How to Prepare and Protect Yourself for a Grid Emergency

(and Almost Any Mega-Disaster)

Contents

General suggestions

Read this in the right frame of mind

It's important to feel good about preparation when you do it. The odds are much greater that the electric power grid *won't* collapse for weeks or months. Nevertheless, I've personally prepared, and you should too, for same reason you get other forms of insurance, like homeowners or renters insurance: The odds are high enough that you need to have some fallback. So do the preparation that becomes your insurance!

This preparation assumes that FEMA will not provide a safe FEMA camp option for most people, (since 300 million people might need their help at once!) The huge advantage of a FEMA camp would be the security from gangs and desperate people. The drawbacks would include: the probable lack of steady supplies since the government would probably be overwhelmed; being among many highly-stressed people; the lack of freedom; and also the harsh take-it-or-leave-it conditions.

Much of this PDF assumes that eventually most people and most local governments will eventually be prepared. If a collapse happens before most people are prepared, most of this still make sense, but you'd just need to focus more on the "Protecting yourself" and "Green Zone" sections.

Several things later in the PDF will be unpleasant to think about. I mention them for three reasons: to be completely honest about the potential severity of this threat; to give you better odds for safety and survival; and because it will probably make you work harder at the parts of the Grid Emergency plan that make these unpleasant situations less likely.

If something seems particularly depressing to you, just keep telling yourself, "This probably isn't going to happen, but I should know about it, just in case it does."

A bonus of reading this PDF is that it contains many tips that can save you money or time *right now.* Learning these things increase your resilience and independence.

→ *Print out this PDF now and store it with your emergency supplies.*

How not to be overwhelmed by all this information

Preparation may initially seem like a lot of work. But in many cases, several options are presented and you only need to pick one.

You should get a pen and paper, and make a shopping list as you go through this PDF. Mark each item as either 'essential' or 'desired' (needed or wanted). At the end, you can decide how many of the desired items you can afford.

When you go shopping or go online to make purchases, it helps to start with the priorities. Being able to collect and sterilize water, stockpiling food, being able to cook food, staying warm in cold weather, and having enough essential medications are the priorities.

To help people get started, I selected a "Quick 6" list of actions that I consider to be the priorities. I also selected a "Next 6" list which would be the next six things I would do. Using these lists might help people get rolling. They are near the end of this PDF.

→ It also helps very much to plan where you will store things *before* you buy them. You ideally want to put things where they are both out of sight and not in your way. Otherwise you will keep becoming reminded of the grid threat, and you'll also keep tripping over the stuff.

Two tips to make your preparation <u>much</u> cheaper!

If you buy everything mentioned in this PDF you'll probably go over the $300-$400 per person quoted in the Grid Emergency Plan. That cost estimate was for the most essential items: food and a way to cook it; collecting and sanitizing water; general sanitation; and disposal of human waste. However, there are many ways to decrease your costs.

1) Consider sharing some equipment with people who live close to you that you trust. Not everyone needs a camping stove, emergency toilet, first aid kit, etc., if people share.

2) Don't spend hundreds of dollars online buying expensive emergency and survival supplies. You can find cheap "do-it-yourself" substitutes for almost everything essential. You can often find tutorials on YouTube.

Strongly consider getting a support buddy

Most people will benefit from some short-term encouragement to prepare. Otherwise they are likely to lose momentum and focus. That's why I strongly recommend that you set up a "buddy" phone check-in arrangement with a friend or out-of-town family member. It will make the process of preparing easier and more enjoyable.

The calls need only take 5-10 minutes if done correctly. Twice-a-week is usually the best frequency. One person calls mid-week and the other on the weekend. In each call you report on a) your progress (what you've purchased, built or learned) since the last call, and b) your plan for the next few days up until the next call. The person listening should acknowledge the progress, and also help you make specific goals.

Either pick someone who is good at following through and who will be supportive to you, or pick someone who you are willing to be the cheerleader for, if they're not so motivated.

Make sure to plan the times for the calls, and create some kind of reminder for yourself.

If your buddy keeps not reaching his or her goals, a good question is, “What is keeping you from taking action?” Another good question is, “What do you need to do to remove the obstacle that keeps you from taking action?”

Summary Preparation Checklist

1. Do you have water and a way to sterilize it?

2. Do you have food and a way to cook it?

3. Do you have ways to stay warm in cold weather and cool in hot weather?

4. Do you have a way to maintain sanitation and handle human waste products?

5. Do you have enough medicines and first aid materials to maintain your health?

6. Do you have a source of emergency lighting?

7. Do you have a radio and batteries so you can receive emergency communications?

8. Do you have a way to protect your electronic equipment from an EMP?

9. Do you have ways to protect yourself, loved ones and your emergency supplies? (Safety in numbers, passive barriers, hiding places, weapons.)

10. Do you have ways to protect your living space from fires?

11. If a nuclear accident happened because the nuclear plant lost electric power, would you know what to do?

12. Do you have ways to maintain morale, and other ways to spend your time?

13. Would you be ready to leave your home or apartment if you had to?

→ *A big bonus:* Preparing yourself for a grid emergency gives you significant protection from any survival disaster or mega-disaster − from hurricanes and floods, to earthquakes and flu pandemics, to limited nuclear war or major global economic meltdown.

Specific Preparation Information

Water (collecting and purifying it)

You should have at least two weeks of water for each member of your family. At minimum, a person needs two quarts of water a day to maintain normal functioning. (Most people can usually live at least three days without water.) Of course, more water would be needed for personal hygiene and washing clothes.

A. Collecting water

1. Set up a rain barrel (or new plastic garbage can) that catches water from a gutter downspout. You can buy a “rain barrel downspout diverter,” and set up a system in advance. If you have no other option, you could saw a metal downspout with a hacksaw and bend it so it goes into a plastic trash can. (In warmer weather, put a thin layer of vegetable oil on surface of open water containers to prevent mosquitoes breeding.)

Another option is to hang a clean plastic tarp between two clotheslines in such a way that one end dips into a bucket or clean plastic garbage can.

If you have nothing else, you can put out clean towels in the rain and wring them into a bucket.

Clothesline, bucket and tarp for catching rain water

2. Also remember that a hot water heater has 30 to 50 gallons of water in it. Any small amounts of rust in the water can be filtered out with a clean piece of cloth.

3. Ahead of time, you can buy bottled water, but if you want to save money get empty 2-liter soda bottles, you can rinse them out well, refill them with tap water and then sanitized with bleach as described below. Leave some room for expansion, because the bottles might freeze when the heat goes off. (The water can usually be thawed in a window facing the sun, with a black backdrop or sitting on metal so that the black material or metal absorbs the heat.)

4. [Not a good alternative.] Water from pools and waterbeds often have toxic chemicals in them, and shouldn't be used for drinking water unless filtered through activated charcoal. (See below.)

5. All things being equal, water that is flowing is likely cleaner than water that is stagnant. However, after a grid crisis, streams and rivers may possibly be contaminated by bacteria from even a small amount of untreated human feces, so boiling water from these sources or sterilizing with bleach are your only guaranteed options.

6. If you live in a climate that does not get much rainfall, and if you have the space, store about 50 gallons of water in a clean plastic trash can or plastic drum in your basement or garage. Change it out about every three months. It should be re-treated with bleach before drinking.

B. Sterilizing water

Any water you drink needs to be sterilized. Water for washing up should be odor-free and clear, and uncontaminated as far as you know, but does not need to be sterilized. (But do not get it in mouth, nose, eyes or open wounds.)

1. You can sterilize a gallon of water with 8-16 drops of *unscented* household chlorine bleach (visually about 1/4 of a teaspoon) — double that amount for cloudy water. Stir or shake and let stand for 30 minutes. One teaspoon of bleach will disinfect five gallons. Immediately after treating, the water should have a slight smell of chlorine. If it doesn't, repeat the process. The chlorine smell may be mildly unpleasant but that proves that it's drinkable.

Bleach becomes weaker as it ages, and the concentration of different bleach brands varies seasonally. Buy at least three gallons of unscented bleach.

If there is any chance that the water was collected within 200 feet of buried human or animal feces (solid waste) then use the boiling method below. (Or use bleach after filtering through activated carbon below.) For the same reason, hands should be washed or sanitized after using the toilet, and before treating water with chlorine. This extra

caution is needed because certain bacteria and viruses that cause severe diarrhea, vomiting and cramps are found in human and animal feces.

2. Pool shock that is 65% calcium hypochlorite and has no fungicides or algaecides is actually more stable than bleach. (Or you can search on "68% calcium hypochlorite" online.) Make a stock solution with one teaspoon (5.5 grams) in 1 gallon water. It lasts one month before losing potency. Don't drink this, but use it in the following ways: Use three tablespoons of stock solution added to one gallon water, and let sit ½ hour before drinking. (Or add one quart stock solution to one gallon of water to sanitize dishes.)

3. If you don't have bleach, boiling water is an alternative. After filtering water through cloth or a coffee filter, you can boil it (rolling boil) for at least one minute (or three minutes at altitudes higher than 2000 feet) to kill bacteria and viruses.

4. If you have clear 2-liter plastic diet soda bottles with caps, you can use them and sunlight if the outside temperature is not low. The UV light in sunlight sterilizes the water. (They must be clear bottles that didn't have sugar, such as juice or regular soda. Residual sugar will feed bacteria.) Strain water through a clean cloth to remove all particulates. Halfway fill a 2-liter bottle, cap and then shake to oxygenate the water. Then fill the container all the way. Put in strong sunlight, preferably on its side, preferably on metal surface (a roof?), or a dark surface, so that more heat is transferred to the water in the bottle. Leave in direct sunlight for one day, or partly sunny conditions for two days. The UV light from the sun and the heat transferred are what sterilizes the water. CAUTION: Some microbes in UV treated water are not dead; they will have their means of reproduction turned "off" by the UV light. If the water is exposed to visible light without UV before consumption, the microbes can have their reproduction turned on again, and then multiply, causing illness if ingested. Therefore drink UV-treated water soon, or keep in the dark until you drink it.

5. An activated carbon filter is good for filtering out toxic chemicals but may not be sufficient for bacteria. It will also filter the chlorine out of bleach-treated water, so it should be used prior to bleach treatment. To make one you would need a two-liter bottle, coffee filter, activated carbon (available online or at pet stores where they sell equipment for fish tanks), fine sand, pea gravel. An alternative to the fine sand and pea gravel might be a layer of cloth or cotton to remove large particulates and debris, and doubling the layer of activated carbon.

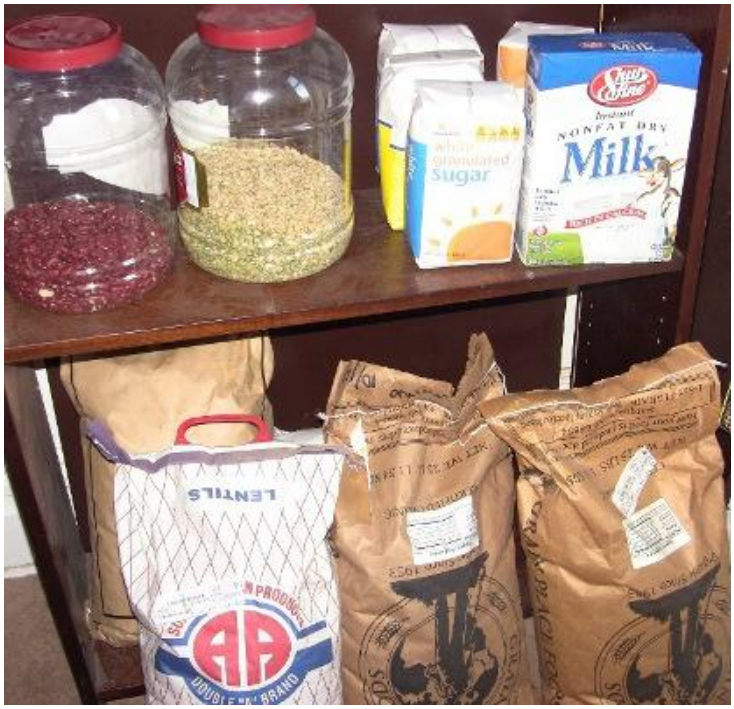
Cut a 2-liter plastic bottle about 8 inches above where it begins to funnel toward the opening. Turn it upside-down. Put in the coffee filter, then at least 2-3 inches of activated carbon. Then two inches of the fine sand. Then a layer of pea gravel. Figure out a way to keep it from tipping over. (You could put it a clean bucket, along with some other 2-liter bottles to keep it from tipping over.) Put the homemade filter in a clean container that will catch the filtered water. Then pour water in the top and allow time for it to be filtered.

Use the filter until the water coming out is no longer clear. At that time, the activated carbon and the coffee filter need to be replaced.

Food (buying and cooking it)

A. Stockpiling and storing food

Buy about 12 weeks of supplies per person in your household: Think of foods like 20 lb bags of rice, oats, beans, soybeans, etc. Powdered milk and soybeans (or soymilk) have complete proteins that are needed by the body. Purchase cooking oil, sugar, salt, a few spices, and multivitamins. Also, you can buy highly concentrated protein, like tuna fish.



Bulk food can often be purchased at a restaurant supply store. (Not all of them require you to own a restaurant.) Oriental markets often have bulk rice in 25 or 50 lb sacks. My attitude toward this food is that you probably won't use it, but like other forms of insurance, it's a practical necessity. So buying comfort foods is not necessary. Some people will choose to rotate and use the dried foods (saving money, and in most cases eating a healthier diet), while others will never use the food except in a crisis situation.

Make sure the food is stored in a way that prevents infestation by bugs or mice, or corruption by mildew or mold.

The following chart shows you how many days you could survive on 20lbs of different foods, assuming 2000 calories per day. Obviously you couldn't live on one food alone.

Food	**Calories in one cup, dry**	**Cups in a 20 lb. bag**	**Calories in 20 lb. bag**	**Days of sustenance**
Barley (hulled)	900	51	45,900	23
Garbanzo beans	755	52	39,260	19.6
Kidney beans (red)	620	40	24,800	12.4
Lentils (green)	915	46.6	42,640	21.3
Oats (rolled)	610	58	35,300	17.65
Oil (canola)	1,930 (liquid)	41.3 (liquid)	79,660 (liquid)	39.8 (in 20 lbs)
Rice (white Long-grain)	700	46.4	32,480	16.4
Soybeans	770	48	36,960	18.5
Sugar	775	48	37,200	18.6

Most bulk products can last 2-3 years at least. (Optional: You can make dry goods last 15 to 20 years if you store in airtight plastic five gallon pail, fill them up to the top to decrease the air space, and then add oxygen absorption packets, available online relatively cheaply.)

Until preparation is widespread, there would be a danger of home invasion and theft after a grid collapse. So plan ahead where you would hide it if the grid goes down.

→ Buy and store food for your pets, too. Usually dry pet food is best kept in the bag. Expiration dates are usually several months away, so just have a 3-6 month supply and rotate.

B. Food for infants and babies

Infants and children have special needs. Breast milk is of course the best alternative. If the baby is weaned and still requires formula, it's important to stockpile enough powered formula for a long-term power outage. Commercial store-bought formulas are vastly superior to what can be made from powdered milk, oil and sugar, but a home-made version is better than nothing.

Since people will not generally know if their infants will be lactose intolerant, it makes sense to store the lactose-free version of formula.

The following section is excerpted from an online source. [Thank you, Alan T. Hagan!]

How to make a formula 3 times a day: Add 1/3 cup plus 2 teaspoons (a little less than one ounce) of instant nonfat milk powder to 1-1/3 cups (2/3 pint) of boiled water, and stir thoroughly. Then add 1 tablespoon (about 1/3 ounce, or 9 grams) of vegetable oil and 2 teaspoons of sugar, and stir. (If regular bakers' milk powder is used, 1/4 cup is enough when making one-third of the daily formula, 3 times a day.)

If baby bottles are not at hand, milk can be spoon-fed to an infant. During a crisis, the best and most dependable food for an infant is mother's milk provided the mother is assured an adequate diet. The possibility of disaster is one more reason why a mother should nurse her baby for a full year.

Storing additional high-protein foods and fats for a nursing mother usually will be better insurance against her infant getting sick or starving than keeping adequate stocks of baby foods and the equipment necessary for sanitary feeding after evacuation or an attack. To give a daily vitamin supplement to a baby, a multivitamin pill should be crushed to a fine powder between two spoons and dissolved in a small amount of fluid, so that the baby can easily swallow it.

If an infant does not receive adequate amounts of vitamins A, D, and C, he or she will develop deficiency symptoms in 1 to 3 months, depending on the amounts stored in his body. Vitamin C deficiency, the first to appear, can be prevented by giving an infant 15 mg of vitamin C each day (about 1/3 of a 50-mg vitamin C tablet, pulverized) or customary foods containing vitamin C, such as orange juice.

Lacking these sources, the juice squeezed from sprouted grains or legumes can be used. If no vitamin pills or foods rich in vitamin D are available, exposure of the baby's skin to sunlight will cause his body to produce vitamin D. If sufficient milk is not obtainable, even infants younger than six months should be given solid food. Solid foods for babies must be pureed to a fine texture. Using a modern baby food grinder makes pureeing quick and easy work. Under crisis conditions, a grinder should be cleaned and disinfected like other baby-feeding utensils, as described later in this section.

Several methods are available: the food can be pressed through a sieve, mashed with a fork or spoon, or squeezed through a porous cloth. Good sanitation must be maintained; all foods should be brought to a boil after pureeing to insure that the food is safe from bacteria. A pureed solid baby food can be made by first boiling together 3 parts of a cereal grain and 1 part of beans until they are soft. Then the mixture should be pressed through a sieve. The sieve catches the tough hulls from the grain kernels and the skins from the beans. The grain-beans combination will provide needed calories and a well supplemented protein. The beans also supply the additional iron that a baby needs by the time he is 6 months old. Flours made from whole grains or beans, as previously described, also can be used; however, these may contain more rough material. Some grains are preferable to others. It is easier to sieve cooked corn kernels than cooked wheat kernels.

Since wheat is the grain most likely to cause allergies, it should not be fed to an infant until he is 6 to 7 months old if other grains, such as rice or corn, are available. Small children also need more protein than can be supplied by grains alone.

As a substitute for milk, some bean food should be provided at every meal. If the available diet is deficient in a concentrated energy source such as fat or sugar, a child's feedings should be increased to 4 or 5 times a day, to enable him to assimilate more. Whenever possible, a small child should have a daily diet that contains at least one ounce of fat (3 tablespoons, without scraping the spoon). This would provide more than 10% of a young child's calories in the form of fat, which would be beneficial.

If under emergency conditions it is not practical to boil infant feeding utensils, they can be sterilized with a bleach solution. (See the section on Sanitation for how to prepare the proper strength of bleach solution.)

Directions for safe feeding without boiling follow:

1. Immediately after feeding, wash the inside and outside of all utensils used to prepare the formula and to feed the infant.

2. Fill a covered container with clean, cold water and add the appropriate amount of chlorine bleach.

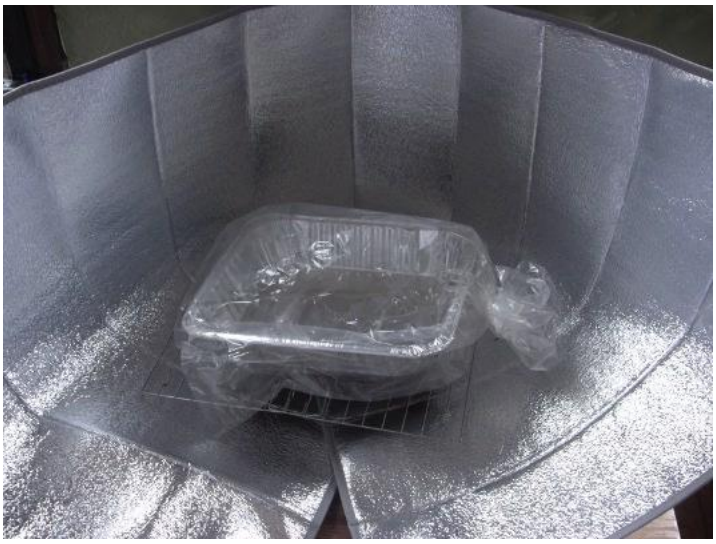
3. Totally immerse all utensils until the next feeding (3 or 4 hours). Be sure that the bottle, if used, is filled with bleach solution. Keep container covered.

At feeding time: Wash hands before preparing food. Remove utensils from the disinfectant chlorine solution and drain, but do not rinse or dry. Prepare formula; feed the baby. Immediately after feeding: Wash utensils in clean water and immerse again in the disinfectant solution. Prepare fresh chlorine solution each day.

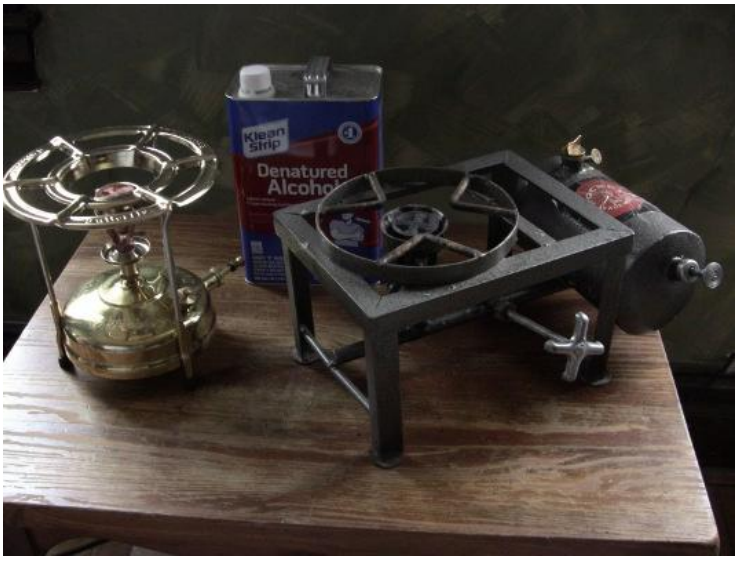
C. Cooking food

Here are some options for how to cook your foods:

1. Solar oven. Use a $4 car sun visor with shiny metallic surface, a roasting bag on a raised grate, and a disposable aluminum baking dish, set-up so that the light can get underneath. (In the picture below, the grate sits on a brick.) Aim open side toward the sun. This DIY oven can heat food to 350 °F. It probably would not work so well on cold or winter days because of lack of strong sunlight. But it’s great in warmer, sunnier locations.



2. Kerosene camping stoves. The stoves pictured below must be primed with methanol (denatured alcohol) but they burn kerosene. There are kerosene stoves that use wicks and don't need methanol. $35 to $90. Of course, you must store kerosene safely. Kerosene keeps a lot longer than gasoline.



3. Propane or charcoal grill. If you already have a grill, purchase and store more charcoal or propane.

4. A camping stove that burns twigs and sticks. These are very small, yet can generate a lot of heat! The downside is that they generate a lot of smoke. They can be purchased online. Or you can create a Do-it-Yourself Rocket Stove. The pictured stove (below left) is made from a paint can, a spaghetti sauce can and a smaller can. Insulation between the

inner can and the paint can to boost the efficiency of the cooking. Sticks are fed in through the side. This requires power tools so it needs to be made ahead of time. https://www.youtube.com/watch?v=gQyU4lokVe4 (Or make one from bricks (below right.) http://sustainablog.org/2011/09/how-to-build-a-rocket-stove/ This second link describes how to build several versions of rocket stove. (Photo credits: sustainablog.org)

5. Fireplace or wood stove. If you plan to use a fireplace in an emergency, make sure that the chimney has been cleaned ahead of time to prevent chimney fires.

6. Outdoor fire. This is the least recommended way to cook because it's inefficient and uses up a lot of wood or fuel. Those who've never used a fire before may have difficulty and may lose control of the fire in windy or cramped locations.

- → CAUTION: Except for fire places and vented wood stoves, all cooking should be done outside to prevent carbon monoxide poisoning.

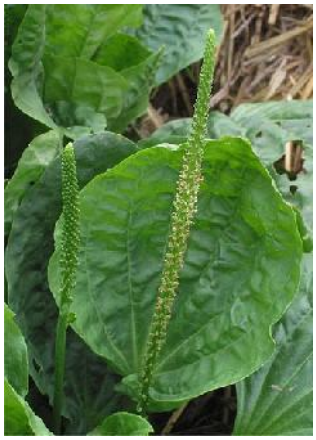
- → CAUTION: Fuels such as kerosene or gasoline should never be stored in buildings where people live. Store in a garage or shed.

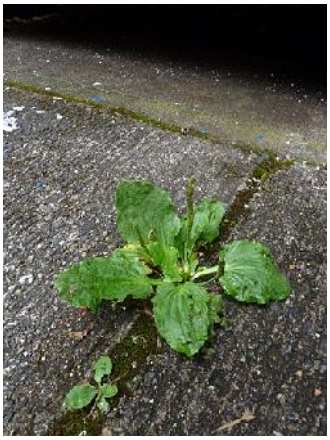
D. Edible wild plants (optional)

Most wild plants don't have enough protein or calories to sustain you for long. However, they are often rich in vitamins and minerals and can boost immune systems. Many have medicinal uses, too. Here are a couple examples of what "weeds" can offer you: Dandelions (leaf and flower) are rich in anti-oxidants, vitamins A, B_2, B_6, C, E and K, and minerals such as potassium, calcium, manganese, magnesium and iron. Young leafs and flower can be eaten raw, but older leaves should be steamed.

Plantain (leaf) can also be eaten raw or steamed, and contains fiber, potassium, calcium, magnesium, sodium, phosphorus, zinc and copper, as well as vitamins A, C and K. Plantain can also help suppress coughs.

Plantain (Source: Wikipedia)





Well crushed, the liquid from the plantain leaf is good for soothing skin after bee stings, insect bites and poison ivy; it has antibiotic properties; and also stops small amounts of bleeding. It has many other benefits and is a very common weed. Young leaves can be eaten raw. Mature leaves are more bitter and fibrous and should be cooked or steamed, preferably after removing large fibers by hand. Pregnant women should not take it internally. People allergic to melons will probably be allergic to plantain. In large quantities, it may cause low blood pressure, diarrhea, or irregular heartbeat. Normal dose: 3-6 leaves per day. (Note: this is not the same plantain as the banana-like plant.)

These were just two examples. To learn about more plants, search on “Edible wild plants with photos” and add your region such as “North East United States” or “Arizona desert.”

E. Gardening (optional)

If the U.S. government is still largely unprepared, the grid blackout might last longer than six months. For those living in the right climate, it makes sense to have a garden or be able to start a garden. However in the worst-case scenario, most people won’t have the resources to keep the garden secure from theft or damage. So, if you expect a blackout longer than three months, my recommendation is to buy more bulk goods, besides starting a garden.

Staying Warm in Cold Weather and Climates

Most gas furnaces and all electric furnaces won't work in a blackout. (The gas furnaces need electricity for the fans.) Use some combination of the following to keep warm:

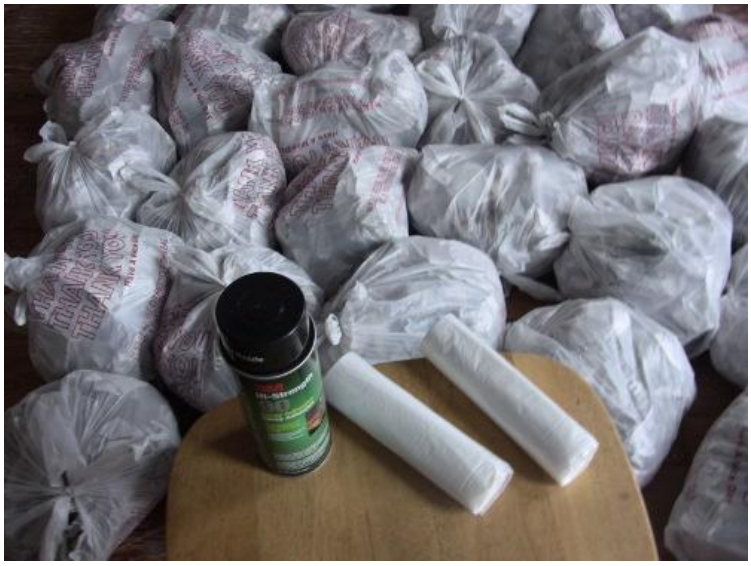
1. In warmer parts of the country where it doesn't get too cold, you might be able to manage with *layers* of shirts and pants, sweaters, coats, wool hats and scarves and gloves. You'd also need many blankets.

2. You can make an emergency "igloo" by draping enough blankets over a small kitchen table and huddling underneath. Or if you have a pup tent, you can set it up indoors.

3. If you live where it gets extremely cold, you might choose to super-insulate one small room where you live. There are several advantages of insulation over most heating options: You don't have to spend money for several months of heating fuel (whether wood, fuel oil, kerosene or coal). There's no fire danger if you use body heat or heated bricks to stay warm. You won't be adding to air pollution (wood and coal fires generate a lot of particulates.) Using insulation also doesn't let others know of your presence or level of preparation, as smoke from a fire would.

4. If you have no budget to buy insulation, you can make insulation "walls" or "blankets" after the grid collapse if you've gathered the materials ahead of time:

To make an insulation wall, these things should be purchased or collected ahead of time: old newspapers (a stack about three feet high), two large sheets of plastic that are 1-2 mils in thickness (often used as a disposable drop-cloths for painting), a can of spray adhesive (either artistic adhesive or car undercoating adhesive), and the standard small plastic bags that people commonly get when they shop, and some duct tape or clear packaging tape. Here are the materials for the insulation wall, partially constructed:



Directions to make one insulation wall: 1. Crumple and ball up ten two-page sheets of newsprint and put in a small plastic bag, then tie the bag shut. (Don't use the heavier paper inserts. You might save them for fire fuel.) You will probably need a stack of newspapers about 3-4 feet high. Fill about eighty bags this way. (This will take about three hours.) 2. Open up one sheet of plastic, usually at least 8 feet by 12 feet. Spray a small amount of adhesive on it. 3. Start laying the bags on the sheet, leaving about a five inch border. (These will eventually be sandwiched between the two sheets of plastic.) Although round, pack the bags fairly tight against each other so there are no large air holes. Spray a little adhesive so the bags stick to each other, as you go. 4. Ball up more double-page sheets of newspaper, and squeeze them into the gaps between the plastic "balls." This prevents air flow between the plastic balls and makes the insulation wall a better insulator. 5. Spray a coat of adhesive over the top. 6. With one or two other people carefully lay the top sheet of plastic on top, and then tamp down so that the adhesive sticks. 7. Staple or duct-tape the five-inch borders together, so the paper balls don't fall out the side of the sandwich, and so that there is no lateral air-flow.

If you don't have enough small plastic bags, 13-gallon bags could probably be used along with the standard small plastic bags, by using string to create two or three almost-round compartments for the newspaper, but I haven't experimented with this. (I originated the insulation wall design.)

Uses: You can sleep under one of these (except for your head, since it doesn't breathe.) Or you could take two walls and use one rope or long cord, to make an A-frame tent for sleeping. (Use blankets to close off the open sides.) Or you could use one or two draped over a table to make a much warmer 'igloo.' Or you could use five or more to insulate a small room, by either attaching to the walls and ceiling, or building a frame within a room and attaching to the frame.

→ TWO CAUTIONS: This insulation is highly flammable, since it's made with paper. DO NOT USE ANY HEAT SOURCE WITH OPEN FLAMES. DO NOT SMOKE OR USE CANDLES. Also, do not make your room or tent so air tight that there is no flow of oxygen for breathing. LEAVE A SMALL OPENING AT LEAST, FOR AIR FLOW.

5. If it gets very cold where you live, consider purchasing a extreme temperature sleeping bag. For about $100, you can purchase a bag that can keep you comfortable down to 0 °F, and you can be okay in it down to -25 °F.

6. Alternative heat sources.

Most of these alternatives will put your budget beyond bare-bones preparation. Most also require vigilance against fires.

a) Chimneys are usually not very efficient, but wood-burning stoves usually work well. You just need to store enough wood.

b) Off-grid solar or wind energy. This requires an array of storage batteries for when the sun is not shining. (The electronics, however, might be destroyed by an EMP.)

c) Packing a lot of people in the same semi-insulated room and using body heat. This may be necessary for those who have no other options, but may lead to spread of disease.

d) Caves or certain underground structures may be an option, since the Earth's temperature is about 55 ºF. The corner of a basement if insulated may do better than the rest of the building if there is no heat.

e) Kerosene or gas heaters. Not generally recommended because of fire hazards, carbon monoxide hazard, the storage space needed for fuel, fuel cost, odor, and danger from burns.

f) You can wrap heated bricks or stones in a towel and then bring them into an insulated room or pup tent (or put under a blanket) for some heat. This doesn't provide a lot of heat but can increase your comfort level. (Details: use firebrick or rocks that won't explode when heated, put in fire to get heated, push out of fire, pick up with oven gloves, wrap in towel over and over, and carry in bucket or with oven mitts still on.)

Staying cool without air conditioning

Options: Wear thin, cool clothing. Plan to siesta or be inactive during warm part of day. Open up windows when it's cooler to let in cool air, and close windows during warm part of day. Use insulated room to keep *out* heat. Drink plenty of water. Moisten clothes or drape a moist towel around neck, since evaporation causes cooling. Work or stay in shade or part of house away from sun. Find a basement or cave area, again because of the 55 degree underground temperature.

Maintaining sanitary conditions and disposing human waste

1. Personal hygiene: With less water and more work needed to make hot water, it will be less convenience to wash up. But good personal hygiene reduces your chance of disease and helps maintain morale. It's important to brush and floss your teeth regularly because it will be hard to find dentists with off-grid electric power. Stock up on essential products so that you have at least three month supply (soap, toilet paper, floss, toothpaste, sun block, sanitary napkins, shampoo, etc.)

If you run out of toilet paper you can cut small strips of cloth, use them and wash them. (Treat them like cloth diapers. See the section below for washing clothes.)

You can take a sponge bath using about a half gallon of water if necessary. One option is to purchase a "solar shower" ($10) Part of it is a black plastic bag that you fill with water and then hang up where it's exposed to sunlight. The sunlight heats the water and you can shower with it via the hose attached.

2. Disinfecting food-preparation surfaces. Use one tablespoon of chlorine bleach per gallon of water. (Or ¾ teaspoon per quart of water.)

→ CAUTION: Never mix chlorine bleach with either vinegar or ammonia. That would create deadly chlorine gas (or chloramine gas which is also deadly.)

3. Sterilizing dishes, glassware and cutlery in cold water. Use 2 teaspoons of bleach per gallon. Keep in water for at least two minutes.

4. Baby and infant sanitation. Stock up on all critical supplies (baby wipes, plastic bags for the baby potty, toilet paper, etc.) Purchase cloth diapers and safety pins as backup in case you run out of disposable diapers.

5. Washing clothes (and diapers)

a. Five-gallon bucket and plunger method. Use a clean toilet plunger. Optionally, you can cut out small "v" sections off of the plunger to increase agitation. Cut a small hole in the lid to the bucket so that the plunger handle can fit through. Put in water, detergent and dirty clothes and leave a small air space for agitation. Put plunger in, then drop lid around plunger handle and then seal lid. Plunge manually. It will be easier to plunge and easier to rinse if you don't use too much detergent. Drain out soapy water, then squeeze out or wring out as much soapy water before adding rinse water. Set your plunger for rinse cycle and repeat. Use clothesline or hang to dry.

b. Another alternative, especially for large objects like blankets or coats, is to put water and detergent in a thick black garbage bag. Dissolve detergent completely in the water, and then put in clothes to be cleaned. Twist-tie shut. Shake bag some to agitate, then put in sunlight. The sunlight will heat up the contents of the black bag. Open bag where you can drain it, and squeeze out soapy water. Put in rinse water, agitate and drain. Repeat. Use clothesline or hang to dry.

6. Disposing of human waste (and animal waste)

Note: Washing hands after using the toilet is now much more important because of the increased chances of illness from feces.

a) Your home toilet can be turned into an emergency water-less toilet. Shut off the value from the toilet tank. Flush to empty the toilet bowl. Dry the toilet bowl with rags (wear rubber or latex gloves.) Lift the toilet seat and place a 13-gallon garbage bag under the seat of the toilet bowl and tape with duct-tape. Also tape the handle for flushing so that water from toilet tank is not accidentally let into bowl (Or drain the toilet tank. That water can be used for other purposes.)

Use the toilet as usual. If available, sprinkle about two tablespoons (1/8 cup) of hydrated lime (calcium hydroxide) into the bag after each production of solid waste to help prevent disease. Hydrated lime is to be preferred to quicklime (calcium oxide) which is more dangerous to use, but will work. Garden lime or pulverized limestone is not useful here.

The bag may be used several times before changing. Hydrated lime is very caustic, like bleach. It should be used carefully. Wash hands immediately if you come in contact with it. If your toilet generates an ammonia smell, ventilate the room, since ammonia is hard on the lungs, too. If you've stored enough bleach for other needs, you can use 2 tablespoons of bleach instead of hydrated lime.

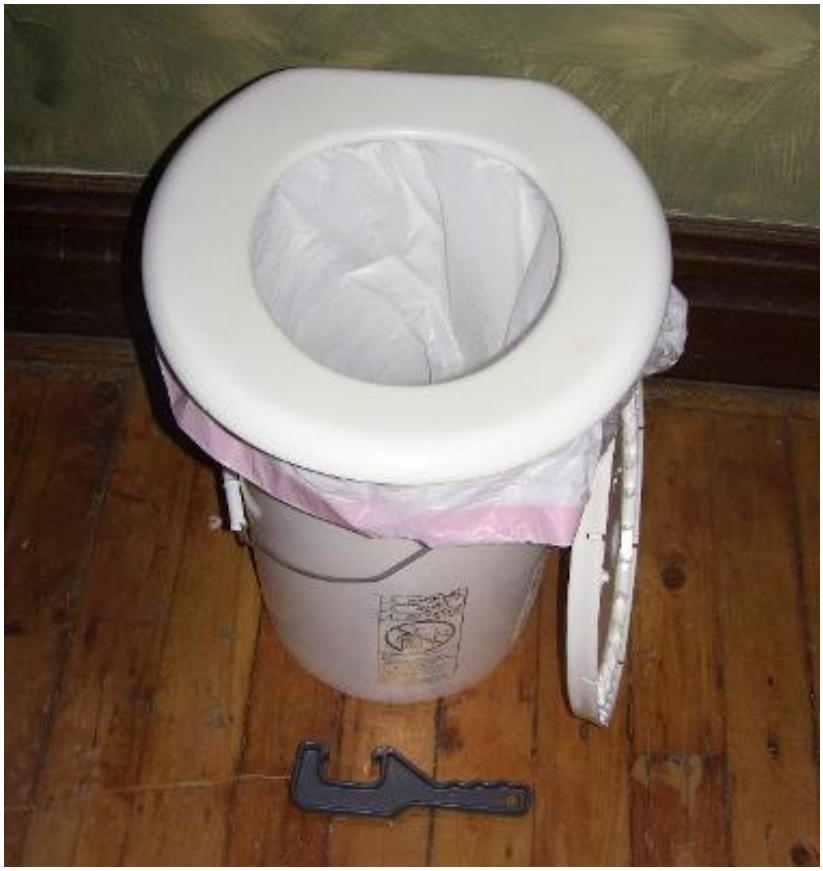
Change the bag by lifting the toilet seat and carefully removing the bag without tearing it. Seal bag with a twist-tie. Place a bucket next to the toilet and transfer the bag to the bucket. Cover the entire toilet with a large 30 gallon trash bag to decrease odor.

Carry bucket to an outside trashcan with tight-fitting lid or to a hole dug deep for disposal. If you must bury it, make sure bags are tightly sealed and that burial is at least 200 feet distant from water sources. Otherwise you will contaminate someone's drinking water.

When just urinating, catch urine separately to save bags and to decrease the production of ammonia (when the lime is added.) Urine can be dumped in a shallow hole outside or spread over ground that will be later be used for a garden. (It is a nitrogen fertilizer.)

b) Get the materials to make an emergency toilet. You'd need: a five- or six-gallon pail with an airtight lid. (Restaurants often use these kinds of pails and lids.) ; a toilet seat (or use two 2 x 4's for sitting that can be lifted off); many 13-gallon plastic bags, a pail opener for quick opening (shown on floor, and available at hardware stores), and hydrated lime (a 50 lb. bag is about $17.)

This option and the previous one are preferred over an outdoor latrine because of rain and cold, and because you are more vulnerable outdoors. The tight-fitting lid seals in odor. (See photo below.)



c) Dig a trench latrine. Either find a spot that is protected from view or create some kind of enclosure. Then dig a long, narrow trench, at least a foot deep, and cover it at you use it. Straddle the trench and squat. If you can put lime on the waste first, that's preferred but not necessary.

d) Pet waste products. For cats, store extra kitty litter. Dogs kept inside will probably need a newspaper area, perhaps placed over kitty litter and plastic to catch the urine. Bag in plastic and store with the human waste.

7. Disposal of dead bodies. Unless someone died of an infectious disease, there's no immediate risk of transmission of diseases like cholera or plague. The danger is that a dead body may contaminate a water source if buried within five feet of the water table, or near a well or other water source. Nevertheless, wear rubber or nitrile gloves when handling a dead body or dead animal. Wrap a dead body in plastic sheeting or large plastic bags taped together, before transporting, because it will produce fluids. Bury it deep enough to be able to put 3-4 feet of dirt on top, so that the body is not disturbed by animals. But do not bury in low-laying ground, where the water table is high.

Disclaimer: The following information should not be considered as medical advice.

Maintaining physical health *(medicines and first aid, etc.)*

1. Stock up on over-the-counter medicines. (Pain relievers, cough medicines, antacids, upset stomach, and antibiotic creams or sprays for cuts and abrasions.)

→ NOTE: except for medications that must be refrigerated, most over-the-counter medications can be taken well past their expiration date. Most of the time, the medications just gradually lose potency, so taking them will usually have the desired effects. Also remember, the expiration date is the last day the medication can be sold. Therefore, there is the expectation that they will be used some time after that date.

→ NOTE: If you have room in your refrigerator, store cough medicines, other medicines and vitamins in your refrigerator (before a power-outage), since this will increase their shelf life even more.

2. Purchase a Benzocaine or oil-of-clove product to minimize dental pain. Also purchase a temporary dental repair kit, or lost filling kit. These are $5-$10 and will be well worth it if you have dental pain. Fixodent or Poligrip can be used to keep a loose crown in place. (Regular brushing and flossing is even more important, since few dentists will have off-grid solar power for their equipment.) If you expect many dental problems, buy a bottle of eugenol and some zinc oxide powder (online.) When small amounts are mixed, they make excellent temporary fillings. The mixture can also be used to cement crowns in place.

The eugenol is an extract of clove oil and can be used by itself to temporarily suppress dental pain and also kill bacteria in the cavity.

To make a temporary filling, place a few drops of eugenol on tooth to kill pain. Wait until the pain goes away and wait one extra minute. Then gently brush or rinse with salt water to clear out area. Dry with sterile dressing. Mix zinc oxide (about the volume of ½ a tooth) with about five drops of eugenol, give or take. Put on a nitrile glove and form mixture into a putty with gloved fingers. While still wearing glove, press into the cavity. Scrape away excess with either your gloved fingernail or a thin strip cut from a credit card. With a clean sheet of paper folded over so it's about three layers thick, bite down on the paper a few times and gently grind to make sure the filling is seated well and doesn't overextend. Have someone look at the filling or floss on both sides of the tooth to make sure it doesn't overextend sideways. Give it time to harden, a few hours or overnight.

3. Purchase a box of nitrile exam gloves. Usually blue in color, they are more durable than latex gloves. They are important for treating people with injuries and infections. They are also useful in an epidemic situation to prevent contamination.

4. If you take prescription medications, talk to your doctor about writing a prescription that allows you to have at least a 30 to 60 day supply of essential medications. Ask your doctor about alternative ways to control or minimize your distress if you run out of the medication. (There may be one or a few herbal remedies worth learning about.) Also ask about the consequences of taking half-doses to stretch the medication in an emergency situation.

5. If you are a diabetic, ask your doctor ask if there are ways to control your blood sugar level through diet and exercise. Ask if there's a way to build up a larger reserve of insulin. (Diabetics should also put more pressure on local government to work out some kind of solution.) A company called Frio makes a special cooling "wallet" for when there is no electricity. It uses evaporation and special crystals to maintain a cool temperature for insulin. You soak the wallet in water, and evaporation keeps the insulin cool for up to two days. Then you re-soak it. (www.diabetesfrio.com or Ebay.)

Another option, invented thousands of years ago, uses the same evaporation principle and can be made from simple materials. It's called a Zeer pot, or a pot-in-pot refrigerator. You use two clay pots of different sizes and put sand in between them. By keeping the sand wet, and by putting a wet cloth on top of the pots, you promote evaporation. This can keep something up to 40 degrees cooler, but this works best in areas of low humidity. (Check YouTube or online for tutorials.)

If you had no other option, you could dig a hole about 4-5 feet deep, put your insulin in the hole (in a container), cover it with insulation (bubble wrap, Styrofoam, or crumpled paper or a blanket in a plastic bag) and it will stay at about 55ºF. (This is why caves are cool.) This temperature is not ideal, but the insulin will keep longer than otherwise.

6. Stock up on bandages, dressings, and elastic wraps. Butterfly bandages are worth purchasing for large wounds, since they are hard to improvise. Because you and others will likely be doing unfamiliar physical work, sometimes outdoors, it's likely that there will be more injuries.

7. Download and print a first-aid manual, or purchase one. Store it with your emergency materials. Consider reading it and learning first aid even before a grid crisis. Here's an excellent free manual: U.S. Army first aid manual in PDF form (225 pages): https://archive.org/details/FM4-25.11 (Search on "F.M. 4-25.11" then select PDF option.)

8. Purchase two N-95 dust masks per person. I recommend buying them in boxes of 10 or 20 at hardware stores, rather than at drug stores since that version is thicker and more durable and could be hand-washed. (Children's masks must be purchased at drug stores.) Masks would dramatically reduce your chances of catching the flu in an epidemic situation, or catching some airborne infection from someone ill. They would also be

helpful in a super-volcano eruption or nuclear blast, if you were not at ground zero but close enough to be experiencing dust. A third use for the masks would be to reduce smoke inhalation from the many people using fires to cook and wood-burning stoves to heat.

9. [Optional] The period after a grid collapse is probably not a good time to get pregnant or to get someone pregnant. Even if the grid is repaired in three months, a slow economic recovery is likely. Consider buying condoms or downloading information on the rhythm method. (Wikipedia: search on "calendar-based contraceptive methods.")

Emergency communications

Purchase a small radio (and extra batteries unless it's the preferred wind-up type) so that you can receive notifications and updates. FEMA has organized many radio stations that are EMP-hardened and have at least 30 days of fuel for power. These "PEP" emergency radio stations will broadcast on the AM frequency. State and local emergency management may use the same network. By listening you may learn about: severe weather, distributions of food and water, a fire at a nearby nuclear power plant requiring evacuation, locations of emergency shelters, etc.

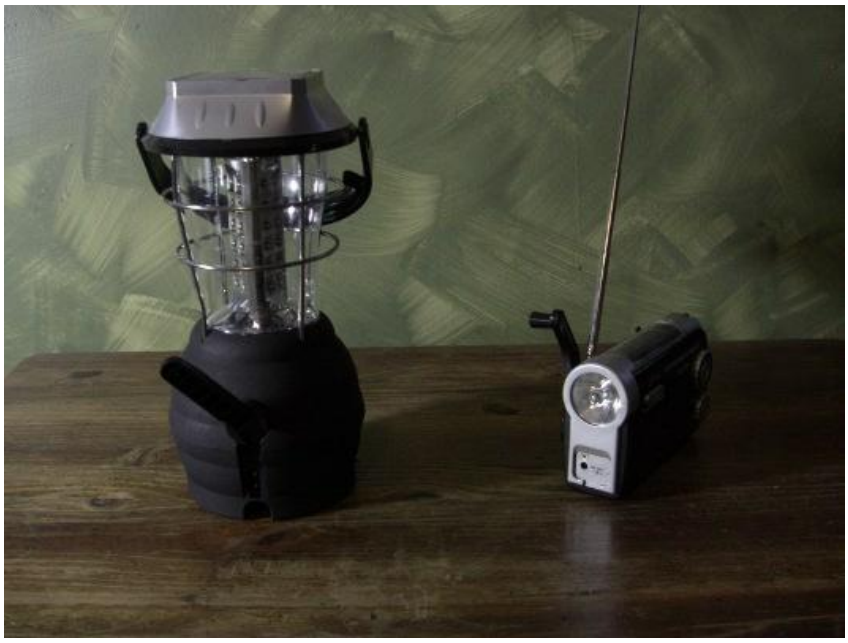
→ A note about batteries: Unused disposable batteries keep much longer than batteries that have been used even once. At room temperature they lose 8% to 20% of their available charge. Batteries do not need to be stored in a Faraday Cage or in aluminum foil (see below).

Lighting and protecting electronics

Without lighting perhaps 35% of your waking hours would be in the dark. Morale would be harder to maintain with little to do.

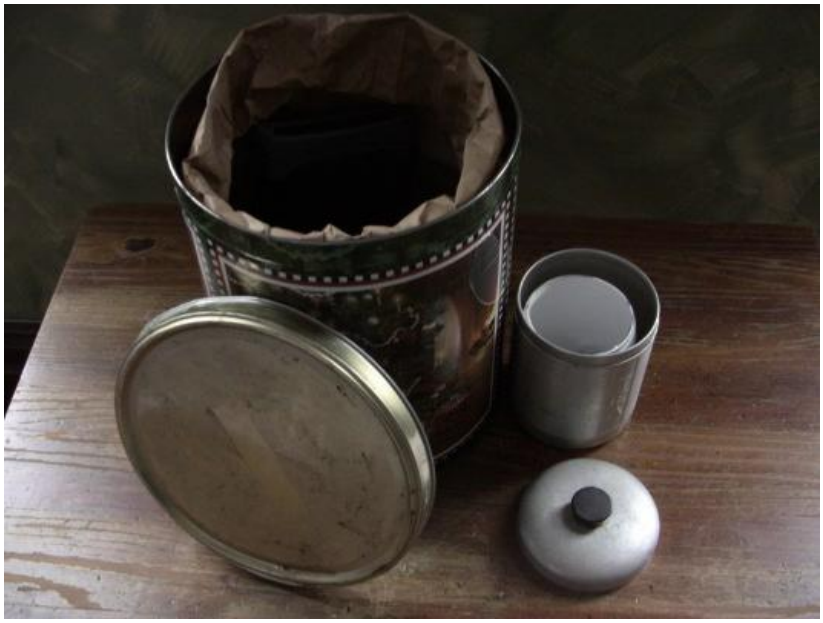
A windup LED lantern can be purchased online for about $25. Some models can also be charged via solar panel on top. I could easily read at night with the model I purchased. A windup flashlight & radio that can also be charged via solar panel costs about $17.

→ You can buy a solar charger for a cell phone for about $50. (This would be to get information stored on the phone, not for communications.) Chargers for laptops would cost $250-$650 or so.



To protect your lights, electronics and flash drives from EMP

Use any metal container that can be tightly sealed, such as a popcorn tin or cookie tin. But the flash drives or other electronics must not be in electrical contact with the metal. So, you can use paper, plastic or cardboard as insulation to prevent electrical contact. This is one version of what's called a "Faraday Cage." Put in your LED wind-up light, spare smoke detectors, and emergency radio, t,l5oo.



You can also store small electronics in an old broken microwave oven, as long as the door can fully close. Just as the microwave is designed to keep in microwave radiation, it will keep out EMP radiation.

→ If you cannot find metal containers, you can create the equivalent: Put your back-up equipment in something that doesn't conduct electricity such as a plastic or paper bag, or a cardboard box, and then completely wrap it tightly in aluminum foil (at least two layers of thin foil.)

Preventing and preparing for fires

Be prepared for fires. (It will be harder to reach fire-fighters; they might have other priorities and not show; they might not have water pressure at the hydrants; and also insurance companies will probably not be much help after a grid crisis.)

1. Because of increased dangers, it's more even more important to have working smoke detectors and fire extinguishers installed close to potential sources of fire. Also have boxes of baking soda close to where you might have grease fires.

2. If the grid does collapse, as extra insurance, consider placing a plastic trashcan on an upper floor, filled with water, with the lid and a bucket on top.

3. Stress fire safety and situational awareness with members of your family. There must be absolutely no untended candles or fires. Teach everyone in your household the basic principles of putting out each kind of fire, and the right kind of extinguisher to use.

4. Work out evacuation plans. How will you get out of upper floors? Who is responsible for young children? Who will grab what vital equipment on the way out (if possible)? Where will you regroup?

5. As mentioned earlier, there should not be flammable liquids in the house, with the exception of the small amount to be used in the near future.

6. If an EMP occurs, small transformers that are on poles near homes may overload and catch fire. The cooling oil in the transformers rarely ignites, so usually only a small amount of insulation burns before the fire goes out. However if the transformers are among trees and it's been dry, there's a danger of the fire spreading. Be ready to put it out.

7. As part of organizing with neighbors, organize a mutual fire-protection plan.

Protecting yourself from radiation

In a grid blackout, nuclear power plant won't have electricity. The nuclear reactor cores would automatically shut down. But the core and the spent-rod cooling ponds need the circulation of water to prevent overheating leading to fire and the emission of radioactive gases and particles. Nuclear power plants generally only have one week of diesel fuel or natural gas for their back-up generators. If they cannot get more fuel for their electric generators, or if the generators are destroyed by an EMP, they then wouldn't be able to prevent the emission of dangerous radiation. In a nationwide grid-down event they are likely to have major problems assuring the continuous re-supply of fuel.

These fires can generate radioactive gases and particles, especially radioactive iodine, cesium and strontium that have been firmly linked with increases in cancer.

If there is a core meltdown, the greatest and most immediate danger is from radioactive iodine. (But the spent fuel rods don't have much iodine at all.) Regular iodine is normally absorbed and concentrated in people's thyroid glands. Radioactive iodine can also be absorbed in the same way and later cause cancer, especially in infants and children. To minimize this problem, it's critical that infants, children, and pregnant and nursing women take potassium iodide, to "fill up" the thyroid, so that it doesn't absorb the radioactive version of iodine.

Due to normal weather patterns and winds, the 2011 Fukushima reactor meltdown in Japan generated enough radioactive iodine *in California* to reach 80% of the level that would have required an evacuation *of California*.

In theory, emergency management agencies would dispense potassium iodide tablets, but in the chaos of a grid-down event, with an uninformed public and very limited communications, it's hard to imagine how they would organize this effectively.

You can buy potassium iodide online without a prescription. Incidentally, "KI" is the chemical shorthand for potassium iodide.

The following information is excerpted from the government's official (CDC) website:

What is Potassium Iodide (KI)?

KI (potassium iodide) can help block radioactive iodine from being absorbed by the thyroid gland, thus protecting this gland from radiation injury.

Table salt and foods rich in iodine do not contain enough iodine to block radioactive iodine from getting into your thyroid gland.

The thyroid glands of a fetus and of an infant are most at risk of injury from radioactive iodine. Young children and people with low amounts of iodine in their thyroid are also at risk of thyroid injury.

Infants have the highest risk of getting thyroid cancer after being exposed to radioactive iodine. All infants, including breast-fed infants need to be given the dosage of KI (potassium iodide) recommended for infants.

- Infants (particularly newborns) should receive a single dose of KI. More than a single dose may lead to later problems with normal development. Other protective measures should be used.
- In cases where more than one dose is necessary, medical follow up may be necessary.

The U.S. Food and Drug Administration (FDA) recommends that all children internally contaminated with (or likely to be internally contaminated with) radioactive iodine take KI (potassium iodide), unless they have known allergies to iodine (contraindications).

The FDA recommends that young adults (between the ages of 18 and 40 years) internally contaminated with (or likely to be internally contaminated with) radioactive iodine take the recommended dose of KI (potassium iodide). Young adults are less sensitive to the effects of radioactive iodine than are children.

Because all forms of iodine cross the placenta, pregnant women should take KI (potassium iodide) to protect the growing fetus. Pregnant women should take only one dose of KI following internal contamination with (or likely internal contamination with) radioactive iodine.

Women who are breastfeeding should take only one dose of KI (potassium iodide) if they have been internally contaminated with (or are likely to be internally contaminated with) radioactive iodine. They should be prioritized to receive other protective action measures.

Adults older than 40 years should not take KI (potassium iodide) unless public health or emergency management officials say that contamination with a very large dose of radioactive iodine is expected.

Adults older than 40 are more likely to have allergic reactions to or adverse effects from KI.

How is KI (potassium iodide) given?

The FDA has approved two different forms of KI (potassium iodide), tablets and liquid, that people can take by mouth after a radiation emergency involving radioactive iodine.

Tablets come in two strengths, 130 milligram (mg) and 65 mg. The tablets have lines on them so that they may be cut into smaller pieces for lower doses.

For the oral liquid solution, each milliliter (mL) contains 65 mg of KI (potassium iodide).

- Newborns from birth to 1 month of age should be given 16 mg (¼ of a 65 mg tablet or ¼ mL of solution). This dose is for both nursing and non-nursing newborn infants.
- Infants and children between 1 month and 3 years of age should take 32 mg (½ of a 65 mg tablet OR ½ mL of solution). This dose is for both nursing and non-nursing infants and children.
- Children between 3 and 18 years of age should take 65 mg (one 65 mg tablet OR 1 mL of solution). Children who are adult size (greater than or equal to 150 pounds) should take the full adult dose, regardless of their age.
- Adults should take 130 mg (one 130 mg tablet OR two 65 mg tablets OR two mL of solution).
- Women who are breastfeeding should take the adult dose of 130 mg.

How often should KI (potassium iodide) be taken?

Taking a stronger dose of KI (potassium iodide), or taking KI more often than recommended, does not offer more protection and can cause severe illness or death.

A single dose of KI (potassium iodide) protects the thyroid gland for 24 hours. A one-time dose at recommended levels is usually all that is needed to protect the thyroid gland.

In some cases, people can be exposed to radioactive iodine for more than 24 hours. If that happens, public health or emergency management officials may tell you to take one dose of KI (potassium iodide) every 24 hours for a few days.

Avoid repeat dosing with KI (potassium iodide) for pregnant and breastfeeding women and newborn infants.

What are the side effects of KI (potassium iodide)?

Side effects of KI (potassium iodide) may include stomach or gastro-intestinal upset, allergic reactions, rashes, and inflammation of the salivary glands.

When taken as recommended, KI (potassium iodide) can cause rare adverse health effects related to the thyroid gland.

These rare adverse effects are more likely if a person:

- Takes a higher than recommended dose of KI
- Takes the drug for several days
- Has a pre-existing thyroid disease.

Newborn infants (less than 1 month old) who receive more than one dose of KI (potassium iodide) are at risk for developing a condition known as hypothyroidism

(thyroid hormone levels that are too low). If not treated, hypothyroidism can cause brain damage.

- Infants who receive more than a single dose of KI should have their thyroid hormone levels checked and monitored by a doctor.
- Avoid repeat dosing of KI to newborns.

My advice: Periodically listen to emergency radio to learn if radiation is ever released. If there is a meltdown of a nuclear core in the US, then it will probably be necessary to take more than one dose of potassium iodide. So have some on hand, especially for infants and small children.

In the event of a meltdown, having a dust mask that catches larger particles will be helpful when you go outside. Then immediately hand wash the masks, rinse your hands, and dispose of the liquid that would have the radioactive particles. Also change out of clothes, and keep them isolated. These actions would not prevent contamination, but would help minimize it.

Protecting yourself and your family from attacks

We must consider two different situations. The first is if most people are prepared for a collapse. The other is if only you and a minority of people are prepared.

If most people are prepared, then the problem is that police, fire-fighters and EMS are harder to reach or impossible to reach since communication is down. Then criminals, fires, and health emergencies become more of a problem. In most locations, organizing neighborhood watches (see “Green Zones” below) should solve the problems. For instance, neighbors would organize street patrols and fire-fighting procedures. They’d also locate the people who have first aid and medical skills, and work out a way to notify them fast, perhaps whistles.

In some areas where gangs already function, the danger is that gangs would overwhelm the street patrols and whatever armed back-ups have been organized. But eventually police, National Guard and possibly some military would arrive and clean them out. Part of the reason that they’d be able to do this is that if most people are prepared, law enforcement wouldn’t be so overwhelmed with other priorities.

[Thus it might be helpful for gang members to know in advance that if they do harm others, they’ll probably be killed. It will be a martial law situation. Even the National Guard will have some very powerful weapons. No trial by jury. No prison with parole.]

The situation where most people are unprepared would be very different. Now, besides the criminal element, there are a majority of desperate people who will be struggling to

survive, many of them with guns. There will also be overwhelmed and stressed police, National Guard and perhaps military.

> The following information is *not* part of the Grid Emergency plan. These are ideas for what to do if most people *don't* follow our plan.

For those who are prepared or are willing to prepare, there's a depressing reality: The more prepared you appear, the more others will believe you have food and supplies. So setting up obvious defenses such as razor wire may initially send the message that you are prepared and not to be trifled with, but later on when people are more desperate, they will think that you probably do have food and supplies, and may risk anything to get them. In other words, an early show of force such as shooting off some rounds may be initially helpful, but later on people may return with more force.

Another depressing reality is that fire will probably be used as a weapon. Gangs may issue ultimatums, such as "give us food, or we will burn you out." They may be desperate enough to risk that. If you have a gun, you may shoot them before they start the fire. Or they might shoot you when you try to put out the fire, or escape the fire.

[Ugly possibilities like these should help inspire you to inform others so that the chain reaction of preparation spreads quickly. That way, scenarios like these will not take place. Even in this scenario, if neighbors pledged mutual aid, gangs would be less likely to attack one house if they believed they would be shot at from many other homes.]

But there are other strategies to consider. If you can deceive people into believing that you don't have supplies, they your chances of attack go down. This means keeping your preparations hidden. You could put deadbolts on the doors that can't be seen from outside. You could cover a broken window on the outside with something that looks make-shift or haphazard, and have solid wood behind it. You could pile some furniture or create an obstacle course just inside a door, to slow intruders down. My point here is to keep your preparation hidden.

Below are more troubling situations, and some ideas for dealing with them. Before reading them, realize that:

- The grid probably *won't* collapse long-term (but we should still be prepared in case it does.)

- Our chain reaction of preparation and advocacy is designed to lower or eliminate the desperation so that these strategies won't be needed.

- If the grid goes down, all these things won't happen right away, nor will they happen to the same person or family.

- Some areas will be stabilized quickly, so you might not have to deal with a 'war zone' atmosphere.

Some things to consider:

1. If a FEMA camp becomes an option for you, whether to go or not would be a tough decision. On one hand you would be physically safe. On the other hand, I believe that (at this time) FEMA would be unable to guarantee most people a steady supply of food, medicine and other essentials. Also, if you go to a camp, your home and property are unprotected.

2. Ahead of time, think about whether or not your home would be the best place to stay. If your neighborhood is likely to be dominated by gangs, and/or if your neighbors don't seem like they would band together, you should make arrangements ahead of time with someone you know well, to move in with them. There's more safety in numbers, and your supplies and knowledge would be of additional benefit to whoever housed you.

3. Children and all members of your family need to know what to do if they are not at home and the grid goes down. For instance, small children will not be able to walk home from school unattended. Also, whenever members of your family go out of town, you should make up a contingency plan.

4. Another reason to keep your preparation secret is that there are national anti-hoarding laws that authorities may use to appropriate your supplies if they find out about them. [From one point of view this is understandable since why should some people starve if others have extra food? From another point of view, if the government had a decade to protect us or inform us, and didn't, they lose considerable legitimacy. People who prepare shouldn't be punished for doing the sensible thing. Also, you can expect that some people in authority will favor their friends with your supplies.]

5. You should only use emergency lighting in a room where the windows are completely covered. Otherwise people will know you're more prepared than most. Many people will put blankets over windows, to prevent themselves from being a target for random shooters. You can do the same.

6. If shooting become frequent in your neighborhood, you can make the equivalent of sandbags, by filling up heavy-duty garbage bags with soil, sand or rocks, and placing them on tables near windows. You could also put a tall dresser in front of a window and put bags with soil or rocks in the drawers. For morale and a sense of safety, you might want to reinforce at least one room this way.

7. If you are not someone who has a gun or likes guns, you must first decide if, on principle, killing in self-defense is okay. Most people think so, but it's your decision. Second, it would be much cheaper and less effort to work out an arrangement with someone who knows how to shoot a gun, rather than go to the expense yourself. It's also much more strategic for households to double up on people, anyway. It would be almost impossible for a two-parent family to defend a house adequately.

But if you are going to invite people in, you must have complete confidence that they will not turn the gun on you and take your supplies. You must also set firm limits ahead of time for who stays with you. Everybody has several people that they care about. But they can't all come to your house to live. In other words, if you recruit person 'A' because he has a gun, he might want to bring in his friend 'B,' who wants to bring in her friend 'C'… It's another brutal decision, but it needs to be made clear ahead of time.

8. In principle, shooting to kill should be a last resort. But in a war-zone situation many people might adopt a Wild West mentality, or decide to shoot first and ask questions later. I strongly advise against letting fear or a cavalier attitude take over. Besides the danger of killing an innocent person, there's the chance that a friend or family member of the person who was killed might come back and burn down your house. Or if the person is wounded and gets away, he or she might seek revenge. If someone really wanted to burn down your house, it would be very hard to prevent it: If you go outside to put out a fire, you risk being shot.

Other reasons to avoid killing are having to bury the body, or not being able to bury a putrid, decomposing body because it's too dangerous to go outside. For these reasons, and on principle, I very much favor non-lethal means. (See the next three points.)

I read a survivalist book in which the author implied that if the grid went down it would become a-kill-or-be-killed situation, or basically survival of the most ruthless. I don't think that's automatically true.

First, healthy people can go 30-40 days or more with no food at all. When you stop eating, at first there are major hunger pains, but then the body begins to burn fat and the hunger pains lessen dramatically. You won't have too much stamina for physical labor, but you will be able to function. So, going one or two days without food, or even two weeks, does not make it okay to kill people for their supplies. It's still murder.

Secondly, a lot can happen in 30 or 40 days. My belief is that the federal government would be able to bring in supplies sporadically to many locations.

Third, especially at the beginning of the crisis, every death sets the tone. This is why right at the start of the crisis, even if most people don't have supplies, it's critical to organize people and make the case for mutual cooperation.

9. Assess your home or living space for defense. Where can people force entry your home? How can you prevent access, or slow down access? If you can't slow down access,

can you at least create an alarm with empty cans stacked up? If you have a fence or some perimeter, how can you make it more forbidding?

10. Set up passive barriers, “funnels” and alerts. Both outside and inside your home or apartment you want to set up barriers that prevent entry. You also want to funnel or direct people away from blind spots. For instance, if you have blind spot near an unattached garage, you might want to put something there or block it off so no one can shoot at you or observe you unnoticed. You can also use string and cans with rocks or metal in them to create noise when someone trips over the string at night. If you create different sounding set-ups, you can immediately know at night which side of the house intruders are on.

I don’t recommend creating traps such as covered pits with broken glass, or boards with nails that will puncture someone’s foot, because, as mentioned, people might retaliate. But you may decide it’s worth the risk, or you may create hazards that just trip people or somehow repel them.

Immediately after a grid collapse, I’d try to think of some creative ways to defend myself and family, but not set them up unless the situation deteriorated. For instance, a blanket could be hung a few feet inside a door so that you would know someone had entered but they would have no idea of what’s behind the blanket, giving you a brief advantage. Or floor boards could be removed just inside a door, causing them to partly fall through the floor and get stuck. Perhaps a blanket could be suspended above a foyer and set to drop or be pulled down on an intruder. Bizarre things could be hung up or suspended to distract an intruder, giving you a few fractions of a second of an advantage. -- You gain a temporary advantage when you can arrange things in advance.

11. A can of hornet and wasp spray can be used to deter people non-lethally. ($5) The cans will emit a stream that can reach 15-20 feet (since it’s designed to spray upward toward a hive.) Sprayed in a person’s face, it will not permanently destroy their vision. Consider this as non-lethal means to deter rape, kidnapping or theft. [Someone might initially be angry enough to burn your house down, but you should make it clear to them that you chose to do this rather than kill them outright.] Put the spray-can in a place centrally located on the ground floor so you can get at it fast. Consider having family members test-practice by aiming and spraying at a target outside.

12. If you’ve decided that it’s acceptable to kill in self-defense, you should mentally prepare yourself to do it without flinching. If I had children to protect, and the grid was down, I would mentally visualize and rehearse different situations, *so that once I determined it was necessary and appropriate*, I would not hesitate.

13. Watch for diversions. A group may create noise or use gunfire to draw you to the front of your home, and then try to gain entry somewhere else. Or they may send in a child to get you to open the door.

14. Watch for imposters. Some people may claim they are from the government, or are National Guard, etc. But just having camouflage uniforms and automatic weapons does not make you official.

15. As mentioned, food should be divided up and hidden. Other important survival equipment and important personal documents should also be well-hidden. Because of the danger of fire, systematic searches of your home, or forced-evacuation, one option might be to bury food or precious materials in a sealed 5-gallon pail.

16. If the grid collapsed because of an EMP, I would personally wait a few days before breaking out emergency lights, smoke detectors, or other electronic devices. That's because a sophisticated attack may involve multiple EMPs. I think that this situation would be very unlikely, but I'd play it safe.

This ends the preparation section for
a worst-case scenario.

Relocating (being ready to leave if you need to)

Here are some reasons why you should be ready to leave your home at short notice:

- Your house is on fire and you can't put it out
- A gang take-over of your neighborhood is imminent
- FEMA is ordering you to evacuate
- A nuclear power plant nearby has an uncontrollable fire
- Some weather emergency (hurricane or flood)
- You can no longer get drinkable water in your area.

1. Each person in a household should have a "go bag" or "bug-out bag" ready to go – or at the very least a prepared list of things to grab. Often the "bag" is a backpack. Think about what *you* need, but here are suggestions: Important personal papers, photo I.D., critical medicines and pain killers, first aid kit, a multipurpose knife (Swiss army type), a two-liter container of water, food that won't spoil, water purification tablets, warm cloths, spare change of socks in case you must walk far, rain gear, materials to start a fire, spare plastic bags (put other materials in plastic bags.)

2. People with vehicles should always have enough spare gasoline to reach a safe destination. But gasoline breaks down quickly unless you add a gas stabilizer (available

at a car parts store.) Then it lasts a year. At that time, use it up and store a fresh batch with stabilizer. Diesel fuel uses a different kind of stabilizer.

3. If you don't own a vehicle, you should make arrangements with a trusted neighbor or friend. In exchange for informing them and supporting them to prepare, a friend, relative, co-worker or neighbor should be willing to take you.

4. If there's an EMP, cars and trucks may not start because of fried circuitry in the ignition system. However, the actual effects will depend on the location and strength of the EMP. It's believed that some cars and trucks will start, but many other electronics in the vehicles will be affected. In any case, it's likely that roads will have many disabled vehicles on them after an EMP. It's expensive but possible to turn a garage into a large Faraday cage. It's also possible to buy and store the ignition parts that are likely to be destroyed. Very old diesel engines will work, but modern diesel engines do have many electronics that can be destroyed.

Maintaining morale and mental health

1. The worst time will be at the very start. Everyone's world has just been turned upside down. If you have the energy, help other people to develop a positive narrative or script. If you don't have the energy to deal with highly-stressed people, lay low for a week or two until people adjust and get their bearings.

2. Besides the "camping until the grid is fixed" script there is the "creating your unplugged life" script. This is an alternative existence for you, almost another kind of life for you. You can think of it as a sabbatical, or a long vacation in a country without electricity. Don't be in "waiting mode," pausing your life to wait for things to return to normal. Instead, actively make the most of this alternative, slower-paced "unplugged" time.

3. You can still move your life, relationships and career forward even in this period. You can learn and practice communication skills, assertiveness skills or learn other useful information.

4. Develop a routine. A large block of unstructured time is oppressive, so it's important to develop a routine. Include walking or some other form of exercise that increases your heart rate. That releases endorphins that are mood enhancers.

5. Maintain the will to live. In quite times, journal or recall the things that made you glad to be alive. Also, make plans and visualize the personally fulfilling things you'll do once the grid comes back. The world may be much different afterwards, but that doesn't mean you won't be able to strive for, and attain some personal fulfillment.

6. Help others to cope. You can share some of the vital information in this PDF. Helping others can take the focus off your own troubles. The people you help will also be in a better position to help you in the future.

7. If not enough dollar bills and coins are available, help set up or participate in a local currency. This will encourage trade, productive activity and help give people a sense of stability. People can trade with small amounts of rice or beans, or four trustworthy people on a block can create a very local block currency with their signatures on paper. Assign a time value to one "block-dollar," for instance ten minutes of work. Then give everyone on the block an equal amount of this money to kick off the new currency.

8. When children cannot go out and play, try to encourage them to develop elaborate fantasies or stories that carry them away in their imagination. Also, help them create games in which they decide the rules.

9. Communicating well with others is now much more important. Probably the most valuable communication skill is called "communication empathy." It can help you relieve people's stress; get to know who you're dealing with better; and help build stronger, more intimate personal relationships. The goal of empathy is to communicate back the *core message* of what you heard.

When you are listening to people, keep tuning into three things: what the person is experience (what specifically happened to them); what they are feeling about the experience; and what they are doing in response to the experience. Once you have a sense of what you think is the main thing they are trying to share with you, you reflect back the core message.

Here are three examples:

> "I get the feeling that you are really overwhelmed [feeling] with all the people living with us now [experience.]"
>
> "Sounds like you are still angry [feeling] that the grid collapse has happened [experience] and interrupted your career."
>
> "You were exhausted and mentally worn out [feelings], so you decided to stay in your room and sleep and lounge around [behavior.]"

Note that the first two examples have a tentative phrase, such as "I get the feeling" or "sounds like." These phrases are usually important when first responding to people because you don't know for sure what they are feeling. Once you have been accurate a few times in your response, the tentativeness and respect will be assumed.

It may seem that this is just parroting them, or telling them what they already know. But it's actually very powerful because the reason that they were telling you something was probably wanting you to know how something made them *feel*. If you're fairly on target,

they will experience some relief or pleasure that someone is understanding and validating their experience. Validating their experience doesn't always mean you agree with their behavior; it just means that you are understanding what they are experiencing and feeling.

As needed, create "Green Zones"

This Green Zone plan assumes that local emergency management will not be offering any good options. If they do, try to harmonize with their plans.

As soon as it's known that it is a long-term power outage, or on the first or second full day, go around to talk with neighbors door-to-door. Propose a daylight meeting. Emphasize the benefits of safety in numbers. Be prepared for a lot of rejection and denial. But eventually many of the people who say no at first will buy in to the need for mutual protection.

Even if most people say no, you've identified yourself as the likely go-to person for information and help, and the likely person for future organizing. (By the way, this doesn't mean that they will *know* you have prepared for the long term, but some people will suspect that you've done *some* preparation.)

It's critical that the organizing begin very soon. Whatever happens early on sets the tone locally. If some act of violence happens on your block right away, that will set the tone. If some people reach out to others to help them, that will set the tone. If you wait longer than a day or two, people's anxieties and fears will probably set the tone even if there's no immediate act of violence. It will be much harder to get people's cooperation and engagement if they've begun to emotionally withdraw, and if they've decided on the "hell on earth" script.

At a meeting, the most important thing will be to <u>listen</u> to people's concerns and feelings. Before make suggestions, ask people for their ideas. This will help you tune into their level of anxiety and their understanding of the situation. By listening, you help to create give and take, and a group sense.

Lay out incentives and consequences for neighbors. People are much safer if they're organized. Fear and desperation will be much less. **Note: this organizing will be much harder if you've never talked with any of your neighbors before. Before a grid collapse, you should make an effort to get to know some of the people around you.**

It's probably best not to talk about patrols and defending against gangs at the first meeting. That's too intense. Talk about mutual aid for fires and for medical emergencies. Build up a directory of skills and what each person of family might need or might be able to offer. This directory can be done by sitting in a circle with each person talking *briefly*

about needs and concerns, and also what they could offer. Offer to share some of your skills and knowledge, before asking people to share their skills and knowledge.

When the time is right, talk about creating a safe zone by blocking streets and alleys with cars or large objects. Either maintain guards on the perimeter, or have people in the houses on the edge of the zone looking out over the perimeter. The greater the number of blocks involved, the less anyone has to patrol, and the more secure the middle blocks are.

For communications, you could suggest an outdoor bulletin board (if things are generally safe). Or you could use different whistles sequences to summon neighbors with guns; fire-fighting help; or people with first aid kits and expertise.

Some people will be too fearful to come to other people's aid, but if enough pledge to do it, it may inspire others. You don't need everyone.

By the way, good people won't disappear

Some parts of this PDF may have given the impression that after a grid crisis there will only be looters and gangs. Of course that's not true. Right now, our quality of life depends on many good and decent people who quietly do their jobs. Doctors, nurses, emergency personnel and law enforcement will not disappear, nor will the goodwill of decent people – those who are in the majority.

What would change is that many people will become panicky and feel desperation. There would be a breakdown of normal organization and communication. Your survival and quality of life would not only depend on whether or not you've prepared, it would also depend on how well you help to calm others and how fast you re-organize so as to have safety in numbers.

A "Quick 6" list of actions

Here's how I'd start out purchasing supplies:

1. Buy at least four gallons of unscented bleach for water sterilization and sanitation. Or, better, buy one to three pounds of calcium hypochlorite (see page 7, section 2.)

2. Buy bulk foods locally. Expect to spend two hundred dollars per person on food alone. (If you can't afford that, at least try for a month of supplies per person.)

3. and 4. Depending on what you have already, purchase (3) a way to cook the food and (4) the proper fuel. If you live in a warm sunny area, a solar cooker might be enough. Or, go online and buy a kerosene cooking stove and some spare wicks, and then go to a gas station that sells kerosene and get kerosene and the proper storage containers. Or, another

example, if you already have a propane stove, buy extra propane canisters. (Make sure that you have matches or lighters, too!)

5. A) Buy two large plastic trash cans with lids. Use at least one to store the dry foods. Seal with duct-tape or packaging tape so bugs cannot get in. You may be using these trash cans later to collect water. B) Figure out how to collect water from the downspout of your roof in advance. You may want to buy a kit for this online. A rain barrel might be superior to a trash can if you can afford it. If you live in an apartment, talk with the apartment management about being ready to collect water. C) Purchase a few gallons of water per person in addition, depending on what you can store.

6. If you depend on certain medicines, ask your doctor to allow at least 30-60 days of essential medicines. Also ask what options you'd have if you couldn't get the medicine. Diabetics should consider buying a Frio evaporation wallet to keep their insulin cold.

A "Next 6" list of actions

Here are the next six things I'd do:

7. Work out some home defense plan. If you have a gun, get extra ammo for it. If you have a friend or neighbor who is handy with a gun and who is completely trustworthy, talk to them about a mutual defense plan. Also, buy deadbolts for your doors; purchase wasp and hornet spray for defense (it can be used like pepper spray); and buy about 300 to 500 ft. of string for various homemade string-&-empty-can alarms.

8. Make sure that you have a way to stay warm if you live in extremely cold weather. This might include thermal underwear, wool socks, and good gloves for passive warmth. Perhaps a "polar" sleeping bag, or a means of super-insulating one room or part of a room to keep you warm.

9. Plan your 'go bag.' Decide what important documents you will take. If you don't want to place emergency supplies into your go bag, at least create a list and put it in your go bag or back-pack, so that you can gather things quickly.

10. Go online and buy a windup LED lantern that's powerful enough to read by.

11. Since it would be hard to reach the fire department, make sure your smoke detectors are working. Purchase at least two extra smoke detectors and batteries. Put the LED light (from #10 above), and the spare smoke detectors in a Faraday Cage, or else wrap the box they came in completely in aluminum foil, using at least two layers of aluminum (to protect them against an EMP.)

12. Also, make sure your fire extinguishers have enough pressure. Purchase at least one extra fire extinguisher.

==========

A Brief Summary of the Grid Emergency.Org Strategy

This PDF is part of our strategy to protect 340 million people in the United States and Canada! Briefly, the strategy has six parts:

1. Learn about the threat. Learn why it can be nationwide and last months. Our website, gridemergency.org, contains official documents and videos that help you grasp that *it really can happen*.

2. Prepare yourself and immediate family. Think of this as just another kind of insurance, rather than a doomsday event. It's about $300 per person. Prepare and then move on with your life! (Those who can't even borrow money to do this should more of #4 below.)

3. Inform and support friends and out-of-town family to prepare. Ask them to pass on the information within a week—even before they are done preparing—so that the entire country can be prepared in six months or less!

4. Make several brief contacts to pressure government to take action "at an emergency pace." Local government should stockpile supplies for the roughly 20-30% who can't afford to prepare or who won't prepare. Communicate to local groups you are part of, also. You should also urge Congress and the President to fund the stockpiles and preparation. Government should also be pressured to force the electric utilities to better shield their equipment.

→ Unlike other issues, it will be easy to get critical mass, *since everyone is affected* and since it's a matter of life and death.

5. Support the people you've talked to, to talk to others, so that a chain reaction of empowerment and advocacy quickly spreads!

6. Stay tuned to our website. Subscribe online for important updates.

► Over 700 hours were spent building GridEmergency.Org, doing research and writing this guide. If you appreciate the work and all the "insurance" it gives you, please donate via PayPal at timcimino@gmail.com.

► Feedback to improve this guide (to the above email) is very much welcomed!