized)
Generator: Ensure generator works and has fresh gasoline. Get heavy duty extension cord. (Use outdoors. <i>Always store empty of gas; keep a can of ether to start if it's difficult</i>)	Do not overload – you can't run much on a 1KW generator!		(more gas if you have a generator)
Drinking water (<i>Note – put as many water bottles into freezer as can fit. Will keep the frozen food cool for several days. Try NOT to open the freezer or refrigerator door much</i>)	12-16 oz	12-24	24-48
Drinking water for cooking and drinking (note the gallon jugs at store are pretty flimsy). Wash then rinse re-used jugs with a tsp of Clorox per gallon.	Gallon jug or any washed beverage container	1-2 gal	10-20 gal
Fresh water for washing dishes, hands, etc. Add a tsp of Clorox (NOT "splashless") per gallon for long-term water storage. Let the Clorox air out before drinking.	Old Clorox or laundry detergent jugs work great	1-2 gal	5-10 gal (near each sink)
Water for flushing toilet (<i>water may go off so you may have restrict flushing only for #2</i>)	Bathtub, buckets and detergent jugs	-	15-20 gal
No-refrigeration milk (UHT or powdered)	Cartons or packs	1 gal	3-5 gal
Canned, powdered and packaged food (<i>keep on hand: first in, first out</i>)	Cans, packets	3 weeks	2-3 months
NON-Electric appliances: Can opener , hand mixer, coffee grinder, drip or stovetop percolator		Always keep on hand	One each
Non-electric cook top (natural gas or propane stove: BBQ or camping type). <i>Use propane stoves outside!</i>	Gas range or use camping stove	Keep on hand	Several small or two large propane tanks.
Board up windows, bring in lawn chairs, potted plants, etc. that can blow around			
Trim trees if you have time (remove dead limbs)			
Close inner doors (reduce floodwater entry)			
Long extension cord (to go from generator or neighbor's house)	50-100 ft, 12 gauge or thicker	1	1-2
Big tarp in case of roof damage	20x30 ft		1
Battery radio (with weather channel)	Crank option good	1	1
Baby and sanitary supplies			2-3 weeks worth

4. Falling trees can kill. Our gorgeous live oaks actually have very little root ball. When the wind gets high (especially if the ground is wet), they can just blow over. A pecan tree, on the other hand, has a deep tap root. They can snap but they won't uproot. Many trimmed dangerous trees while preparing for the hurricane. However, one tree that was being felled as a precaution killed a 10-year old boy.

5. Check on your neighbors. As noted above, some died because of loss of power meant their medical equipment stopped working. Others needed help getting out of their yards because of downed trees. Most folks who had electricity and water had house guests! Also, neighbors are a great support to prevent looting of empty houses, or to spot downed live power lines, etc. Most folks shared food, water, etc. And even now food banks are empty so this is a great time to clear out the cabinets and donate to those in need. My student's condo neighborhood had a barbecue where they all threw on the meat that had defrosted in their powerless refrigerators. The students in my church went to the houses of all the elderly neighbors, to make sure they were OK and to help clear tree limbs and other debris.

6. Be grateful. I am personally very grateful to have survived with minimum damage, praise God. Although we had trees fall both at our city house and our farm, they fell in the direction away from the houses and people. We managed through the dark evenings by playing Spades by the light of a Coleman lantern (from my camping stash) and telling stories. Make it be a memory that is fun. The streets in our neighborhood are lined with piles of debris, and for many it was the first time they had conversed with their near neighbors. I talked to a man whose home was completely washed away, his car was ruined, but his boat was OK and he was happy to be alive. The police, EMT, fire, FEMA, and yes even the power companies have been working 24/7 to get everyone supplies and back to normal as soon as possible. Still over half the city was dark after a week. Driving into the city Sunday evening after Ike was one of the most eerie things I have experienced. At that time the entire city was dark - no streetlights, no stoplights, no house lights, and few cars on the road. And silent! No cars, no TVs or music - only a single generator and the sounds of the chirping frogs. (By the next night the buzz of generators was everywhere). And when the clouds parted we had dark skies... the best I've ever seen in Houston. Makes us realize how much light we waste into space! It is terrible of course that so many houses were wiped out, that so many have been without power for so long, but the good news is that food, clothing and shelter were available across the city; I volunteered at the Astrodome in Katrina and the GRB Convention Center shelter in Ike and Harvey. Rice University was a regional EMT command station, and we had EMT ambulances and crews from all over the country that came to help. And the volunteer navy that helped in the floods! As Fred Rogers said, "Look for the people helping".

7. Let your friends know where you are, and that you are OK. Post on your Facebook page that you are OK and how to reach you. Keep an "oldfashioned" **wired** telephone line (it doesn't need power!), and make sure you have at least one instrument that doesn't require power! For many, a wired phone ("landline") was a lifeline; cordless models were useless without power. Internet phones were useless when the cable failed and the wifi modem was without power. Cell phones worked, but many towers were damaged and circuits were overloaded. Amateur radio operators provided communication when other routes didn't work - I monitored for many hours to ensure that folks who needed help were able to get it, and the emergency crews used ham radio too. (I teach a ham radio class periodically if anyone wants a license!). I put a message on my cel phone that I was OK and where I could be reached on a land line, so I could turn it off

and save battery. For many, an iPhone was their only phone and internet for many days, and a car charger was crucial. Be sure you have the cel phone numbers of your neighbors! At our farm we had a landline and a DSL modem. When we connected up a generator to our fridge and DSL, we had internet, albeit slow... probably the only folks with internet in the county. Get a ham radio license... it's not expensive and fun.

8. **Solar panels:** there are a number of small solar panels on the market that can keep you cell phone charged when all else fails. If you have a whole-house solar panel, be sure to disconnect from the grid in an emergency so you don't back-feed and harm the electrical workers (most do this automatically now). New whole-house battery panels can give you 2-3 days of power. Some new electric vehicles have AC outlets so you feed power into your house – for us in the Freeze of 2021, just a little electricity would have let us run our gas heating system.

9. **Natural gas generators:** there are now natural gas generators (permanently installed to your gas line) that can automatically kick in when your power goes out. Not all communities allow them, so check first. If you must have electricity to power medical equipment, these can literally be lifesavers.

10. **Natural gas appliances:** Speaking of natural gas, if you have natural gas, you continue to have hot water (yea!) and a cooktop even in a power outage (you need a pilot light or a match). Our gas house heater didn't work because it needed electricity for a spark, but who needs heat in hurricane season? But, for the big freeze of 2021, our natural gas stove and natural gas hot water made a HUGE difference in our ability to weather 46 hours without power in 12 degree outside temperatures – by running hot water every hour or two, we kept our pipes from freezing AND we warmed up our bathrooms. And we had a big pot of stew on the stovetop.

Stay safe!!

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