

The Time To Build The Cellar Is Before The Tornado Hits

Printable Flyers Supporting Home and Community Scale Disaster Preparations

The various disasters of the last few years have taught critical lessons:

- ★ When the going gets rough, your local, state, and federal government may leave you behind for the wolves to devour.
- ★ A very large disaster – and/or several disasters coming on at the same time – will stretch the ability of the government and private aid agencies to respond adequately.
- ★ Government disaster response agencies are plagued with politics. Their decisions are not always made in accordance with the best practices of disaster response. Politics can delay or reduce to the point of inadequacy government responses to disaster. Your mileage may vary with this issue, depending on local conditions and the disaster.
- ★ Even with the best of intentions, the government can't do everything, be everywhere, or rescue everybody. During disasters, people may be left to their own resources for an extended period of time. The cavalry may not always come riding over the hill to the rescue.
- ★ Besides weather-related disasters, we are at risk of terrorism, military attacks, financial crises, resource exhaustion, & collapse of irrational economic structures. Some disasters, such as an “Electromagnetic Pulse” attack, could affect all of North America. An EMP would destroy all electrical generating and distribution systems on the continent. It could take years for them to be replaced.
- ★ We are dependent upon a long and fragile supply line for gasoline and diesel. There are a hundred things that could happen as early as tomorrow that could break that supply chain. If the fuel stops, then so do the trucks that haul groceries. Most major supermarkets only have 3 or 4 days of food in their inventories; if the trucks stop, their shelves will be quickly stripped by panic buying.

The purpose of these “Printable Flyers” is to give general, basic information on coping with a fast-acting, long-lasting disaster where rescue will be delayed. Make copies of these flyers now, so you will have them ready if they were needed. Everyone hopes that something like this would never be needed – but if it is needed, the copy shops won't be open. So make lots of copies now, when they are cheap and access is plentiful. When your neighbors need the info, you'll have it for them. That could make a big difference in your neighborhood. *The time to copy your printable flyers is before the grid goes down and the copy shops close.*

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Note: the Extreme Civil Emergency flyer is customized for central Oklahoma. At the printable flyers site, you will find a rich text version that you can download and customize for your particular area.

www.energyconservationinfo.org | www.bettertimesinfo.org . |

MUTUAL AID FOR FIRST RESPONDERS TO EXTREME CIVIL EMERGENCY

The day will come when fuel prices are sky high, supermarkets will be rapidly emptying, banks will have long lines and may even be closed. Government at all levels appears in disarray and nothing they are doing seems to help. The only predictable thing about this moment of “punctuated equilibrium” is that it is unpredictable in its timing and its details. This flyer suggests mutual aid ideas to facilitate rapid and authoritative response at the grassroots to such an unprecedented situation. If the good guys and gals don't get there the firstest with the mostest, someone else will.

Gather a small group of helpers. Ideally, this is a group forms pre-crisis, and you already know and trust those involved. If you haven't done that, proceed as best you can. There is a lot that needs to be done, and many hands will make for lighter work.

Give your group identity and authority. Or operate under the identity/authority of an existing organization. In a serious crisis, identity and authority are often one and the same. Authority also derives from authentic leadership that offers practical suggestions for adapting to rapid changes and mitigation of dangers. Think and act “servant leadership.”

Develop a communication infrastructure. You must be able to communicate with your group, the people in your area, and with your allies elsewhere. If electricity and a copy machine are available, that's great. But if not, build a hectographic duplicator. Put up bulletin boards at major intersections/gathering places in your area (e.g. police and/or fire stations, grocery stores). If radio is working, use Citizens band, Family Radio Service, or Ham radio to facilitate communications. Set regular contact times, frequencies, and develop/use codes for sensitive/dangerous issues.

Get your plan ready. Use the **Simple Critical Infrastructure Map** method <http://files.howtolivewiki.com/Dealing%20in%20Security%20JULY%202010.pdf> to identify primary threats and design your response. Here is a summary in case you haven't downloaded it, the crisis is upon you, and the internet is down: (1) **Six primary ways to die** – too hot, too cold, hunger, thirst, injury, illness. (2) **3 sets of essential services** protect us – Shelter (too hot, too cold), Supply (hunger, thirst), Safety (illness, injury). (3) **7 layers of infrastructure:** person/individual, household, village or neighborhood, town, region, country, world. (4) **4 tiers of cooperation** – individual, group, organization, government. (5) **4 factors necessary for group formation** – communications, space (to meet/plan), transportation, resources. (6) **3 necessary items of social infrastructure for organizations:** shared map (knowledge of the area/situation), shared plan (ideas for response), shared succession plan (what happens if leaders don't lead or make too many mistakes) (7) **6 major problems in maintaining infrastructure** – neglect, time and wear, operators/skilled personnel, necessary system externalities (such as fuel for a power plant), economics, violence/disaster. (8) **3 effects of infrastructure failure** – services become unavailable, service prices rise steeply, service standards drop (e.g.. dirty water, random blackouts). The results of infrastructure failure range from minor inconvenience to mass death. (9) **4 primary infrastructure delivery paths** – produce on site, grid services, delivery, fetch/carry.

Get the word out. Use the Extreme Civil Emergency flyer and/or develop your own printed communication that identifies/explains the major threats and how to mitigate/adapt to them. Tell the story! Develop talking points for your unique circumstances and get people out talking. Bring back the town crier if necessary. Get there the firstest with the mostest!

Call a neighborhood meeting. The Shared Critical Infrastructure Map system provides an excellent method for working through a meeting process so that you develop shared maps, shared plans, and resolve leadership questions. As you identify issues, use the common experience/knowledge of the group and the printable flyers to develop responses.

Start a neighborhood safety/security patrol. If the telephones aren't working, tell people to put something red on their front door, window, or fence if they need help, green if they are OK, and yellow if they have knowledge/resources to offer. Organize resistance if anyone attempts to take advantage of the situation. Stop any effort to interfere with necessary survival projects. Beware of the tendency of people to resort to bad behavior/habits when under stress. Disasters/crises always bring out both the best and the worst in people, so plan for this from the beginning.

Secure/protect critical infrastructure/resources. Offer assistance to police, firemen, , EMTs, medical facilities, stores, warehouses, pumping stations, electrical infrastructure, and other essential locations in the the area to protect them from looting/damage.

Be helpful and provide instructions. People will need to adapt rapidly to seriously degraded circumstances and many will not have the skills and knowledge necessary to do so successfully. Help people by freely offering advice, instructions. Organize classes to teach, provide a reading room for research. Think servant leadership! **Assist with vulnerable groups.** Hospitals, schools, child care centers, and nursing homes may need to be evacuated and alternative facilities developed.

Send a delegation to city hall, and/or other local government location(s) and to neighborhoods close by. Tell them what you are doing, ask about outside resources available (be prepared for “nothing” as an answer), offer them resources (information, knowledge, flyers, your plan, etc.)

MUTUAL AID BEFORE AN EXTREME CIVIL EMERGENCY.

In a crisis, those who get there the firstest with the mostest have the best chance of influencing the outcome, for good or for ill. Use this 5 point process to prepare to respond effectively, when the times call for prompt grassroots action to save and protect human life and community: (1) design your mutual aid contingency plans in advance of need, (2) acquire the necessary knowledge & resources, (3) make connections & build relationships, (4) practice your plans, and (5) be ready to act without hesitation or uncertainty at short notice. In doing so, you plant and nurture the seed of a spontaneous emergent order that can cope with a perilous situation that may be mushrooming out of control. Good design will enable you and your community to build new structures amidst the collapsing ruins of the old that both replace the old failed systems and protect you and your neighborhood from their falling debris..

Prepare yourself and your household first. Observe and analyze/evaluate your own household's vulnerabilities, design your responses, and implement your plans. Authority comes from authenticity, and walking your talk gives you credibility in a crisis.

Find and develop your core leadership group and give yourselves identity, competency, authority. The time to develop trusting relationships is before a crisis hits, so start with people you know and trust. If you aren't working through an existing organization, start one. There are 4 primary sources of an organization's emergent authority in a crisis: (1) the human rights to participation & association; (2) practical work in advance of need to identify challenges and opportunities and develop plans to mitigate dangers and adapt to changing circumstances; (3) your willing ability to freely share this expertise and situational awareness with others (servant leadership!), and (4) your competent group discipline to work together on common tasks. Appearances count! Make an authoritative-looking picture ID for each member of the group.

Work on your shared map, shared plan, and leadership issues. Use the Shared Critical Infrastructure Map system <http://files.howtolivewiki.com/Dealing%20in%20Security%20JULY%202010.pdf> or find your own method. The time to identify threats, resources, and design contingency plans is before the crisis hits. Make multiple copies, and spread them around. Plan for best and worst cases, and points "in between."

Find the knowledge and instructions you will need. Providing practical knowledge and instructions that will help people protect themselves and their families and adapt to changing circumstances is important to establish credibility. While computer files and CDs are useful to transfer and distribute info, in some emergencies they may not be usable, so wherever possible, get paper documents and books. **Make copies of printable flyers.** You need enough saturate your neighborhood and extra to share elsewhere. Make copies of the Civil Emergency flyer for every household in your neighborhood, & one set of the other printable flyers for every 10 households.

Develop the essential organizational infrastructure, both physical and social, and practice using it. Get a small copier, a generator/inverter, and make a hectographic duplicator. Get your radio system and test it regularly. Meet regularly and conduct drills to test your designs and practice your responses. **Become involved with your community.** Don't be a stranger to your neighbors. Know them as well as possible under the circumstances. Where appropriate, join neighborhood non-governmental organizations/institutions and patronize locally owned businesses. Introduce yourself! Trusting relationships built in advance of a crisis are likely to carry through the emergency as trusting relationships. Know who the trouble-makers are too.

Localize and Regionalize. If your Mutual Aid group is concentrated in your neighborhood, help start similar groups in other areas of your municipality/region and network with them. If your Mutual Aid group is scattered over a region, members should establish mutual aid groups in their local residential neighborhood. In a crisis, your areas of practical cooperation will be the household, neighborhood, and municipality. Before the crisis, you can work effectively at the region and even higher levels, but the most productive will likely be the individual, household, neighborhood, municipality levels. Support community/regional projects that increase resilience, protect infrastructure, and reduce the brittleness of vital systems.

Essential design disciplines and principles. Observe carefully and thoroughly. Research – climate data, resources, threats, opportunities. Trust yourself. See everything as part of a whole. Solutions grow from place. Never do anything for only one reason. Do only what is necessary, but do what is necessary. Design and act on a scale appropriate to the circumstances; incorporate redundancy, responsibility, and resiliency everywhere. Work with the edges, promote/protect bio-diversity. Nothing you do (or don't do) is without consequence(s). Energy follows patterns set for it; everything works both ways. Everything needs something else. Seek a harmony between giving and receiving. We start small or we don't start at all. Make the least change for the greatest effect. Design from patterns to details. Cycle everything. Prefer biological solutions where possible/practical. The problem often contains the solution. Don't let the perfect become the enemy of the good. First things first, second things second, etc. Design so that all can participate in their own rescue. Think and design "outside of the box". Don't be afraid of manual labor. Incorporate personal, household, and community responsibility everywhere. Use a 4 steps – Observe, Evaluate, Design, Implement (follow that with critique and practice.)

Don't abandon your morality and principles. Don't leave anyone behind for the wolves to devour. The best designs care for people, care for the planet (with particular focus on your immediate neighborhood), and have a care for the future. In a crisis, cooperation is more important than competition. Never seek a good end by immoral means.

THE SEVEN HABITS OF PERSONAL, FAMILY, & COMMUNITY RESILIENCE

Resilience is the ability to successfully meet and surmount challenges, obstacles, & problems.

1. Solidarity and cooperation. When the going gets rough, nobody gets thrown to the wolves. This is a basic principle of a human civilization of life and love. Our first concern is naturally for those who are closest to us, but that can't be the extent of our involvement. Our families are only as secure as our communities, and our communities are only as safe as the world. Studies of past disasters show clearly the importance of cooperation in successfully meeting and surmounting a serious challenge. The more solidarity and cooperation that is evident in a society, the more resilient it is when faced with big problems.

2. Creativity and adaptability. Sometimes problems that seem very big need to be viewed from a different angle of observation. We get enclosed in boxes that limit our ability to see an entire picture. A rapidly changing world means we have to get out of our boxes in order to see enough of the picture that we can authentically respond. Sometimes we need to see the possibilities of new relationships, new connections, new uses for old systems or machines or resources, or new ways of using those systems to do new things. The ability to creatively meet changing situations is a positive indicator of community and family resilience. If systems are breaking down, we must discover new and better systems that are not so brittle and vulnerable.

3. Pro-activity. Either you will act on a situation or it will act on you. A decision to do nothing may be a decision to make the situation worse. A problem won't get better by itself. A flat tire is a flat tire, it has to be changed. Standing there and wishing it were otherwise, or denying that the tire is flat, gets you nowhere. Positive action in support of safety and security is evidence of resilience in a family and a community.

4. Prudence, preparation, and planning. While the world is full of blessings and opportunities, it is also a risky and hazardous place. We know this and so we tell each other and our children stories and proverbs about watching for dangers and taking precautions. Look before you leap, watch where you're going, a stitch in time saves nine, an ounce of prevention is worth a pound of cure, these are a few of the ways we teach the importance of watching out for yourself and others that you are responsible for. The point of "watching out" is to avoid trouble, or manage it when it is inevitable. Cultivating the virtue of prudence & its associated discipline of sustainable living helps a family or community successfully surmount challenges.

5. Responsibility. Civilization works in part because most people willingly assume responsibility and carry out their duties. Your social responsibilities include making a best effort to ensure that your own household is as sustainable as is practical for your circumstances. The more people that assume personal responsibility and carry out their duties in life, living in a more rather than less sustainable way, the more resilient is the community. In a time of rapid change or disaster, everybody must accept responsibility for maintaining community values, order, health, and safety.

6. Awareness of environment. It's easy to get into the routine of life, and go through the motions practically oblivious to what everybody else is up to. We trust our environment because we know it well and generally have a handle on its risks. But there are times when things change very fast and thus normality is disrupted. Such disruptions can be prolonged. To cope with rapidly changing circumstances, we must practice our ability to observe, understand, and generally be aware of our environment -- its opportunities and its risks.

7. Holistic methodology. We live in an age of specialization, but life has plenty of reminders that there are some things that everybody should know how to do. The crises and challenges of life at this time in place and history call us to expand our horizons, to look for solutions in many different places and peoples. Nobody is an island, we are all connected. We can't cope with particular local situations in isolation from other global issues, because global issues inevitably work their way down to the neighborhood and there is a spiritual reality that unites us. Times of rapid change, disasters and disruptions of life as we know it can stretch pre-existing stresses in a culture to the breaking point. Thus, we must bring all that we have and are -- values, reasoning ability, knowledge, spirituality, faith, prayer, relationships, and cultures -- to the table in the search for solutions to the very grave problems which afflict all who live on this planet.

WHAT TO DO IN AN EXTREME CIVIL EMERGENCY!

An “extreme civil emergency” is a situation where there is no electricity, no re-supply of local stores, no fossil fuels available, phone/internet/communications not working. If no help is coming or it will be long in coming, any rescue will be up to “We the People” in our own communities. Don’t wait for the government to “tell” you what to do. Work with your neighbors & civil society organizations (religious/civic groups, schools, fraternal lodges etc) to secure basic needs, preserve public order, & protect the common good for the duration of the emergency. United we stand, divided we fall. There is a lot to do, & much of it involves manual labor. Working together with others will make the work go easier & *smarter*. Many hands make the work go lighter. **Procrastination is the thief of time.**

COMMUNICATE! Set up community bulletin boards, organize meetings. Positive action that promotes security & wellness is the best antidote to fear, panic, & other negative reactions to stress. Bring back the “town crier”. Get there the “firstest with the mostest”.

VULNERABLE POPULATIONS. If you have friends/family in nursing homes or hospitals, you may need to go & get them. Check on vulnerable people/elderly in your neighborhood. Organize shelters in community buildings and/or provide volunteer support to the staff of nursing homes & hospitals to help them cope with the radically changed circumstances.

WATER. The City’s water system will go down without fossil fuels & electricity. Store water! Collect rain in buckets, kiddie pools, trash cans, fish tanks, ice chests, fridges/freezers, whatever – dig holes in the ground, line with plastic, boards, bricks, whatever, to hold water. If you live within 2 miles of the river on low ground, try digging a 20-30 ft deep well. Purify surface water by letting it settle & filtering through cloth (if muddy), then siphon the clear water into a pot & boil it for 10 minutes (rolling boil, not simmer).

SEWAGE & GARBAGE. The sewage system requires electricity & fuels. If the electric/water/fuel systems go down, stop flushing toilets. If households keep flushing, the system will choke/back-flow. Make a **composting toilet** out of a bucket & toilet seat. Put dried leaves/grass in the bottom of the bucket, add more dried material (paper, leaves, shredded cardboard, grass, etc) after use. Urinate into bottles or jugs, try not to mix urine with feces (this will help reduce the smell). When bucket is full – dump into a hole & cover with dirt or if you are an *experienced* composter, dump into a compost bin & cover with lots of organic material. Do this away from any water sources. If you dilute the urine – 1 part urine to 10 parts water – you have a safe & nutritious fertilizer for growing food, if you can rise above the ick factor. As to trash – there is no garbage anymore. Everything is useful. Recycle, reuse, make it over, make do, waste not, want not.

FOOD. If the electrical & fossil fuel systems go down, & the transportation system isn’t working, grocery stores will empty quickly. Do not depend on the government to haul in food – in a crisis this big, that won’t happen. Work with your neighbors to find food. Within 60 miles of OKC, there are millions of lbs of wheat, soybeans, & other raw food products. Go now, in whatever vehicles you can fuel, & buy/trade to get wheat, soybeans, oats (whatever they have on hand) from the grain elevators (the tall grain storage cylinders you see in rural areas). If no fossil fuels available – **make bicycle carts or handcarts & organize teams** to go there & haul food back. A neighborhood of 3000 people needs 100 carts that haul 250 lbs each. Remove chaff & dust by tossing wheat in air when wind blows. **Make a grain grinder** with three, 3/4" diameter steel pipes, 30 in long. Wrap each pipe with duct tape to prevent slipping, then bind them together with duct tape. Cut top out of a large can. Put 1 in grain in the bottom of the can, place on smooth hard surface like concrete. Sit with can between feet, wear gloves, move the pipes straight up & down about 3 in each time, rapid strokes. Sift to separate into flour & cracked wheat. **Start gardens everywhere**, if in the right growing season; if not, get ready to plant. Plant dried beans, popcorn, potatoes/sweet potatoes, seeds of winter squashes, cukes, pumpkins, watermelons from grocery stores. Cut off tops of carrots, place in saucer of water, grow greens. **To build a garden fast** - remove lawn turf, build 6 inch sides for 4 ft wide beds, make them as long as you want. Scoop soil from pathways into beds. Fill with straw, leaves, dirt. **Organize community kitchens** since cooking fuel will be scarce. Build outdoor bread ovens, solar ovens. Start compost piles. Container garden on pavements. You can grow almost anything in 6 in of soil. Grind popcorn for meal. Dandelions, purslane, chickweed, pig weed, lambs quarters, rose petals/hips = food.

HYGIENE. Wash hands often. Make a hand-washing solution – put a little liquid dish soap in an empty squeeze bottle, fill with water, shake. Pour solution on hands to wash. Wash dishes carefully; if water is scarce, wipe/scrape them clean, then wash. Water gardens with the wash water. Never drink or brush your teeth with unpurified water. Disease prevention and careful attention to sanitation is essential.

HOUSING. Consider combining households with friends/family. It will be hard for 1-3 person households or families with small children to do all the work necessary to maintain an individual household in these circumstances. Living in larger households for the duration of the emergency will help keep your quality of life from crashing completely. As a practical matter, mortgage/rents are “on hold” for the duration. If the courts are closed, & the financial system isn’t open, no one can be legally evicted or their house foreclosed. If you have friends/family in rural areas, you may be better off going to them. If you have no transportation, walk or ride bicycles. Start soon.

SECURITY. Start neighborhood safety/help patrols. Organize opposition if anyone takes advantage of the situation. Resist attempts to interfere with necessary survival projects. Be wary of the tendency to resort to bad behavior/habits when under stress.

SEASONAL ISSUES. In winter, shelter with neighbors if you have no fuel for heat (more people = more heat). Cover windows to insulate. Do not use charcoal briquettes inside – they give off deadly carbon monoxide! In the summer, keep hydrated & stay in the shade!

NETWORK. In an extreme civil emergency, Mutual Aid will open reading rooms. *Info will be available to help us survive.* **Bring your own paper & pencils/pens to copy plans & useful information. Volunteers/teachers needed. Look for us!**

DISASTER PREPARATIONS ON A LIMITED BUDGET

Better Times Emergency Notes

The time to build the cellar is before the tornado hits. If your resources are limited, anything you can do to stock more of the basic necessities of life helps you prepare for a disaster or emergency. Disasters happen. People lose their jobs, get sick, evicted. There are potential dangers like economic collapse, war, terrorism, and disease epidemics. Think carefully about the challenges you may face. Make lists of what you need and check them twice. If a disaster doesn't happen, you still benefit because you made these preparations. You increased the safety, health, security, and wellness of your family and community. You fulfill an important citizen duty. Don't procrastinate or wait to the last minute!

Got Free information? Look for free info at libraries, schools, on the internet. Libraries often offer free internet access, Talk with older people about how things were in the past. The other **BETTER TIMES Emergency Notes** cover issues that can help you prepare within your resources. Consult them for inexpensive ideas regarding water, emergency heating, and cooking. Enroll in free classes. Ask questions. Use maps and dictionaries. (Often.) Read the instructions. Use time constructively. Remember: A stitch in time saves nine. An ounce of prevention is worth a pound of cure. Waste not, want not. If you don't know, ask! To avoid fools, take steps! Nurture blessings in your own life and in the life of your community. Keep books in your home. Read them to your children. Learn many things. Practice many skills. Teach others. **Do what you can, with what you have, where you are.**

Got smart shopping? Look at flea markets/garage sales for stuff that would be useful in an emergency: extra pots & pans (such as a Dutch oven), blankets & winter clothing, towels, water & food containers, food processing equipment (grain and meat grinders, mason jars, pressure cookers), candles, matches, blankets, towels, rope, tools, camp stoves, flashlights, lanterns, rolls of plastic, fishing poles and tackle, etc. **Stop throwing stuff useful stuff away:** this includes plastic & glass containers & their lids, newspapers, plastic & paper bags, kitchen scraps, cardboard, lawn trimmings. Start a compost heap with your kitchen leftovers and lawn trimmings. Use it for fertilizer for a gardens. Think of your trash as a resource to be used rather than a problem to be disposed of.

Got contingency plans? Planning involves no out-of-pocket expense. Decide now what your family will do during emergencies. If people aren't at home, or can't get home, where should the family gather? If you have to evacuate, where would you go? Prepare small "evacuation kits" for each family member. Pack them with a 3 day supply of food, water, a blanket, small battery powered radio, addresses, phone numbers, and other items that would be useful if you have to evacuate. Make sure you have paper copies of all your vital documents, including birth and naturalization certificates, bank statements, etc. If civil disorder threatens the area, it is usually best to stay home, avoid crowds and public gatherings, and become as invisible as possible. If the disaster is large and widespread, it may be days or weeks before help arrives. Don't wait for someone to come "help" you. Help yourself and your neighbors.

Got community organizing? Resilience is a word that describes the ability of a community or family to successfully meet challenges. A resilient neighborhood is a better and safer place to live. If a major disaster hits your neighborhood, work together with your neighbors to increase the safety, security, health, and wellness of your family and community. "Neighbors" can include: friends, family, the people next door & on your block, churches, service clubs or other organizations (like Scouting or 4-H), schools, neighborhood associations, government agencies, co-workers. Pool resources. Work on projects together. Plan what you will do during an emergency situation. Past experience in disasters says that trusting relationships that begin before a disaster endure through the event and help people to face grave challenges successfully. That history also teaches us that a disaster is a hard time to establish such relationships, so NOW is the time to get to know your neighbors. Be ready to help others by organizing a community response to a bad situation. Take special care of those who are particularly vulnerable: people with serious medical conditions, the elderly, the very young, those who have emotional or mental problems. Be aware of the tendency to resort to bad habits when you are under stress. **Don't leave anybody behind, there's room for everybody in the boat.**

Got water? It's cheap and so are containers to store it in. Make sure you have plenty. Start collecting empty bottles (soda pop, etc.) Wash with dish soap and rinse with a chlorine bleach disinfecting solution (see BETTER TIMES Emergency Notes #4). Don't rinse the bottle with plain water after rinsing with the disinfecting solution. Fill immediately with clean tap water, put the lid on, and store in a dark and cool place. Store as much as you can. Clean, large plastic trash cans with lids can be used to store water for washing and flushing purposes. Chlorine bleach is cheap, get several gallons in case you have to purify drinking water or need a disinfectant.

Got juice? The essentials of a cheap power system include a source of power (car alternator, portable generator, wind or solar power), batteries, an inverter (to change the battery's 12 volt DC power into AC power), and a way to distribute the power. Small inverters are cheap and will run a couple of lamps or a radio, or even a small TV (look at electronics or auto parts stores, or catalogs). They plug into the cigarette lighter of a car, a good quality extension cord that plugs into the inverter will bring the power into the house. When the battery gets low, the inverter automatically shuts off and the car can be started to recharge the battery. Small solar panels are available that can provide enough sunlight for a couple of hours of lights each sunny day. Emergency lights can be run directly from a battery (such as brake or backup lights removed from a car or bought for this purpose). Flashlights & battery powered lanterns are useful; for less money than you spend on batteries in a few months, you can get an inexpensive solar small battery charger and some rechargeable batteries (\$2 - \$6 each, depending on the size). (The cheapest source for a good quality but inexpensive solar charge is at www.ccrane.com.) A step

down voltage converter (plugs into the cigarette lighter) can be used to run small "C" or "D" powered radios or CD players from a car battery. For all alternative power applications, an inexpensive volt meter will be very useful. This flyer has only a bare minimum of information on this subject, use it as a source of ideas. Do further research in libraries or by talking to electricians. **Got more energy ideas?** Look for cheap candles at dollar stores & churches, buy lots of the tall ones in glasses (they last 3 to 6 days burning continuously and produce light as well as heat, don't leave them burning unattended or while you sleep). Put candles in front of mirrors and you get more light.

Got Food? The tighter the budget, the more you will have to rely on basic foods such as beans, rice, flour & canned goods that supply a lot of nutrition for the dollar. You can increase the health and quality of life of your family right now if you buy less prepared and packaged food and do more cooking from basic ingredients. Bonus points: you save money and people will ask, "How did you learn to cook like grandma?" Store as much food as you can. If a disaster doesn't happen, with extra food on hand, you'll spend less time in the grocery store.

Emergency Food Storage List for People with Limited Incomes

30 cans of meat or fish	8 pounds oatmeal
40 pounds rice	40 pounds flour
15 pounds corn meal	30 pounds pasta
10, 26 oz cans of spaghetti sauce (or 30, 8 ounce cans of tomato sauce & some spices)	30 boxes macaroni and cheese
60, 15 oz. Cans of Vegetables (15 Oz. Cans)	4, 3 pound cans shortening (or equivalent in oil)
10 pounds sugar	3, 32 ounce jars jelly or jam
salt, bouillon, pepper, some hard candy, spices, yeast, baking powder, baking soda, cocoa	10 jars of peanut butter
12 lbs dried milk (60 quarts liquid)	12 lbs dried beans or peas

This list provides 30 days of nourishing meals with 2500 calories per day per person for a family of 4. Additional items that would enhance this diet include cream of mushroom soup, instant potatoes, syrup, sprouting seeds, tea, more canned meats, vegetables, fruit, & dried beans/peas, tomato/spaghetti sauce. From these ingredients you can prepare: donuts, chocolate cake, chili mac casserole, biscuits, macaroni & cheese, tortillas, chili & rice, bread, rice pudding, Spanish rice, pasta and various sauces, hush puppies, gluten steaks/meatless loaf, bean loaf, cookies (among the many possibilities). Measure portions carefully. If you typically don't include these foods in your diet, and this is what you plan to store, start cooking with them now. Don't wait for an emergency to start a new diet. This helps save on your current food bill too, and thus helps you to put aside more food now for an emergency later. If you can't buy it all at once, buy a little at a time until you have 2 or 3 months emergency supplies on hand. Store carefully so roaches and rodents don't get in -- look for food grade plastic containers such as 5 or 6 gallon buckets with lids. You can often get them cheap or even free at bakeries, donut shops, restaurants, or other places that serve a lot of food. Empty 2 liter pop bottles are another cheap storage container for dry goods like beans, rice, and flour. Rotate your supplies, use some of the flour, rice, beans or whatever, and then buy more. "Store what you eat, and eat what you store." Use this list as a guide, customize it to meet the needs and tastes of your family.

Got more food ideas? Start a garden! Growing food in your yard is like growing money. Buy produce directly from farmers or on sale at the stores and preserve it yourself by dehydrating or canning. (You can learn how to do this if you don't know how.) Dehydrators are cheap & the dehydrated foods can be stored double bagged in ziplocks or in mason jars. You could also dry food in the oven. Set it to 140 degrees, spread food in trays, prop the door open a little, check frequently. Consult your local home extension office or library for more information. You can grow tomato plants, peppers, and other such plants in containers inside your house, or on a porch or balcony. If you have pets, don't forget pet food.

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Building Community During a Major Disaster

Normal life has a strong hold on us; it is what we are familiar with and understand. But this "normality" can change suddenly, radically, and painfully, bringing death, destruction, and dislocation with little or no warning. Prolonged and extensive disasters are a difficult challenge to the safety, security, health and wellness of our families and communities. We may expect help to arrive almost immediately; this may not happen; circumstances can prevent it from happening.

Disasters happen. On April 5, 1992, the first of what became an average of 4,000 artillery shells a day fell on Sarajevo, a cosmopolitan European city of 500,000 people that had hosted the 1984 Winter Olympics. The siege continued for almost 4 years (the longest of the 20th century). Overnight, the city lost electricity, water, natural gas, & telephone service. 10,000 people were killed, 50,000 wounded. By 1993, the price of wood was \$200 per cubic meter, dandelions and nettles fetched high prices. Seeds were smuggled into the city, & gardens were planted everywhere. Ham radio operators helped the city keep in touch with the outside world. For light, people used car batteries, candles, and homemade oil lamps (jars filled with vegetable oil, with shoe strings for wicks).

Throughout this traumatic event, the people of Sarajevo coped with dramatically changed circumstances by working together and continuing their lives as best they could under the circumstances. Many cottage industries and small businesses were started to provide the goods & services that people needed under the new situation. Artists & musical groups staged plays & concerts; religious services continued, children went to school, doctors operated by flashlight. Everything was inconvenient -- people had to walk miles for water (they also caught rain from roofs and drank melted snow), there was little public transportation. The city's markets stayed open, but prices fluctuated with the availability of home grown/made or smuggled goods. The simplest tasks became time consuming. Snipers and artillery added to the stress. The suicide and general mortality rates increased. Few buildings escaped damage. But the city did not collapse and die in a chaos of disorder and violence. People were brought together in solidarity by the situation. The moral of this story: Some responses to disasters are better than others; when life hands you a lemon, don't whine, make lemonade.

During and after a disaster: (1) People may develop personality changes relating to trauma-related stress. They may experience anxiety attacks, have trouble sleeping and eating, feel on edge & brittle, be easily disturbed or upset, become over-protective of loved ones, experience emotional episodes (including crying), and suffer despair and a sense of hopelessness. They may feel so powerless to affect their situation that they are almost incapable of helping themselves. They may become angry and resentful, unable to make decisions, easily irritated, unable to focus on work, lacking the energy even for basic daily activities. They may be sad, depressed, and unwilling to confront the situation that brought about the disaster.

(2) People may experience strong feelings of solidarity & bonding with their neighbors and others who have suffered the same situation. They may become very cooperative, generous, compassionate, helpful, and warm-hearted. People often demonstrate the ability to learn new skills very fast, and exhibit a lot of ingenuity and creativity in working around obstacles and managing chaotic situations. Humans are known for sacrificing themselves to save others -- sometimes for members of their family, but also for complete strangers. We can work hard and smart when the need is there. Instead of giving into despair, we can become pro-active. People are very adaptable, even when changes are coming very fast and the stress is very grave.

(3) Some people take advantage of the suffering, distress, weakness, or problems of others. They profiteer on scarce goods, refuse to cooperate on necessary neighborhood projects, hinder rescue and repair efforts, and/or turn violent and criminal. Some disasters have been followed by violence & looting, and theft generally increases. Goods donated by humanitarian organizations may end up in the marketplaces at inflated prices. People can be rude, arrogant, pushy, violent, or lazy in the absence of a disaster, and these traits may be intensified by the stress of a major traumatic event.

Got commonsense? Panic, paralysis, flight, and helplessness. Pro-activity, solidarity, cooperation, smart work. Crime, thuggery, profiteering, vicious competition. All responses to disasters are not created equal; some are more dangerous than others. If times get tough, encourage and support the good; discourage and avoid the bad, protect the weak & defenseless. The actions of individuals and neighborhoods can have dramatic consequences for the larger systems of society (for good or evil). The Scout precept -- "Do a good deed daily" -- as well as the religious, ethical, and philosophical traditions of many diverse cultures bear witness to this. Many good deeds done daily are seeds of a culture of life and love.

Special Needs of Children: Children are greatly affected by disasters; they will need extra **realistic** reassurances (don't promise what you can't deliver.) Expect them to be afraid -- 4 common fears are death, darkness, animals, and abandonment. Refusing to discuss such fears with children will only intensify their concerns; encourage them to talk about their feelings or otherwise express them through activities such as play acting or painting. Their feelings won't go away if adults refuse to talk about them, if repressed, eventually they will come out, usually in a negative way. Pretending that problems don't exist only makes them worse. Physical reactions like nightmares, vomiting, headaches, or emotional reactions like refusing to eat, getting upset easily, feeling guilty or neglected, are very common reactions to severe stress. Kids may regress to earlier behaviors like bed wetting or wanting a special toy. When you talk with your children, listen to how they say what they say. Watch them at play -- with other children, and with their toys. Repeat information & reassurances many times; answer their questions as much as you can. Hold your child, provide comfort (touching is very important for children during stress). Spend extra time with them before going to bed. Don't hesitate to seek help from friends, family, schools, religious organizations, or support groups. Caution: the stress reactions of your kids will be a source of stress for you. Don't take your stress out on your kids.

When a disaster happens: Take care of first things first. Immediate threats are the obvious & threatening: fire, freezing cold, medical emergencies, severe weather, industrial-chemical-pipeline explosions. Medically fragile people, the elderly, and families with young children are especially vulnerable. Check on your neighbors! **Be realistic in your expectations.** Things may not get back to normal instantly. It will take time for the situation to recover and the burden may be on each community to rescue itself. Encourage dialogue about what has happened. People's emotions may be roller-coastering; it will help (a lot!) to be able to talk about the event and how it has impacted their lives, for better or for worse. Encourage dialogue (organize opportunities for this to happen). Rumors abound in disaster situations, and should be judged guilty until proven true. Beware of spreading false information that creates public anxiety.

Analyze the situation using Simple Critical Infrastructure Maps. The fundamental threats in big disasters are the six ways to die – hunger, thirst, illness, injury, heat, and cold. There are levels of infrastructure to protect us from these threats – personal, household, village, town, and region. In response to big disaster, individuals form groups which may become organizations. Groups need space to work, resources for their work, communications, and transportation. They need a shared map, a shared plan, and a leadership succession plan (if the leadership isn't performing, how is new leadership selected?). There are 6 typical problems maintaining infrastructure: neglect, time/wear, operators, externalities (fuel, parts etc), economics, violence/disaster. 3 possible consequences of infrastructure problems: services become unavailable, services become extremely expensive, quality of service is degraded. Think about and then plan for these issues as you develop your response to what is likely a rapidly devolving situation.

Learn some relaxation techniques: such as – take several slow deep breaths, breathing in through your nose and out through your mouth, while thinking calm and peaceful thoughts (or prayers). Challenging events such as major disasters make demands on our "best natures". It's vital to determine the important actions to be taken in response to the disaster, but people may have different ideas about what is important and should be tackled first (this is true in families, neighborhoods, businesses, governments). Understanding this potential for disagreement helps manage the situation. Leaders must be patient in their interactions with others; they must understand that they are as vulnerable to these stress reactions as anybody else. Be aware of the tendency to resort to bad habits when you are under stress. Remember that "haste makes waste." Wisdom, daydreaming, & risk taking can reveal options that you never felt possible.

Be pro-active and hopeful. If there are things that need to be done to help put things back to normal, then do them. Try not to be swamped by details (while remembering that often the devil is in those details). Keep your eyes on the big picture and what has to happen in order to ensure the health, safety, security, and wellness of your family and neighborhood. Think "outside the box", be open to creative solutions to shortages, failed public services, or problems in the marketplace. Even small actions that promote stability and preparedness can affect the ultimate outcome of this event, for better or for worse. What you and your family do (and what you don't do!) will be important not only for your own family, but also for your entire community. Artists, entertainers, musicians, and theater groups should expect that their services will be in great demand, ditto for plumbers, doctors, mechanics, gardeners, nurses, mothers, priests, tailors, engineers, electricians, and many other skills, trades and services. (Librarians will be major heroes!) There will be plenty of work to be done, and it will help if the work is as smart as possible. You won't be able to get through this safely and securely all by yourself: you will need your community, and your community will need you.

Morale is critical during hard times. Draw on all the resources available to you to bolster morale in yourself, your family, and your neighborhood. After attending to any immediate and pressing emergencies of the disaster, invite your neighbors for a potluck dinner. Use this as a time to talk with them about how your community will meet this grave challenge. Many people find strength in religious, ethical, cultural, and philosophical traditions. These beliefs can be structures of support to carry people through hard times. If your family has religious or devotional practices, do not neglect them under the pressure of events in a crisis. If your family doesn't have any religious or devotional practices, you should think about getting some.

Honesty is the best policy. Leaders must be prudent in their responses, because poor leadership can make a disaster much worse, aggravating an already bad situation. Authoritarian response is a dead end path of failure. The best and most effective leadership in a crisis is servant leadership. Bad news should not be concealed. Lies, half truths, making promises that can't be kept, and evading the issues or their consequences are sure and certain destroyers of leadership credibility. (It is immoral to not warn the public of hazards/imminent dangers.) Beware of those who resort to politics and scape-goat in their disaster response. Those who do this run the risk of being suspected of bad faith or of attempting to shift blame from themselves onto others. The time for apportioning blame (if this can be done) is after the recovery is well underway, not during the on-going progress of the disaster.

"The world will be saved by Beauty." Civilization doesn't just happen by accident, we have to work at it. If we keep practicing, we will eventually get good at it. In the meantime, everybody must do their part to maintain community and support the common good, especially during a disaster. You will start re-creating a safe and secure community when you yourself decide that you will be a good neighbor. Like charity, building community begins at home, it starts with you. In a disaster, you may feel that you have lost control over your situation. But building community is something you can do, right here, right now, in the place where you are -- whether or not the electricity works, you have a job, or the buses are running. Nobody is an island. Think of your neighborhood as your village, and discover anew the truth that we have learned many times in history: united we stand, divided we fall, cooperation is as important as competition. (During a disaster, cooperation is much more important than competition.) Don't leave anybody behind, there is room in the boat for everybody. And let's remember this good advice as we rebuild: we can do better next time!

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Community Food Projects during a major Disaster

BETTER TIMES Emergency Notes

Community Kitchen. If food or fuel become scarce, establish a community kitchen in a place convenient for those in need of assistance (schools or churches come to mind immediately, but you can also feed 200-300 people out of a home). Organize cooking and serving teams. Invite people to bring food, cook it together and serve it cafeteria style so that all are fed. (This is a soup kitchen where some or all of the guests bring the food.) Arrange for meals to be delivered to those unable to come to the kitchen. (If fuel is scarce, this may be the most practical way to distribute food.) Generators could be used to power freezers to keep food frozen. Community bread ovens can be built from materials available in most communities, as well as solar cookers, outdoor wood stoves made from barrels, and non-electric hotpots (explained in the BETTER TIMES Emergency Notes on Food Preparation).

Community Food Processing. Governments or non-profit agencies may distribute emergency supplies in a food scarcity emergency. If the disaster is prolonged, it is likely that those distributions will be primary agriculture products (whole wheat, corn, soybeans, dried beans, rice, powdered milk, etc. Tasty and nutritious meals can be cooked from these foods, but many people do not have the knowledge or the equipment for home processing of these ingredients. The basic technology required is a way to grind the products. If manufactured grain grinders are not available, grinders can be improvised from steel water pipes.. Soy milk, tofu, tempeh, and other products can be made, and vegetable oils extracted from corn, soybeans, sunflower seeds, and other oil crops. If the weather is not cold, and a generator is available, making ice would be very useful. (Fill containers like cottage cheese tubs or casserole pans with water, freeze, chop up into smaller bits.) It may also be necessary to organize water fetching and purification teams, and a community food processing effort can do this too.

Urban Agriculture & Community Food Production. About 10% of the world's food is grown within cities. If a disruption of the regular food production and distribution system is prolonged, it will be necessary to increase this production considerably. Even if the problem happens during the winter, in many areas this can begin immediately in greenhouses and cold frames. Indoor greenhouses, with lights powered by car or marine batteries that are recharged by automobile alternators can be improvised, and seeds started for spring gardens (heat is also an issue here). Seeds can be sprouted. Depending on local resources, other options include fishing (ocean, rivers, creeks, ponds, lakes), hunting, or foraging (very slim pickings in most areas during winter). Even densely populated cities have lots of space for community gardens. Possibilities include street medians, lawns, vacant lots, golf courses, and container gardening on roofs, porches, sidewalks, even streets. Compost heaps can be started immediately, both to help resolve the garbage situation, and to make fertilizer for gardening.

Rural-urban partnerships. Many cities are surrounded by farming areas, but there are many potential disasters that could wreak havoc with normal systems of food production & distribution. If the present food system fails, it will be necessary to weave new direct relationships between rural farmers and urban consumers. Farmers will need assistance with planting, harvest, and transportation; new direct market relationships with urban consumers would help with these essential activities. In the old days, cattle and pigs were driven to market on the hoof; this may happen again if the transportation system is compromised by instability and disaster.

Networking ideas. Work with other agencies or organizations, such as community gardening organizations, neighborhood associations, university extension departments, and food banks to help ensure that nobody is left out in the cold without food.

5 USEFUL EMERGENCY FOOD IDEAS: SOURDOUGH, PICKLED EGGS, GLUTEN, BULGAR, ORAL REHYDRATION

Easiest sourdough bread: Make bread as usual, add an extra cup of flour (you will have to adjust the amount of liquid and other ingredients accordingly). After the second rising, pinch off about one cup of the dough, and put in a covered non-metal container in a warm place. When you bake the next day, instead of adding yeast, add the dough you saved from yesterday's baking. This will take a little longer to rise, but it works. (Many cookbooks have other sour dough recipes.)

How to pickle eggs. Eggs will keep for several days without refrigeration. But you can pickle them for longer-term preservation.

1. Use quart mason jars. Boil the jars for 10 minutes and then keep them covered with hot water until they are used.
2. Hard boil the eggs and peel them. Take the mason jars out of the water and put the boiled/peeled eggs in them. You can add hot peppers and fresh garlic for flavor and color, also carrots, spices, herbs (cumin, dill, oregano, whatever you like). Anything added contributes flavor and is itself pickled.
3. Add 2 cups vinegar. Add water to fill to about ½ inch below the rim. Wipe the rims of the jars and put on a new lid and then screw on the ring finger tight. Note: lids should not be reused, but the rings can be used over and over again.
4. Put water in a deep pot (deep enough so the water comes up to the rims of the jars, look around for a boiling water canner). Place the jars in the pot so they do not touch each other (make sure they are up off the bottom of the kettle, some kettles have racks for this purpose, or you could put a towel in the bottom of the pot. Bring the water to a rapid boil, and keep the water boiling rapidly for 20 minutes. (This is called "processing time" and it starts when the water starts to rapidly boil, NOT when you turn on the heat). Use tongs to put the jars in the water and take them out. If you don't have tongs and can't improvise any, let the water cool naturally. Do not reduce processing time.
5. After the 20 minutes are up, turn off the heat and remove the jars from the water. Place them on a rack and allow them to cool naturally. Don't try to hasten the process by putting them in cold water. As the jars cool, , the center of the lids will depress

slightly. This is a sign that a proper seal has been made. If the center of the lids doesn't depress, bring the water back to a boil and process for 20 minutes again. Once the jars are completely cool, store them in a cool dark place. You can remove the rings or leave them on. If you don't need them, might as well leave them on, that way they won't get lost and you'll always know where to find some. Let the jars sit for a couple of weeks before using them. Once opened, use within a few days, or keep refrigerated.

Gluten can be made from whole wheat kernels. Despite the name, gluten is a very useful and nutritious food product that you can make without using fancy equipment.. It can be cooked in a variety of ways. 1. Mix six cups flour with water until it is the consistency of bread dough. If you don't have flour, grind whole wheat to make flour. Let this dough sit for 20 minutes. 2. In a sink, basin, or bucket, place a bowl, on top of that put a pie plate, and on top of that put a colander (pasta strainer). The bowl should be larger than the pie plate. 3. Take a handful of the dough, and run or pour cold water over it while you kneading it (if you are pouring water from a pitcher, you'll need an extra set of hands). Keep doing this with handfuls of dough. The water running off will be milky white with starch and have flecks of bran. The bran settles in the pie pan (dry it and save it, it has a lot of uses), and the white water in the bowl should be saved and used to thicken sauces, gravies, or soups. Keep kneading and rinsing until the water runs clear. What's left after the water rinsing is wheat gluten. Form into small loaves and steam for about 30 minutes or bake in an oven. Slice into strips and marinate for 10-12 hours. Use beef or chicken bouillon, add hot peppers, the "Scarborough Faire" spices (parsley, sage, rosemary and thyme), soy or teriyaki sauce, hot chili sauce, sesame oil, garlic, whatever you have handy and tastes good and familiar. Then bake it or crumble it and fry in hot oil. If you don't marinate it before baking, you'll want a good amount of sauce in the recipe. It's taste is very bland, so it needs a liberal spicing, or a flavorful sauce or gravy. Sprinkle the bran on breakfast cereals (including oatmeal and creme of wheat), and add it to baked products or casseroles. Be creative with seasonings. The recipes below have ideas..

Chickless Caciatory: Add poultry seasonings, powdered chicken bouillon, cumin, thyme, rosemary, garlic, savory and salt to the freshly made gluten and bake in a loaf pan at 300 degrees for 45 minutes. In a fry pan, saute onions, bell peppers and mushrooms, celery (whatever you have, if you are using dehydrated, re-hydrate in hot water before sauteing). Slice the gluten in 2 inch diameter pieces, and put in the pan. Slowly cook on both sides until it cooked all the way through. Cover with spaghetti sauce and let simmer for about 20 min. Serve over pasta or rice.**Vegetable "liver" and onions:** After making the gluten, flavor with soy sauce, garlic, onion powder and salt and bake at 300 degrees for 45 minutes.. Put some oil in a pan and saute onions (cut in strips) and mushrooms. Remove the mushrooms and onions, slice the gluten in patties and slowly brown on both sides. Add a mushroom gravy (cornstarch variety is best) and simmer for about 45 minutes or until most of the gravy is absorbed by the gluten, turning often to avoid burning. Serve with the cooked onions and mushrooms. **Scallops gluten:** Season gluten with lemon thyme, pepper, garlic, cumin. Heat a deep fryer (hot enough for french fries). A deep fryer can simply be a heavy pot (such as a pressure cooker or Dutch oven) with oil in it. French fries are a perfect side dish. Form the gluten into balls, and deep fry. Serve with tarter sauce. **Meatless Loaf:** Make gluten, grind it, mix with chili powder, bouillon, garlic, onion powder, and a handful of oatmeal or cooked bulgar. Form into a loaf and put in a loaf pan. Cover with tomato sauce. Bake at 300 degrees for 45 minutes. **Chicken Fried Steakless Cutlets:** Make a Meatless Loaf, don't cover with tomato sauce before baking. Let cool, slice, dip in milk and seasoned flour (do this 2 or 3 times, add black and/or red pepper and salt to the flour). Put some oil in a skillet. Fry with medium heat until brown on both sides. Make a white cream sauce flavored with some spices or herbs, or a brown gravy, or mushroom gravy, and serve with mashed potatoes.

Bulgur wheat: In an emergency, authorities may distribute bags of grain. One way to prepare whole wheat grains is to process it as "bulgar wheat". Bring to a boil one part rinsed whole wheat kernels plus two parts water, then simmer until the berries are tender (about one hour). Spread the berries on a cookie sheet and bake in a 225°° F oven, stirring occasionally, until dry (about one hour), or dry in the sun. Grind in a blender, or grain grinder, or crush with a rolling pin, to the consistency of cracked wheat. **To make the bulgar wheat pilaf:** saute onions and garlic and bulgar wheat in oil. Add 2 parts broth, stock, water with bouillon, to one part bulgar wheat, plus dried herbs such as sage, thyme, rosemary, basil, oregano, parsley. Cooked or stir-fried vegetables and/or chunks of mat can also be added. Be liberal with the seasonings. Bring to a boil, reduce heat, simmer until liquid is absorbed. Cream of Bulgar: Grind dehydrated bulgar to the consistency of flour, cook and use like Cream of Wheat.

Oral rehydration solution: In the event of severe diarrhea and dysentery, or loss of fluids due to excessive heat, make and administer an oral rehydration solution (common store names for oral rehydration solutions are Gatorade and Pedialyte). Give the dehydrated person sips of this drink every five minutes, until he or she begins to urinate normally. Keep giving the drink often in small sips, even if the person vomits. Not all of the drink will be vomited. Combine ½ tsp salt and 8 heaping tsp (or 2 handfuls) of powdered cereal and dissolve in 1 liter of boiled and cooled water. Powdered rice is best, but corn meal or wheat flour or cooked and mashed potatoes can also be used. Boil this mixture for 5 to 7 minutes to form a watery porridge. Cool quickly and give to the sick person. When using, make it frequently, especially in warm weather. Without refrigeration, it can spoil in a few hours. Another recipe for an oral rehydration drink is: one-half level teaspoon of salt, 8 level teaspoons of sugar, mixed with one liter of water. A half cup of fruit juice should also be added if available.

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Food Preparation and Safety

Better Times Emergency Notes

SAFETY NOTES FOR EMERGENCY COOKING. If there are problems with the food distribution system, work together with your neighbors to ensure community food security during the emergency. Set up soup kitchens in homes or public buildings. Organize potluck meals and community kitchens; food may be available, but fuel for cooking may be in short supply. For many people it will be safer to prepare food in community kitchens than to use emergency cooking methods in homes or apartments. Never use charcoal briquettes or Coleman-type fuels inside for cooking. Carbon monoxide poisoning is serious business. Small propane camp stoves can be used indoors with proper ventilation, such as placing the camp stove in front of a window open 1/4 inch or an open door. Placing the stove in front of an open window/door keeps exhaust fumes from spreading through the room). Symptoms of carbon monoxide poisoning include headache, lethargy, blurry vision, room feels "stuffy". If symptoms occur, get fresh air into the room immediately or move everybody out fast. Pregnant women and unborn babies are particularly at risk. DO NOT use wood inside at house for cooking unless you have a fireplace or properly installed wood stove. If you need a campfire, build it in a safe place outside. Use bricks to make a stand for a pot or to hold a grill in an open fireplace or on a campfire. Don't leave open flames unattended.

Baking on top of a camp stove. (1) Place a cast iron skillet or cookie sheet on top of the burner(s). (2) Put something on top of this to raise the cooking pan up and allow air to circulate underneath. This could be a low cake pan, or empty tuna cans, or the trivet from your gas range. (3) Put the food to be baked in a covered pan on top of the "risers". (4) Make a tent from several layers of foil over the cake pan, so that air can circulate beneath it, and put a small vent hole in the top of the aluminum foil. Large cans or pot lids also work as covers. Keep an eye on the food as it is baking. You may have to flip biscuits so that they brown on top. **Chafing Dish cooking.** Chafing dishes come in many different sizes and use small cans of jelled fuel for heat, some use candles or denatured alcohol burners. A fondue pot is a type of chafing dish. The small stand supporting the chafing dish can be used with a skillet or omelet pan, or a pot for soup or stew. It takes up to a half hour to warm a can of food with a candle. Buddy burners can also be used with chafing dishes. "Buddy burners" and candles can be used with chafing dishes.

Solar cookers. Solar cookers are made with cardboard boxes, aluminum foil, duct tape, and glass. Such ovens can get to 350 degrees, hot enough to bake meats and casseroles. A solar cooker works by reflecting light onto a dark pot through a clear transparent cover such as glass or an oven baking bag, and insulating the pot so that the heat does not radiate out but rather cooks the food. Crockpot recipes will generally work in a solar cooker. Work with materials you have at hand to create an insulated container with a clear top that can be heated by the sun. **Non-electric crockpot.** Use a box or bucket big enough to pack 4 inches of insulating material on all sides, top and bottom. Line the inside with aluminum foil, and put insulating material on the bottom (such as newspapers, cloth, sawdust, hay). Bring the food to a boil, cover the pot (3 - 6 quarts) and put it in the container. Pack the top and the spaces between the pot and the sides of the box or bucket with insulating material, and put the lid on. Good for up to 4 hours cooking..

Food cooks faster in covered pots. Be thrifty with scarce fuels, combine methods (such as using a camp stove to bring beans to a boil, and then the non-electric crockpot to finish the job). Consult Scout manuals for other methods of cooking over open fires. Work with your neighbors to ensure community food security.

FOOD SAFETY IN A DISASTER. Cold foods must be kept cold (below 45 degrees F.) to prevent spoilage. If the power goes off, open your refrigerator and freezer as little as possible. Wrap the freezer in blankets or newspapers, or stack bags of clothes or mattresses against the walls & on the tops. Shield it from direct sunlight, and don't heat the room it is in. Eat the items in the refrigerator first, the same day the power goes off. (Invite the neighbors for a disaster buffet potluck.) If you are frugal in opening the freezer, the food inside will stay below 45 degrees for 3-5 days. Be careful about storing prepared foods without refrigeration. If it is cold winter, put food in an insulated box (such as an ice chest) in an unheated room or porch. Pack it with snow or ice (if available). Put a thermometer in the box and check it several times a day to make sure it is staying below 45 degrees. Protect the cold box from sunlight. When cooking, estimate food portions carefully, as you may not be able to refrigerate the leftovers. Spoiled foods may not have an offensive odor, so while the presence of a bad odor is a sure indicator of spoilage, its absence may not be an assurance of safety. **Don't take chances! If in doubt, throw it out.**

Creamed foods, soft cheeses (cream cheese, spreads, cottage cheese), gravy, mayonnaise, salad dressings, pork, & poultry spoil quickly. Dispose of them if the refrigerator has been without power for 12 hours. Seafood, chopped meat, and poultry sandwich fillings are not safe after 4 hours without refrigeration. Hard cheeses will be fine at room temperature for several days. To preserve for longer periods: Dip the cheese into a salt solution (salty enough that an egg floats) and place on a rack to dry overnight. On the 2nd day, rub with salt and leave on the rack. Do this again a 3rd day. By this time a rind should be developing. If it feels dry and smooth, continue to the waxing; if not, rub with salt and let dry another day. **Waxing:** Apply 3 or 4 coats of wax (either with a brush, or by dipping into melted wax, melt the wax in a double boiler, which is a pot of water with a smaller pot inside), let the wax dry between each coat. Wrap with cheese cloth, and continue the process of dipping and drying until several layers later the cheese is completely covered with a smooth wax exterior. It will continue to age inside, but remain good. If you do find mold on hard cheese, scrape or cut it off. Sour milk can be used in baking (corn bread, pancakes, waffles, biscuits, sour dough starter). Butter will keep for several days, and

clarified butter will keep for months without refrigeration: **To clarify butter:** melt it slowly over low heat, boil slowly until the solids collect together in the bottom of the pan. The butter oil will be clear and golden. Sometimes a bit of scum floats up to the top; skim that off. Ladle off the clarified butter, leaving the solids in the bottom of the pan (you can pour the remaining bits of butter oil and solids through a cheese cloth to extract all the butter and leave all the solids behind). Store in an airtight container. Whole un-cracked eggs will keep for several days at a cool room temperature.

Emergency food preservation: meats and vegetables can be preserved by pressure canning. Fruits and pickles can be preserved by boiling water canning. Consult resources such as the Ball Blue Canning Book for the necessary times. Vegetables can be dehydrated. If electricity is not available, they can be dried in the sun. Place trays of thinly sliced vegetables or fruits in the sun, covered with screen (to keep flies and insects away from the food). They can also be placed on trays on the dash boards and seats of a car, which is then parked with the windows rolled up in the sun.

EMERGENCY FOODS. Anticipate the needs of spring and summer by building greenhouses (depending on local climate) and preparing for community gardens: use sheets of plastic, PVC pipe, poles, lumber or windows scavenged from houses to build greenhouses, egg cartons and other small containers can be seed starters, buckets can be planters. Start compost piles for fertilizer. Learn new skills and teach others. Network with groups such as gardening associations and agriculture and extension agencies. Forage for edible wild greens and flowers. Authorities may distribute emergency foods such as wheat and soybeans. Home processing of whole grains is labor intensive, so organize community processing centers. In an emergency, people may refuse to eat unfamiliar food; **encourage people to eat, even if the food is unfamiliar to them.**

Emergency grain grinder: cut three, 30" lengths of 3/4" steel pipe (such as water pipes), wrap each pipe with duct tape. Tape the 3 pipes together, so there is a "working end" where the pipes are level with each other and smooth. Cut the top out of a large can (a large juice can is ideal). Put 1" of clean, dry grain in the can, put the can on a smooth hard surface (such as concrete). Sit with the can between your feet, and put the bundle pipes in the can. Move the pipes up and down about 3 inches, with rapid strokes. It takes about 4 minutes of pounding to make 1 cup of flour. You can sift this using window screen (thus providing cracked wheat and flour) or thin nylon or cheesecloth. The finer the grind, the easier the digestion. Beans can also be ground with this procedure. Wheat may be "parched" before grinding. Heat in a dry skillet, until slightly puffy (this can then be cooked with water and eaten as a porridge, or ground into flour for baking.) Sprouting the wheat or the beans makes grinding easier and enhances taste and nutrition.

Bulgur wheat: Bring to a boil one part rinsed whole wheat kernels plus two parts water, then simmer until the berries are tender (about one hour). Spread the berries on a cookie sheet and bake in a 225° F oven, stirring occasionally, until dry (about one hour), or dry in the sun. Grind in a blender, or grain grinder, or crush with a rolling pin, to the consistency of cracked wheat. **To make the bulgar wheat pilaf:** saute onions and garlic and bulgar wheat in oil. Add 2 parts broth, stock, water with bouillon, to one part bulgar wheat, plus dried herbs such as sage, thyme, rosemary, basil, oregano, parsley. Cooked or stir-fried vegetables and/or chunks of mat can also be added. Be liberal with the seasonings. Bring to a boil, reduce heat, simmer until liquid is absorbed

Soybeans must be cooked before grinding for flour or grits. Soy flour may be substituted for up to 25% of the wheat (or other grain) flour in quick breads, and for up to 15% of the grain flour in yeast-raised breads. It increases the nutritional value of the recipe. There are two ways to make soy flour or grits: dry heat (in an oven) which is typically used in Asia, and wet heat (boiling) which was developed in the West. **Dry Heat Method:** For both soy flour and soy grits, first soak the soybeans in water for 8 hours, drain, and then bake in an oven, solar oven, or in a covered oven/pan over a campfire or cooking stove; you want the equivalent of about 350 degrees for 15 minutes. Stir the soybeans, then bake again for 10 minutes (stirring them after 5 minutes). Grind finely to make soy flour, or crack coarsely to make soy grits. **Wet Heat Method:** (1) Dissolve a pinch of baking soda in five cups of boiling water, add 1 cup dried soybeans. Simmer over low heat for 25 minutes. Drain, rinse with cold water. Dry in the sun or in an oven at low heat until dry (sun drying will take a day or so). Grind to a fine flour. To enhance its nutty flavor, toast it lightly in a dry skillet over moderate heat, stirring occasionally. To make soy grits, grind the boiled and dried soybeans coarsely. To cook soy grits, add water and cook like rice, flavoring it with herbs and spices

Soy milk: Bring 3 cups water to a boil, then slowly add 1 cup soy flour (do not use toasted soy flour), stirring constantly with a whisk to prevent lumps. Reduce heat and simmer for 20 minutes, stirring occasionally. Line a colander with cheesecloth or nylon mesh (a nylon stocking works well) and place over a large bowl or pot. Strain the soy flour mixture through the lined colander. Stir sweetener or other flavoring into the strained soy milk and use immediately or refrigerate. **Weaning food for small children:** Mix cooked finely ground soy grits with cooked rice and reconstituted powdered milk (30% soy grits, 60% rice, 10% milk powder).

How to make and use a hectographic duplicator

Better Times Emergency Notes

Folks over 50 years old may remember receiving hand-outs at school printed with purple ink. Those copies were made by a hectographic duplicator, which is a low-tech, inexpensive method of making multiple copies. A hectographic duplicator is a firm bed of gelatin made with a special recipe. A master copy made with hectographic ink or pencils is placed face down on the bed and the ink transfers to the gelatin. The master is taken off and blank sheets of paper are laid on the gelatin, producing from 30 to 50 or so copies. Hectographic copying has a long history of utilization in extreme situations such as prisoner of war camps, the Soviet gulag, and in civilian societies under tyrannical governments or foreign occupation. It does not need electricity and the materials are commonly available.

Recipe for the Gelatin Bed

			<i>English</i>	<i>Metric</i>
Unflavored gelatin powder	3.6 oz.	100 grams		
Water		1-5/8 cups	375 ml	
Sugar		1-2/3 cup	385 grams	
Glycerin		2-3/8 cups	715 grams	

Mix the unflavored gelatin powder with cold water. A common US brand name is “Knox” and it is available at most grocery stores in 1 ounce boxes. The box contains four 1/4 ounce packets. To get 3.6 ounces, I used three boxes, plus 2 of the quarter-ounce packets and half of a third. While gently warming the water, add the sugar and stir. When the sugar is dissolved, add the glycerin. Stir until it begins to boil, and continue to stir while boiling it for one minute. Remove from heat and pour into a metal baking pan that is a little bit larger than a sheet of paper. Let the mixture cool for several hours, and it hardens into the gelatin press bed.

Cautions: This mixture boils at a higher temperature than water. Treat it as carefully as you would a pan of boiling oil. Don’t splash or spill it. The mixture will increase in quantity as it boils so use a pan that holds about 3 times as much volume as the original mixture and stir with a long handled spoon. When you pour the liquid into the pan, use a spoon or some tissue paper to skim or blot up any foam. Very smooth surface = the best printing results. *The gelatin bed is not edible!* It will last a long time (months, maybe years.)

The Printing Master: Use hectographic ink, hectographic pencils, or ditto masters to make hecto masters. Hectographic ink and pencils are available from any supply source for tattoo artists, or you can make your own. Hecto inks are available in a variety of colors, although the most common is purple. If you use ink, you need an old-fashioned writing stylus, available from tattoo supply houses and art stores. A quill pen would work if you have one available. Dip the pen into the hectographic ink and write your message on a sheet of paper. Small brushes could be used to paint various colors onto the paper stencil.

Using a ditto master: Instead of typing on the paper, turn it around and type or write on the back of the ditto carbon. Your master copy is then on the “back” of the paper – non-mirror imaged – so that when pressed on the gelatin bed and the copies are made they will not be backwards. If you type on the front of the paper, then the copy on the back will be mirror-imaged, so the printed copies will end up backwards. Note that you must use ditto masters, ordinary carbon paper won’t work.

Making the Copies: After the ink dries on your master, swirl a cup of water over the surface of the hardened gelatin pad and then drain that water. Use a clean sponge to wipe the surface and take up any remaining water. You want it to be slightly moist, but no drops. If the gelatin pad is too wet, the ink on the master will run.

Lay the master copy face down on the gelatin pad and make sure all parts of the paper are touching the surface of the gelatin. Leave it there for several minutes – the longer it is left in place, the more copies you can make. Then carefully pull it off and set it aside. You may be able to use it again.

Take a clean sheet of paper and lay it down on the gelatin bed and smooth it in place, then pick it up at one edge and peel it off. *Voila, a printed sheet!* Continue the process until you have enough copies or the copies begin to fade. Online sources say that the sharpness of the copy can be enhanced if the paper that receives the print is slightly moistened with alcohol (use a sponge to do this).

To clean the gelatin bed, pour a cup of hot water onto the bed and swirl it around until the ink dissolves. Pour this off and immediately cover the pad with some cool water. Drain that, and use a sponge to wipe up any excess water. Lay a clean sheet of paper on the pad and take it off to make sure no ink is left. When the gelatin is dry, cover it with a lid or aluminum foil to preserve it for your next duplicating session. The pad can be reused many times, but each time you clean it, a small amount of the gelatin dissolves and washes away, so it will eventually need to be replaced. If you damage the surface somehow, don’t despair. Use warm water to soften the surface and the sponge to smooth it. Or, you can re-melt the gelatin pad and let it harden again. If the surface dries out between printing sessions, use warm water to soften and re-moisten it.

Ink Recipes

These recipes come from a source contemporary to the hectographic printing era: *Fortunes in Formulas for Home, Farm and Workshop. The Modern Authority for Amateur and Professional.* edited by Gardner D. Hiscox and T. O'Connor Sloane (New York: Books, Inc., 1907; rev. ed., 1956).

Purple: Methyl violet, 2 parts | Alcohol, 2 parts | Sugar, 1 part | Glycerine, 4 parts | Water, 24 parts

Black: Methyl violet, 10 parts | Nigrosin, 20 parts | Glycerine 30 parts | Gum arabic 5 parts | Alcohol, 60 parts

Red: Fuchsin, 10 parts | Alcohol, 10 parts | Glycerin, 10 parts | Water 50 parts

A modern recipe using contemporary pigments is found in *Recipes for Art and Craft Materials*, Helen Roney Sattler, (New York: Lothrop, Lee & Shephard, 1973):

- ★ 1 1/2 teaspoons water-based pigment, such as Prussian blue, iodine-green, methyl violet, and so on. (Do not use an oil paint pigment. Aniline dye is best but poisonous.)
- ★ 1 teaspoon glycerine
- ★ 4 teaspoons distilled water
- ★ 2/3 teaspoon peppermint or lemon extract

Mix the pigment with glycerine until smooth and well blended. Add water and extract. Stir or shake until thoroughly mixed. Makes about 2 tablespoons-enough for several projects.

Sources:

Glycerin: commonly available in small bottles at drug stores, or search for “soap-making supplies”.

Ditto Masters: local independent office supply houses or REPEAT-O-TYPE, 665 State Rt. 23

Wayne, NJ 07470 U.S.A, www.repeatotype.com

Hecto Inks and Pencils: www.spaulding-rogers.com or local tattoo supply businesses.

My information sources for the gelatin recipe, history, and printing process:

www.fell.demon.co.uk/steve/jelly.html | www.fell.demon.co.uk/steve/inks.html | <http://english.boisestate.edu/ttrusky/hecto.html> | www.deadmedia.org/

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Hygiene, Trash, Human Wastes

Better Times Emergency Notes

Hygiene. This is the first line of defense against the spread of disease and despair. If electricity is not available, household duties require the assistance of everyone. Persons with special needs (such as families with young children or the elderly) may need the help of neighbors. Attacking messes when they are "small" keeps them from becoming big problems. If water is scarce, scrub pots and dishes with brushes (or clean sand, or newspaper) to remove food particles and grease, and then wash in hot soapy water.

To make sanitizing and disinfecting solutions... Use ordinary unscented chlorine bleach (sodium hypochlorite, 5.25% in water solution, such as Clorox) to make sanitizing and disinfecting cleaning solutions. For **sanitizing**: For hard, non-porous surfaces, use 1 tablespoon liquid bleach in 1 gallon water, wet and then air dry, don't rinse. For porous surfaces (like a wood cutting board), use 3 tablespoons bleach per gallon, wet liberally, rinse and wipe dry. For **disinfecting**: Use 3/4 cup bleach in 1 gallon of water, small items can be soaked, surfaces such as floors or counters should be wet liberally and kept wet for 2 minutes. 1 tablespoon of powdered detergent may be added, but do not add anything that contains ammonia, as it reacts badly with chlorine. Rinse after disinfection. For toilets, pour 1 cup bleach into the bowl, brush, let stand for 10 minutes. Change the solutions frequently for heavy cleaning.

Washing Clothes. Use rubber or plastic tubs or buckets and a household plunger to wash clothes without electricity. Put water, detergent, and clothes in the buckets. Cut a hole in the lid for the plunger handle (the agitator). Soak the clothes. Insert the plunger handle through the lid, put the lid on the bucket, agitate, and voila, wash day without electricity. You can use the sink, but if water is scarce, don't let the wash water to run down the drain (if the sewer isn't working, the drain may be clogged). Use a tub of clear water to rinse the clothes. Some clothes may require hand scrubbing. Air dry by hanging on clothes lines or hangers. In winter, you can air dry outside, but you may have to crack ice to remove it from the clothes (wear gloves when hanging clothes in winter). Hand wringing clothes is laborious work, you'll want extra hands to help; Use the wringer of a commercial mop bucket.

Personal Cleanliness. If water is scarce, use a bucket or tote instead of the tub for bathing. If you use a sink, don't let the water disappear down the drain, you'll need it for flushing the toilet. Put the tote in the bathtub and stand inside it. Use a camp shower, sprinkler bucket, or cups of water, or a wash cloth and a basin of water. Wash your hands regularly, especially after using the toilet; many diseases are passed hand to mouth. If water is scarce, pour a chlorine bleach disinfecting solution over your hands (mix this in a jug, and have it ready for use). Cornmeal or cornstarch can be used as dry shampoos (sprinkle liberally in the hair, and then brush vigorously). Use only boiled or otherwise purified water for brushing your teeth or cleaning contact lenses. If you usually shave, continue to do so unless a scarcity of water or lack of razor blades make this impossible. On sunny days, you can have hot water for washing by painting food grade plastic buckets (with lids) black, filling them with water, and putting them in the sun. (This can also be a source of free heat; put several into the sun, and bring them in to help keep a room warm.) You can also paint 2 liter pop bottles black to obtain smaller amounts of hot water.

Maintaining normal routines is important. Don't skip your daily wash, even if you have to use just a basin and wash cloth! It boosts morale and prevents disease. Be proactive in your community to ensure public health.

Trash. If normal services are interrupted, trash is a serious urban health danger. If you don't take care of it, the rats and flies will, and you won't like that. The primary rule is: Be careful what you throw away and how you throw it away. *Do what you can, with what you have, where you are* is a traditional saying that bears remembering. People can respond creatively to disruptions of normal supplies and services. When you begin to think of your trash as less of a disposal problem and more of a useful resource, you're getting to the point.

Throw away less stuff. Bottles and cans have other uses once they have been emptied; food and shredded paper can be composted. If stores are closed, you'll find uses for cans. Sort what you throw away; a big problem with recycling is the practice of mixing different kinds of trash. Don't mix wet and dry trash! You will create a stinky mess that will be attractive to flies and rats. Keep toxic items such as spray paint cans separate. Don't put disposable diapers in with other trash. Separate it, bag it, stack it, and cover it with a tarp so it can't get wet.

Compost the organic trash. Mix shredded dry organic materials (such as newspapers, leaves or sawdust), with wet and green organic trash (lawn clippings, kitchen/garden scraps -- no meats or fats -- and dirt. Keep this compost heap covered with dry

material, and slightly damp. If it starts to stink, you probably need to add more dry material or dirt. As the compost rots, it generates heat. You can capture some of this heat as hot water by running a garden hose through the compost heap(s).

Don't put disposable diapers into latrines, compost heaps, or bury them in the ground. If trash collection is disrupted, switch to cloth diapers. Disposable diapers in a disaster situation are a disaster in and of themselves. They can't be burned (institutions can be fined for burning them in their trash incinerators). If you bury them, you could end up digging up your entire yard and you will have a backyard full of diapers that will never decompose. Bag and stack them if you must, but cloth diapers are actually less hassle than fly-infested bags of smelly "disposable" diapers.

If disruptions of trash collection are prolonged, you may be tempted to organize the burning of trash, but this should be done in conjunction with public authorities such as fire or police departments. Be pro-active in organizing your neighborhood to take care of its trash. Don't wait for the flies and the rats to start working on it. Think of your community's trash as a resource that can be used to help people get through tough times.

Disposal of Human Wastes. The breakdown of a city's sewage system is an immediate threat of the spread of disease. Improper disposal of human wastes causes epidemic diseases that kill people. Immediate intervention is required. Do not use public spaces such as parks or lawns for human waste disposal on the surface of the ground. Do not bury human waste in snow. If the sewer works, but the water doesn't, use water that has been used for washing to flush the toilets. The "California System": "If it's yellow, it's mellow; if it's brown, flush it down".

Chemical toilets (such as porta-potties) are a temporary solution, but something must eventually be done with the sewage in the storage chamber. If you have access to a gas station or RV park, or if trucks can come and pump the tanks, you can dump into a holding tank; this service may be limited by the availability of fuel and electricity.

To make an emergency toilet, put a toilet seat on a rigid plastic bucket. In the bottom of the bucket, place some sawdust, peat moss, or dried leaves mixed with some dirt. After each use, add more of this material so the waste is covered. When the bucket is full, you have 2 options: (1) Dig a hole in the ground about six feet deep and 2 or 3 feet across. Empty into the hole, and cover completely with dirt. Cover the hole with a board weighted down with bricks or rocks. When this has been filled to within 2 feet of the surface, fill it the rest of the way with dirt. Disposal holes must be at least 8 yards away from a source of water such as a well, pond, or stream. (2) empty into a compost heap, and cover completely with natural materials. (This compost should be aged for at least one year before using, and it must be monitored to ensure that it heats up properly so the disease pathogens are killed.) An alternative is to put a small amount of water in the bucket, and empty it each time it is used for solid wastes. After rinsing, disinfect with a chlorine bleach disinfecting solution.

The primary problems of outdoor pit latrines are flies/mosquitos, odors, and the spread of disease, none of which are minor nuisances. Manage these by: (1) covering the pit with a slab of concrete or plywood; this slab must fit tightly to the pit walls so that there are no gaps or holes between the latrine cover and the edges of the pit, (2) installing a capped and screened vent pipe that rises at least 18 inches above the roof of the latrine, and (3) using a tight fitting seat cover inside the latrine. Paint the vent pipe black and place on the sunny side of the latrine. This heats the air inside the pipe, causing it to rise and draw air out of the pit, minimizing odor. If toilet paper is not available, many common papers can substitute, such as newspaper or phone book paper. Some cultures use water for cleansing.

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www.bettertimesinfo.org

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Your health and wellness in disaster situations depends on your community's ability to properly meet the challenges of public health such as hygiene, trash, and sewage disposal.

Work together with your neighbors to increase the safety, security, health, and wellness of your family and community.

YOU NEVER MISS THE WATER UNTIL YOUR WELL RUNS DRY.

Better Times Emergency Notes

If the water system has been disrupted, assume the water is impure unless announced otherwise. 90% of the surface water on Earth is unsafe to drink without purification. Many life-threatening diseases and parasites can be spread by impure water. Do not take chances with water!

If the city water system is disrupted and pressure is declining: (1) close the main shutoff valve. If the gas and electricity are still on, turn off the hot water heater. (2) Open the faucets, one by one, collecting any water that comes out. Do this until all the faucets in the house have been opened and their water drained into containers. (3) Open the drain valve on your main water line. If there is no valve, disconnect a water pipe at the lowest point in your system, and drain the water. **To tap the water heater**, close the cold water inlet pipe (on top of the heater). Open a hot water tap and let the water run until it stops. Attach a hose to the drain cock in the base of the heater, open the valve and drain into a container. The plumbing of large buildings contains a lot of water. The building maintenance supervisor would know how to access this water. Waterbed water is not safe to drink due to the toxic anti-algae treatments, but it is a great source for water for flushing toilets. Treated swimming pool water is a judgment call based on what it has been treated with.

Wells. Many cities have artesian wells in parks and other public places. Studies indicate that ground water that has filtered through 2 meters (a little more than six feet) of sand or loam is free of bacteria, parasites, and other water-borne problems, but there could be problems such as a leaky sewer pipe or industrial contamination with the water. Unless announced otherwise, purify the water. **Rain.** Most houses and buildings have gutters that collect and channel rain to down spouts. When it rains, let the water run for about 10 or 15 minutes, and then catch the runoff from the down spouts in barrels or buckets. (If the roof is in bad repair, cover it with tarps or plastic.) Rainwater can be caught on flat roofs by tarps that channel the water into buckets. Rainwater is pure, but if the roof or gutters are in bad condition or dirty, purify the water before drinking. You can also dig emergency cisterns into the ground at run-off points. Line them with plastic, bricks, or wood. Depending on the lining, this water should be purified before drinking or cooking.

Streams, rivers, lakes. All surface water must be purified before drinking. Just because animals and birds may drink it doesn't make it safe for humans. Water-borne diseases & parasites are grave threats from such water, even if it looks sparkling clean and pure. **Snow and ice melt.** Fresh, clean, just-fallen snow can be melted and used without further purification. Older snow must be purified. Don't eat snow; you'll have a net water loss due to the energy required to melt the snow. Use a candle, a camp stove, wood stove, or the sun. Two ways to melt snow with the sun are: (1) Pack clear containers (smaller containers, like a 2 liter bottle with the top cut off) with snow. Place them on a black background in full sun. (2) Put two poles in the ground and drape a couple of black trash bags so their ends are in a bucket. Put some snow on the black plastic. Orient this so the snow is exposed to full sun. The melted water trickles down the plastic into the bucket. **Rivers.** Dig a hole at least 3 feet deep below the level of the water, about 12 feet from the river's edge, in a spot that is only a foot or so above the level of the river. You may need to shore up the sides of this hole to keep it from collapsing. Water will seep into this hole from the river, and will be relatively clean water, but it must be purified before using.

Emergency purification of water

Water to be purified by these methods should be as clear as possible. If the water is cloudy or dirty because of suspended solids, let it sit in buckets for a day or so to allow the solid materials to settle to the bottom and/or filter through cloths or sand.. Siphon clear water from the center and middle of the bucket, leaving the solids and the water just above them in the bottom. Put this water through several layers of coffee filters or clean cloth. Treat it by one of these methods. Make purified water taste better by pouring it back and forth between two clean containers.

Boil for 10 minutes. "Boiled" means a rolling boil, not simmering. At higher altitudes, increase the boiling time to 15 minutes. To improve the taste, add a pinch of salt to each quart of boiled water and pour it back and forth between two containers. **Treat with chlorine.** Use plain, old-fashioned chlorine bleach (the label says "sodium hypochlorite at 5.25%", Clorox bleach is this strength, don't use scented or colored bleach). Add 8 drops (1/8 teaspoon) to each gallon of water.. Mix thoroughly and let it stand for 30 minutes. It should have a slight chlorine odor. If it doesn't, repeat the procedure. **To purify with iodine**, use "2% U.S. Pharmacopoeia (USP) strength" (ordinary household or medicinal iodine). For clear water, add 20 drops per gallon, 40 drops if the water is cloudy. Cover and let it stand for 30 minutes. If you are using water purification tablets; follow the directions on the label. Bleach and iodine kill micro-organisms, if there are chemical pollutants in the water, they will remain. **Distillation.** Put 3 tuna cans on the bottom of a large pot and place a smaller pot on top of the tuna cans. Put unpurified water in the larger pot (make sure the smaller pot does not float off of the tuna cans.) Turn the lid upside down and place it on the large pot. Bring the pot to a boil. The vapor will condense on the under side of the upside-down lid and flow down the lid to drip into the smaller pot. To hasten the process, you can put a bit of cool water in the lid, but make sure the cool water can't drip through the lid into the water below.

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Keeping warm in a winter weather emergency

For when there is no electricity or natural gas due to a utility shut-off or natural or man-made disaster.

“The time to build the cellar is before the tornado hits.” Don't wait for a winter emergency to decide what to do. Plan now and get things together before the power fails. Useful items include: extra blankets and towels, candles, flashlights and batteries, matches, battery powered radio, propane camp cooking stove, propane or kerosene heater, extra fuel, aluminum foil, extra food, hats and gloves, power inverter, marine battery or extra car battery, battery charger, buckets with tight-fitting lids, 2 liter bottles filled with water. If power failure is likely, keep your house warmer than usual to store heat in the structure of your home and its contents.

Bundle up your body! Wear several loose layers of clothes. Don't forget a hat, even when you are indoors! If you must go outside, beware of wind and wet. Keep dry. Wet clothing loses its ability to insulate, and can suck heat right out of you. Stay out of the wind as much as possible. Make sure your head, hands, and feet are protected. Clean clothes keep you warm better than dirty clothes.

Don't try to heat the entire house. Gather everybody into 1 or 2 rooms and don't forget pets. The kitchen and an adjacent room are a good choice. Close doors and hang blankets over doorways. Use plastic sheets, blankets, quilts, aluminum foil & newspapers over windows. Look for leaks and drafts and use cloth, newspapers, caulk, or weatherstripping to close them. (However, don't seal the room so tight that no fresh air can get in. Even if it is cold, you need fresh air to stay alive.) Insulate floors with blankets, newspapers, and rugs. **Get Neighbors together in 1 house or apartment.** Each human body radiates about 100 watts of heat. We're all familiar with the way a crowded room gets warm, so put that to work for you to stay warm during a winter emergency.

Safety first!

Ventilation and attention to safety details are required for open flame heaters such as kerosene or propane heaters. Store fuels like propane and kerosene safely outside of the house or apartment.

Place the propane or kerosene heater in front of the ventilation opening (such as a window open 1/4 inch).

If you place it away from the ventilation, the fumes will first fill the room before they exit from the window. Carbon monoxide and smoke detectors can save lives!

Never use charcoal briquets or Coleman fuel camp stoves inside a house or garage for cooking or keeping warm. People die every year from carbon monoxide poisoning when they fire up charcoal briquets inside the house to keep warm. **There are no exceptions to this rule.**

Never run an electrical generator inside a house or a garage. Always put it outside. Make sure it stays dry and let it cool down before re-fueling it.

Carbon monoxide poisoning is always a risk with open-flame heating indoors. If the room seems "stuffy" and you begin to feel headachy and lethargic and/or your vision gets blurry – get everyone out of the room and ventilate it with fresh air immediately. **Pregnant women, children, and unborn babies are particularly at risk of carbon monoxide poisoning.**

Beware of fire! Place a fire extinguisher where it can be quickly used. If you don't have a fire extinguisher, get a couple of large boxes of baking soda and a bucket of sand. Don't leave candles or open flame heaters burning unattended or while you are sleeping. Make sure candles are in secure holders that can't be knocked over. Keep them away from small children.

Don't keep a gas cook stove burning 24 hours a day for heat. They aren't designed for that. Turn the burners on to warm things up for a couple of hours and then turn them off. Wait a while before you turn them back on. Turn the oven on, at a moderate temperature, for 3 or 4 hours & then turn it off for a while. **Don't leave the oven door open to heat a room.** That

burns out the thermostat and then the stove won't light. While the oven is on, make something good to eat to help you stay warm.

Refrigerator and freezer issues If the temperature is below 42 degrees, take the food from your refrigerator and freezer and put it in an ice chest or other box with a tight lid. Put it outside in a covered place, such as a porch or shed. During the day, keep it in the shade. If it is below freezing most of the day, the frozen food will stay solidly frozen too. However, if frozen food thaws, cook and eat it, or cook it before you re-freeze it. Do not simply re-freeze frozen foods that have thawed; cook them first.

Lights and alternative power Emergency lighting can be candles, flashlights, and lanterns. To increase the illumination, put lights in front of a mirror. **DO NOT** go to sleep with candles or lanterns burning. The flame of one candle can generate enough heat to keep a person from freezing to death. Make sure there is nothing burnable close to the candles.

Use a car battery for lights and radios. Brake or back-up lights, electric wire, and a car battery can be an emergency light source. This will cause a car battery to deteriorate faster, but in an emergency, sometimes such risks are worth it. Marine, RV, or golf cart batteries are better choices than car batteries for emergency power. They are designed to be drained slowly and recharged. If you use this set-up indoors, remember that batteries are filled with toxic, corrosive acid. Make sure the kids can't get to them. Large batteries (car, marine, etc.), if used indoors must be in a room that is well ventilated. Keep them well away from open flames.

You can use a power inverter to convert DC battery power to AC power that operates lights, radio, a small television or CD player. DC lights/radios run directly off the battery. A 300 watt inverter runs one or two 100 watt light bulbs and a small radio. A 600 watt inverter powers the equivalent of six 100 watt light bulbs. However, it's best to use compact fluorescent lights with an inverter because they use less electricity. You can get a solar battery charger for small batteries (AAA through D) for about \$20 from www.ccrane.com/more-categories/batteries-chargers/solar-powered-battery-charger.aspx.

When the power goes out, turn off all lights except 1 & unplug electrical appliances. Turn off the heating system. When the power comes back on, there may be power surges that can damage equipment. Leave one light on so you know when the power comes back.

The sun is your friend! Open the curtains when the sun shines directly through the windows. If the windows are dirty, clean them – more light will pass through them and thus you will have more heat from the sun. Cut pieces of cardboard so they are the same sizes as your south facing windows. Cover the cardboard with aluminum foil. Place them outside the south windows straight out horizontally from the window ledge so that the light which hits the ground in front of the window is reflected into the window. As the sun moves in the sky, and light no longer shines directly through a window, cover it with curtains and extra blankets/auto sun shades.

“Store” daytime sunlight for night-time heat by placing bottles of water (or buckets with tight-fitting lids) in direct sunlight coming through your windows. This warms the water. When the sun stops shining on the bottles or buckets, their stored heat will be slowly released. Paint the bottles or buckets black to store more heat. This is free hot water for bathing or washing dishes!

To keep warm at night, bundle up. Use extra blankets. Sleep more than one person in each bed. Wear a cap to bed. Make a “tent” of blankets or sheets over the bed (like the old fashioned “canopy beds”). Or you can make a tent in the middle of a room, and gather the family inside. **DO NOT** use open flame heating inside a tent.

The best place for babies is on their mother's bodies, in their arms or using one of the many ways of carrying a baby and still having your hands free. Check on your elderly and vulnerable neighbors to make sure they are OK.

Food and drink can keep your warm! Drink a lot of water, and eat frequent meals with lots of carbohydrates. Soups, casseroles, bread, biscuits and gravy are comfort foods for stressful conditions that also give you extra fuel to stay warm. Besides natural gas stoves (which work when the power is out), you can cook inside with propane camp stoves, a wood burning stove or fireplace. You can warm food over candles or cans of sterno or chafing dish fuel. You can cook outside on a gas grill. **Don't pour any heat down the drain in the form of hot water!** Let hot water cool to room temperature before draining, and you get more heat and humidity in the house. If the air is really dry, put a pot or kettle of water on the stove and keep it at a low simmer.

Newspapers are great for emergency insulation. Just ask anyone who's been homeless. They can be wrapped around legs, arms, torso, taped over windows, laid on the floor, or layered between blankets. More layers = more insulation. Auto sun shades can be hung over the inside of windows to reflect heat back into the room.

Beware of the tendency to resort to bad habits when under stress.

This information is provided as a public service, and has been compiled from credible sources, but responsibility for use of this information is with the reader. Use it at your own risk. Your mileage may vary. Bob Waldrop, www.energyconservationinfo.org .

HOW TO STAY COMFORTABLE AND SAFE DURING THE HOT SUMMER

with little or no air conditioning

Stay hydrated. Drink at least a cup of water every 20-30 minutes during extreme heat periods in the summer, even if you aren't thirsty. Avoid soft drinks, caffeine, and alcoholic beverages. The idea that an ice cold soda pop is the perfect solution to thirst is a delusion encouraged by advertising. The more soda pop you drink, the more thirsty you will be, the hotter you will feel, and thus the more uncomfortable you will be. Soft drink advertisements are LIES! "Sugar free" drinks are as bad as the sugared versions.

Cook outside to avoid increasing the heat and humidity inside your house. Eat small, light meals, spaced throughout the day, rather than 2 or 3 big heavy meals.

Dress for the season. Wear shorts and a light shirt. Loose fitting clothes are cooler and more comfortable than tight fitting garments. Go barefoot or wear sandals. Natural fabrics are cooler than synthetics. At night, use light cotton sheets on your bed. Minimize indoor fabrics, as fabric increases interior humidity.

If the heat becomes oppressive, douse your head, arms, and feet with cool water, or take a cool shower. Or go outside and douse yourself with a water hose. Keep a spray bottle of cool water handy, and give yourself spritzes of cool water. Dip cloths in cool water and wrap around your neck, wrists, and ankles.

Shade is your friend. Keep the sun's heat from hitting windows, doors, walls. Shade the outside of the windows. Indoor curtains are not enough (although they help). Once the sun hits the glass and window frame, the heat gets inside the house, even if you have curtains. Use auto sun shades to make a cheap outdoor window shade. Duct tape two or three of them together (depending on the size of the window). Hang them on the *outside* of the windows. An roll-up window shade also works fine. One or more curtains inside will help. Choose white or another light color (sheets are do-able and cheap). Shade the doors. Shade your walls with plants. It takes many years to grow a tall tree, but vines like Morning Glories grow fast.

If you have no air conditioning, ventilate your house at night. Keep the house closed up during the day until the inside and outside temperatures are the same. Then open up the windows and doors. If practical for your situation, during the day only open windows and doors that are shaded. At night put box fans in

the south and west windows to pull hot air out of the house. Put box fans in north or east windows to draw in cooler air. Open every window and door to facilitate cross breezes. In the morning, close your windows and doors when the temperature outside is the same as the temperature inside.

Keep the air moving around inside. Use fans to create breezes during the day and the night. Moving air makes you feel 10 degrees cooler than the actual temperature. Use fans even if you have an air conditioner. With fan breezes inside, you can set the thermostat higher than would be the case without the fans, and maintain comfort..

Minimize heat buildup inside the house. Watch out for anything that creates heat inside the house:

- ★ If you have a dishwasher, don't use it or at minimum don't use the heat dry at the end of the cycle. Take cool showers.
- ★ Many electronic devices such as "instant on" televisions draw current all the time, and thus create heat all the time. Plug them into an electrical outlet strip and turn it off and on with the switch on the strip. This will eliminate those unnecessary "hot plates" that add heat to the indoor climate.
- ★ Don't use the clothes dryer, hang your clothes on a line outside to dry.
- ★ If you smoke, do so outside.
- ★ Turn your computers off when they are not in use.
- ★ **COOK OUTSIDE!**
- ★ Replace your incandescent lights with compact fluorescent bulbs.

Shade the outside parts of your air conditioner. If the air conditioner is in bright sunlight, it will work less efficiently. Shade the compressor or the outside part of a window AC with an awning. Don't block the air intakes.

For more energy conservation ideas, visit our website

www.energyconservationinfo.org .

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www.justpeace.org + www.bettertimesinfo.org