The County Restoration Handbook

Building the future one county at a time

Edited by Eric Vought and Cathi Vought

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0.1.1: Minor revisions to 1st Major Printed Draft

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Abstract

This project is a collaboration between the Well-Fed Neighbor Alliance, The Statesmen For Our Constitutional Republic, and other organizations. The goal of the handbook is to provide a guidebook and framework for restoring the sovereignty, good stewardship, stability, and general resilience of the counties of the United States, starting with Lawrence County, Missouri, as our initial focal point. Sovereignty is the focal point of this effort: none of the other terms we use: good stewardship, stability, and resilience, make sense outside the context of local people having control over their own lives.

None of this is intended to imply that a locality can or must isolate itself from the rest of the country or the world. Each locality, however, can and must be prepared to provide its most critical needs for itself, when it must, during all kinds of emergencies or crises. A locality must also have alternatives for any of its basic needs, even those it traditionally provides for itself. Without being able to provide for its own needs, neither a community nor its individuals have autonomy nor control over their own destinies: you cannot successfully negotiate for anything when you cannot walk away from a bad deal.

The Lawrence County document is meant to be heavily tailored for different localities. Clearly Greene County, MO, Tioga County, NY, Los Angeles County, CA, and Pima County, AR have very different needs and must meet them differently. No single effort can hope to cover all these diverse needs, but many ideas and best practices can be shared.

The Handbook is a compendium of knowledge developed in an online shared-authoring environment at http://countyrestorationhandbook.thestatesmen.org. Periodic snapshots are published from the online information.

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Preface to 0.1

This is a partial draft with useful information as a demonstration of where we are headed. Much is missing, especially parts of the Cyclopedia and Glossary which are online. The Bibliography is very rough. But a tremendous amount of material has come together and perhaps it is a good beginning. ---Eric Vought

Forward

A BIOREGIONAL APPROACH TO RESTORING FOOD SECURITY

Galen Chadwick, Regional Coordinator WFNA

First of all, this Handbook was conceived as a gift to the people of Missouri, to freely address an astonishing proposition: We, the people, can no longer independently feed ourselves. By any measure, not one Show Me county is still self-sustaining, much less able to supply a diverse quantity of home grown food for our teeming cities. Not even close.

Within living memory, a localized food supply system was the norm all across America. Thousands of resilient, often vibrant, local economies were built upon it. People knew their neighbors and, by and large, trusted each other to do the right thing. As little kids, we biked all over town without a second thought. Crime was low; people had time for each other. But now, everything's turned upside down. The handshake, Main Street community of my youth has vanished, along with our national food security and countless jobs. What happened?

Our heritage of self reliance and economic independence has mutated into a state of globalized dependency. The Jeffersonian dream of an agrarian commonwealth has soured into a Hamiltonian nightmare. Historic factors are many, but beginning in the late 1960's, structural collapse became systematic and intentional. Please see films like *The Future of Food*, *Food Inc.*, *The World According to Monsanto*, *Fresh*, *The End of Suburbia*, *Food Matters*, or *Dirt* if you still have any doubt about this.

At the household level, marketers strive day and night to program us with the logic of fast-food, microwave "efficiency." But the arc of *monological* consumerism has also funneled extraordinary power to those at the top end while destroying the family commercial farm at the bottom. Industrialized agriculture has dispossessed millions of family farmers into our cities, the largest human migration in history. "Rural cleansing" is the term the corporados like to use.

It gets worse: according to world food statistics, some 96% of all fruit and vegetable varieties grown a century ago- the people's commonwealth of millennia- has gone extinct [1326]. We now suffer a breakdown of continuity so profound, a cultural amnesia so incalculable, we have no name for it. Surprise! You now work for the Global Casino, are owned by foreign banks, and China "feeds the world."

"What problems might confront the 320 million consumers of America *if we had to feed ourselves again*?"

And so here we are. The offshore, just-in-time globalized delivery system means only 2-3 days of food is in the pipeline on any given date (FEMA estimate). Our lives now depend upon an uninterrupted flow of cheap Mid East oil. Question: Where, in this post 9/11context, do our notions about "*sustainability*" fit if we can't feed ourselves? What problems might confront the 320 million consumers of America *if we had to feed ourselves again*?

These questions matter because the last Americans able to feed themselves without Big Government, Big Oil and Big Pharma are pushing 80 to 90 years old. Don't we boast that there are certain jobs "that Americans no longer do?" But the downside is never quite spelled out, is it?

The Well Fed Neighbor Alliance's answer begins with a 20 year plan for restoring food and economic security for some million residents of S.W. Missouri. Our bioregional approach includes 30 contiguous counties that surround the urban hub of Springfield. The interface between the Ozark highlands (woodland) and the Osage Plains (prairie) is our bioregion; the conditions, opportunities and obstacles often vary greatly from state to state.

In his Introduction, computer wizard Eric Vought explains his Wiki-inspired creation and how to ground your overall security needs in everyday practicality. The links he provides are not meant to be a compendium, but rather to initiate a document you can continue to fill and modify any way you like. Like a country potluck, take what suits; or add more of your own and leave the rest for others.

"A regional plan requires the creation of an economic locomotive powerful enough to make everything work, and it must be smart enough to resist corporate take-over and/or Federal animus."

A regional plan requires the creation of an economic locomotive powerful enough to make everything work, and it must be smart enough to resist corporate take-over and/or Federal animus. To this end, Joe Maxwell's invention of a *Producer Operated Distribution System* (P.O.D.S.), combined with the expertise of co-op builder Russ Kremer, formed the heart of our working co-op structure. With this vertically coordinated farm-to-consumer value chain (open books system) we aim to establish trust at the bedrock level. Everybody knows what everybody makes, and everybody helps the others to prosper. We must grow local, buy local, bank local.

Structurally, the Well Fed Neighbor Coop is a for-profit center that operates under the WFNA Ltd., a 501 C3 educational nonprofit. The Coop functions as a central broker for all commercial parties. It offers insurance protection, product differentiation, consumer loyalty, and point-of-sales marketing that the big box firms can't match. This Coop model can be tailored to fit the unique circumstances of other communities. But it is probably not for everyone. Restoring a regional food supply system is a heavy lift.

The Coop is a pull-through distribution model that brings higher value to the producer, transporter, processor, cold storage operator, grocer, customer, restaurant and ultimately, to large institutional providers. Independent supermarkets want a variety of meats, proteins, dairy, eggs, veggies, fruits, herbs and all kinds of value added products that come from our region. Everything comes down to building demand.

To fill these needs we've established mutually binding contracts, and our producers must also sign best-practices pledges. Customer involvement is proven to increase with in-store CSA's (Community Sponsored Agriculture), producer field audits and tours, WFN Coop co-branding, and our WFNA seal of quality approval. The Co-op acquires, protects, promotes, and differentiates local products.

There are several positive aspects to this legal arrangement, and Joe Maxwell and Russ Kremer were hired for their professional expertise at the formative level. Obviously, investment planning, SEC rules, and funding for an effort of this magnitude requires team depth and professional involvement. We've learned that "build it and they will come" attempts at Coop building usually fail, more so when attempting to wrestle formidable economic realities.

Beyond Coop formation, the range of Alliance volunteer activities is impressive. Our 1000 Gardens Project[1] gave us almost instant "movement" status. The goal was to inspire the creation of 1000 urban gardens between our official launch, (on Jan 3rd 2009), and approaching Earth Day, April 22nd. Given the huge national trend, we managed to help instigate some 3,500 new gardens in about 100 days. Local nursery sales *doubled* over the previous year.

Another ally, Mom's for Local Food[2], is reaching into hospitals and schools with nutritional education and introducing the "lunchbox rebellion." Sending kids to school with healthy, locally grown food is the fastest way to keep the nano tech and GMO garbage where it belongs, i.e., rotting in warehouses. Women make or influence around 93% of all food purchase decisions[1328] and our Moms are continually hitting grocers and restaurants with demands to stock local products. Mom's recently sponsored a well attended 5k run, and more fun activities are planned.

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[1] http://wellfedneighbor.ning.com/group/1000gardensproject/
[2] http://wellfedneighbor.ning.com/group/momsforlocalfood

The Gateway Farms permaculture program is restoring an abandoned, 15 acre, hardscrabble farm. A country-savvy couple is developing an extensive produce garden and experimenting with a number of familiar and exotic crops. In addition to hosting a parade of visiting volunteers and frequent canning parties, they tend a small experimental pecan and paw paw orchard, make hay, and raise bulls, chickens, rabbits, ducks and miniature pigs.

Several larger farms have joined us in helping urban folks make the transition to a prosperous and independent ag-based future. We aim to restore the diverse, independent commercial family farm model from the Golden Age of Missouri Agriculture, while applying the best science of today. No one is interested in drudgery! Note: According to bankers, Missouri's most profitable farms (non-corporate, non-subsidized), are 8 to 10 acres, often with niche crops or raised bed/greenhouse operations based on Joel Salatin's Polyface Farm Model[1327].

A ministry component is in the works. Call it "Noah's B&B" for now, the idea is for young urban families to visit rural congregants and stay with the farm faithful once a month or so. This will help revive our ageing, crossroads churches, bring a little income to our struggling farms, while helping our kids to learn the lessons of self-sufficiency. By collecting eggs, helping with gardens, tending livestock, and learning the daily chores, they will keep alive our hopes and dreams for freedom.

A student group, Guerrilla Gardeners, is starting up as of this writing. Other organizations frequently collaborate with the WFNA wherever food and job restoration is a mutual mission. Check out our social website, wellfedneighbor.com[3] to meet a rapidly growing collection of exceptionally informed, caring people. A well-fed belly begins with a well-fed heart!

We make no claim to knowing all the answers. Indeed, our first objective is to simply buy time. No one can foresee all the changes that a comprehensive and coordinated transition to "*sustainability*" will bring. But however the word may eventually be defined, we can all agree the first step is to create a diverse and prosperous regional food supply system, one capable of feeding all of us indefinitely. Restoring statewide *energy sovereignty* sufficient to achieve this end is a logical corollary.

"Speaking to this sovereignty, the silence of our politicians and academicians is deafening."

Speaking to this sovereignty, the silence of our politicians and academicians is deafening. Aside from the private views of a few friends employed by the Extension office, we hear only crickets. Why is this? Because the attainment of a sustainable, prosperous, and peaceful future--- while not theoretically impossible—-- would almost certainly not support the *status quo* interests of our leading institutions. Truth be told, the dark side of this discussion includes almost all of us.

Perpetual resource extraction, farm labor exploitation, limitless construction and the industrialized food system fill certain functions essential to societal stability. Until other ways of filling them are developed, the real job of our institutional elites is to maintain— and improve— the effectiveness of globalization. Do we really want "sustainability?" It is not so obvious. Missing is any context for realism, beginning with objective measurements for governmental and institutional accountability and performance.

We can not independently feed ourselves. What does this imply? Some say the situation is intractable from the top down, but the general reader may be equally unprepared to face some unsettling, personal conclusions. Restoring a food secure future goes waaaaay beyond putting in squiggly light bulbs and inflating tires to a proper pressure. Most urbanites expect convenience at every step, view the raw physicality of farm life with gimlet-eyed suspicion. "You want *ME* to sweat all day over a few grubby carrots? Are you crazy?" To be perfectly blunt, restoring a food secure future requires an across-the-board awakening: No Food = You're Screwed.

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[3] http://wellfedneighbor.com/

Our prototypical, "single bottom line" mentality is profoundly reductionist. But for a few exceptions it frames the national debate and it frames us. Green wash and eco-positivism notwithstanding, our paycheck silently argues that poverty is necessary and desirable, and that our military extravagance should continue to function as a social welfare institution in exactly the same sense as our rest homes, hospitals, schools and prisons.

Conventional green projects often showcase institutional concern, while deflecting the energy of those pressing for real action. Creating lasting structural change is not the goal. A genuinely sustainable, inclusive, and peaceful world will require radical, individual reinvention. We must return to work the land in significant numbers. Otherwise, we will simply mill about at the exit of history, directionless.

The WFNA policy is to screen all partisan commentary from our website and activities. Inside the garden gate, ideology offers no vision or plan for a sustainable future, only the need for self-revelation. Those who inhabit the upper half of the bell curve get this. Please help us keep it that way.

"In sum, the Handbook provides the missing context of realism for establishing authentic "sustainability"."

In sum, the Handbook provides the missing context of realism for establishing authentic "sustainability". Squiggly light bulbs and thicker insulation in the attic are irrelevant, in the end, unless based upon a restored, bioregional food supply system sufficient for the people living in that region.

Self-governance and the sovereign right to determine our own vision of the future, to secure our rights and defend them, means we must again grow, own, trade, and transport our own food within a privatized, free market system.

To this end, the WFNA champions a peaceful, inclusive, prosperous, and sustainable economy built upon food independence, and upon energy sovereignty sufficient to guarantee it. Feed Missouri first! Every lesser goal is derivative and futile until food security is restored.

This Handbook is dedicated to all who yearn for a compelling, comprehensive, and coordinated vision of a free America. We seek independent, generous, entrepreneurial people. As WFNA president Ruell Chappell says, are you ready to put "real skin in the game?" Ready to vote three times a day with your fork? Civilization, after all, is only three meals deep.

The WFNA Handbook is meant to be used in any way that helps bring us together. The remaining way forward is simple if not easy: *redeem the land if we ourselves would be redeemed*. This hope compasses the essence of our motto:

"The best defense against hard times is a well-fed neighbor"

Kind regards.

Galen Chadwick

Acknowledgements

My apologies to anyone I leave out. This is a work built on the shoulders of many others; any mistakes are my own.

I want to express my most profound gratitude to my wife, Cathi, not only for her excellent work on the Handbook itself, including editing, graphics, original articles, hours of printing, etc., but especially for not killing me during the course of the project.

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To everyone who released their work for use in the Handbook, especially Richard Moore and Travis Hughey.

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To every volunteer who makes the WFNA possible.

To Brian Highland and Hal Holiday, who taught me how to write and, more importantly, why.

To the Adonai who gave me words and puts up with my frustrations. "And now remain these things: Faith, Hope, and Love".

Part I. Introduction and Organization

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Chapter 1. Handbook Organization

For a list of sections, see the Table of Contents. For recommended reading by audience or special interest, see Start Here [5].

This handbook will organize a great deal of information which leads(?) to use by people with different but often overlapping perspectives. Regardless of perspective, the basic needs are the same:

Ten Point Checklist

1. Water

2. Shelter

3. Food [34]

4. Heat and Cooling

5. Economic Independence

6. Transportation

7. Health And Nutrition

8. SecurityAndDefense

9. ResilientCommunication

10.Continuity

This is the "Ten Point Checklist" for determining how viable a family/farm, community, or county is. Depending on the scale and scope of an effort, each topic may be approached very differently by different audiences. The topics can then be generally divided by level of detail and level of need:

Figure 1.1. Detail vs. Need Matrix
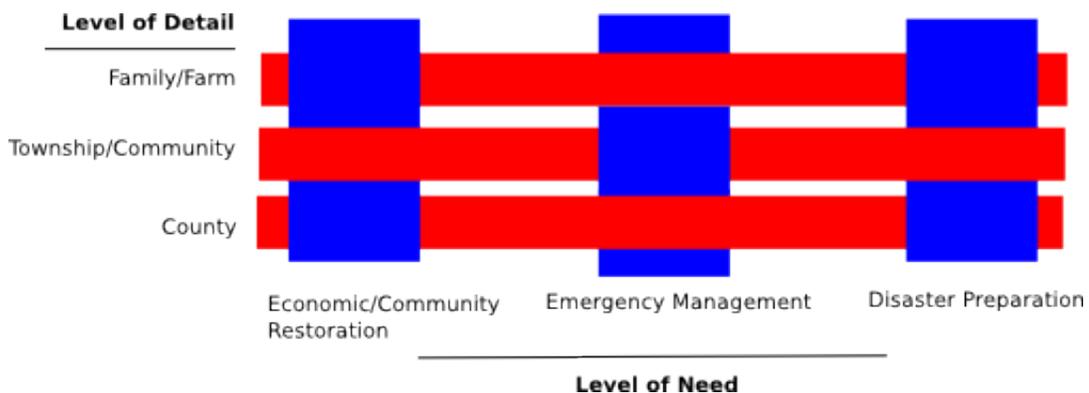
• Level Of Detail Overview [7]

  • Family Farm Level [11]

  • Community/Township Level [12]

- County Level [17]

- Level Of Need Overview [8]

Economic Community Restoration Goal	Work toward mid and long-term improvement of our own economic well-being and the well-being of our communities; making our communities healthier and more resilient in the face of change or hardship. Recognizing and promoting best-practices at the community level.
Emergency Management Goal [25]	Dealing with the crisis-of-the-minute (< 72 hours) whether or not best practices are in place or preparation has occurred.
Disaster Preparation Goal [29]	Planning for and dealing with longer term (> 72 hours), regional emergencies which might disrupt production, communications, or infrastructure for extended periods. Once again, when disaster strikes implementation of best practices and preparations will likely be incomplete, so thought needs to be given to improvisation or crash-transition.

This means that each topic, such as water treatment can be looked at from nine different points of view: are you a home owner trying to figure out what to drink today because the city water has stopped functioning or a policy planner looking at community-wide water treatment and emergency storage in the event of a regional disaster? Each Handbook article may cover one or more of these boxes on the restoration matrix.

Of course, the other type of information required for any useful discussion is the starting point, Where Are We Now [6].

The Supporting Documents [99] section will organize general reference materials and external documents. Many of these materials will be distributed with the Handbook as addenda or in electronic form on a CD.

Chapter 2. Start Here

Chapter 3. Where Are We Now?

This section is for information on the current state of affairs in Missouri, such as production/consumption statistics, economic data, food pipeline, climate information, and so forth. What are our strengths and weaknesses? What do we have to work with?

Chapter 4. Levels Of Detail Overview

The handbook covers several levels of detail and several overlapping goals as shown in the following diagram:

Figure 4.1. Detail vs. Need Matrix
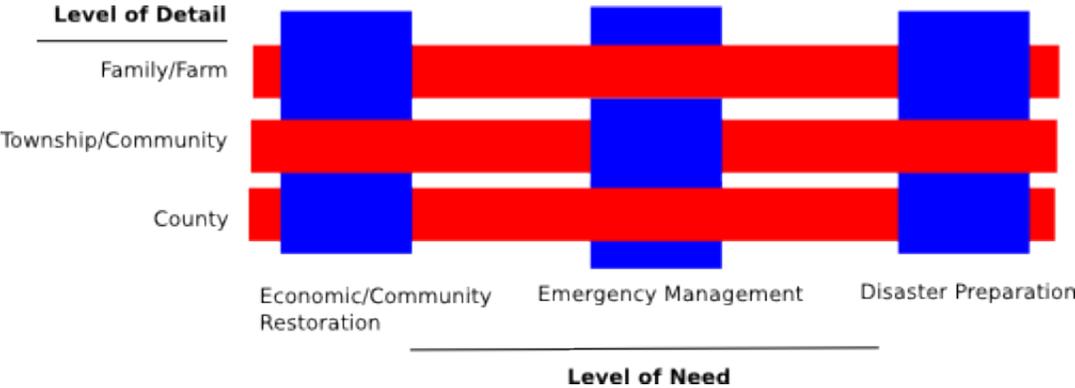
People coming to the County Restoration Handbook may be approaching it from any of several points of view, from the individual family or farm level all the way up to county-level policy planning. The Handbook is organized roughly among these levels of detail with each main article marked according to the level(s) it pertains to as well as the level of need (see Level of Need Overview[8]). This will eventually result in the equivalent of marked walking trails through the Handbook for particular audiences.

We are specifically looking at three main levels of detail.

1. Family/Farm Level [11]

2. Community/Township Level [12]

3. County Level [17]

At each level, a different type of organization is required, different communication technologies are effective, and the audience for the information will be different. At the county and community/township level, we must also cover the glue which will be used to organize communities into manageable units within each county. Fortunately, as Missouri was laid out according to Public Land Survey[895] *Quadrangle*, *Township*, *Section* lines, we have natural units for that level of organization.

It is recommended that each reader concentrate on the level of detail they are most interested in but also familiarize themselves with information at adjoining levels. Families, therefore, need to read the Family/Farm Level information thoroughly and be familiar with the Community/Township Level. County-level planners should read CountyLevel information thoroughly and become familiar with at least the Community/Township Level. People organizing neighborhood watch and township emergency services need to be familiar with all levels of information as the brunt of responding to any emergency is on your shoulders and you must coordinate both with individual families and county-level personnel.

Chapter 5. Levels Of Need Overview

The Level of Need is the planning time-frame for information in this handbook. Is this information geared toward dealing with a crisis in progress or for long-term improvement of the community? We divide the Level of Need into three categories:

Economic/Community Restoration

Work toward mid and long-term improvement of our own economic well-being and the well-being of our communities; making our communities healthier and more resilient in the face of change or hardship. Recognizing and promoting best-practices at the community level.

Emergency Management [25]

Dealing with the crisis-of-the-minute whether or not best practices are in place or preparation has occurred.

Disaster Preparation [29]

Planning for and dealing with longer term, regional emergencies which might disrupt production, communications, or infrastructure for extended periods. Once again, when disaster strikes implementation of best practices and preparations will likely be incomplete, so thought needs to be given to improvisation or crash-transition.

Part II. From Family and Farm to County- Levels of Detail

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Chapter 6. Family Farm Level

10 point check list "A":

1. Water

2. Food, Seeds, Garden

3. Shelter

4. Heating and Cooling

5. Alternative Energy and Lighting [74]

6. Sanitation and Health

7. Nutrition

8. Children and Elderly [89]

9. Resilient Communication

10. Tools And Equipment

- Team formation

- Team roles

- Farm Application

- First visit protocol

- Follow through

- Local funding strategies

- Record keeping

- PR steps

- WFNFC Membership

Chapter 7. Community/Township Level

Figure 7.1. Community/Township Level
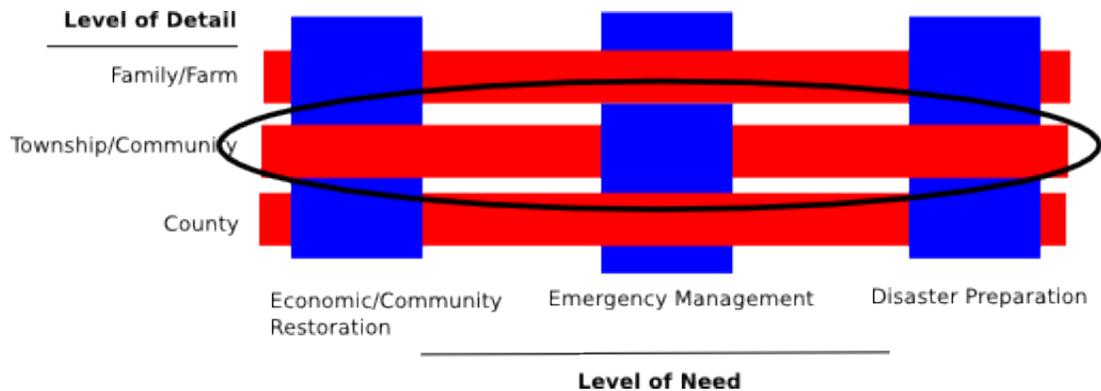
Overview

The community and township level of detail is the heart of the Handbook. It is where every effort is brought together, from FarmRestoration to CountyLevelDisasterPreparation. The Township level is the smallest level of self-government and the because of short distances involved; it is the level of communication and decision making most likely to be able to act decisively in an emergency. In many cases, this action must be taken autonomously, without coordination from County-level leadership. This means that it is crucial for emergency response plans to be coordinated between county and township level *before* disaster strikes and that local people must exist who are considered to have the authority to act.

Community-level planning is best accomplished using the principles of CastleDefense: local safe areas with surrounding zones establishing communications, emergency response, and community defense based on distances easily handled by walking or riding. In the Dark Ages, a time of great turmoil in Europe, local manors and monasteries were organized in this manner and often organized into military districts referred to as Marches and Ridings. Using this system of organization ensures that low-tech methods are available for communications when hi-tech methods are for some reason not available.

The *Public Land Survey System* (PLSS) used when Missouri was first surveyed is already well laid out for community-level planning and emergency response. Each *Township* is a 6 mile square of 36 1-mile sections. This size was selected because anyone in the township can walk into the center, do business, and walk back out within the course of a day. Someone can readily walk from one township to the next for the purposes of a farmers' market or other commerce. A *Quadrangle*, a square consisting of four townships-by-four, is an area which can be readily covered by horseback or horse-drawn conveyances when and if needed. These squares are already surveyed and numbered for use in community planning. Horse or mechanized post can connect Ridings together when necessary and the Riding Headquarters can function as temporary County Command Posts as County officials circulate to deal with an ongoing crisis.

Township Term Confusion

It should be noted that Missouri has several conflicting and layered definitions of *Township*. We are talking about the original survey lines here, not political boundaries.---Eric Vought

Figure 7.2. Watch Area Communications Diagram
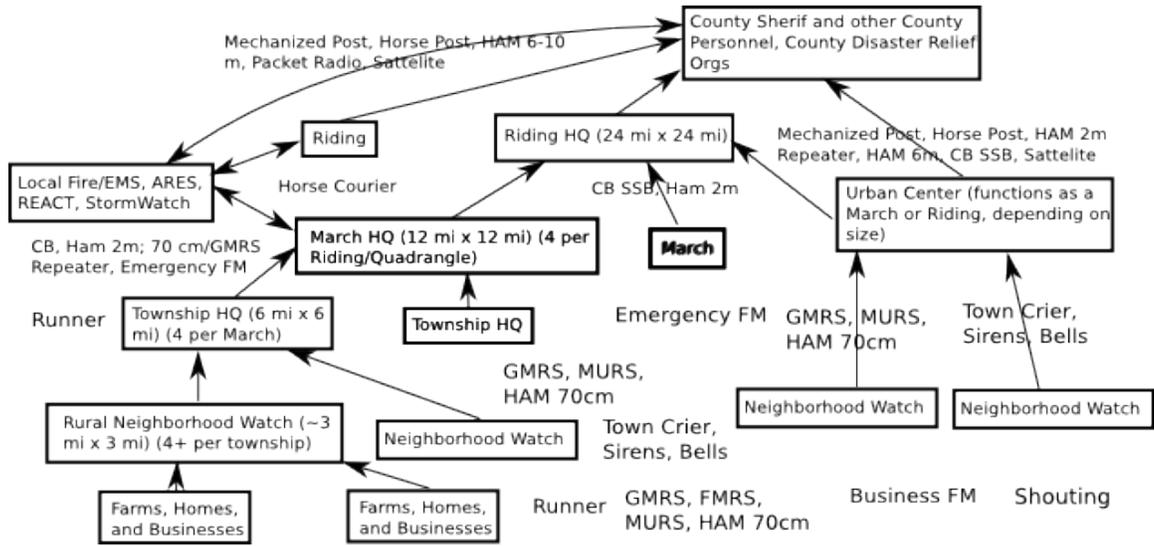
This diagram shows what such a hierarchy might look like and the TwoWayCommunications which might be usable at each level. Exactly which communications technologies are used in each area depends on terrain and line-of-sight, on roads, foot/horse paths and fordings, on existing practice, on the nature of an emergency, and on the availability of qualified volunteers. Telephone, the cell network, and texting are options at all levels when they are functioning.

The basic level of organization at this level is the Neighborhood Watch. Urban Neighborhood Watch policies and procedures are already fairly well described. Here we concentrate on developing effective strategies for Rural Watch Areas [65].

Discussion

FYI , just to start putting some numbers on "paper" -- in an area of 100 mile radius there will be 31,400 square miles. Pi, which is 3.14 times radius squared = 3.14 x 100 x 100= 31,400 sq.mi.

A Township is 36 sq mi, so 31,400 divided by 36 = 872 townships. Many of those will have a good farm; how many? We need to find, identify and keep in touch with those farmers, and develop good farms in the townships which do not have one. Another option is to make sure that there is some viable industry which can allow that township to support itself via barter, etc.

Protection of those farms, as a core part of Castle Defense // Guardener Systems will be paramount. I am going to proceed , as to the Pyramid Defense System I am working on, to have each of those Farm / Castles protected. I had always wondered what kind of grid would be necessary to protect the entire region, and since each Township Farm / Castle needs to be secure, that answers the question as to how many systems might be needed.

We could begin by placing one per county, then one per March, then one per township...

A Riding, 16 Townships, or 4 Marches, is close to the size of each county.

We are then talking about approximately 16 +/- farms per county, which should be an excellent basis for protection, trade, redundancy, seed saving, etc. within that local vicinity.

Dividing the total projected 31,400 sq mi by 16 Townships of 36 sq mi, and again by 16 Townships per county, that gives us 55 counties give or take.

Stated differently, 36 sq mi per TS x 16 TS per Riding, or County, = 576 sq mi per Riding, or County. Divide the "BIG CIRCLE" ** by 576, and you have 55 Ridings/Counties.

This number of 576 is fairly accurate, on the average, for smaller counties, as Cedar County is 499 sq mi, and Lawrence is 613 sm, Dade is 506 sm. There are bigger counties, Vernon at 837, Howell at 928, while, go figure!!!; "Texas County, the largest of Missouri's 114 counties, comprises 1,179 square miles of Ozark Highland. With the same name as the second largest of the fifty U.S. states, larger than the smallest State (Rhode Island 1,045 square miles), in terms of total land area."

These figures are just a place to start to give us an idea of what kind of level of magnitude we are speaking of. Another way to look at it is that Missouri is 70,000 sq mi. Looking at the map, it looks like the area we are talking about would equal about half of the area of Missouri. Again, some figures to get us somewhere in the ballpark.

---Jerry Diamond

Castle Defense System

A working "castle defense system" such as that which evolved around Medieval keeps and monasteries, is more than a military structure. It was organized for local commerce, communication, emergency management, and crime control in addition to defense. It was connected into a wider system of roads, posts, and circuit courts. We will be working with an idealized system adapted for modern community-level planning, but the principles are similar to what has worked for millennia.

The castle system developed in a time of trouble and tribulation to allow areas of the countryside to pull together and respond to emergencies with the greatest efficiency possible. In a time where local budgets and economies are stressed, police and sheriff's departments are cutting back on patrols, and fuel prices are unstable, duplicating a time-tested and efficient system is worthwhile.

In this system, the countryside is divided into manageable chunks based on the area which can be reasonably covered by marching infantry or horseman within one day. A "March" is defined as the area which can be reasonably patrolled on foot over the course of a day, and a 'Riding' as the area which can be patrolled on horseback over the same day. These are the areas in which communication, commerce, and response to developing situations can be managed in the absence of long range radio, telephone, and motorized transport. It should be noted that even when vehicles and fuel are available, the medieval divisions still make sense as roads, conditions, or simply funds may act to limit patrol areas in the same manner.

An infantry unit can march between 10 and 20 miles in one day, or 5-10 miles one way from a central base with some pack and baggage in favorable terrain. Light patrols returning to prepared meals and bedding push the top of this envelope. A cavalry unit can move 15-25 miles in one day or 8 to 12 miles round trip. Horse scouts with light equipment and no rolling stock can push 20-40 miles between dawn and dusk in favorable terrain. For our purposes, we will use a 6 mile radius for foot patrols and a 12 mile radius for horse patrols. These are approximate but reasonable values which are particularly convenient in Missouri, as will be discussed. The limits of horse patrols are a decent approximation for what can be accomplished with motorized vehicles in bad conditions and they also describe the limits of some mobile two-way radio technology for use in coordinating patrols.

Figure 7.3. March and Riding Illustrated

Typically, each military district has one or more small strongholds which operate as a center of communications, fortress, and emergency shelter in time of need. 'Fortress' is something which is not often needed these days as even in time of war, they cannot withstand modern weaponry, but the other functions of a central keep, fort, or monastery are still applicable. In the past, these central points naturally became a focus of trade and commerce.

A warning system of bells, beacons, or mounted heralds notified the populace of impending emergency, at which point the local militia would report to the keep and the populace, if necessary, would flee to it. A network of foot and horse patrols would keep the central location apprised of the developing situation. The keep was prepared in advance to have stores of food and fodder, arms and equipment, as well as shelter for citizens and animals. Most modern emergency response plans provide *no* thought whatsoever for saving livestock during a civil shutdown or evacuation. For those living in the medieval period, giving thought to such things was a matter of daily life (or death).

The Public Land Survey System (PLSS) and Castle Defense

Figure 7.4. March and Riding in the Public Land Survey System Diagram

Under the Missouri Public Land Survey system, land was surveyed out from a longitude and latitude "range lines" into *townships* of six miles square. Each township was divided into 36 one mile square *Sections*. A group of four townships by four (16 total) is a *Quadrangle*. In Lawrence County and other areas of Missouri, Farm Roads are numbered according to section lines and form a grid on one mile markers (e.g. FR 1060 is one mile from and runs parallel to FR 1050). Corrections for survey error and the Earth's curvature are made at township boundaries, which is why you will find sudden jags in the roads at those points.

This system, as shown in the diagram, is readily adapted to Castle Defense principles. A group of four townships is considered to be a March and a Quadrangle is considered to be a Riding. This means that (at least) every four townships should have one central rally point and shelter capable of putting out emergency

personnel on foot (if necessary) and every Quadrangle should have a significant outpost capable of putting out mounted or mechanized personnel in any emergency. These figures must be adapted to the needs of specific terrain and conditions.

Within this system, Neighborhood Watches are organized (see RuralWatchArea [65]). Each watch is set up to report to a Township-level Watch Coordinator by phone, radio or, if necessary, by horse or runner (this is why distances are critically important). Each Neighborhood Watch is responsible for no more than 3 miles by 3 miles (a quarter of a township) and may be significantly less in settled areas. Patrols are organized and referred to on section lines. For ease of use, when we refer to a Rural Watch, we will be talking about a 3 mile square area (9 sections). Occasionally, we will need to talk about watches which do not conform to this norm.

Within each watch, the Castle Defense is mirrored on a smaller level. There is a central house or houses (Watch HQ) which are connected, in whatever fashion, to the emergency communications structure and which emergency personnel know to check at for local information. Each family in the neighborhood is able to communicate with the Watch HQ and knows to go there for news. In time of emergency, the Watch HQ is the rally point for volunteers on their way up the chain to Township HQ so they can be directed from the March HQ on where they are needed.

Each Watch also arranges so that people in the neighborhood can group together when needed, especially to put children, invalids, and elderly in a central location to free up volunteers for emergency response. At each level, Watch HQ, Township HQ, and March HQ, it is important to be able to quickly set up a field kitchen and aid station so that injured, refugees, and returning volunteers can get a meal and comfort.

The Riding HQ should be set up to be able to deal with an influx of volunteers, injured, and refugees from its entire Quadrangle (16 townships). It also needs to be able to operate as a temporary headquarters for County-level personnel who may be moving from location to location to manage a developing emergency. The Riding needs to have state-to-regional communications abilities, post-dispatch (e.g., by horse courier) between Ridings, and the ability to quickly get volunteers and emergency personnel to the townships where they are needed. Both the Riding and March HQs need to have a ready-to-use map room where up-to-date information on the terrain, situation, and capabilities can be quickly spread out and worked with. Maps must have township and section boundaries to make coordination easier. These are available from the County Assessor's office.

At at least the Neighborhood Watch level, the headquarters will simply be one of the local homes. At the Township, March, and Riding levels, it is more likely that a church, school, fire hall or other facility will be available. In many cases, the choice will be dominated by road access and line-of-site for communications.

Urban Centers

Obviously urban centers are a wrinkle in this system. Wherever possible, an available urban center should be used as the March or Riding HQ with a backup facility outside the urban area in case of a need to evacuate the urban center. In many cases, an urban center will be a Riding of its own and the Ridings around it will be correspondingly smaller. As we go forward, we will compile Missouri maps with these issues resolved.

Chapter 8. County Level

Planning at the county level.

Part III. From Economic Restoration To Simple Survival - Levels of Need

Table of Contents

Chapter 9. Township Self-Reliance

Overview

This section is a place-holder for the WFNA material on PODs (Producer Organized Distribution System) and co-op formation (Joe Maxwell's, Russ Kramer's, and Ruell Chappel's presentations). Plus an index of local commerce groups and directories.

Readers will also be interested in the Local Currency article.

The rest of this section is stray text in need of a home.

Checklist

10 point check list "B"

- Infrastructure inventory
- Production inventory
- Small Food Processing
- Team formation
- Team roles
- Job formation
- Faith-based exchange
- Local-funding strategies
- PR steps

Transition Towns Wiki

Transition Towns[1]: a useful resource with proven "how-to's" for getting started in your county.

Although most people we've encountered here locally are not proponents of "peak oil" or "man-made climate change," many do see real potential problems that necessitate the action prescribed in Transition Towns. Please go to the 12 Steps[2] link for the actual "how to do it" for a place to start.

Well Fed Dallas County (WFDC)

Here is a resource to see how one immediate county has started their campaign.

Basic Progression (See Transition Town 12 Steps)

- Held (3) open meetings organized by one couple to find like minded individuals. The people were pooled from Homeschooling email groups. Look for any other "local" groups such as gardening clubs, 4H clubs and interested congregations.

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[1] http://www.transitiontowns.org/
[2] http://transitiontowns.org/TransitionNetwork/12Steps

- (3) couples were selected to Steering Committee (SC) positions, who expressed the most enthusiasm in seeing the project move forward and be successful. These were also the most faithful in attendance.

- A series of SC meetings were held to determine the specifics of the group; who we are, why we're doing this, how we're going to do it, etc. Here is a flyer we developed to hand out at all of our grassroots (GR) meetings to help convey the message;

Well-Fed Dallas County

WFDC is a grassroots awareness and action campaign dedicated to food security, preparedness and economic prosperity for the people of Dallas County, Missouri.

WFDC exists to support and encourage sustainability and preparedness through its neighbors, and to encourage and support cooperation between supermarkets, banks, entrepreneurs and county government to establish a local and sustainable food supply.

WFDC works through bi-monthly grassroots meetings by bringing information and experts to address (3) key areas;

FOOD: Gardening, Livestock, Processing , Production and Sales,

PREPAREDNESS: Alternative Energy and Survival / Sustainable Living,

And AWARENESS: Applicable News and Tracked Legislation

WFDC believes that we can supply our own food; we can create jobs and a bustling economy through local agriculture. It is our goal to tap the resources and knowledge that exist right here in Dallas County, to produce better quality foods and a sustainable living regardless of circumstances beyond our control! Local agriculture and food production can guarantee economic sustainability and prosperity for generations to come!

Come join us!

Email: info@wfdc.us[3]

Discussion Board: http://wfdc.us/discussion

Facebook: Well Fed Dallas County

- We developed an open Discussion Board for Dallas County citizen's to share, make requests and generally just get involved;

Discussion Board: http://wfdc.us/discussion/

- We developed a basic GR meeting outline to keep interest and a more controlled environment. The thing we discovered immediately is that the excitement in the meetings leads to following rabbit trails and not much production. As noted in the flyer, there are 3 basic areas we cover and this is how it works;

  1. Awareness; 10-15 minutes. One SC member presents information as they're capable. Most people have no idea what is really going on. We are not political in that we neither support nor attack any party. We don't care who's in office or what party they're with, only what they're doing.

  2. Session 1; 30 minutes +/-. Either Food or Preparedness.

  3. Break; 10-15 minutes. The mind can only absorb what the behind can endure. We always encourage people to bring snacks, and one person from the SC is tasked with bringing coffee and associated stuff.

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[3] mailto:info@wfdc.us

4. Session 2; 30 minutes +/-. Either Food or Preparedness.

5. Closing; 10-15 minutes. Here we issue challenges and requests. For example writing to the editors, bringing an immediate neighbor to the next meeting, etc.

- Flexibility is key. There may be times when one key area may take up both sessions of a meeting. Some of the things we have done in past meetings are; Power Point presentations on winter survival and another on end of season garden soil preparation, Showed a 30 minute segment of "Meet the Farmer" featuring Joel Salatin and another clip from the "Future of Food." We have done presentations on Agenda 21, Codex Alimentarius and the international use of food as a weapon. The meeting content possibilities are endless and people are amazed.

- Our last meeting of the year will be an heirloom/ open pollinated Seed Swap and Christmas get together. This will become a tradition for sure.

- Another beautiful thing about the GR meetings is that we don't have to know everything. Point of fact is that we know very little, but then again, that is the point isn't it. We don't have to know everything, but we do have to know where to get answers. We bring in experts, whether in person or their work as public information. Verify your sources! Provide both sides of any issue and widely recognized as legitimate sources for anything you present. The SC chooses the topics and many times as interest is expressed at the GR meetings. Topics can be complimentary to growing seasons, animal husbandry or whatever.

- Meeting places; One of our local banks offers for free their meeting room and this is where we have the bulk of our GR meetings. In the future and as we branch out to each town, the local Lion's Club's offer their meeting rooms for a small fee. The SC meetings are rotated amongst SC member homes.

- Meeting Times and Dates; For the GR meetings, every other Thursday works best for us. Every week is too much for anybody responsible for content, and once a month is too little for those excited. No one day is magical in that everyone can attend, so just pick one and stick to it. Anything earlier than 7:00 is too early for anyone who has to drive for any distance, and staying until 8:30 – 9:00 is really not too late for anyone really interested.

- The SC meetings are really fun. We always meet over a really good meal and the ladies have fun doing it. It's nice to have one person chair the meeting, but authority should never be an issue. We're all in this together and everyone should have equal say and influence. These meetings are held every other week between the GR meetings. Here we discuss the content of the following GR meeting, special events, and generally, typical business stuff.

- Volunteers have not been a problem. One person started a Facebook page for us. Another offered graphics services. The message breeds enthusiasm.

- WFDC has been interviewed by one local paper (yet to be published), and has had one meeting reported on by another paper. The individual writing for us volunteered after attending the same meeting.

About Well Fed Dallas County; (As determined by the SC):

- This information is peculiar to WFDC. Every individual county should work as they decide what is appropriate for their area.

- The endgame of our group is to work ourselves out of a job! The vision shared by the SC is one in which the things we are sharing become second nature and a way of life for the citizens of Dallas County.

- We have decided that we are autonomous in that we are directly connected to no other group or organization. This allows us to accept or reject anything as it pertains to Dallas County. We are certainly supportive of WFNA.

- We are not interested in tax exempt status or any other direct or indirect interaction with the Federal Government especially considering the restrictions and rules that inevitably go with it. That being said, we are not for profit nor do we seek donations of any kind except that of personal resources volunteered as needed to accomplish our goals.

The Future of WFDC; (As being worked out by the SC)

The SC has determined that immediately we will be going to every town in Dallas County with the GR meetings. One town at a time to make people aware and start them off on their own campaigns. It's the opinion of the SC that once the foundation is laid all over the county, then the powers that be will have no choice but to fall in line.

The SC will be working on markets for local products. The growers need incentive to grow, the entrepreneurs need incentive to produce and the banks need incentive to finance. This will require the help of our supermarkets, retailers and local government

BuyLocalDirectory

Where to buy and sell local goods, especially farm products.

Directories

LocalHarvest[4]

A national directory of local farms and locally available farm goods. Local farms and groups (such as farmers' markets) can obtain accounts, post information, maintain a calendar of events, and sell goods, either through the Local Harvest Catalog or through their own website. Customers can search their area for products, farms, and events by zip code.

Lawrence County (or nearby) Markets and Cooperatives

Mount Vernon Farmers' Market

Mount Vernon, MO. Saturdays in season on the town square. Producers' Market organized under the Mount Vernon Chamber of Commerce. Farm inspection required. Season begins with Founders' Day festival and ends with Apple Butter Making Days.

Aurora Farmers' Market

Aurora, MO. There are actually two farmers' markets operating in Aurora, one of which, on the east side of the park Wednesdays and Saturdays, is a producer's market.

Webb City Farmers' Market

In Jaspar County, but accepts Lawrence County Vendors. It is an outdoor market with a shelter for vendors. An excellent, well-run market which tries to balance between producers and value-added (e.g. jellies, crafts). Farm inspection required. High traffic in season. Market runs Tuesday, Friday, and Saturday.

Sarcoxie Farmers' Market

An informal market run on Saturdays on the town square in season.

RebuildingMainStreet

- Vulnerability Audit

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[4] http://localharvest.org/

- Energy Descent Planning

- Grocery store revival

- 11/27 LOCAL BREAD BAKERY   http://www.hillbillyhousewife.com/category/recipes/bread/breadmachine

- Strategic Marketing

- Bio fuels

- Church & Civic leaders

- Sheriff and safe passes

GoulburnWoolScour

http://www.gwsr.com.au/index.htm

The web site of a wool scouring plant in Australia that has a sophisticated process for cleaning wool and minimizing environmental impact, including co-generation (lanolin, irrigation water, dirt for erosion repair in pastures, heat exchangers in scour water) and grey-water usage.

There is no reason that much of their process could not be duplicated on a much smaller scale for wool processing in Missouri. We have many people who raise sheep in Missouri, the land is well-suited to it, but many raise wool-less breeds ("hair sheep") like the Katadin, or simply discard the wool because there is no nearby processing. It is too expensive to send the wool to South America and back.

PioneerThinkingNaturalDyes

"Making Natural Dyes From Plants." Pioneer Thinking, December 12, 2009. http://www.pioneerthinking.com/naturaldyes.html.

This is an article covering the very basics of using plant dyes with vinegar or salt fixatives with a list of plants and the colors obtained.

There is no way to determine when the article was written. The data above is simply when I last accessed the page.

Chapter 10. Emergency Management

Overview

This section of the Handbook deals with community and self-preparedness: mobilizing neighbors to deal with local, short-term emergencies of all kinds. In any kind of emergency, the biggest killer is panic and the greatest hurdles are communications and teamwork. There are many ways to accomplish critical tasks, but in the middle of an emergency is not the time to argue about it. Critical skills need to be identified quickly and everyone in the community should have a useful role, whether it is assisting law enforcement, helping track a lost child through the woods, setting up impromptu day care, or having a hot meal for the rescue workers when they return. Vulnerable members of the community, including strangers who may not have emergency shelter, children, the disabled, elderly persons, sick and wounded must be identified and taken care of quickly and efficiently. When at all possible, this care should come from the community itself, not outside strangers.

The Handbook's coverage is based on these fundamental rules of emergency management:

1. The first rule of emergencies is not to have one, and therefore the first step is helping people prepare ahead of time for foreseeable problems. This includes having a food, fuel, and financial buffer, basic emergency supplies, the ability to communicate to report problems, hear instructions, or get help, awareness of safety and security, self-defense, and first aid. For every person who is prepared for an emergency, that is one less person who needs help and one more person relief efforts can concentrate on instead.

2. Someone who is prepared is a potential resource to help others who, for whatever reason, did or could not. If you never use your first aid skills on yourself or in your home, perhaps you will keep an injured motorist breathing until a medical professional can arrive. If you never need to defend yourself, defense training might save another's life. The more these skills are spread around the community, the better chance someone will be there to help you, your family member, your child when needed. There is less than one police officer per one thousand people; it is physically impossible for them to always be when and where needed, but you have a lot of neighbors much closer to home.

3. Teamwork does not just happen: it takes time for people to learn about each other, trust each other, and develop the communications structure to work well under adverse circumstances. That is true of police, it is true of citizens working together, and it is true of citizens and police working together to make our communities safe. One of the largest benefits of community training is simply meeting your neighbors, the amateurs and the professionals, and starting to build the esprit d'corps necessary to meet trouble and excel.

4. Adversity, danger, and violence can be paralyzing; the best way to help someone is to give them a useful role. Dwelling on danger, on personal loss, on suddenly unfamiliar and chaotic circumstances, on pain can lead to a rapid spiral where people become depressed, unstable and a danger to themselves or others. Giving people a role and utility within their measure reverses this spiral and they can quickly become an asset to a relief effort.

5. Bad morale is contagious but shared pain is diminished and shared joy is multiplied. People need to be able to continue to function as a community during an emergency, to re-enforce eachother's efforts, to share the burden of loss, to worship, and to celebrate the victories and small miracles of life. Establishing community, morale, and even entertainment quickly pays dividends. Small comforts and elements of the familiar have a disproportional effect under bad circumstances.

To a large extent, existing organizations, programs, and resources already cover many specific needs in the community: the American Red Cross, the First Responder Program, ARES, REACT, etc. These

organizations provide assistance in emergencies, coordinate volunteers, and offer training. In many cases, there may not be enough volunteers in the right places at the right times, people may not have the training they need, or organizations may not be active in some areas. As a general rule, organization at the county level and within urban areas is stronger than in rural neighborhoods and, in most cases, neighborhoods and businesses do not know how to coordinate with emergency volunteers and professionals: people do not know what to do or where to go when they need help or when others around them need help.

The goal of community organization for emergency management is then:

- To improve our communities and educate citizens to reduce the number of emergencies which occur.

- To direct people to volunteer groups which suit their interests and encourage them to get appropriate training. The end goal is to ensure that trained and equipped volunteers are available in enough locations and enough numbers to respond to most emergencies and to keep things going in developing disasters long enough for relief organizations to properly mobilize.

- To organize neighborhood watches, especially the Rural Watch Areas[65] for local, neighborhood coordination to communicate with emergency volunteers and professionals.

- To ensure that designated areas exist for people to obtain news, assemble volunteers, and store emergency equipment and supplies in the neighborhoods, close to where they will be needed.

- To help different organizations and interests work together in the communities to coordinate effort and reduce duplication or confusion.

- To organize and disseminate BestPractices for local emergency response and neighborhood-level organization, coordinate communications procedures and protocols within our counties of interest.

- To recommend and promote equipment which is dependable, interoperates with other equipment, and serves its purpose under adverse conditions, including how to improvise organization and equipment when needed.

Individual/Family Emergency Planning

By definition, an emergency is something for which you are not prepared. The more you are prepared to take in stride, the fewer events will be emergencies. For example, there is rarely any reason for a short power outage to be an "emergency" as minimal preparation will allow life to continue uninterrupted. Unfortunate things happen, and every family should take steps to protect themselves from unfortunate events.

These are the basic steps, roughly in order of importance, to consider:

- Know who to contact for help.

- ICE "In Case of Emergency" information so an aid worker knows who to call to help you (e.g. next of kin, your doctor).

- First Aid Kit

- BugOutBag [87] and GetHomeBag

- Vital Documents

- Home emergency kit (this bridges between "Emergency Managementent" and "Disaster Preparedness)

- Training

- Tools

Who To Call

The first step every family should take is to organize and post information in the house (and on every cellphone used in the household) on who to contact in case of emergency. This includes 9-1-1, the direct numbers for local fire and police (to report an incident after the fact, for instance), and the number of Aunt Flo where the kids can stay for a few days if there is trouble at the house. Children should be trained early on who to go to for help, especially if something happens where the parents are incapacitated.

ICE

Have ICE In Case of Emergency information where it can be found if you are incapacitated. Put it in wallets, in glove compartments, on the refrigerator, in school bags, and physically attach it to your child at large events (with a pouch and safety pin, for instance). Identity, name of parents, allergies, medical needs, and who to contact aside from the parents are a good start.

First Aid Kit

Have a First Aid kit in your home and each car. Make sure they are readily accessible, even if the power is out. Check them regularly and restock expired products *before* you need them.

BugOutBag

The next step is to organize a BugOutBag [87] or 72-hour kit to enable the family to weather a larger emergency in the home or to carry essentials when forced to flee the home. A BugOutBag (and the complementary GetHomeBag used to get home when an emergency happens at work or otherwise away from the home) also functions as a starting point for charity when *someone else* has the emergency and has to sleep on your floor for a night or at a nearby hotel. The American Red Cross assembles such kits to give to people who are burned out of their homes (including a stuffed animal for kids), but everyone who can help their own neighbor frees up charity resources for someone else. During a large regional emergency, this can make a tremendous difference.

Start assembling a Bug Out Bag immediately. Do not wait until you can get everything needed. Start with the bare essentials and work up from there. Make sure your Bug Out Bag has the basic documents needed to get further help. When the Red Cross shows up at a fire, for instance, one of the first things they will need is some way to identify the people who actually lived in the house. You will also need information on your insurance agency and government identification. Some items may stay in your car glove compartment in case you leave the home with only your night clothes. Your car will survive 9 out of 10 emergencies which may destroy your home (such as a fire). Safe deposit boxes are an obvious choice for important papers, but remember: *you cannot access the box without key and ID!*

Vital Documents

Your Vital Documents are next, building on what you organized for your BugOutBag.

Home Emergency Kit

Next, extend your BugOutBag [87] supplies to a three-day stay in the home. For instance, put three-days worth of basic supplies in your storm shelter so that you can survive three days in place and *then* three-days outside the home if forced to leave. At that point, you are crossing the boundary from Emergency Management to DisasterPreparation [29].

Training

Work on getting necessary training! Everyone should get basic First Aid/CPR training. Start young. First Aid can be integrated with school, home school, sports programs, or e.g. Cub Scouts. The American Red Cross, FEMA, and other organizations offer classes in your community. Many of them are free. Red Cross courses are generally free to Red Cross volunteers (so sign up!). The more people available with basic First Aid knowledge, the better chance that someone can get the lifesaving help they need until a professional can arrive.

Tools

Make sure you have the basic tools you need to maintain your home in a short-term emergency. This will include:

- Tools to turn off the gas lines.

- Saws and hatchet to move downed limbs and trees blocking doors and driveways.

- Emergency lighting and portable appliances with *charged* batteries.

- Hammer, nails, duck tape, cardboard, and other items to seal broken windows and doors.

- Basic tools to repair plumbing and thaw frozen pipes.

- A secondary (and safe!) source of heat.

- Tools to clear ice and snow from walkways, driveways, and your car.

- Whatever else is critical to your home and situation.

Conclusion

The best way to become prepared is to start somewhere. Choose an item or two from the list at a time. Having any preparation at all puts you above average. Be persistent and keep working at it.

Chapter 11. Disaster Preparation

Restoration of our communities makes our economy healthier, avoids many emergencies which might otherwise be caused by short or long term economic collapse, and prepares people to weather short-term calamities. No community can produce every single tool, resource, or material it needs, however. Even a healthy, robust community will have trouble handling major calamities and long-term disruption of supply lines without specific emergency planning. Such a disruption could be a natural occurrence or man-made, it could involve earthquakes, disease, warfare, monetary devaluation or embargo.

What could trigger a long emergency?

1. A natural disaster – The giant volcano under Yellowstone Park could erupt. Giant earthquakes along the Mississippi valley or California could split the earth. Super storms could devastate coastal cities and the ports that bring in food and fuel.

2. Military action. If nuclear weapons were used against Iran the world could be plunged into a world war with nuclear and biological weapons. A nuclear device exploded in the space above the USA could disrupt the entire electrical and communication system and put the nation in total darkness. Even a conventional war can interrupt shipping, take away a significant portion of the workforce for military service, or cause rationing of resources.

3. Monetary devaluation or foreign trade policies could lead to US citizens not being able to purchase imported products. The current US depression could continue or get worse, leading to either hyperinflation (worthless money) or capital starvation (too little money). Growing federal debt could lead to the dollar being devalued against other currencies. Foreign trade partners could embargo the US (or simply stop lending money) for political reasons.

4. Other oil extracting nations could shut off our fuel imports like OPEC did in 1973. This could shut down the transportation of food and other life essentials.

5. Corporations that control the production and distribution of oil, coal, electricity, water and food could create an artificial shortage and inflate the prices like Enron did for the State of California and British Petroleum (BP) that is responsible for the oil that is gushing into the Gulf of Mexico

Most emergency planning is focused on localized emergencies like fires, ice storms, earthquakes, floods, but most plans assume that the basic infrastructure will still be in place -- communication network, electrical grid and fuel supply. There are few backup plans for major disasters that shut down the whole system for an extended period. We really do not know what might cause the next major emergency of this type, but, historically, we know that major upheavals, from the "Year Without a Summer" to World Wars, do occur from time to time. Our ancestors survived many of them, and, with some care, we can too.

It should be noted that we are not talking about "extinction events" or "world-ending catastrophes". By definition, no planning will help those circumstances. Nor is it even realistic to plan, beyond a certain point, for catastrophic events where we, ourselves, are at ground zero. Instead, we plan for regional disasters or catastrophic events which disrupt everything around us, where a community survives the initial circumstances relatively intact and needs to move forward from there. We will discuss this in depth in the next section.

Principle

We do not plan for the asteroid falling on our own town but for the asteroid falling several towns over.

Specific Planning Scenarios

It is helpful to have specific scenarios in mind to focus planning and to test plans against. What level of disaster can we plan for and for how long? For the most part, it does not matter at this point what the specific emergency might be: loss of outside resources, destruction of local crops, loss of national communication and disruption of government will be similar in a wide variety of circumstances. More specific scenarios can be considered down the road to fine-tune plans and make them more flexible in specific circumstances.

As such, the following yardstick is proposed:

- a 75% reduction in availability of imported goods

- a resultant price increase in domestic and remaining imported goods

- a duration of 18 months, tapering off thereafter

- Loss of up to 50% of domestic crops in the first year

The percentage reductions are somewhat arbitrary, although supported by historical events. Very few events completely eliminate outside commerce for any significant length of time. Goods do get through, even if their price becomes exceedingly high ("Black Market"). The time frame is chosen to reflect the time taken to restore normal crop cycles. Disasters do not just destroy crops but also perennial plants, mature vines and trees, seed stock. Shortages cause farmers and mouths to compete for the same grain. Orchards must be cleaned up and pruned after storms. It generally takes more than one complete crop cycle to either restore normalcy or begin new kinds of production.

If a community loses 100% of its local production due to disaster, it generally cannot be expected to survive without help from less affected communities. In that case, disaster mitigation is a question of surviving long enough for that help to arrive and start being effective. A 50% loss of production is itself a severe planning challenge in a situation where outside imports have also been degraded. If local losses happen to be less than this, then your community is one of the "less affected" which can perhaps begin helping its neighbors to survive.

This scenario does not make specific statements on *which* resources will be degraded. A 75% loss of imports could mean that certain product categories are wiped out entirely and others are nearly unaffected. A Mid-East war and embargo, for instance, might still allow unrestricted imports from South America, including some petroleum products. Mitigation plans should take this into account, state their specific assumptions, and focus on adaptability in using one resource to cover the loss of another.

Who will help us survive a major emergency?

The Federal Government and the international corporations that control the governments in most nations cannot be trusted to do anything to protect us from a long energy and food emergency. The government failed completely to respond to hurricane Katrina even though it was predicted to strike the city at least 3 days in advance. New Orleans and the Gulf Coast are still trying to recover from this disaster.

In general, a top-down national structure is not helpful for responding to major emergencies. We have local government in the US because it is not possible for a centralized government to understand and plan for the unique needs of each community. By definition, a major emergency is one in which even the normal rules do not apply and therefore, it is impossible for a central system to understand what resources are needed where. In addition, it is morally reprehensible for the central government to be responsible for making decisions when critical resources cannot go far enough: essentially deciding who lives and who dies.

When hurricane Floyd struck North Carolina in 1999, the relief organizations, fueled by massive private donations, had enough water, supplies, and volunteers to help people. What they did not have was adequate

information on what was needed and the logistical tracking to know what was available to them. When even local emergency personnel on site cannot determine these things, an outside structure second-guessing their decisions is no help. It should also be noted that communities across the Carolinas were disrupted by the storm even though they were not directly struck. A flood of refugees from the Outer Banks closed schools in Raleigh, NC for weeks.

The massive "national security system" that takes over 50% of our national budget did not protect us on September 11, 2001. It is not prepared to protect us from other long emergencies and the collapse of the infrastructure. The nation electrical power grid is a fragile system where whole sections can collapse from pressure at a single point (as evidenced by the Northeast Blackout of 2003[1]) . Without electricity, fuel for transportation could not be pumped into transport trucks. Without electricity, banks would no longer be able to provide money for business transactions. Food imported from other nations and states would stop flowing. Grocery stores would be out of food in less than three days and within two weeks we would begin to have famine conditions. The last of the national emergency food supply was sold off in 2009 . The nation has no food grain reserves in storage—zero, zilch, nothing.

The government may impose marshal law to control people, but this will not provide people with food, water and fuel. Many state national guard units have been deployed overseas, and, as evidenced by Hurricane Katrina (2005), are not in position to help in local emergencies. Communities must have plans in place to respond locally, provide emergency supplies, and *help neighboring communities.*

Examples of unexpected emergencies

When the Soviet Union collapsed there was great disruption and suffering. The island of Cuba had its petroleum supply line cut off from the USSR and no other nations were willing to help them. They were forced to come up with alternatives in food production, transportation, utilities and other essential services. [They suffered famine conditions for almost 4 years until the people http://www.yidio.com/power-community-how-cuba-survived-peak-oil/id/3523075460 through cooperation and ingenuity managed to create alternative systems. Now they are healthier than before.]

Springfield, Missouri experienced an ice storm that cut off electricity to large populations for 10 days or more and they saw how quickly the food disappeared from the grocery stores, their homes became cold, and they were beginning to go hungry.

The purpose of governments – to provide services for the community.

Local and state governments have been created specifically to provide needed services, resources and security for the citizens of the community. These include protection from criminals that threaten our life and property (police & courts). Protect from fires – (fire departments) Protection from weather and natural disasters (weather department – disaster relief – national guard) Safe water supply (city water departments) Transportation infrastructure – public roads and highways – land given for railroads – air traffic control systems Food production – agriculture agency with seed development & education. Food security & inspection. Family services for children, mothers, etc. Emergency shelters. In fact all the parts of local governments are responsible to the people for maintaining services, security and resources for the people.

Over-dependency on these leads to fragile communities which cannot survive disruptions. Over-dependence is characterized by the following conditions:

1. More services are procured and more promises made (e.g. police/fire retirement plans) than can be paid in lean times. Either the locality borrows money, depend on boom tax revenues which will not be

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[1] http://en.wikipedia.org/wiki/Northeast_Blackout_of_2003

present in economic downturn, or simply promise more than can be fulfilled in order to secure votes. This leads to the probability that services will be suddenly cut when money runs out.

2. Neighborhoods and families do not have stores, supplies, or skills locally where they are needed. Citizens do not participate in emergency services but rather treat them as something they are simply entitled to be provided. When an emergency disrupts services, especially transportation and communications, people cannot help themselves let alone others around them. This causes panic and panic is deadly in a disaster.

3. People do not develop the relationships and communications within their neighborhoods and with local emergency personnel to be able to work as a team in time of disaster. A high-casualty event such as a tornado enough wounded to rapidly overwhelm local emergency services and personnel. Emergency services require citizens with no or minor injuries to help those who are worse off, but if citizens do not have the training necessary to assist and have not developed the team skills necessary to work with those more trained, then they may actually make things worse. Assigning four people to a task does not make them a team. Team skills and relationships need to be developed before disaster strikes. Similarly, having two-way radios in a disaster without knowing how to use them, who will be listening, what channels to use, and what protocols are required to use shared effectively is worse-than-useless. These are not things which can be decided and imposed by government--- they must be worked out in the communities which will be affected.

We the people must demand that government workers and elected officials do the job they have been employed to do. That means planning for lean times as well as good. It means staying within a budget for services which can be maintained throughout the economic cycle. If officials cannot do that then they must be replaced. But we must also demand from ourselves that we do not expect something for nothing, we consider the costs of handouts we are offered, and we expect to work with emergency professionals and trained volunteers at the local level, to develop required relationships, build team skills, and obtain the training needed to work within our own neighborhoods when necessary.

Many people argue that armed citizenry maximizes the chance that a "good guy" will be present when an incident occurs and will reduce the chance that an incident results in mass murder of defenseless civilians. However, it is hypocritical to not extend the same reasoning to the carrying of first aid supplies and the provisioning of our neighborhoods, homes, vehicles, and businesses with emergency stores.

The Proposed Action Plan

Local citizens need to organize a cooperative system to create a Vulnerability Assessment and an Emergency Backup plan of action. Local government can and should be part of this plan, but much of the energy and input must come from the individual citizens who will be on the hook to implement the plan in time of need.

The proposal has two parts: 1) a vulnerability assessment for each town or city and 2) a set of proposals for creating alternative back up supply systems for electricity, fuel, transportation, food and water. These back up systems should be designed to take effect within 3 days after a national or local emergency and should be designed to last for at least six months.

These plans should not depend on Federal Government funding and should be locally/privately funded as much as possible and make use of volunteers. Every household should be urged to develop their personal vulnerability assessment and their plan for back up food, water, transportation, fuel and communication.

Emergency stores must be distributed throughout the community whenever possible. This maximizes the chance that they will be close to where they are needed when transportation is disrupted and that centralized stores cannot be wiped out by the same event which causes the disaster. Families and neighborhoods will be responsible for allocating stores locally and for transporting a portion up to the next level of community

for helping others and they must be prepared to do this without outside direction when required. What coordination occurs should happen within and on top of the RuralWatchArea [65] structure.

Existing organizations, such as the American Red Cross, Lutheran World Relief, the Salvation Army, ARES, the Church of Jesus Christ of Latter-day Saints, and so forth, already exist to organize much of this effort at the community level and create centralized emergency communications/shelters/aid stations. The structure to organize this at the neighborhood level to fill gaps in and coordinate with these volunteer efforts mostly does not exist. Most people would not know where to go for help, would not know where to go to offer help, do not have basic required skills, and do not have the required emergency supplies to even survive until help arrives.

This needs to be fixed immediately.

Without waiting for the government.

We the people, without waiting for the government, need to re-localize our total economy – food, energy and money, and wean ourselves from dependence upon energy and food imported by international corporations from other nations. This makes us very vulnerable and insecure. The military "national security system" does nothing to provide security for our food, energy and economy (jobs).

This is what Well-Fed Neighbor movement is attempting to do.

Preparation needed

1. Create a power point to illustrate how 95% food and 70% of oil is imported from other nations and states.

    a. Fruit labels showing production location

    b. Graph showing percentage from sources

    c. Energy imports from sources

2. Create illustrations what will happen if the supply lines break down.

    a. Possible causes of a long term emergency

    b. b. Systems that would break down

    c. Effect in the community

3. Create a vulnerability assessment outline for towns and cities.

    a. Water supply

    b. Electrical source

    c. Gas & oil supply chain

    d. Food resources

    e. Basic medical supplies

    f. Communications and political continuity

4. Create a plan of action for towns & cities to cope with a long term emergency without Federal government.

Part IV. Food

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Chapter 12. Overview

Something to think about:

Salt is a real commodity. It is every bit as real as gold. The difference is that gold will not preserve food, make it taste better, heal disease, or fertilize your crops, garden, orchard, or vineyard. You can't eat gold as many people have historically found out who hoarded it, thinking it was the end-all hedge against hard times. If that is all you have when hard times hit, you are out of luck, and scripture says it will thrown out into the street. In Eze 7:19:

> They shall cast their silver in the streets, and their gold shall be removed: their silver and their gold shall not be able to deliver them in the day of the wrath of the LORD: they shall not satisfy their souls, neither fill their bowels: because it is the stumbling block of their iniquity.

Meat On the Hoof and Crops In the Ground

This is where we need to be heading if we want to consider ourselves wealthy. We need to have food and it needs to be food that is growing. The best form of food preservation is meat on the hoof and crops in the ground. Another experience my son and I had, way back when we were in Denver, happened in a restaurant which "counter-culture" types often frequented; you know, you'd have radicals and patriots and all kinds of different people. This one gentleman was sitting up at the counter and we were sitting at a booth. He was talking to somebody about his investments and buying stock in DIA (Denver International Airport). I made a comment out loud to him while they were talking. Later I made another comment out loud, and so a while later, after his friend left, he came and sat down at the booth with us and told us about how you could get a ten percent discount on Canadian gold maple leaves if you drove to Canada and bought a quarter of a million dollars at a time. And I said, "Ian, what are we waiting for, let's go."

The Garden Was Worth More Than The Gold

He did recognize, however, that while talking about buying massive amounts of gold coins, and knowing people who did, that gold is not true wealth when times are hard. He told us about Germany in World War II and how people would come down the country roads and see a farm with a garden, and they would come up to the door of a farm house and they would knock on the door. When the farmer would come to the door, they would offer to buy food with gold and they were sent on down the road. The man said three times "the garden was worth more than the gold" and this has stuck with me. "The garden was worth more than the gold." We need to have food in the ground; we need to have gardens, orchards, vineyards, olive yards, bees, goats, chickens, and cattle. We need to have meat on the hoof and crops in the ground."

(---Jerry Diamond, Copied from a 2010-10-29 post to the Sustainable Cedar County Group, used with permission; originally from How To Get Out of Babylon[1])

The Plan For Food In Missouri

So, keeping that in mind, the *first order of any plan for food in Missouri is to make more of it*. If we are not producing enough food then there will not be enough to eat, let alone store.

1. Grow more food. Explode small farm development, urban gardening, seed banking and livestock breeding. In the interests of returning to minimum production levels quickly, concentrate on:

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[1] http://www.howtogetoutofbabylon.com/ebook/sectionone.htm

    a. Three-Sisters Gardening [44] (corn, squash, beans). *Three-sisters gardens* require the least tilling and care on newly cultivated land, provide a mix of nutrition and easy to store vegetables.

    b. hardy free-range small livestock (e.g. goats, primitive sheep breeds, chickens, pigs). Free-range livestock gather their own energy from currently non-productive land and can be ramped up quickly with minimal infrastructure. Meat, eggs, dairy, wool, light draft, and leather production can be obtained depending on animal and breed.

    c. systems of aquaculture and vermiculture (e.g. barrelponics) to recover energy from agricultural waste and food scraps. These can provide high-production vegetables, animal feed, and soil enrichment to transform worn-out dirt back into fertile soil

2. Revitalize farmers' markets, especially growers' markets, producers' cooperatives, CSAs, and mechanisms to market and distribute local food.

3. Rebuild our food processing infrastructure: mills, silos, canneries, butchers, dairies, and packing facilities utilizing local food.

4. Store salt [38] locally against hard times (as it is one of the few life critical substances for both humans and livestock we cannot readily produce). We are talking about individuals storing amounts of salt for their own consumption but also communities and groups storing pallets-worth of salt for communal use. Salt also becomes a trade commodity to obtain things we do not have and critically need.

5. Increase personal and local storage of food to give greater depth to our food supply and allow us to weather sustained emergencies. Right now, many of us would go hungry if supplies were cut off for even days or weeks. Encourage individuals and families to start small but start somewhere. Rebuild the community infrastructure to store food (e.g. granaries) against hard times. For personal and community food storage, we are recommending preservation of dry goods using dry ice in plastic food-grade buckets and barrels[905].

6. Educate people to cook using raw and stored foods, to do their own canning and preserving to have control over their own food supply and give them options in an emergency.

7. Due to the current *complete lack of infrastructure in Missouri for storing, milling, and processing grain*, a critical component of local and personal food storage will depend on sprouted grains and legumes--- safe storage of grains and legumes, easy home sprouting techniques, use of sprouts in cooking and bread-making--- this will allow us to have a "Store what you eat and eat what you store" food supply as quickly as possible. The KISS Survival Food System[2] lays this out in a compact, simple way.

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[2] http://chetday.com/kiss.html

Chapter 13. Salt

Salt is a life-critical substance for human and livestock. It is required for food preservation, especially of meat, is one of the best antiseptics for cleaning meat-contaminated areas (such as butcher blocks), has medicinal value, and is an input into many small-farm industrial, or cottage-industry, or light industry processes (such as manufacture of lye or chlorine bleach).

It is not, however, readily produced in Missouri in any form (there are some caves in Missouri from which salt might be mined but deposits are few and far between). Some plants concentrate certain salts (e.g. Walnut, potassium and dandelion, sodium) but these minerals must be replenished in the soil for this to occur. Even if we are producing our own food as well as fuel and other materials in Missouri, we will consume significant quantities of salt.

The Sustainable Cedar County group has been ordering periodic semi-trailer loads of sea salt from Sea Agri (of 2000 pound pallets in 50 lb bags). Sea Agri provides a lab analysis of their salt which we have found to have sheep-safe levels of copper. Farms and groups in surrounding counties go in on this order and arrange pickup and distribution of bags or pallets from Stockton so that the salt supply ends up well-distributed. Other groups can do the same thing, ordering a semi-trailer in their area under a cooperative purchase and then distributing them by bag or pallet. Anyone with a truck and trailer could also buy directly from the distribution center.

Following is the information for ordering:

> From: Robert
> Subject: SeaAgri
> Date: Tuesday, October 26, 2010, 3:18 PM
>
> SeaAgri has made several improvements to our bagging and distribution effective 11/01/2010.
>
> New pricing has been established for both 2000 lb superbags and pallets of 50 lb bags. A new price schedule is attached along with a copy of our new label that is attached to each 50 lb bag. These changes are relative to truckload orders of 22-24 tons only.
>
> SEA-90 is now provided in a properly weighed and labeled 5 mil vented, heat-sealed 50 lb bag. We guarantee 50-51 lbs in each bag and 40 bags per pallet. Each pallet is made of oak and with product will weigh approx 2075 lbs and be fully shrink wrapped with a cardboard layer bottom and top for additional protection.
>
> Our primary warehouse and bagging operation is now located in Kansas City MO 64503. All 2000 lb superbags and pallets of 50 lb bags will be shipped from this location. We will continue to provide superbag shipments from CA but not pallets of 50 lb bags.
>
> Our new warehouse facility is located within 80 miles of the geographical center of the United States and more centrally located to most of our customers. As a result, freight charges should not change dramatically. If you have trucking available, check your cost from Kansas City for truckload quantities. We will continue to provide competitive freight pricing if required. I will be happy to provide you with a quote upon request.
>
> Best Regards,
>
> Robert Cain President 770-361-7003

Jerry Diamond also mentions that the "cheapest way to get it [bulk salt] is super totes from Cal-Mexico at $200 per ton; $4800.00 for 24 tons, one semi-load."

Chapter 14. Working With Whole Grains

This section is about how to work with whole grains. Knowing what to do with unprocessed grains and even prepared flour is a lost art. We discuss how to store grains, how to make and use flour, and how to avoid having to grind bread-quality flour when possible.

Why Whole Grains?

- For making breads, pasta, gravies, etc., flour is used.

- It is time/energy consuming to grind flour for each meal where it is needed.

- So why store whole grains instead of quantities of preground flour?

- Flour does not store well or long. /CitationNeeded/

  - Ground flour is susceptible to rot, mold, and pests.

  - Ground flour loses nutritional content very quickly.

  - Ground flour cannot be planted to grow new grain. Whole grain stores well for long term emergency needs

  - Can be economically sealed and preserved for up to 30 years (e.g. dry ice storage)

  - Retain their nutrients

  - Can generally be planted to grow new grain even after years of storage. If we rely on whole grains for just emergency storage, we would still need to rotate supplies periodically

  - Best way to do that is to eat it

  - Need ability to handle whole grains anyway

  - Makes more sources available

    - local grain elevator

    - animal feed

    - wild harvest

- Use what you store, store what you use.

- Either way, it is likely you will need to know what to do with whole grains

  - How to make it into flour and then into bread, etc,

  - How to use it without making flour to save effort or because you do not have the right tools

  - How to supplement domestic grain or flour with wild harvested materials to stretch supplies or increase nutrition.

What To Do With Whole Grains

Once you have a quantity of whole, unprocessed grain, you have several options:

• You can mill it into flour

• You can cook it whole (e.g. puffed wheat, grains in stews)

• You can crack it (e.g. cooked for porridge or stews)

• You can sprout it

If you have limited supplies of grain and/or limited tools and facilities, you should consider sprouting the grain first. Sprouting grain increases its nutrition dramatically, increases the yield of your grain supplies, and is the least mechanically difficult. Sprouted grains can then be eaten raw, dried, crushed or ground to make a variety of things, including breads [881][882].

The next option should be cracking the grain. This is less mechanically intensive than milling but dramatically decreases cooking time. Cracked grains are also good for animal feed. Cracked grains can then be added to stews or cooked into porridge, or used as a substitute for rice in a meal. In a pinch, grain can be cracked with a big rock on a firm surface. Some grains can be readily cracked with a tamper on a concrete patio.

Milling the grain (turning it into meal (coarse) or flour (fine)) is mechanically intensive but opens up many options for using it, including making bread, gravies, pasta and so forth. Making fine breads and pastas also requires separating the bran and possibly grading the flour (into whole wheat and white flour, pastry flour, etc). But whole grain breads and pastas can also be made.

Many wild harvest or garden plants can be made into flour additives to increase the yield of your grain supplies, including wild grains such as curly dock and golden rod, dried beans, dried tubers, and so forth. Milling is best done in bulk (to make best use of the effort) and as fresh as possible (to preserve nutrition), which are conflicting goals. Several home grain mills are available on the market to turn modest amounts of grain into flour in a home kitchen. These can be hand or electric operated. Traditionally, a neighborhood or community would share a mill capable of handling bulk grain. Each user of the mill pays part of their grain to the mill owner to fund its operation ("mill tax").

Last in order of preference is using the grain whole. Most grains requiring cracking in some fashion to open up the fibrous bran coating and make cooking or other processing easier. It is possible to simply toss some grains straight into the pot and they will eventually soften, but it will take much cooking and the grains will tend to be tough or chewy. One way to do this is to put grains (e.g. wheat or rye) in water on a wood stove overnight so that it will be cooked by morning for cereal.

Using Sprouted Grains

Grains can be sprouted before eating (raw, cooked, baked, or dehydrated). Sprouting grain increases its nutritional yield significantly and reduces the labor involved with milling gain into flour.

Grains (or beans) can be sprouted in wide-mouthed jars and then added to breads[881][882].

Sprouts can also be dehydrated, ground a pressed into cakes (Essene bread)[892]. This can be done using a meat grinder, food processor, blender, rock, etc., and does not require a grain mill. If you have a kitchen grain mill, sprouts can be processed on the "cracked/coarse" setting with less effort than grinding flour from whole dry grain. Wheat sprouts develop quite a bit of gluten and can be used to make whole grain dough more elastic and better rising.

Question: does sprouting grain also increase its value for livestock? Specifically, does it decrease starch content and increase protein value?

Chapter 15. Food, Seeds, Garden

There's a saying that I've heard around the agricultural community, "If you eat, you're in agriculture." It is considered a basic human right to grow or forage for your own food on your own land.

In emergency situations, it often comes to light just how little food we keep around in our homes, and the food we often do have that can be prepared in less than ideal circumstances is often of poor quality or loaded with chemical preservatives, additives or colors.

But let's stop a moment and define "emergency". Many people who store more than a few days' worth of food in their homes are thought to be preparing for "TEOTWASKI" (The End of the World as we Know It," often viewed as some great flu epidemic, terrorist attack, massive natural disaster or a severe breakdown of government services. The simple fact is that an emergency is something you are not prepared to deal with. If your spouse loses their job, wouldn't it be a relief to know that you don't have to worry about money to buy groceries for a few weeks or months? How about when someone's home burns down or floods and they have to start from scratch - often with donated household items, but food is rarely thought of in these instances.

During the ice storm that crippled southwest Missouri during January of 2007, we were fairly comfortable in our rental house, which had gas heat, gas water heating and a gas stove. We made candles and had oil lamps, and for the two weeks we were without power, we stored our "keep cold" groceries in a bedroom that we closed off and our frozen goods on the back porch. We had spent a lot of time away from television and "normal" distractions, so not having those available was inconvenient, but not that bad - we played games, worked on craft projects and put together baked goods to take down to the shelters that were set up in a local church. After three days at home, we decided to poke our heads out, get the van de-iced and see how everyone else was doing. It was a madhouse! People did not have alternative ways to heat their homes, leading to a very near case of carbon monoxide poisoning of friends of ours who had not known how to properly run their gas heating system (they had never used it before that point). Other friends had not thought to change out their cordless phones for corded ones that could be used without power, and the general lack of "normal" entertainment had everyone on edge, bored and stressed out. It really opened our eyes as to the difference between a prepared home and an "average" one.

Another common saying, this one from truck drivers, "If you're eating it, a truck brought it." Regional disasters have borne this fact out; most large cities have a 3-day supply of food or less at any given time. Video from Hurricane Katrina, midwestern ice storms and the recent Haitian earthquake often pokes us in uncomfortable ways and make us think of setting up more food storage, but it can be a difficult prospect requiring a great deal of thought.

But food storage has to be more than the required 25 pounds of grains and 5 pounds of beans per month per person. The elderly and young children have been known to starve themselves rather than eat a monotonous and bland diet. Following Y2K, thousands of people across the country, who had purchased at a premium large quantities of dried and canned goods, found themselves selling for very little the food that they did not eat. "Store what you eat and eat what you store," is very good advice, indeed. An emergency situation where you may not have access to all your usual cooking resources is NOT the time to learn how to cook with these ingredients.

But food storage is not simply for those who are well-off and able to afford it. By sticking with homemade, wholesome foods, families can save a great deal of money. The Hillbilly Housewife[1] has meal plans, complete with recipes, to feed a family of 4 for about $75 a week - a great boon for a family who has lost an income or is otherwise facing hard financial times.

Beyond stored foods is a great array of wild and cultivated plants that can be used to save money and add interest and much-needed nutrients to meals.

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[1] http://www.hillbillyhousewife.com/

Here are some additional links on food-related topics:

Food Storage

- Food Storage Supplies [45]

- Wilt Resistant Potatoes

- Food Storage Calculator[2]

- "Long Term Storage of Dry Goods in Plastic Buckets[920]"

- Basic Grain Storage Technique and Determining Capacities

- Legionary Rations: Roman Portable/Refrigeratorless Cooking

- *Cookin with Home Storage[862]*

Food

- PlantBreedingExpertList

- HullessBarley

Permies: Permaculture Resource[3]

Food Processing

- HomeMadeOilPress

Harvesting From Nature: Wild Edible Plants

- Pages From An Ozark Herbal[4]

- "Spring Edibles: Lunch and More from your Lawn[820]"

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[2] http://www.thefoodguys.com/foodcalc.html
[3] http://www.permies.com/
[4] http://mistymanormercers.com/OzarkHerbal/html/

Chapter 16. Three Sisters Gardening

A three sisters garden is a traditional Native American planting system that allows for companion planting, lower inputs and better nutrition.

By planting corn, beans and squash together in hills, we provide a better environment for the plants we grow than we could accomplish by planting separately. This is known as companion planting. This allows each plant to both contribute and benefit from the other two plants. Corn uses a lot of nitrogen in the soil; beans fix nitrogen into the soil for the corn to use. Beans often require a support to climb in order to be productive; corn provides this support. Squash uses some of the nitrogen and provides a natural mulch of large leaves, covering a good portion of the hill and preventing competitive weeds from becoming well established, as well as keeping the soil cool and moist during the heat of summer.

There is also the benefit of a lower input requirement for these types of plantings. Hill culture practices requires only a small amount of ground be tilled, with the squash being allowed to spread out over the ground between the hills. The beans take the place of fertilizer applications, the spiny squash leaves keep animal pests away and the corn plants eliminate the need to build trellises for the beans. In addition to labor savings, there is also a lower cost to bring the crops to harvest because of decreased fertilizer and materials purchases.

The three plants also provide a generally complete nutrition. The corn grain provides carbohydrates; the squash provides vitamins and oils in the seeds; and the beans provide protein.

To plant a three sisters garden, in late spring (after the chance of frost has passed) you will need to clear a hill approximately three feet wide and mounded one foot tall. If you are planting multiple hills, try to keep the centers of the mounds four to five feet apart. You will also need to select appropriate varieties of seeds. The corn will need to be a fairly tall variety, not a miniature type. The beans will need to be pole beans, so that it would climb the corn. The squash needs to also be a vining variety, so that it will spread out over the ground rather than forming bushes; also, you may use either summer or winter squash varieties. We've had good luck here with butternut squash, Cherokee Trail of Tears beans and a Hopi variety of corn that is great for cornmeal.

Once your garden has been turned, plant six or seven corn seeds about six inches apart in a circle near the middle of the hill. After a week or two, when your corn is four or five inches high, plant six or seven bean seeds about six inches apart from each other and also from the corn plants. At the same time, plant four squash seeds near the edges of the hill.

After the plants are growing well (three to four inches), thin the plants down to the strongest four corn plants, four bean plants and one to two squash plants. You can use the bean plants as sprouts in sandwiches or salads.

The corn can be harvested while it's in the green corn stage, when the silk is dry and dark brown, and then roasted or boiled like sweet corn; otherwise allow it to stay on the plant into autumn when it is dried on the stalk and ready for storage. Beans can also be harvested throughout the season to eat cooked like green beans, but also can be allowed to dry on the vine for use over the winter as dry beans for soups or baked beans; we usually harvest ours during the summer and then allow a good amount to dry on the vine for the next year's seed. Summer squash can be harvested as they reach their full growth, but winter squash should be allowed to remain on the vine until the skin hardens thoroughly in the fall, and then cut the vine three or four inches from the squash. We regularly store winter squash for several months (usually through the winter) in a cool back room in our house.

Chapter 17. Food Storage Supplies

Where to get supplies for storage and preservation of food (e.g. oxygen absorbers, dry ice, food-grade containers, etc.)

SorbentSystems[1]   Food grade containers, oxygen absorbers, vacuum and heat sealers.

USAEmergencySupply[2]   Tools, containers, and materials for long-term food storage.

DryIceDirectory[3]   Locate dry ice vendors near you, worldwide.

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[1] http://sorbentsystems.com/longtermfoodstorage.html
[2] /freelinking/https%3A/%252Fwww.usaemergencysupply.com/information_center/food_storage_faq/oxygen_absorbers.htm
[3] http://www.dryicedirectory.com/

Chapter 18. Small Livestock

Land that is marginal for planting is often initially overlooked by people trying to produce their own food. Small livestock can be incorporated into a sound agricultural plan very easily, often providing additional benefits beyond simply supplying milk, eggs and meat.

When we first moved to our farm, the weeds were overtaking most of the property and the bugs were horrible. By introducing sheep and chickens, we were able to not only eliminate these problems, but actually gain from them; the weeds kept the sheep eating for weeks, and the chickens had a field day with the variety of bugs around the farm.

There are benefits and drawbacks to all types of livestock, however a large number of the drawbacks can be avoided by using primitive or heritage animal breeds. As an example, we have raised Shetland (primitive) and Suffolk (improved) sheep in the past. The only real benefit of the Suffolks are their fast weight gain; one of the original animals in the breed record books put on as much as 45 pounds in the first eight weeks of age. By comparison, the Shetlands, though they lack the quick weight gain of the Suffolks, are hardier, do not have serious issues with parasites, do not have birthing problems, have better instincts with regards to predators, do not have serious hoof issues, and do well on otherwise marginal forage. The Suffolks we have raised, on the other hand, have required a large amount of intervention to keep them healthy; this costs the owner both time and money. This includes tail docking. The Shetlands are born with naturally short tails, whereas the Suffolks have been bred to produce as much wool as possible, and were therefore bred to have longer tails; in warmer climates, this can cause a nasty complication called flystrike, because of waste being kept close to the body and allowing flies to become problematic. To say that it is disturbing is putting it mildly; if you want to investigate flystrike on your own, I wouldn't suggest it after meals unless you have an extremely strong stomach.

One of the simplest ways to start with livestock is to raise chickens. These small birds require little more than food, water, shelter and protection from predators. There are literally hundreds of plans for chicken tractors, which are basically a small protected (fenced) pasture, roosts and nesting boxes in a small, portable structure. It is easy to raise between four and twenty chickens in a chicken tractor, with the larger end requiring mechanical assistance (i.e., ATV, tractor, truck, horse, etc.) to move it. The tractor is moved every few days to provide fresh pasturage for the birds to find new insects and seeds to eat. Among the dual-purpose breeds I can recommend are Rhode Island Reds, Buff Orpingtons, Barred Plymouth Rocks and Araucanas; these birds do fairly well on range, produce both meat and eggs and are fairly hardy as they have been bred for multiple purposes, and so have not lost the good genetics from either extreme. You can raise hens to produce eggs without a rooster; however, if you want to raise chicks, you will need one of the "country alarm clocks".

Chickens can also be free-ranged, with a coop to put them up in at night; you may, however, have predation losses during the day from hawks and dogs. We have often raised 20% more chicks than we will need in layers to account for these losses. We did lose many more than that once when we had one of the neighboring field that they hung out in brush-hogged; this removed almost all of the cover they had available to be able to hide from hawks. Well, they say hindsight is 20/20; hopefully our loss will be your gain.

When bringing young chicks home, you will need to set up a brooding area; this should include a boundry to keep them contained, heating lamp, litter, waterer and feeder. If it is not in an enclosed room, you may want to add a cover on the top. We use a quart waterer for up to six chicks or a gallon for more, a small rectangular feeder, sawdust or wood pellet litter, place it all in a large plastic tote (sans the lid, of course!) and top it with 1/2" hardware cloth and a reflector "trouble" light with a 40-75 watt bulb - we often just rest the lamp on top of the hardware cloth. There is a small matter of adjustment with the light; if the chicks are all gathered together underneath it, they are not warm enough - you will need to either lower the light closer to them or put a higher wattage bulb in. In contrast, if they are crowding each other out of the shadows, it is too warm and the bulb should be raised or replaced with a lower wattage bulb. A

lady I knew some years back had a clever way of getting around using electricity, as she was living very remotely; she set up a hook on the bottom of the cover and hung a small kerosene hurricane lantern on the hook, adjusting the flame until it was the proper temperature for the chicks. Eventually you will be able to do away with the lamp as they grow in their adult feathers; keeping track of how close or far they are from the heat source will help guide you in this.

Once you have the chicks home, you will want to dip their beaks in the water so that they understand where to find the water. I usually do this by taking the chicks out of their transport box one at a time and doing this as I put them into the brooder; that way you are sure to have done it with each chick.

If you bring home laying hens or older pullets that do not need the heat lamp, or if you are moving chicks you have raised into a coop, you will need to keep them in the coop for three days; this helps them recognize this as "home". Your coop will need one square foot of floor space per bird, or eight square inches for bantams (this is a type of miniature chicken). You will also need to provide one nesting box for every four layers you have; these can be about ten to twelve inches wide and about a foot deep, with fresh bedding (we use straw or hay) and the lowest one being ten to twenty inches from the floor. Chickens prefer to lay in private, dark areas, so you will want to put the nesting boxes in the darkest part of the coop. Roosts should be provided as well; these boards or branches are one to two inches in diameter and allow the chickens to sleep above the floor; this keeps them from roosting in the nesting boxes, which can create extra work in upkeep.

Other possibilities in the poultry arena are Guinea hens, ducks, turkeys and geese. Guinea hens are helpful if you have serious insect problems; however, they are wilder than chickens and you will often find them roosting in the trees instead of their coop. Ducks are just plain fun; they produce good (if somewhat large) eggs and meat, and their antics provide fun entertainment at times. In looking at turkeys, you will want to stay away from heavily "improved" genetics; the trend lately has been to produce a large, meaty breast, often to the detriment of the bird's health. Geese make wonderful watchdogs in the coop; they will not harass the chickens if there is adequate roosting space for the chickens to get off the ground, and anything that gets into the henhouse and shouldn't be there won't get out. Some geese tend towards aggressive, especially towards small children, but we have not had too much trouble with the African and Toulouse breeds we have raised.

Rabbits are another easy-to-manage livestock. A breeding trio of rabbits (two does and a buck) from a good local breeder will give you a good start into small meat production. I recommend setting up a colony cage or room; this allows the rabbits to interact and lowers the monitoring needed to establish a breeding time. I have seen fine setups with five-gallon buckets turned on their side for nesting boxes, a good bit of straw on the floor for them to "dig" in, watering crocks or bottles, and freely available feed or good quality hay.

Pigs are a bit unique in livestock circles; they are omnivore monogastrics that cannot process cellulose fibers. They can be fed a large variety of food, from kitchen scraps to garden leavings to grain and mixed feeds. They put on weight fairly readily without a lot of cost. However, their tendency to root means that their fencing must be fairly tight and in good condition; many a homesteader has enclosed a pig where they intend to start a garden within a couple of years, and let the pig do their tilling for them. It should be noted that because of their diet and digestive system being closer to ours, their manure must be composted more extensively before being used in food gardens, in order to remove pathogens that can infect humans.

Sheep are a particular favorite of mine; they produce beautiful fiber (though there are hair breeds available if you have no use for that), lean meat and non-polluting lawn mowing. They are often easier to handle than larger animals, especially the smaller primitive breeds.

Both sheep and goats grow to their full size in about a year's time, providing relatively quick turn-around and a carcass that is of a good size for a family to butcher and process. They are also very social animals and do not do well alone.

Sheep and goats are different in that sheep cannot tolerate the amount of copper in their diet that other livestock can take; also, when threatened, sheep tend to band together and run away from danger, whereas

goats separate and turn to face the danger. This can really confuse a good herd dog that will spend all day trying to get behind the goat to drive it while the goat spends all day trying to keep the dog in front of it!

Goats are nature's escape artists; an individual posted on a forum that he had gotten a couple goats at auction, what type of fencing did he need? A well-experienced goatherd repled, "Watertight." I am of the opinion that if your goats have not gotten out in a week or so, the fencing is either (finally!) goat tight, or they're plotting their next escapade. They do provide good milk, though you will want to make sure bucks are downwind of the does at milking time; otherwise you may get a musky taste to your milk.

Dehorning of sheep or goats is a matter of personal choice; I prefer to leave them intact as it will provide them additional protection from predators. There are a variety of methods to dehorn an animal, from pastes to irons to surgical techniques, that all have their advantages or disadvantages. Along the same lines is tail docking and castration of males (wethering). There are various tools for crushing or cutting the tail or testicles. We use an elastrator, which is a small, strong rubber band that can be stretched using a tool, slipped over the area in question, and released. Though the lambs or kids will show discomfort for the first few minutes, they are usually up and around within a half hour, and are back to themselves by the next day.

This brings up another item: veterinary care. Contrary to popular belief, most farmers do not have a veterinarian come out for standard animal health care. Most mammals receive a minimum vaccination of a tetanus shot; this can be purchased at most feed stores. We usually give our tetanus shots a few weeks before birth, as this will provide protection to the young as well as the mother, and then again at weaning (at which time we wether the rams we do not want to keep as breeding stock). After that, we give a yearly booster; the ewes receive it before they give birth every year, and the rams and wethers receive theirs at the same time. Vaccines are not at all difficult to administer; a simple subcutaneous shot involves lifting up a fold of skin, swabbing with alcohol or iodine, sticking the needle and pushing the plunger. Intramuscular shots are somewhat more difficult as you need to be aware of meat cuts that could be damaged; however, finding a place just behind the "armpit" of the animal usually works well, and the only change is that you will need to draw back on the plunger; if blood appears in the syringe, you will need to find another place to vaccinate as you have found a blood vessel.

Another thing we deal with both at this time and again in the fall is trimming hooves, easily done with a pair of pruners or a pocketknife, to remove the excess growth in the hoof that has folded over underneath the foot. We keep our animals on somewhat rocky pasture, so we only trim twice a year, and usually only the six-month-old lambs need it in the fall. At the same time, we check for parasites using the FAMACHA method, which looks at the color of the inner eyelid[1] to determine if an animal is anemic; if so, we will treat with a dewormer, rotating types if the parasites seem to be resistant to a particular formulation.

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[1] http://goat-link.com/content/view/110/107/

Part V. Communications and Neighborhood Organization
- What Ties It Together

Table of Contents

Chapter 19. Overview

What connects the personal to policy, restoration to survival, is neighborhood organization and communications. The Neighborhood or Rural Watch ensures a flow of information from local families to and from the County Sheriff and other emergency organizations, charities, and ministries. This flow of information cannot happen without communications and communication must happen no matter the weather or emergency, rural or urban.

In this section, we discuss urban Neighborhood Watches, lay out a structure for RuralWatchAreas [65], and plan a ResilientCommunications [52] network for citizens to inform and help each other. We also talk about how to do these if you were not able to plan *before* an emergency transpires or if even backup communications fail.

Chapter 20. ResilientCommunications

Introduction

Communicating effective alerts and warnings allows people to take actions that save lives, reduce damage and human suffering, and speed recovery. Rapid reporting about what is happening during a major emergency can also be very effective in protecting people, reducing damage, and improving response. Neighborhoods and communities need to develop a capability to warn those at risk in a timely manner.

At the family level, it is critical that each member of the family can get information to take appropriate action to protect themselves, connect with other family members, keep loved ones outside the area informed, make themselves useful helping others, and if necessary, get out of the disaster area safely.

Because it is difficult to predict what communications methods might be working during an emergency and it is probable that routine technologies such as telephones, cell phones, and Internet may not be working (or working well), both communities and families need to have *resilient* communications. This entails three main tasks:

1. Have multiple methods of communication and know how to use them (e.g cell phone and 2-way radio).

2. Ensure that critical information and basic emergency plans are taught and printed in advance so they do not need to be communicated during an emergency. For example, family members and citizens of a community should not need to find out where to go if they cannot go home or have to leave home. This should be selected and discussed in advance.

3. Select known locations to act as hubs for spreading news, at least one of which is outside the disaster zone, and assign relays which will be responsible for communicating news to and from those hubs. For example, families should select a family member or contact outside their area in advance whom they should contact if they cannot find or contact each other.

While many informal channels are used to communicate business and personal information every day, resilient emergency communication depends on disseminating alerts, warnings and follow-up information through as many channels as possible, very rapidly.

Emergency Family Communication

http://www.fema.gov/plan/prepare/commplan.shtm

Your family may not be together when disaster strikes, so plan how you will contact one another. Think about how you will communicate in different situations.

Complete a contact card for each family member. Have family members keep these cards handy in a wallet, purse, backpack, etc. You may want to send one to school with each child to keep on file. Pick a friend or relative who lives out-of-state for household members to notify they are safe.

Family Communications Plan which should be completed and posted so the contact information is readily accessible to all family members. A copy should also be included in your family disaster supplies kit.

Appendix C of the Are You Ready? Guide (contains blank contact cards and a family communications plan form)

Other notes to be fleshed out:

- Often easier to dial out than dial in (keep a relative or contact out of your area that you can call with news and others can call them for updates)

- Can often text when cell networks are busy

- Keep a set of 2-way radios of some type for local communication; know how to use them. Keep at least one in every vehicle & bug-out bag, or on your person.

- Keep an emergency radio in the home, at work, and in each vehicle which can receive (in priority):

  1. NOAA Weather Alerts

  2. AM/FM radio

  3. TV (audio only)

  4. Shortwave broadcasts

  5. CB (incoming only)

- Regularly ensure that radios are charged and that spare batteries are available (or car-adapter, crank, or other means of charging).

- Know your neighbors, their contact info, and what means of communication they have available. Where is your closest *AmateurRadioOperator* (*HAM*)? Where is the closest HAM to your out-of-state family? Your child's school?

One Way Communications

This section describes one-way communications for getting information out in an emergency (i.e. broadcasting). This type of communication is typically top-down in nature (e.g. from civil authorities, emergency personnel or relief organizations down) but often re-broadcasts information gathered from local sources. Effective one-way communication is essential for action on a community-wide level. People need to know the extent of the emergency, its probable duration, and what action they should take to protect themselves as well as where and how to get or provide help.

A good example is weather information which is gathered from thousands of weather monitoring stations nationwide as well as storm-watch volunteers with mobile radios and then broadcast through the FM NOAA *AllHazards* radio advisories and by commercial radio broadcasters. The important thing to note is that without viable two-way communications to gather news, authorities have nothing to broadcast. This is why news channels in an emergency will end up rebroadcasting the same initial information endlessly: they have been caught flat-footed and have not been able to gather anything else to report. Healthy neighborhood-level information gathering is essential for one-way communications to function.

On the assumption, however, that you have news to report, how do you get it out to everyone? As a home owner in an emergency, how do you get the information you need to act effectively to protect yourself, your family, and your community?

Types of one-way broadcasting:

- Phone trees (one-way broadcasting over two-way technology)

  - Don't forget *texting*!

- Newspapers/flyers

- Radio (AM, FM, NOAA AllHazards, TV, note EmergencyAlertSystem [55]/SAME radios, shortwave/HAM)

- Town crier, loudspeakers, sirens

- Rumor mill, local watering hole

- Internet (blogs, news sites, browser preemption)

- Aircraft

- Libraries

- Power requirements (receiving and broadcasting)

- The impact of cable, IP/telephony, and TV-over-ATM technologies

- Digital broadcasting? CAP[1]?

Phone Trees

A phone tree is a simple way to "get the word out" to a large number of people with minimal effort. The person at the start of the tree calls a small number of people, say four, and each of those four calls four other people, with each of those four calling four others, etc., until everyone on the list is reached.

A list is prepared in advance assigning each person to a level of the tree with all relevant contact information. Each person in the tree tries to reach the people assigned to them by any means available, retrying as necessary. If a person cannot be reached at all, then the person trying to contact them becomes responsible for reaching the people further up the tree. If a report on the number of people contacted is desired (for taking a roster of people who are known-OK, for instance) then each person must call *back down* the tree when they are through contacting those above them.

It can take days for a single person to contact, say, one hundred people directly. The phone tree divides the work and scales to trees of hundreds of people.

As an emergency broadcasting technique, it works well for getting the word out *before* an emergency or to call out rescue workers to help in a *neighboring* emergency. For broadcasting *during* an emergency, it has one serious limitation: it relies on two-way phone technology to be still operating. Often, even land-line phones run on underground wires are taken out during storms due to overloading of the switching circuits or loss of power to switching stations. Overhead phone lines and cell towers are much more fragile.

A modification of this technique which does work in emergencies is to use two-way radios to contact each family in an area which has CBs or two-way FM radios and then use runners to contact the next level of the tree.

Texting

It should be kept in mind that texting on modern cell phones often works when voice connections will not. This is for two reasons: 1) texting does not require a steady connection between phones and 2) text messages are transmitted in the dead space inside other phone calls. This means that when the cell network is overloaded with voice calls and towers do not have steady connections, texting may still work. You can also send text messages to multiple people at once. It has been demonstrated in social networking that text messages can be used in this way to quickly inform hundreds of people of an upcoming event or situation. People should know how to use the text messaging on their phones and texting should be one of the options for contacting people on a phone tree who have cell phones.

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[1] http://en.wikipedia.org/wiki/Common_Alerting_Protocol

Emergency Alert System

The post-1999 replacement for the EmergencyBroadcastSystem which allows the President or a lesser authority to preempt all national broadcast systems, including AM, FM, broadcast/cable TV, satellite radio, etc. to announce a national, regional, state, or local emergency.

The EAS uses the *SpecificAreaMessageEncoding* (SAME) system for identifying whether a broadcast is meant for a specific receiver, such as whether a broadcast tornado warning is for the county in which the receiver is located. Some consumer weather radio systems receive and decode SAME messages for local alerts.

The EAS has never been activated for a national emergency and is considered a last-ditch means of alerting the populace in the case where the President cannot contact the media or the media is not already reporting on a developing situation (such as a sudden hostile nuclear launch). In many instances, normal media outlets using satellite communications begin reporting on an emergency or national incident faster than the EAS system could be activated. EAS broadcasts can reach approximately 98% of the mainland US directly to SAME-capable radios.

See: http://en.wikipedia.org/wiki/Emergency_Alert_System

Communications Technologies And Planning

There are many different ways of communicating, from shouting to satellite Internet. You probably use many different methods every day, such as reading a newspaper and texting on a mobile phone. In many emergencies, from a road accident to an asteroid strike, some or all of your normal communications channels, both for talking to others and for getting news and information, may not function or may not function adequately.

In an emergency some or all of these may occur:

- Newspapers may not be delivered.

- Wired or cellular telephones may not work or may not be reliable.

- Internet access may not function.

- You may not be able to safely walk or drive to a store or central location for news.

- Cable TV may not work.

- Local broadcast stations (TV and radio) may be off the air.

- Postal mail may not be delivered.

Resilient communication requires understanding what technologies may be available to communicate, ensuring in advance that more than one option is available both for receiving news, calling for help, keeping in touch with family, and coordinating teams, learning how to use those technologies *before* an emergency happens, and making sure that appropriate equipment (such as radios and flashlights) are available and working before disaster strikes.

Individuals and families need to develop communications plans for themselves, but it is easier if communities and neighborhoods decide on standards and conventions so that individuals can work together. Not everyone needs to follow the plan (and some uniqueness actually helps promote communications resilience) but everyone should be able to know what the plan is. A plan may be written or suggested by:

- State, county, or local government.

- Non-profit or relief organizations.

- Neighborhoods, neighborhood watches, school districts, or churches.

- Amateur radio groups such as ARES.

- A workplace.

But, whoever promotes the plan, each level from national to individual should be able to adapt the plan for their own needs and should have continuous input into the plan as requirements, economic realities, skills, technologies, or realistic threats change.

This section describes a number of available communications technologies and how they fit into emergency planning. Many times, an alternative technology can be used in daily life outside an emergency as well. Routine use of alternative communications builds skill and familiarity, can justify expense by benefiting daily life even if no disaster occurs, and can discourage panic in a real emergency by presenting someone with a familiar and normal task. These risk management opportunities will be discussed as appropriate.

Principle: The best risk management confers benefits even if the risk does not occur.

Rough and Ready Communications	Simple communications which do not depend on complex technology to work. Always start here.
One Way Communications [53]	Broadcasting, newspapers and other technologies for getting news and information to a wide audience.
Two Way Communications	Technologies, especially radio technology, for communicating both ways. Technologies for requesting information, finding people, getting help, coordinating teams/emergency personnel, protecting communities, or simply talking with another person.

Recommended Watch Equipment

The Rural Watches depend on communications equipment to reduce crime, improve neighborhood coordination, respond to emergencies, and prepare for disasters. Watch equipment must work day after day under varied and sometimes punishing conditions. Over the last few years, some of us in the group have tested specific products and equipment for these roles. Most of it, honestly, has been cheap, unreliable, and difficult to use. Some of it has survived the rigors of farm and travel use.

There is some advantage to standardizing on specific products where possible, so that in emergencies someone will already be familiar with borrowed equipment. We need to strike a balance between standardizing new equipment and making sure that purchased products are compatible and interoperable with equipment people already have or may purchase used.

The following Forum discussions have information on equipment we have tested and found sound: http://countyrestorationhandbook.thestatesmen.org/content/neighborhood-watch-do-discussion-task-list#comment-9 http://countyrestorationhandbook.thestatesmen.org/content/emergency-power-radios-and-equipment. In addition, the page on emergency-flashlights has relevant information. These discussions need to be turned into a decent list of equipment we need to encourage people to get along with tips for using those specific units. We will try to buy in bulk to save money where possible.

TwoWayCommunications

The different types of radio technology can be bewildering. This section attempts to lay out the more common technologies available for emergency use, what they are good for, and how they fit into a

communications plan. Any discussion of radio technology is necessarily simplified. There are whole books on each of these technologies (especially *Amateur Radio*/HAM). We try to present the most important information for making intelligent choices and references for further reading. There are also a number of other special purpose technologies available which we will briefly mention but not get into detail.

A two-way radio is an electronic device for wireless communication. An individual such radio is often called a "set" or "rig". Radios may use different technologies, such as the frequency or wavelength of radio they communicate on (e.g. a "shortwave" radio) and how they encode a message into electromagnetic energy (e.g. AM/FM, digital or analog, SSB). Generally speaking, one radio may only be used to talk to another radio using the same technology. A FRS "bubble pack" radio you commonly see on store shelves may not be used to communicate to a 10m HAM set.

Radios also differ sharply in their purpose. A radio may be a mobile handset meant to be light and portable (but short range). A radio may be a set for installation in a car or other vehicle (like many CB radios). A radio may be a *BaseStation* for use in a home or office to talk to mobile radios in the field. There are also satellites and repeaters which simply echo what they receive at higher power in order to extend the range of a signal--- possibly to the other side of the planet. Lastly, there are radios meant to bridge gaps between different technologies, such as connecting a mobile radio to a phone system or the Internet.

A cell phone is just a mobile 2-way radio with a common system of repeaters to pick up the signals and connect them, as necessary, to the phone network. The advantage of other technologies in an emergency is that most common 2-way mobile radios can talk to *each other* without requiring the use of a complex tower and switching system which might not be available or may be inundated with traffic.

Although any individual may only use one or two of these variations, each of these types and technologies are part of a *resilient* strategy for emergency communications and it is important to understand where they fit in. Due to the many options available and the fact that technology changes daily, it is impossible to find *the* right solution. The guidelines we present here are simply a set of best practices which will get a household or community a good distance along the way until it has the expertise to make different decisions. The system does not need to be perfect, but merely good enough to allow people to function when primary systems are unusable.

Radios Need Power

It can not be emphasized enough that alternative communications and alternative energy are necessarily tied together. Radio sets require power, and although this can be provided by hand-crank for small, local units, the vast majority of radio sets will require electricity either in the form of batteries (which must be periodically charged) or a direct line for base stations and repeaters. Emergency FM radios used by emergency personnel have a limited power-life and extended time in the field without considering how they are to be recharged can result in a dead communications system, dead citizens, and dead personnel.

Emergency radios used by families and neighborhoods will be useless without reliable power checked regularly and a means to recharge in extended power outages. A community otherwise well-prepared for a disaster without the ability to coordinate and patrol its neighborhoods will rapidly fall prey to criminals and looters. Power for radios must be considered as part of any alternative energy plan.

Types of Technologies

The following is a list of basic technologies in common use in the US today. Some technologies will be in more common use in rural vs. urban areas, in major highway corridors, or different parts of the country, but the cost of equipment and the number of people willing to learn new skills or get licenses generally determines how many people will have or be willing to obtain certain types of radios in an area.

[A separate page should be written to talk about each technology in some depth with links for further reading; only top-level information needed by decision makers to generally understand the technology

is needed here. Once the break-out pages are done, it will be easier to decide where that line is and this section should be revised accordingly. /EricVought/ 2010-01-30]

FRS	*Family Radio Service-* unlicensed FM radio for family communication; very short range, cheap hand-held consumer radios make them popular and useful for home, neighborhood, and travel use. FRS shares 7 channels with GMRS so that FRS and GMRS users may talk to each other. FRS (and GMRS) use tones (CTCSS and DCS) to identify different groups of users on the same channel so that users can listen to only the traffic they are interested in. Channel 6, CTCSS tone 22 is suggested by the FCC for national emergency and travel information.
GMRS	*General Mobile Radio Service* - FM radio band for personal and family communication requiring FCC license. Can use repeaters to extend range. Many consumer radios support both FRS and GMRS but FCC-license is required for advanced features of GMRS. GMRS licensees will often have better, more professional equipment than FRS users and are allowed to transmit on a higher power with correspondingly greater range/reliability.
CB	Citizens Band or Citizens Radio Service - AM radio for general personal and travel communications requiring very simple radio technology. CBs tend to pick up a lot of interference (noise) but have excellent range for mobile radios and deal well with obstacles such as trees, brush, and vehicles. Channel 9 is reserved nationally for emergency communication.
CB/SSB	CB with *SingleSideBand* mode- a way to increase CB range with newer CB radios as long as both radios support SSB. Useful for local person-to-person communication.
MURS	Multi-Use Radio Service- FM *Very High Frequency* (VHF) radio band "a private, two-way, short-distance voice or data communications service for personal or business activities of the general public." Technology tends to be much less standardized (different brands may not talk to each other) than FRS/GMRS but provides more options for private/group communications. Somewhat better range than GMRS because its wavelength is not affected by trees, brush, and small obstacles as much (in this way, similar to HAM 2m).
Emergency FM	2-Way FM radios restricted to emergency personnel such as police, fire, and rescue. Technology is similar to GMRS but can support encryption and data transmission.
HAM 2m	Amateur Radio 2-meter wavelength, usually FM for short-distance and mobile communication. Requires HAM Technician license or above. May also transmit data (such as Internet connection) and use repeaters to extend range. Used by the Missouri SEAR network for emergency weather spotting.
HAM 6m	Amateur Radio 6-meter wavelength, AM or FM for local-to-regional communication. Requires HAM Technician license or above. May also transmit data (such as Internet connection) and use repeaters to extend range. Used by Missouri emergency communications network.
HAM 10m	Amateur Radio 10-meter wavelength for regional-to-global communication. Requires HAM Technician license or above for voice communication, HAM General license or above for data. May use repeaters to extend range.
Business Radios	Many businesses, such as warehouses and office complexes, have Business Band FM radios similar in technology to GMRS. This is mentioned to remind emergency planners to enlist the aid of such businesses in emergency planning.

hybrid radios	Some radios support more than one technology. Many 2-way radios also carry NOAA weather broadcasts and alerts. Today, most consumer GMRS radios also support FRS. Professional FM radios can be programmed to work with multiple bands, such as GMRS and MURS as well as the special purpose Business and Marine radio bands. Encouraging businesses to program their radios to support at least one FRS channel (e.g. Channel 6, CTCSS tone 22--- the suggested emergency/travel information channel for FRS/GMRS) will make these businesses more able to contribute to and participate with citizen emergency measures.

Figure 20.1. Two-Way Radio Popularity

2-Way Radio Technologies By Rough Popularity
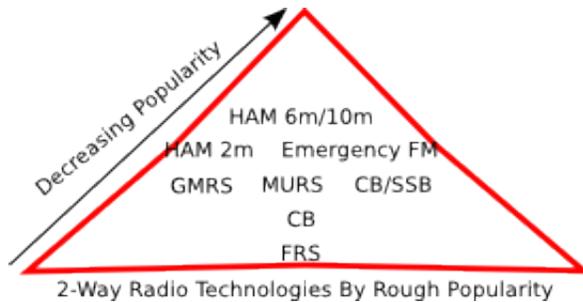
Figure 20.2. Two-Way Radio Coverage
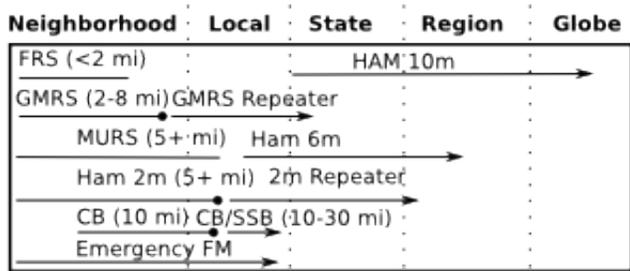
2-Way Radio Technologies and Approximate Coverage

The choice of which technologies to use cannot be made on the technology or its range alone. Popularity, ease of use, and cost often dominate. One cannot use a superior technology for neighborhood communication if at most one person in the neighborhood has that technology and knows how to use it.

In general, cheap, unlicensed consumer radios can be used for neighborhood and local communication when needed, as long as a sufficient number of more professional operators exist in every neighborhood and community to bridge the gap to county, state, and regional communication. Citizens should be encouraged to achieve at least the bottom-rungs of licensure (e.g. GMRS or HAM Technician) to guarantee that enough operators will be available for emergency needs. Citizens called to assist law enforcement posses, search and rescue, or to patrol their communities will benefit from professional radio skills.

Short-range technologies can be extended by repeaters to achieve quite wide coverage. A church in Boston experimented with giving small, wrist-watch-type FRS radios to elderly in the neighborhood to wear while walking. A local repeater picked up and amplified the weak signals from the tiny radios and church volunteers were able to listen if one of its elderly members needed help without requiring them to wear large, heavy, or complex radios.

Repeaters can be expensive, however (\$500-\$1500 ea.) and over-dependence on them leads to the same source of failure as the cellular networks: loss of towers, especially if the 2-way radio repeaters are mounted

on the same towers as cellular systems (often the case, there are only so many good tower sites). It is less likely that two independent networks (cellular and mobile radio repeaters on different sites) will be knocked out in the same emergency. Encouraging amateur operators to operate repeaters off of the roofs of their own homes, barns, or silos can allow them to contribute a valuable emergency service. Scattered repeaters with independent power sources (e.g. solar panel and battery) can provide an emergency system with both versatility and redundancy.

Although common mobile radio technologies FRS/GMRS and CB both provide channels for emergency communication, it is a common problem that *emergency personnel are no longer listening on them*. Police, fire, and rescue often have their own Emergency FM radios and have gotten rid of personal radio sets. It is therefore imperative that private citizens listen to these channels regularly and be prepared to relay information to 911-dispatch. In a situation where the telephone network is lost, emergency personnel should ask citizens to work with them to monitor mobile radio traffic and to take part in search and rescue operations. REACT and ARES are two organizations dedicated to this kind of effort.

Division of Labor --- Managing Communications

These kinds of considerations lead to the following general division of labor for communication.

Family and Household

Most families and households should have a number of FRS-type radios available for family communication. FRS radios are cheap, lightweight, and simple to use. Many of them also receive NOAA weather broadcasts and almost all of them these days support GMRS channels for future growth. They have convenient charging stations and many now charge off the same mini-USB cables becoming popular for cellular phones. Many have secondary features useful in an emergency, such as built-in flashlight and a siren to signal for help. At the time of this writing (2010-01-30), some consumer radios designed for emergency use (such as the Motorola Talkabout® EM1000) are appearing. Radios are cheap enough that non-profit emergency and relief agencies can stock or distribute a number of them in order to encourage their use or have them available in a disaster.

Two-way radios of this design can be used on a daily basis, outside of an emergency. Since they have no monthly connection fee, they are considerably less expensive than cell phones for neighborhood communication, keeping track of children outdoors or at an event, meeting up in a large store or parking lot, or coordinating multiple vehicles while traveling. Kids can be encouraged to carry them to keep in touch with classmates outside of classes at school. FRS radios can be used in populated areas to get travel and road information and sometimes to talk to other equipped drivers. Such radios are often used by event planners for, e.g. Cub Scouts, historical reenactment, or proms to keep things on track.

If the radios are used routinely outside of an emergency, they will be available in an emergency. An emergency, from a car accident, to a regional ice storm or tornado trapping family members at work or school, can occur with little warning. A 2-way radio should be readily available to every family member old enough to use one at all times. By putting one in every purse, bug-out bag, backpack, or car trunk, you can increase these chances, but only if they are regularly used will you be certain that they are actually present, charged, and functional when needed. In addition, routine use breeds familiarity; performing a familiar task and being connected to friends and loved ones makes it easier to stay calm in an emergency.

Households should be further encouraged to obtain GMRS licenses. This is an FCC license with a fee, generally for five years at a time, and it covers an entire family. Unlike HAM licenses, there is no test but there are some rules and etiquette for using the more powerful GMRS features. Not every household will bother to obtain this license or learn to use it to the fullest, but, the more that do, the more operators will be in each neighborhood with a more advanced skill set and likely somewhat better equipment to glue together the families with cheap "bubble pack" radios and the better chance of getting help or road information when needed.

Each household should have a Citizen's Band or CB radio available and it is a good idea to have one in a vehicle. New CBs are more expensive than FRS radios, but used ones are plentiful. CBs have longer range than FRS radios, especially in urban or wooded conditions, are simple to use, and many people listen to them, including professional truckers, backyard hobbyists, a variety of businesses, and perhaps as much as one-fourth to a third of emergency personnel in rural areas. Chances of getting the word out when, for instance, trapped in the basement of your home or in your car in a snowdrift are better than for FRS/ GMRS. It is not too difficult or expensive to put a good CB antenna capable of reaching 10 or more miles on top of a house and only a few of these are required in a community to pick up most citizen emergency traffic. Organizations such as REACT specialize in listening for and relaying these messages to emergency personnel. It is now common for CBs to also carry NOAA weather alerts, providing another opportunity to receive emergency alerts and announcements.

CBs are often a poor choice for family communication, even in rural areas because there is more traffic on them and the traffic might not be "family friendly" (the less-professional truckers can be quite explicit in on-the-road conversations or simply crude and may tie up a channel for quite a while). CB mobile radios also tend to be heavier and bulkier than their FRS/GMRS counterparts.

Neighborhood Communications

We are generally working from the EMCOM *Neighborhood Emergency Radio Communications Service (NERCS) guidelines[845]* for Neighborhood Watch communications. These guidelines form part of the basis for technology choices and frequency/tone assignments.

Neighborhood communications can vary markedly by neighborhood. Each neighborhood should have the means to communicate between at least a portion of households and between its local neighborhood watch and emergency personnel. If a fair portion of households can be kept informed, then people can group together for news or pass information informally (FRS radio, runner, shouting) to other households. Older children and young adults can be readily pressed into service to run paper or verbal (depending on responsibility) messages between stations and will be excited to be able to contribute. Small groups of households (e.g. a floor in an apartment building, four neighboring farms, etc) should associate together for purposes of sharing information, making sure radios can be kept charged, and so forth. Elderly, shut-ins, and similar at-risk residents should group together with another household, if possible, during an emergency. This can follow the same structure as a call tree for the local Neighborhood Watch and would connect up the chain to the local *WatchCaptain*.

FRS radios work poorly in urban areas (interference from buildings) but houses are much closer together. A couple of blocks can easily be covered by cheap FRS radios. The higher power of GMRS radios does a better job of penetrating walls and floors. MURS radios do a good job of covering urban areas at somewhat greater expense and the possible need to buy identical radios to ensure interoperability. CBs penetrate buildings well but are often subject to interference from high voltage lines and other electric equipment which might make them unusable. Therefore, it is likely that some combination of FRS and GMRS will be used in urban neighborhoods. In a populated area, a GMRS repeater could easily service several neighborhoods with the expense divided among several hundred people but different channels and CTCSS codes can be used to separate traffic out so it does not become too crowded. (Make sure it has backup power!)

A rural neighborhood may be spread out over several miles to handle just a small number of farms. Unless the terrain is flat and empty, FRS simply will not handle this situation. GMRS without a repeater may be able to depending on terrain and if the local Watch Captain or someone willing to act as a dispatch has a high enough antenna. A GMRS repeater can cover the area but the expense will be divided among fewer households than in an urban area. MURS may do quite well and fewer identical sets are needed to cover the neighborhood. The extended range of CBs may be useful here and interference is usually much less than in urban neighborhoods. A few vehicle-based or home-roof-antenna CB sets can be used to pass information over a considerable area. In this case, many farms might have cheap FRS/GMRS sets for their own use and one CB or MURS radio apiece to connect up to other farms. It is not as easy to fill coverage

gaps in rural areas with informal methods since farmers often must remain with their livestock to care for them and runners must cross a considerable distance.

Suburban areas, being in-between these two extremes, can likely make good use of either technology option. Cost, whether people already possess certain radios, and terrain will likely dominate the decision. Coverage gaps can easily be filled by message runners and multiple households can often consolidate to work together in the duration.

Neighborhoods must also be able to communicate to the wider community for news and relay information to emergency personnel. Neighborhood communications, for instance, would be used to report an injury to the Watch Captain (or the neighborhood dispatch) who would then use neighborhood communication to locate temporary assistance (a First Responder or First Aid-trained volunteer) and a longer-distance technology to contact emergency personnel.

This longer distance technology might be CB, CB/SSB, Emergency FM, a high antenna, repeater, or human-in-the-loop relay through another neighborhood, but this is the place where Amateur Radio operators and HAM radios really shine. 2m (with a good antenna or favorable terrain) can cover a town and easily get messages between a neighborhood and another HAM operator (probably an Amateur Radio Emergency Services (ARES) member) working with local authorities and emergency personnel.

ARES encourages members to have portable units with backup power and the radio groups have yearly outings to test their systems and exchange information. In addition, Amateur Radio operators are required to pass tests on a wide variety of radio technology to get their license. A local HAM may be able to help maintain and repair other types of radios, antennas, and generally to advise people on how to best use their equipment.

CB radios with SingleSideBand can be used to pass news in and out of a neighborhood. For technical reasons, CB/SSB is more oriented toward long point-to-point conversations rather than short messages between multiple participants (the receiving and sending radio must be tuned to each other), but this is an excellent technology for families to pass news to other families in the wider area and to simply allow people to connect up and talk when other methods might be reserved for emergency traffic.

Businesses

Businesses often have radios for their own use. In many cases, these days, this takes the form of Business Band FM radios, but some, especially rural, businesses use CB radios, and some still use GMRS under old FCC licensing rules. Businesses obtain radios for the ends of the business, not the community, but, in order to function in an emergency, to protect its property, or to ensure the survival of its employees during an emergency, a business will need to be able to communicate with the wider community, with Neighborhood Watches, and emergency personnel.

Businesses using CBs or GMRS already have this ability. Professional Business-Band radios are often actually programmable general-purpose radios. A typical radio may have, for instance, four, eight, or ten channels pre-programmed by a technician as memory slots for the frequencies and settings the business uses for security, fulfillment, plant operation and so forth. It is often straightforward to program one of or more of these channels to a shared FRS/GMRS channel (such as channel 6) so that these radios can be used during an emergency for employees to call for help, to coordinate with emergency personnel or community volunteers, or so that some radios can be loaned to emergency services for the duration of a crisis.

If radios are to be used in this manner, it is worthwhile for the business to plan in advance so that the radios may be recovered or paid for after a non-world-ending emergency. This will include property tags, a list of model and serial numbers, and pre-printed receipts so that the business has a record of who requisitioned the radios and who is responsible for them. It is possible for communities to subsidize radios under a letter-of-marque system: community money pays for some of a business radio's cost in exchange for its use during a disaster (when the business will likely not be operating anyway).

Businesses or business complexes might conceivably use a HAM radio to connect to the wider community and relay information from shorter-range business radios to emergency personnel. It should be noted, however, that FCC rules forbid businesses to require employee Amateur Radio Operators to participate in emergency drills or to pay them for their services --- they must remain volunteers.

Communities

Whether a large city or a rural town, community-wide communication will look somewhat similar. Missouri's townships were specifically laid out to support reasonable foot and horse communication which also makes them reasonable for the same radio technologies.

Emergency FM radios and repeaters will be used to connect emergency personnel. HAM 2m, 6m, and possibly 10m will connect the community to the wider world and coordinate with county and state officials. HAM operators can relay messages for citizens to their families in other communities or help separated families find each other. Either a significant number of emergency personnel should have access to citizen mobile-radios used for personal or neighborhood communication (CB, FRS/GMRs, MURS) *or* emergency personnel should be prepared to use citizen volunteers to relay messages to them.

Communities must be careful when relying on Emergency FM and a repeater network. It has been shown, in 9/11, for instance, that these radios do not work well in and out of disaster areas where debris and rubble may absorb signals, especially if the repeater network with its more powerful transmitters is damaged or destroyed. Emergency personnel should be prepared to fall back to more resilient technologies when necessary, including CB or CB/SSB radios (high-voltage interference is less likely present in such a disaster), HAM radio operators on the 2m band, and good-old fashioned paper and runners to go between pockets of Emergency FM connectivity. There also must be means for emergency personnel who may be spending extended periods in the field to *recharge* their radios.

A healthy local Neighborhood Watch organization may provide a ready-made system to relay critical messages and emergency personnel should form relationships with the neighborhood operators *before* they are needed to make sure they are prepared to work together. More than a radio is needed to relay messages; it also requires more radio discipline than typical communications and both sides have to agree on basic conventions and protocols. For example, the radio code "ten-twenty-three" can mean very different things to a typical CB operator and to a police officer.

In problematic terrain (hills and thickets of trees), communities should make efforts to encourage siting of CB and line-of-site FM antennas in good locations, such as the roof of a house at the peak of a hill.

Communities should also have access to alternate methods of Internet connectivity (cable, DSL, wireless broadband, satellite) to provide the best possibility that normal business may proceed as best as may be expected. More technologies means a better chance that they will not all be knocked out. Internet systems were explicitly designed by DARPA to survive a nuclear holocaust. Internet routing is quite resilient in the face of alternate routes and broken trunks. Scattered satellite Internet connections can ensure that information can get in and out of a region even in very significant disasters.

Internet connections (and HAM packet radio systems) also provide a convenient way to transfer bulk data such as pictures, compressed audio, and documents into and out of a disaster zone, such as research on a disease outbreak, photos of criminals or of equipment damage, technical specifications (say for repair of equipment), and official documents authorizing emergency action. Making certain that local Internet Service Providers are prepared to reroute around damaged connections using different technologies benefits both them and the community at large.

Community shelters should site HAM relays where possible. The amateur operators can then take advantage of the shelter's emergency power and, when emergency traffic does not take priority, can help separated families connect to each other.

Counties

County-wide and county-to-state communication will largely be accomplished on the HAM 2m and 6m band using volunteer operators, possibly with a network of repeaters. 6m radio is also the standard for Missouri emergency communication. Which bands will be used in what manner for county coverage depends entirely on county terrain. A basic plan, including strategic placement of amateur radio relays and automated repeaters should be developed and tested.

Weather spotters in Missouri largely use 2m technology.

A significant portion of County sheriff and other county-wide emergency personnel should have access to CB and CB/SSB sets and be trained in their use. In addition, personnel should be prepared to coordinate with Neighborhood Watches to relay information when phone systems are down.

A small number of FRS/GMRS sets should be available to communicate with residents-on-the-scene, an extreme example being when someone is trapped in a collapsed house and only has an FRS radio or a resident is barricaded in the bedroom with an ax-murderer in the house. Relaying from emergency radio to dispatch, down to a neighborhood dispatch and finally, to the trapped resident would be excessively cumbersome. County personnel may elect to borrow citizen radio operators (or radios) from the neighborhood/community near the scene, but this should be thought about some in advance as time may count.

County agencies or organizations will need to operate radio bulletin boards to gather and disburse information on people separated by or stranded in the emergency. Radio relays at shelters can report to the county relay who has checked in at a shelter and can deliver posted messages. Other family members can then connect to the county system and be directed to the correct shelters or receive a message that a loved one is accounted for and safe.

State

At the state level, the county communication systems must come together to work with state government/ emergency management, disaster/relief organizations, and regional information sources. Broadcast news sources such as TV, and radio must be able to get timely information from these organizations to keep listeners informed. Missouri has standardized on a 6m emergency radio network. The details of state planning are beyond the scope of this document but largely flow from the needs of county systems.

Paper Mail/Courriers

The Postman, *Lucifer's Hammer*; how to organize to get physical mail transfer working as quickly as possible. Mail courier as means of informal communication and official broadcasts. ---Eric Vought

Chapter 21. Rural Watch Area

Overview

The Rural Watch Area is an adaptation of the NeighborhoodWatch program for rural, farm-based communities and their associated, more-settled areas. The Neighborhood Watch Program has several shortcomings for Rural Watch organizations:

- It is focused on block-structured urban areas where population density is high and areas to be covered are relatively small.

- It does not deal with issues of natural predators, protection of livestock, or response to livestock-out-of-bounds incidents.

- It is oriented toward relatively short response times for emergency personnel such as EMS and Sheriff.

- Directly following from the previous two bullets, the Neighborhood Watch Program documents completely sidestep the incredibly sensitive issue of armed watch members, but this issue cannot be adequately ignored in a rural watch--- it must be dealt with as best as it can be. Instead, the NWP documents forbid armed watch members and focus on "observe and report" protocols similar to private security guards.

- It (intentionally) fails to flesh out the details of neighborhood communication in situations where phones do not operate and shouting is insufficient to communicate with the entire watch area. These details were meant to be fleshed out at the county/neighborhood levels.

Because the watch program was intended to be adapted by the local groups, these failings are not fatal. It seems likely that the negative armed watch position was taken to avoid the serious liability issues for watch members using deadly force in the protection of property and the ambiguity of when such force might be justified in the defense of life. These concerns must be adequately dealt with in any add-on effort and must be tailored to the local moral, legal, and threat environments.

At the same time that we deal with these larger omissions, rural Watches differ in several other ways from their urban counterparts:

- The nature of rural crime tends toward property theft and destruction rather than violent crime. Rural folk tend to be more affluent than urban dwellers (if you do not feel particularly 'affluent,' realize that farming is a capital-intensive business and that farms typically have more value in equipment and livestock sitting around unguarded than most urban mugging victims have on their person).

- Violent crime which does occur tends to be more brazen and often toward home-invasion scenarios or kidnapping where the attacker is not afraid of discovery or adequate response from law enforcement--- there is simply no one to hear.

- Existing communications tends to be inadequate and unreliable. Many areas of Lawrence County, Missouri, for instance, have only sporadic cell phone coverage and many towers are not adequately protected against loss of power. Rural phone switches tend to assume very low simultaneous usage and will overload quickly in any type of emergency.

- The size of Rural Watch Areas makes it difficult for neighbors to simply watch their neighbors property while going about their own business as can be readily done in an urban area. A Rural Watch must concentrate more on active patrols of the area, on reporting and tracking suspicious activity.

Neighborhood Watch

The Neighborhood Watch Program[1] started in the 1960s to focus on residential crime prevention programs involving private citizens. The National Sheriff's Association created the National Neighborhood Watch Program in 1972 to assist citizens and law enforcement in starting and organizing local Watches.

Over time, the role of the watches expanded from simple crime prevention activities to include emergency response, disaster preparation, emergency communications, and other tasks. In 2002, USA On Watch was created in a partnership with the NSA, the Department of Justice, the USA Freedom Corps, and the Citizen Corps to recognize this expanded role. The Neighborhood Watch Program was intended as a starting point, not a finished product. Localities and Sheriff's departments were encouraged to tailor materials and organization to their local needs.

In many ways, the activities of a modern organized watch are roughly those of the typical Founding Period's community militia, minus the armed civil defense role which those militias were infrequently called to perform. The de-emphasis on local militia training/activity, the co-opting of the term 'militia' to mean 'armed hate group,' and the general decay of community organization made it necessary to recreate them for general neighborhood communication, citizen patrol, and emergency response in a non-paramilitary context. Ideally then, a 'militia' is simply a group of armed citizens who have been activated in a civil defense role and who probably follow roughly the same structure of organization (at least initially) as the community's Watch structure. As with Founding-era militias, we expect this use to be infrequent on a historical scale but critical to state security on the occasions where it is required.

The Neighborhood Watch Program has several shortcomings from the point-of-view of rural, farm-based, communities. The Community Restoration Handbook attempts to lay an effective foundation for a *RuralWatchArea* program.

Resources

USAOnWatch[2]   The USA On Watch/Neighborhood Watch homepage.

Neighborhood Watch Manual[835]   The official handbook for starting and organizing a local neighborhood watch.

Neighborhood Emergency Radio Communications Service[854]   An EMCOM proposal for emergency radio communications at the neighborhood/watch level, including technology, channel, and tone assignment recommendations.

Rural Watch Area Organization

Smallest Local Unit

Each Rural Watch Area will be based around a 3 section by 3 section (3 miles by 3 miles) square covering one fourth of a survey township (6 miles x 6 miles). This ends up being a fairly manageable size for rapid foot/horse/vehicle communication, can be covered by portable radios, a bell or siren. Because Lawrence County farm roads are based on the section lines, it is easy to describe watch boundaries in terms of the cross roads. The number of families in a typical Rural Watch Area is roughly comparable to an suburban block.

This convention also makes it easy to name each watch uniquely (statewide) according to its township and quadrant. If this effort succeeds, there will be dozens of Rural Watch Areas in Lawrence County alone and they will need to be identified correctly when communicating with emergency personnel. Each watch will

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[1] http://usaonwatch.org/
[2] http://usaonwatch.org/

be formally named by the survey township and the quarter of the township it covers. So, for instance, the watch south of Stotts City, Missouri will be "T27N R28W NE" (sections 1, 2 ,3, 10, 11, 12, 13, 14, 15). Because the township names are based on the distance to the latitude and longitude range-lines, emergency personnel can readily convert the Watch name into a location on the map.

In areas of higher population, such as the outskirts of towns or business districts, the Watch Area can be reduced to a single section named by the section number, as in "T27N R28W #13".

With a Rural Watch Area based on this size, people can walk from the outside of the square to a headquarters in the center within an hour (2 to 2 1/2 miles max depending on layout of roads), and bicycle, ride, or drive that distance in minutes. From experimentation, it looks like decent consumer GMRS radios will cover this distance as will hand-held CBs, especially with a base station and good antenna at the headquarters. Low-end, FRS-only radios may not cover the distance adequately unless the terrain is ideal.

Each Rural Watch Area will have a Watch Captain and should have at least one Deputy Watch Captain. Ideally, they should also have a neighborhood dispatch separate from the Captain so the radios can be monitored and the neighborhood can coordinate with emergency services while the Watch Captain is in the field. The Watch Captain, Deputy Watch Captain, and Neighborhood Dispatch should be (or become) GMRS licensees and the Dispatch may be HAM operator. Access to emergency FM radios will depend on local policy.

When there is an extended emergency, neighborhood residents should gather at the Rural Watch Area HQ to get news, and volunteer to help. Either at the HQ or elsewhere, residents should consolidate small children, elderly, and disabled if possible in order to free up potential volunteers for other duties. Injured persons should also be moved here if possible and medically advisable so that emergency personnel can service one location. Bulk cooking should be done at the HQ, again to free up people to volunteer and so that returning volunteers or emergency personnel operating nearby can come back to a hot meal.

Township Level

The next level of organization is the *Survey Township*. Please note that to prevent confusion, we will generally refer to incorporated townships, such as Mount Vernon, as *incorporations*. There are four Rural Watch Areas per survey township, six miles by six. Professional-grade GMRS base stations with good antennas, 70 cm HAM base stations or mobile 2m HAM, and well-placed CB base stations should be able to cover this distance. Mobile 70cm HAM or GMRS sets should be able to cover the distance with a repeater. Foot traffic should take a few hours to go from the Rural Watch Area HQ to the survey township HQ. Horses and vehicles can cover the distance quickly.

The Survey Township will have an equivalent population to many urban Neighborhood Watches and will have a Watch Coordinator responsible for coordinating between emergency personnel and the Rural Watch Areas under his or her Survey Township. There should also be a Deputy Coordinator and, again, a Township Dispatch who is different from the Coordinators and preferably a HAM operator/ARES member. Access to Emergency FM radios will depend on local policy, but the Coordinators and Dispatch at this level probably should have access to Emergency FM radios.

At the Survey Township level, the HQ should be prepared to accept refugees and injured from the surrounding Rural Watch Areas as well as to dispatch volunteers to where they are needed. Maps, radios, first aid supplies, and the means to set up a small aid station and field kitchen should be available here. The Survey Township HQ should be prepared to host volunteers and emergency personnel returning from the field.

The Rural Watch and Bearing Arms

Patrol members should be trained by law enforcement. It should be emphasized to members that they do not possess police powers and they shall not carry weapons

or pursue vehicles. They should also be cautioned to alert police or deputies when encountering strange activity. Members should never confront suspicious persons who could be armed and dangerous.

—*Neighborhood Watch Manual[835]* pp 20

A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed.

—*2nd Amendment to the Constitution of the United States* as found in [MissouriConstitution] pp 189

That the right of every citizen to keep and bear arms in defense of his home, person and property, or when lawfully summoned in aid of the civil power, shall not be questioned; but this shall not justify the wearing of concealed weapons.

—[MissouriConstitution] Article I, Section 23 (pp 15)

The Neighborhood Watch Manual carefully specifies that Watch members are not police and that watch members *shall not* carry weapons. Watch members are not, in fact, law enforcement, and have no more authority for confronting criminals than any citizen--- and less, under the law, than a property owner confronting a criminal on their own property. Watch members should not seek confrontation with potential criminals and trespassers and--- under both law and morality--- use or even threat of deadly force is seldom acceptable in the defense of mere possessions or property.

Watch members who use deadly force to intervene in a crime may expose themselves to both criminal and civil liability. That being said, the strict prohibition on watch members carrying arms is simply unworkable in a rural watch for reasons to be further discussed below. This forces us to attempt to develop guidelines for how and when watch members may carry arms for their *personal defense* and what the likely consequences will be. It is hoped that these guidelines will form the basis for individual watches to decide these serious issues for themselves if they wish. Clearly, for instance, a Rural Watch Area consisting to large degree of Amish farmers is going to approach these issues very differently than other Watch Areas. In the end, the goal of these guidelines is to inform on best practice and let individuals make the difficult moral choices for themselves.

Legality

The discussions based on the law operate from best knowledge at the time of this writing. Law may change, as may the way courts interpret it. Do not rely on any of this as legal advice without doing your own research and consulting an attorney if that seems prudent. Missouri CCW courses also offer some instruction in current self-defense law and policy.

The Problem

In an urban Watch with high population density, relatively small distances, and relatively quick response times, a blanket prohibition on the carrying of arms by Watch members on patrol may be workable (some may argue that it is not advisable in even that circumstance, but we will not tackle that question here). An "observe and report" approach can work well when lines of communication are short and a rapid response is likely. Criminals, in this situation, are likely to be more afraid of their actions being observed and transmitted to the Watch Captain and from there to police when communications are reliable, pictures and video are easy to take and transmit, and an armed response can likely be called by the Watch (in the form of police or nearby armed citizens) quickly. An unarmed Watch member in a well-organized community may well count on the cavalry coming to the rescue, perhaps even stepping out the door of the apartment 15 feet away.

In a Rural Watch Area, let us take a standard three mile square in a farm community, the chance of an armed response showing up in time if a Watch member is directly threatened (or they directly witness a

violent crime) is close to zero. The time for even the nearest neighbor to reach the roadside to help a Watch member may often be measured in minutes and the Sheriff may be upwards of thirty minutes away. This fact dictates not only policy regarding weapons, but also any other equipment carried by a Watch member, such as first aid kits--- the response time of local EMS is likely to be no better than that of a Sheriff, and a victim may need to be kept alive until more qualified help can arrive. When something goes wrong, a rural Watch member is likely to be on their own for a significant length of time.

Many rural citizens therefore habitually carry arms or may have them accessible in their vehicles. A farmer out checking on livestock and who sees a predator will not likely have time to go home, unlock a weapon, and bring it back to the scene before their entire herd or flock has been annihilated. This is especially true of smaller livestock such as sheep and goats. As many Watch members may be patrolling as part of their own farm-related duties, which often span multiple owned or rented pastures, forbidding them to carry or have weapons accessible *for personal defense or of their own stock* is not workable. This decision must be left to the individual farmer.

Rural Watches must also deal with hunting season which is not normally an issue in urban areas. This leads to a high probability that routine confrontations with trespassers or strangers during this season may involve an armed poacher. As a pragmatic statement, it is never advisable to confront an armed trespasser without being likewise armed: if they are law-abiding, confrontation is not necessary; if they are not law-abiding, confrontation is foolhardy. It should be noted that citizens armed on their own land may be exempt from rules prohibiting the carrying of certain types of weapons during hunting season (e.g. limits on the number and type of rounds in a shotgun during turkey season) and that this exemption does not extend to Watch members who are not on their own property.

There is also a basic difference in the way some violent criminals may respond when discovered or observed in rural areas. With communication lines and response times longer, with it harder to accomplish the real-time transmission of pictures and video, an armed criminal may just as readily opt for silencing the witness and taking the camera as for running away. First Responders in rural areas may specifically be the target of criminals posing as victims and this can happen with neighborhood watches as well. In addition, another problem which urban areas do not often have is the wild, feral, or even rabid predator who will certainly not be intimidated by a camera and a radio. Watch members should not *seek* confrontation, but the choice of whether and how to defend their own persons must be left to them as individuals.

In many instances, regardless of Watch policy, it is better to let a crime against property go unthwarted and depend on law enforcement to catch the criminal who has just been filmed in the act rather than risk a deadly altercation (and possible harm to bystanders) by a direct confrontation. As a legal principle, an armed citizen may not even forcefully *present* or threaten with a weapon unless there is an imminent threat of harm to life and limb. Such a threat is not present when observing a thief in the act of stealing a bicycle unless they directly threaten or harm others in the act.

But in the rare cases where a Watch member directly observes a violent crime and in which lives are in danger at that very moment, telling them that they must "observe and report" without intervening, when they know that armed intervention will almost certainly not arrive in time, is morally questionable. Whether it is actually *advisable* to intervene is something which cannot be determined for all situations in advance. Even the training of law enforcement officers is not sufficient to that task and the decision may never be made lightly. Purporting to make that decision across the board for all neighborhoods and all situations is simply not operable.

The Devil In the Details

Because neighborhood watches have no special authority or law enforcement power, any Watch member choosing to intervene in any situation does not do so with the endorsement of any organization (and clearly not endorsement of the Neighborhood Watch Program which explicitly forbids doing so). At the point where they go from observer to participant, they shed their identity as a member of the Watch and act

as private citizens only. They are then open to civil and criminal liability for their actions as well as the possibility of having to live with a mistake, and a resulting wrongful death, for the rest of their lives.

Additionally, there is the question of whether and how a citizen may lawfully carry arms independent of the Neighborhood Watch. Watch members may not be issued arms by the Watch. When they carry arms (or have them accessible in their vehicles) as *private citizens* while participating in the Watch, they must obey all other requirements for lawful open or concealed carry. *This includes the requirements of property owners* whose property may be posted or who may not have given permission for anyone to carry weapons on their property. Participation in a Neighborhood Watch does not constitute a blanket allowance for its members to carry arms on all properties within its bounds. Indeed, such would be extremely problematic when there may be criminals who *live in the neighborhood* and who may wish to participate in the Watch as cover for other activities.

Otherwise lawful possession of legal weapons may not be a problem on patrol when the patrol sticks to public roadways or when weapons remain in the citizens' own vehicles, but any time response to an emergency results in entrance into a property, the rights and wishes of the property owner *must be obeyed*. It is best to discuss these issues in advance and to make sure neighborhood properties are properly posted to avoid any possible confusion.

Guidelines For Watchmembers Bearing Arms

- Watchmembers may lawfully bear arms *in their own person* and for their personal defense while on patrol or other Watch business as long as they obey all applicable laws and are otherwise entitled to bear arms (e.g., of age and not a convicted felon). Likewise, they may keep accessible arms in their vehicles subject to applicable law. Neither the Watch, nor any group, organization, or other person associated with the Watch assumes any responsibility for the use of any such arms.

- A Watch shall not issue weapons to its members, request or require them to bear arms in its name, request or require armed response by Watch members to an incident. A request by a citizen (for instance on a Watch radio frequency) for help when under (alleged) threat of bodily injury or death is a request from the *citizen* in their personal capacity to other citizens in their *personal capacities*. Be aware that responding to such a request, especially when you did not witness an altercation and do not fully understand the situation, is fraught with danger: morally, legally, and physically. *Do so at your own peril.* Trained law enforcement will often hesitate to enter such situations, especially domestic disputes.

- In the state of Missouri, it is illegal to shoot any canine (domestic or feral dog, fox, coyote, or wolf) unless the animal is a threat to life or property at the time of the shooting. Retaliatory, preemptive, or systematic shooting of stray animals is not legally authorized. If an animal is shot in the process of attacking a human or after it has bitten a human, it should be preserved for examination by health officials to see if a disease such as rabies played a role in the attack (Rules For Shooting Canines).

- Individual families or farmers in a neighborhood may make agreements among themselves as to whether and how armed response is authorized on their property. For instance, my neighbor and I might arrange that we will protect each other's livestock from predators. Once again, these issues are outside the scope of the Watch organization and must legally full under the scope of private individuals.

- Watch members should not pursue criminals, trespassers, assailants, or vehicles. Instead, issue a *Be On The Lookout For* (BOLO) to other watch members/nearby watches and inform authorities. Take pictures and record notes.

- An armed watch member must obey the requirements and postings of a property owner the same as everyone else. Each Watch is expected to discuss the issues and to ensure that properties are appropriately and legally posted as to any weapons policies of the property owner. Membership in a Watch does *not* constitute any authority to bear arms on any property.

- Watch members should not seek a confrontation with anyone likely to be armed or violent but should focus on observing and reporting suspicious activity. When trespassers must be confronted in order to determine their purpose, it is recommended that the property owner or his/her agent approach with Watch members there to observe. Under Missouri law and *Missouri Castle Doctrine*, the property owner has certain rights in defense of their own property not held by anyone else. In any case where there is reason to expect that a trespasser may be violent, 1) avoid confrontation and 2) call the Sheriff.

- Watch members, even in their own capacities, should not present, brandish, or fire weapons, threaten or use force unless to protect life from imminent danger.

- A Watch member (whether armed or not) who intervenes and uses force in any neighborhood confrontation is legally *on their own*. The Watch may neither discourage nor encourage such action.

- Members of a Watch may be legally charged by a Sheriff or other civil authority to bear arms during a protracted emergency (acting as a posse, as assistant deputies, or as a militia), but until or unless that occurs, they are merely citizens with no legal authority.

- A Watch may (and should) attempt to educate rural citizens on the legal and moral issues involved in the use of deadly force for self-defense and may encourage local training in the safe operation of firearms or in self-defense generally so that citizens may choose to act or not act in their own person. This may include organization of firearms safety, hunting safety, training by local law enforcement, and CCW courses. Weapons are a fact of life in farm communities and people should know how to handle them safely and effectively.

- Pepper spray and black powder weapons often fall under different laws than firearms. Rural Watch Areas may wish to discuss these alternatives in areas where carrying of firearms for personal defense may not be acceptable.

- It is not generally advisable to enter private property on patrol and is not advisable at all to do so without permission of the owner. Doing so armed is a good way to get killed.

- Do not confront strangers who are merely present in the community, such as a car which has driven by several times. Record information and take photos if possible and issue a BOLO to other Watch members to see if a pattern develops. (In my neighborhood, a neighbor called the Sheriff because of a suspicious vehicle often driving through slow in the middle of the night. As it turns out, it was a person who had recently leased a pasture and was checking his livestock at regular intervals. Suspicious behavior does not equal "illegal" but it is worth keeping an eye on. (---EricVought)

- Always have witnesses. Use the Buddy System whenever possible on patrol and/or record encounters, preferably transmitting that recording to another location. Log any incidents immediately while the details are still fresh in your mind.

Rural Watch Area and Mustering Out

Rural Watch Example

Part VI. Restoration Cyclopedia
- Topics From A to Z

Table of Contents

Alternative Energy and Lighting

Energy and Lighting Resources in Springfield, Missouri area.

Lighting

Whenever an emergency situation hits, or even when the power just happens to go out for whatever reason, it's always a good idea to have some emergency lighting around the home. Remember when Y2K was about to hit and everyone was scrambling around for back-up generators to give them the extra jolt of power needed in case the end of the world did happen? Well, the end of the world didn't happen, but that doesn't mean it isn't a good idea to have a generator lying around the house. With that said, ask yourself, are you and your family ready for the next Y2K?

It's always good to have some extra candles and flashlights around your home, but sometimes those items won't always suffice. A few other items you should also have on hand include water, batteries, and even some dry foodstuff; after all you never know how long you'll be in the dark for. Other items that I've found to be extremely helpful include hurricane lanterns and solar powered lights such as flood lights and lanterns.

Hurricane lanterns, whether they're the traditional ones made for oil candles or the modern ones that include flash bulb ballasts are excellent sources of light. Perfect for camping and emergency situations, hurricane lanterns provide a sufficient amount of light for long periods of time, which is surprising since it's considered a small lamp. Solar powered lights and flood lights also make for excellent emergency lights. Mainly used for industrial type projects, they can also be used for outdoor events and as construction lights since they're extremely bright.

You wouldn't really think it, but solar powered lights do come in handy and require little maintenance. Batteries are usually not required (even though it's a good idea to have some around in the event that you do need them) and you only need to put them out in the sunlight to get them charged. Even today, many companies are developing solar powered and eco-friendly lights and flashlights, ensuring you that they will work the moment you need them. Regardless, no matter what the circumstances are, there's no such thing as being too prepared. As long as you have all the necessities, you'll be more than ready to face the situation head on.

Solar Lighting

http://www.ozarksgreenbuilding.com/lighting.html

Lighting fixtures can account for nearly 20 percent of the electric bill in the average home. There are products out there, however, which use up to 50-75 percent less energy than the typical incandescent or halogen light fixture. Compact Fluorescent Light bulbs (CFL's) use about 1/4 the energy of regular incandescent bulbs to produce the same amount of light. They also last about ten times longer than regular bulbs, roughly 8-10 years. LED lighting is an emerging technology that holds great promise to revolutionize lighting over the next decade. They utilize about the same amount of energy as CFL bulbs, however have a much longer lifespan of about 22 years. LED lights also do not contain any mercury, one of the downsides of CFL bulbs. Here are some simple techniques to follow which can reduce the amount of lighting energy you consume in your home:

Use task lighting to only illuminate the spaces you need, allowing you to reduce the wattage of light bulbs. Take advantage of three way lights and dimming fixtures and use light light when you don't need it. Install motion detectors on exterior lights so they aren't always on.

Use low voltage lighting, such as CFL and LED lights wherever possible.

Use solar lights for exterior landscape lighting which charge all day and do not require any electricity. For more information on lighting products, visit ENERGY STAR's lighting products guide. Look for ENERGY STAR qualified lighting fixtures when purchasing new lights.

Glade Winds

http://gladewinds.com/ Our Mission: Educate our clients, local government and non-profit organizations on the benefits of clean, renewable energies. Encourage sustainability so that our local communities will be self-sufficient and economically sound. Provide our clients with quality products, consulting and installation that best suits their needs. GladeWinds' expertise is with wind and solar technologies as well as organic lawn & garden practices. We also know a thing or three about the hearth industry. Geothermal and Hydroelectric are other great alternatives to your energy needs. Call today! 417-209-3227 or 417-209-3200

http://www.solarlightingusa.com/

Power Source Solar

http://powersourcesolar.com/ Power Source Solar is the Ozark's largest and fastest-growing provider of electricity for boat docks, farms, government agencies, and homes.

LED Emergency Light

http://www.gilbertinc.com/gemini.htm

Transition Towns

– preparing for a self-sufficient community-based future In over 150 cities in 14 countries, 'Transition Town' communities are raising awareness of the threats associated with peak oil and climate change, and taking practical steps to prepare for a post-industrial future… By Eartheasy Posted Nov 9, 2009

While leaders in all levels of government discuss the realities of global economic distress, uncertain future energy supplies, and the overarching threat of climate change, a quiet evolution is making real progress in developing strategies to help us transform our communities to adapt to these upcoming challenges.

In over 150 cities in 14 countries, 'Transition Town' communities are raising awareness of the threats associated with peak oil and climate change, and taking practical steps to prepare for a post-industrial future. And rather than dwell on bleak scenarios, participants in this grass-roots movement see future communities being more connected, more vibrant and more in touch with our environment than we see today.

Each Transition Town is independent, developing its own plans and working on its own priorities. But the common denominator of all Transition Towns is a bottom-up, participatory process for all major decisions in each community.

"If we collectively plan and act early enough there's every likelihood that we can create a way of living that's significantly more connected, more vibrant and more in touch with our environment than the oil-addicted treadmill that we find ourselves on today."

Transition Towns website Initiated by Louise Rooney and environmentalist Rob Hopkins in 2005, the "transition towns" movement is dedicated to drastically reducing carbon emissions on a local basis,

developing alternatives to oil, and nurturing resilient local economies. Instead of looking to federal governments for money or leadership, transition towns are taking on the responsibility themselves. They are committed to working as communities to find new and better ways to live in harmony with nature while meeting essential needs.

Dealing with the threats of peak oil and a changing climate requires fundamental change, beginning with the notion of individual 'well-being' as dependent on material acquisition. This entails redefining the very nature of community and culture so that people can move beyond the 'infinite-growth' economic model and begin to develop more locally based lifestyles that are more self-reliant, interdependent and meaningful.

The key areas commonly examined are food, energy, transportation, local economics, communication, systems of care and the arts.

Each Transition Town has its own priorities and issues it is working on. For instance, Multnomah County in Oregon has launched the Multnomah Food Initiative – a public engagement process that will bring the community together to create a shared vision, shared goals, and the first comprehensive community food action plan in the nation.

The Transition Network suggests a list of seven principles of transition that enable a diversified response grounded in the local context. These are: *Positive Visioning:* Transition initiatives are based on a dedication to the creation of tangible, clearly expressed and practical visions of community life beyond dependence on fossil fuels. *Trust and Empowerment:* Transition initiatives are based on telling people the closest version of the truth that we know in times when the information available is deeply contradictory, and then empowering appropriate responses. Inclusion and Openness: Successful Transition initiatives depend on the unprecedented coming together of diverse sections of society. *Sharing and Networking:* Information sharing and learning are key principles of resilient ecologies that are central to transition. *Building Resilience:* How communities respond to shocks is critical to the transitional path beyond fossil-fuel dependency. The movement is explicit in its intention to build resilience across key economic sectors (including food, energy and transport) and across a range of appropriate scales – from local to national. *Inner and outer transition:* Transition is a catalyst to shifting values and unleashing the energy and creativity of people to do what they are passionate about. Subsidiarity: Self-organization and decision making at the appropriate scale are key principles drawn from resilient ecological systems.

"We truly don't know if this will work. Transition is a social experiment on a massive scale. What we are convinced of is this: if we wait for the governments, it'll be too little, too late; if we act as individuals, it'll be too little; but if we act as communities, it might just be enough, just in time."

Del Tech Associates, Ltd.

Distributor of materials and supplies for manufacturing solar panels and composites. Business type: manufacturer, wholesale supplier Product types: Specialty materials, process supplies for solar panel manufacturers and composites. Address: 3598 E. Gasconade St. , Springfield, Missouri USA 65809 Telephone: 417-886-8281 Web Site: · http://deltechweb.com E-mail: · Send Email to Del Tech Associates, Ltd.

3M Industrial Tape & Specialties

Business type: manufacturer
Product types: lightweight composite materials for electric vehicle chassis.
Address: 3211 E. Chestnut Expressway, Springfield, Missouri USA 65802
Telephone: (417) 869-5219
Eagle-Picher Technologies, LLC (Commercial Products Department)
Business type: manufacturer
Product types: sealed lead acid batteries, lithium batteries, rechargeable batteries, emergency backup batteries .

Address: P.O. Box 130, Seneca, Missouri USA 64865
Telephone: 417-776-2256
FAX: 417-776-2257
Eagle-Picher Technologies, LLC
Business type: manufacturer
Product types: specialty batteries, high purity gallium and germanium products, lithium-thionyl chloride batteries, valv
Service types: power system design
Address: C & Porter Streets, Joplin, Missouri USA 64801
Telephone: 417-623-8000
FAX: 417-781-1910

Power Source Solar

Business type: manufacturer, retail sales Product types: alternative homes and buildings, solar pool heating systems, DC to AC power inverters, packaged power systems, photovoltaic systems, solar water pumping system components. Address: 3718 Ponderosa, Springfield, Missouri USA 65803 Telephone: 417-833-4274

Sensible Steam Consultants

(Steam Engines)
Business type: manufacturer, retail sales, wholesale supplier, service
Product types: wood fired steam powered electric generators, biomass energy boilers, biomass powered electric genera
Service types: system design, consulting services, system installation
Address: 152 Von Goebels Lane, Branson, Missouri USA 65616
Telephone: 417-336-2869

G & S Associates
417-725-1205
997 Sterling Ct
Nixa, MO 65714

Heating And Cooling in Emergencies

Cooling Systems

Earth Tubes non-electric, passive geothermal solar heating & solar cooling systems for sustainable architecture http://www.thenaturalhome.com/earthtube.htm home page » passive solar design chapter » earth tube detail page ... you are here Earthtubes (earthtubing) are, in a word, sustainable, non-electric, passive geothermal solar heating and solar cooling systems. Earthtubing utilizes conventional, thin wall, plastic pipe to passive solar pre-heat your home's air intake. Fresh air enters a system of these pipes which are laid around the interior of your home's foundation. You can let the air draft naturally through your earthtubes for a truly sustainable, non-electric, passive geothermal system or add fans and filters to supplement the home's back-up heating and cooling system. Be careful with Earthtube details, though ... while architects are warming-up to the idea, they are making very elementary mistakes, like using large concrete (cement) pipe that is impossible to clean. The Adolo Leopold Legacy Center earthtubing details are a classic example of very poor design that relies entirely upon mechanical means to attempt to clean the air coming out of the tempering tubes. Earth tubing (fresh air return tempering) is not suggested for low/ zero energy, sustainable applications in humid climates where the designer is concerned about air quality. There have been numerous designs over the years that attempt to deal with the issues, but they invariably are forced to develop high-energy, mechanical systems to deal with lowering humidity and sterilize air prior to passage through the tempering earth tubes. Every low-tech passive energy system we have ever

encountered fails to properly address the air quality issue. Hybrids tend to rely upon UV treatment of the air, which is sketchy, at best.

Conventional Homes

are typically High R value and "airtight", so all of the heating and cooling effect is stored within the air temperature (convection). If you let the air escape, you lose all your comfort. High thermal mass building materials allow the heating and cooling effect to be stored within the home's walls and floor (radiant). This allows you to vent the inside air of an HTM without "losing" all your heating or air conditioning comfort. Constant venting in the winter is common to HTMs, with fresh air being pre-heated or pre-cooled before it enters the home. Please note that Earthtubing is not meant as a summer cooling system in hot, humid climates where moisture would reach dewpoint and collect in the tubes. Weep holes are drilled in the bottom of corner fittings, but these drains can be quickly overwhelmed in a very humid climate. If you must alter your indoor climate in the summer for personal comfort level, you will need mechanical means. There really is no truly healthy passive method to de-humidify. (Design Drawings and Plans follow)

Water Misting

http://www.rapidcool.net/?gclid=CLzVkv-Brp4CFRshnAodtR5umg

Water misting systems have proven to be more effective than conventional methods for cooling outdoor locations like a patio, green house, waiting line, or dining area. A mist fan system can increase productivity and employee morale in hot indoor or outdoor industrial working conditions.

The concept incorporates water and heat to provide cooling through "flash evaporation". Specially designed mist nozzles operate under high pressure to produce tiny water droplets reducing the surrounding air temperature. Our custom stainless steel mistline provides cooling to the area from our high pressure pump assembly. When combined with mist nozzles, this mist system can achieve maximum cooling without wetting or residual moisture.

Mister systems can also provide a dynamic visual effect to any home, patio, or commercial location. Rapid Cool offers one of the largest selections of mister equipment, fans, and components on the market today for home or commercial use. Whether it is one of our portable misting fans to a complete misting system, Rapid Cool can handle most any indoor or outdoor home, patio, green house, industrial, or commercial application.

Quality systems for long life and trouble free operation For More Information or Price Quotes Call 800-573-4437 or Fill Out This Form

National Affordable Housing Network

http://www.nahn.com/

We proved that low-cost housing for cold climates could be built to use less than 200 USD a year in space heat, while overall first costs were essentially the same as similar housing built without the efficiency features. The result was measured total house energy savings of more than 50 percent over current practice. Now, it's time to expand on this work and transfer it to those who need it most.

The National Affordable Housing Network is working to dramatically change the way that affordable housing is built in this country. To achive these results, we: provide technical support and education to housing organizations serving the disadvantaged; produce information products and communications support among energy practitioners to provide a way for non-profit housing organizations to get the help they need; develop demonstrations of resource- efficient, affordable housing to provide verification of energy and resource efficiency measures; develop highly detailed, easy-to-follow houseplans and graphics

to allow volunteers and self-help builders to follow step-by-step guidelines, while sharply reducing or eliminating marginal costs; develop partnerships between utilities and low-cost housing producers to design innovative low-income programs to help change practice; develop specifications and detailed guidance for adding efficiency in both rehabilitation and manufactured housing.

Our highly detailed, easy-to-follow house plans and graphics allow volunteers and self-help builders to follow step-by-step guidelines, while sharply reducing or eliminating marginal costs.

The National Affordable Housing Network (NAHN) was presented with the Andromeda Star of Energy Efficiency Award in recognition of its outstanding contribution to energy efficiency in the development of resources and technical assistance for construction of low-income housing in the United States.

An independent, nonprofit organization, the National Affordable Housing Network represents the interests of low-income consumers in the development of highly efficient home building and improvement energy solutions. An emphasis on specific solutions for affordable energy design has resulted in methods that are documented, measured, and developed for households most in need of energy efficiency.

The Network's High Performance house plan series, designed for self-help builders in both warm and cold climates, helps reduce measured total house energy costs by up to 50 percent. With more than 23 years of field research, energy design and experience, NAHN experts have provided tens of thousands of individual contractors and builders with training and education on energy-efficient building practices. The Network also has a 12-year relationship with Habitat for Humanity, encouraging the organization to upgrade construction standards, providing research, evaluation and education as well as seeking additional resources for applied energy-efficient practices.

What if some of the nation's leading resource and energy experts put their talents toward solving this problem? The result would be savings for disadvantaged families of from $500 to $1,000 a year, putting needed food on the table and clothes on children.

Backup Power and Cooling Plans for Critical Facilities

Part 1: How One Hospital Improved Its Emergency Cooling Plan Part 2: Case Study: Hospital EPS Load Breakdown

How One Hospital Improved Its Emergency Cooling Plan By Dan Koenigshofer May 2009 http://www.facilitiesnet.com/powercommunication/article/How-One-Hospital...[1]

Efficient Heating of Commercial Space

Large commercial buildings such as factories, warehouses, arenas, and aircraft hangars are difficult to heat due to their high ceiling and large air volumes.

Forced air furnaces or unit heaters are the conventional approach but they result in large temperature differences and poor comfort. Infrared heaters are more efficient at heating these buildings. These IR heaters use natural gas, electricity, or oil to heat the radiating surface. The heat is directed downward to the load, by line-of-sight and/or reflectors.

The radiation warms occupants, objects, and the buildings floors and walls. Due to this direct radiant warming the indoor air temperature does not need to be set as high and hence the temperature difference and the energy consumption are reduced.

The IES laboratory has an ongoing project which will compare three different space heating technologies: * A low-intensity Infra-Red heater * A single-stage condensing unit heater * A single-stage non-condensing

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[1] http://www.facilitiesnet.com/powercommunication/article/How-One-Hospital-Improved-Its-Emergency-Cooling-Plan--10800

unit heater The evaluation of these tests has included: thermal comfort calculations, steady state efficiency measurements, temperature profiles, and a comparison of heating degree day versus gas consumption.

http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca/eng/buildings_commun...[2]

Zero-energy building

http://en.wikipedia.org/wiki/Zero-energy_building A zero energy building (ZEB) or net zero energy building is a general term applied to a building with zero net energy consumption and zero carbon emissions annually. Zero energy buildings are autonomous from the energy grid supply - energy is produced on-site. This design principle is gaining considerable interest as renewable energy is a means to cut greenhouse gas emissions. Buildings use 40% of the total energy in the US and European Union.[1][2] Sunlight and solar heat, prevailing breezes, and the cool of the earth below a building, can provide daylighting and stable indoor temperatures with minimum mechanical means. Z.E.B.'s are normally optimized to use passive solar heat gain and shading, combined with thermal mass to stabilize diurnal temperature variations throughout the day, and in most climates are superinsulated.[5] All the technologies needed to create zero energy buildings are available off-the-shelf today.

The Zero Energy Buildings Database is part of the High Performance Buildings Database which lists many additional projects. Visit the High Performance Buildings Database to discover more energy efficient building techniques. http://zeb.buildinggreen.com/

Annually, a Zero Energy Home produces enough energy to offset the amount purchased from the utility-resulting in a net-zero annual energy bill, sending the electric meter in reverse.

SOM Designs Zero Energy Chinese Skyscraper

The 71-story, 2.2-million-square-foot Pearl River Tower, in the new city of Guangzhou, China, being built for the China National Tobacco Corp., is a "net"-zero-energy building designed by the storied architectural firm of Skidmore, Owings & Merrill (SOM), New York City, scheduled for completion in 2009. The firm has set its sights on redefining one of its bread-and-butter project types, the corporate headquarters, into a model of high-tech sustainability

The Pearl River Tower epitomizes the super tall corporate headquarters building of tomorrow as an iconic, high performance structure, that is designed so that it potentially produces as much energy as it consumes. The building's form guides wind to a pair of openings at its mechanical floors. The winds drive turbines that generate energy for the building's heating, ventilation and air conditioning systems. The openings also provide structural relief, by allowing wind to pass through the building instead of pressing against it.

Continue reading "SOM Designs Zero Energy Chinese Skyscraper" »

Earth sheltered, Earth Berm and Underground Homes

http://www.coolhouseplans.com/links.html?searchCategory=Earth+Sheltered+...[3]

Earth sheltered homes became more popular in the 1970's when energy efficient homes where in great demand, but have been around for centuries. Some advantages of an underground home are the energy savings and superior safety from some of nature's fierce elements. These earth contact homes are billed as hurricane proof and tornado proof but not completely disaster proof. Also, if an earth shelter or underground house is built properly it is very earth friendly. Earth berm houses are some the environmentally or eco friendly homes on the market. On May 14th 1974 Malcolm Wells came up with

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[2] http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca/eng/buildings_communities/hvac_energy_systems/publications/200805.html
[3] http://www.coolhouseplans.com/links.html?searchCategory=Earth+Sheltered+Homes

Underground America Day and it has been celebrated every year since. It seems the biggest concern with this style of architecture is finding an underground house contractor. Below are some great resources for earth friendly sheltered living and green home contractors.

PBS Performance Building Systems-earth sheltered-solar energy ... EARTH SHELTER CUSTOM HOMES Beautiful, Protective, Efficient ... When sheltered with earth, the home benefits from the constancy of the earth's temperature, ... www.earthshelter.com/[4]

See more energy effieient home desings in the section on SHELTER

Wood stoves

http://www.woodheat.org/technology/woodstoves.htm

A wood stove is the most popular, flexible and economical wood heating option. A stove can be located almost anywhere there is enough space and where its chimney can be properly routed. A perfect installation has the stove located centrally in the main floor living area of the house and the flue pipe running straight up into the chimney. This installation design will provide the best performance and need the least amount of maintenance.

Wood stoves are for space heating A wood stove is defined as a space heater and space heaters are intended to heat a space directly, unlike a central heating furnace, which supplies its heat to the house through a system of ducts. But because modern houses conserve energy more effectively than older houses and need less heat to stay warm, it is now possible to heat an average-size modern home with a single space heater, provided it is located in the main living area.

If you want to heat most or all of your house with a wood stove, try to meet these two objectives: First, the heater should be located in the area where the family spends most of its time. And second, there should be ways for the heat to flow to other parts of the house. These conditions are not usually difficult to meet, but they do need to be planned.

Put the stove in the area you spend your time. Choosing the right location for the stove may be the most important decision you must make. The heater should be located in the part of the house you want to be the warmest. This is usually the main floor area where kitchen, living and dining rooms are located and where families normally spend most of their time. By locating the space heater in this area, you will be warm and comfortable while you eat meals and relax.

For heat upstairs, don't put the stove in the basement A basement is not a good location for effective space heating. Although the heated air from the stove does tend to rise to higher levels of the house, this movement is normally too slow and limited to provide comfort on the upper floor. Usually, in an effort to keep the main floor living spaces comfortably warm, the basement is overheated. This wastes fuel and the frequent high firing can damage the stove. Unfinished basements are particularly bad locations because too much of the heat is absorbed by the walls and lost to the outside. Also, wood stoves operating in basements may over-fire or smolder without anyone noticing. The basement is only a good location for a space heater if your family spends much of its time in a basement family or recreation room.

Stove heat output versus room size If your house is divided up into small rooms you will probably not be able to heat it entirely with a single space heater. A stove too large for the room it is in will overheat the space quickly.

Houses of open plan design with fewer separations between rooms can be heated entirely with a space heater, depending on their size and energy efficiency. In an open plan house, a larger appliance can be used without overheating the space.

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[4] http://www.earthshelter.com/

Correct stove sizing is important because a stove too large for the heat demand of the space will be operated with slow, smoldering fires much of the time to avoid overheating the room, and an undersized stove can be damaged by frequent over-firing to keep up with heat demand.

A wood heat retailer is the best person to advise you on stove sizing for your home. Since experienced retailers know the performance of each stove, they can help you match a stove to your heating objectives and the location you have selected for it. When you visit a retail store to look over the available options, take along a floor plan of your house. This will save time and help the salesperson give you better advice.

Stove structural design

Some aspects of the design of wood stoves are related more to looks and personal preference than to performance. For example, there is no functional difference between cast iron or plate steel construction, and painted or enameled finishes. These differences affect appearance and cost but not heating performance.

Although the bottom and rear of all new stoves are shielded to prevent overheating of the floor and to permit close clearances to combustible walls, some stoves have shielded sides and top as well. The more shielded a stove is, the more of its heat is delivered to the room by warm air convection than by direct radiation from the hot stove surfaces.

Some specialists say that fully shielded stoves are better for small spaces because the hot air they produce more readily travels to other areas and because they don't feel as hot when you sit near them. In practical terms, however, most modern stoves have both radiant and convective characteristics.

Combustion design

The internal design of wood stoves has changed entirely since 1990, as the result of the U.S. Environmental Protection Agency regulation established in the late 1980s. The EPA's mandatory smoke emission limit for wood stoves is 7.5 grams of smoke per hour. Today, all wood stoves and fireplace inserts, and some factory-built fireplaces sold in the U.S. must meet this limit. Stove manufacturers have improved their combustion technologies over the years, and now some newer stoves have certified emissions in the 1 to 4 g/h range. The EPA certified emission rate is a reliable number that can be compared from one model to the next, but a one or two gram per hour difference in smoke emissions does not mean much in day-to-day use.

The two general approaches to meeting the EPA smoke emission limits are catalytic and non-catalytic combustion. Both approaches have proved effective, but there are performance differences. In catalytic combustion the smoky exhaust is passed through a coated ceramic honeycomb inside the stove where the smoke gases and particles ignite and burn. Catalytic stoves are capable of producing a long, even heat output. All catalytic stoves have a lever-operated catalyst bypass damper which is opened for starting and reloading. The catalytic honeycomb degrades over time and must be replaced, but its durability is largely in the hands of the stove user. The catalyst can last more than six seasons if the stove is used properly, but if the stove is over-fired, garbage is burned and regular cleaning and maintenance are not done, the catalyst may break down in as little as two years.

Non-catalytic stoves do not use a catalyst, but have three internal characteristics that create a good environment for complete combustion. These are firebox insulation, a large baffle to produce a longer, hotter gas flow path and pre-heated combustion air introduced through small holes above the fuel in the firebox. Non-cats cannot match the even heat output of catalytic stoves, but their owners love watching the beautiful fire they create. The baffle and some other internal parts of a non-catalytic stove will need replacement from time to time as they deteriorate with the high heat of efficient combustion.

Although most of the stoves on the market are non-cats, some of the most popular high-end stoves use catalytic combustion. Because they are slightly more complicated to operate, and the best of them

do produce exceptional performance, catalytic stoves are suited to people who like technology and are prepared to maintain it properly so it continues to operate at peak performance. Both options have their pros and cons, and most users of either type seem satisfied with the performance of their stoves.

![Catalytic Stove]

Cross section of a catalytic stove, showing combustion air/exhaust flow patterns, the catalytic element and the bypass damper.

Cross section of a non-catalytic stove, showing combustion air/exhaust flow patterns, large baffle and high level combustion air supply.

Why advanced stoves are worth the extra cost

On average, advanced, EPA certified stoves are about one-third more efficient than the old box, pot belly, or step stoves, and almost all of the currently available central wood heating furnaces and boilers. That's one-third less cost if you buy firewood, or one-third less cutting, hauling and stacking if you cut your own. Although this higher efficiency is a by-product of mandatory emissions limits, it has made the EPA rules a winner for both the environment and stove users. The extra cost of advanced technology is about \$200 per stove. Over just two seasons of wood burning the greater efficiency of the stove will more than compensate for the higher initial cost. Advanced stoves produce about 90 percent less particulate matter - smoke - than older stoves. After a fire is ignited, you should see no visible smoke from the chimney, so neighbors won't complain and the foul smell, and thick smoke won't blanket your yard either. Fires ignite more easily and burn more completely in these new stoves. The result is a far more convenient and pleasurable wood burning experience. Virtually all the new stoves have a glass panel in their door and an air-wash system to keep it clear. This not only means being able to monitor the fire and adjust it periodically to get a perfect burn, but the fire itself is spectacular to watch. No fire in a conventional stove or fireplace can compare with the beauty of an efficient wood fire.

Ninety percent less smoke means 90 percent less creosote. This gives two important benefits. First, the chance of chimney fire is virtually eliminated, as long as the stove is operated correctly and reasonable maintenance is done. And second, the flue pipe and chimney will need cleaning much less frequently, which is another way the new technology stoves save time and money.

Hybrid Stove Making Charcoal

Biomass cooking stove burns wood to charcoal and saves the charcoal. One pound of wood cooks 6 kiols of rice and makes 65 grams of char www.youtube.com/watch?v=BGXv7buNUMY[5] - VIDEO http://www.youtube.com/watch?v=BGXv7buNUMY

WOODGAS AND ROCKET STOVE PRINCIPLES

- AVAN STOVE - N. Sai Bhaskar Reddy,GEO GEOECOLOGY ENERGY ORGANISATION, December 30, 2007

Avan (Earth) Stove http://e-avanstove.blogspot.com/ has the features of both Rocket stove and Woodgas stove. It is made up of 25 nos of ordinary bricks, four bricks with slits, one piece of flat tile, one steel grate 7x7 inches and Clay mixed with cow dung. The approximate cost of construction is $ 2 (USD). All types of biomass can be used as fuel (Sticks / twigs / chips of wood / dry leaves / grass / saw dust / cow dung cakes / paddy husk etc.) and advantage of gravity is used for easy and semi-automatic feeding. Designed by Dr. N. Sai Bhaskar Reddy, GEO -Geoecology Energy Organisation http://www.e-geo.org declared as Creative Commons.

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[5] http://www.youtube.com/watch?v=BGXv7buNUMY

More Woodstove Magic

by Daryle Thomas I hate to get off on the wrong foot. So let me offer a bit of opening advice: "They ain't nothin' magical 'bout burnin' a woodstove."

That takes a big load off of my mind. Should anything I say in the next few lines strike you as a trifle abnormal, you may rest assured that it is only the perception of abnormality. No magic, no hocus pocus. Operating a woodstove is simple, straightforward and easy.

How many times have you heard the phrase "airtight woodstove?" Talk about the perception of abnormality. There is not, nor never has been, any such thing as an airtight woodstove. Think about things that are airtight. A Volkswagen Beetle floating on a pond. The refrigerator on the back porch. A vacuum. But not a woodstove. Air has to be going in to make the fire burn.

Understanding that the stove is only as good as the chimney is a necessary perception with wood heat. In simple terms, if the smoke is going up the chimney, it won't be coming out into the room.

Burning Issues in Wood Burning

A German physicist named Fahrenheit developed a temperature scale on which water freezes at 32 degrees and boils at 212 degrees. The book, Fahrenheit 451, touches on the priceless information that, if one wishes to burn a book, one must heat the book to 451 degrees F.

Years ago, as a fledgling Boy Scout, I would bet my fellow scouts all the money in their pockets that I could boil water in a newspaper cup over a campfire. Soon all the money in their pockets was in my pocket. The perception that the paper cup would catch fire is every bit as erroneous as thinking green wood burns.

Any chemist will tell you that all the water must be consumed before the paper will heat up past 212 degrees. Since the paper won't ignite until it is heated over 450 degrees, the water will boil before the paper burns. Guess what happens to green wood? Green wood is up to 50 percent water. That's right, campers. All the water must be boiled out of the wood before the remaining fibers will be heated to their ignition point. Just like the paper cup, the temperature of the wood will not rise above 212 degrees until the water is gone. Bear in mind that creosote forms at temperatures below 300 degrees F. So while you are most assuredly not burning the green wood, you are producing creosote.

While we're at it, dry wood doesn't burn, either. It sublimates. Say what! Next time you haven't got a great deal to do, watch what goes on in the wood stove carefully. If you look closely, you will see that the flames don't actually touch the wood! The stick of wood is the storage chamber for volatile gases.

When the wood is heated well into the 450 degree range, these gases are driven off and ignite. After all the volatiles are driven off, the wood becomes charcoal. Charcoal is flammable, which is why it glows red in the firebox.

When all that can burn in our once handsome chunk of wood has burned, we are left with ash. Some ash is required to insulate the hot coals and preserve them for the morning reload. Too much ash chokes out the fire, and must be removed. A sure sign of too much ash is the inability to place more than two tiny pieces of wood into the firebox. Do yourself a favor and take out the ash.

http://www.ruralvermont.com/vermontweathervane/issues/winter/97012/dthom...[6]

Gallery of Cooking Stoves:

Gallery of Current Work (2002) http://www.repp.org/discussiongroups/resources/stoves/gallery.html

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[6] http://www.ruralvermont.com/vermontweathervane/issues/winter/97012/dthomas97012.shtml

Improved Cookstoves and Charcoal Production

-- "The Appropriate Technology Sourcebook: A Guide to Practical Books for Small Community Technology" by Ken Darrow and Mike Saxenian, revised and enlarged edition, 1993, Consortium for Sustainable Village Based Development (CSVBD) ISBN 0917704185. This section of the Sourcebook has reviews of 37 books on improved cookstoves and charcoal production covering all aspects of the subject from design to community acceptance, along with a concise but thorough 1,000-word overview of the problems, constraints and solutions. It includes some wise cautions. For instance, you might assume that the less smoke the better, but you might be wrong: "In many places, smoke from indoor cooking fires is a significant contributor to lung and eye disease. Yet this smoke also serves to dry crops hung over the cooking area and to protect thatched roofs from insect damage". It's best to assume that your assumptions could be wrong. The reviews are pithy and to-the-point, with sources for the books and prices. Reading the whole section (about 8,000 words) will give you a good introduction to this promising but far from simple field of work. Online at publishers Village Earth/CSVBD:

http://www.villageearth.org/pages/Appropriate_Technology/ATSourcebook/En...[7]

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[7] http://www.villageearth.org/pages/Appropriate_Technology/ATSourcebook/Energycookstoves.php

Aquaponics

Aquaponics is a system where fish are raised in conjunction with vegetables. The waste from the fish flows into a hydroponics system to provide nutrients for plant production. The plants filter and process the water to support for the fish. Often there is some component of the system as well to produce food for the fish from food scraps or vermiculture. The system as a whole produces more than the sum of the parts attempted separately and allows a relatively small setup to produce high output of both fish and vegetables.

S&S Aqua Farm is a family farm in Missouri with an aquaponics system which also provides information packets for others to start their own system: http://www.townsqr.com/snsaqua/page2.htm. Their system has been covered in Small Farm Today, Back Home Magazine, The Missouri Conservationist, and The Growing Edge.

"Barrelponics" is a system where aquaponics is done on a very small, do-it-yourself scale in plastic drums. Generally, an ebb-and-flow system is used where the roots of the plants are alternatively flooded with water from the fish tank and then drained to both flood the roots with nutrients and allow them access to air. The *Barrelponics Manual* written by Travis Hughey, is free for download from his website[1].

"Aquaponic Food Production", by Rebecca Nelson and John Pate.

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[1] http://www.fastonline.org/content/category/4/15/29/

Bug-Out Bag

Clothing

Children and Elderly

Emergency Flashlights

FamilyEmergencyPlan

Select an out-of town contact as a family message drop. It may be easier to make a long-distance phone call than to call across town, so an out-of-town contact may be in a better position to communicate among separated family members.

Be sure every member of your family knows the phone number and has a cell phone, coins, or a prepaid phone card to call the emergency contact. If you have a cell phone, program that person(s) as ICE (In Case of Emergency) in your phone[1310]. If you are in an accident, emergency personnel will often check your ICE listings in order to get a hold of someone you know. Make sure to tell your family and friends that you've listed them as emergency contacts. Teach family members how to use text messaging (also knows as SMS or Short Message Service). Text messages can often get around network disruptions when a phone call might not be able to get through.

Subscribe to alert services. Many communities now have systems that will send instant text alerts or e-mails to let you know about bad weather, road closings, local emergencies, etc. Sign up by visiting your · local Office of Emergency Management web site.

Planning to Stay or Go

Depending on your circumstances and the nature of the emergency, the first important decision is whether you stay where you are or evacuate. You should understand and plan for both possibilities. Use common sense and available information, including what you are learning here, to determine if there is an immediate danger. In any emergency, local authorities may or may not immediately be able to provide information on what is happening and what you should do. However, you should watch TV, listen to the radio or check the Internet often for information or official instruction as it becomes available. For information on staying put or sheltering in place, click here.

Emergency Information

Find out what kinds of disasters, both natural and man-made, are most likely to occur in your area and how you will be notified. Methods of getting your attention vary from community to community. One common method is to broadcast via emergency radio and TV broadcasts. You might hear a special siren, or get a telephone call, or emergency workers may go door-to-door.

Emergency Plans

FEMA has an Online Family Emergency Planning Tool[1049] created by the Ready Campaign in conjunction with the Ad Council to prepare a printable Comprehensive Family Emergency Plan: `http://ready.adcouncil.org/beprepared/fep/index.jsp`

Or use the generic forms attached to this Handbook (follow the link from the bibliography entry if online).

Use the New Quick Share application to help your family in assembling a quick reference list of contact information for your family, and a meeting place for emergency situations: `http://ready.adcouncil.org/beprepared/quickshare.html`

You may also want to inquire about emergency plans at places where your family spends time: work, daycare and school. If no plans exist, consider volunteering to help create one. Talk to your neighbors about how you can work together in the event of an emergency. You will be better prepared to safely reunite your family and loved ones during an emergency if you think ahead and communicate with others in advance.

Most of this is apparently cut and paste from FEMA documents. Needs to be rewritten, generalized, and linked to appropriate sections of this document. --Eric Vought

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Appendix A. Supporting Documents