

The Oil Drum: Campfire

Discussions about Energy and Our Future

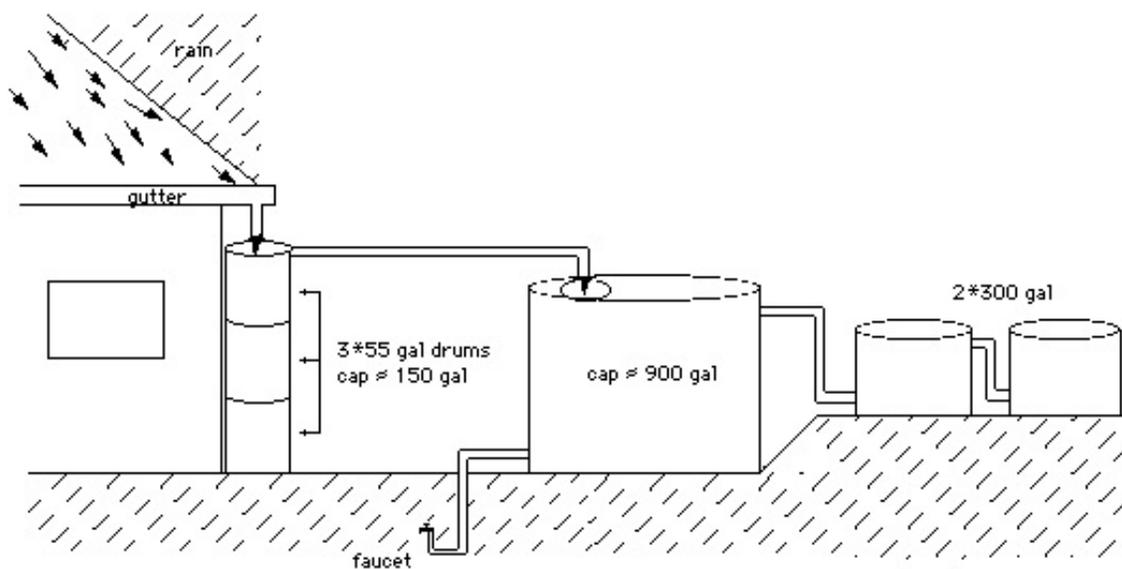
Planning for Water Contingencies

Posted by [Gail the Actuary](#) on October 21, 2009 - 6:14pm in [The Oil Drum: Campfire](#)

Topic: [Environment/Sustainability](#)

We know that fresh water is essential to life. While we can survive for weeks without food, even a few days without water can be a problem. One rule of thumb as to the [amount of water needed](#) for drinking is two quarts (1.9 liters) per person per day. If one includes uses other than drinking, obviously more is needed.

In uncertain times, the question is what, if anything, we should be doing with respect to backup planning for water. We can think about this question on both a short term and longer term basis. In some instances, the issue may be more one of supplemental water (beyond what the city system is willing/able to provide) for irrigation of crops.



A diagram of one rainwater catchment system from www.thefarm.org

On a short term basis, the easiest solution to a temporary water outage is to have a few gallons of bottled water around. Another solution is to use the water from a hot water heater as a back-up supply. Water from the storage tank of a toilet can also be used.

This may be silly, but for a slightly longer term solution, I bought myself a few children's wading pools (of the "hard shell," non-inflatable type). I thought perhaps these could be put out on the patio, and used to collect water. This solution would only work if neighbors left them in place. This approach wouldn't provide a lot of water, but in a rainy part of the country, it might be enough to "get by" for a while.



Children's wading pool of the type I bought.

A better longer term solution would be a rainwater catchment system. If one wants potable water from the rainwater catchment system, there are quite a number of requirements that must be met. For example, the [Texas Manual on Rainwater Harvesting](#) gives quite a few details. One of the requirements for such a system is that the roof used for catchment be made of a suitable material. Unfortunately, asphalt shingles that are so popular in much of the US are not on the list of suitable materials.

If a person uses water from the catchment system only for watering plants, he/she has more flexibility in roof types. It is also not necessary to worry about treatment of the water after collection.

The diagram in the initial panel shows one layout of a rainwater catchment system. In years past, [underground cisterns](#) were often used for rainwater storage. These are probably more durable for long-term use.

If you live on a farm, you probably will have a local source of water--typically well water or spring water. With these, you don't have to worry about the city system of delivering water going astray for some reason (bankruptcy for example). Your only concern then is that any pump used for this purpose remain operational. In years past, windmills were used as an economic substitute for electricity for pumping water.



Windmill used for pumping water, from [ironmanwindmill.com](#)

I tried to think about the issue of how a city or small town would guarantee the availability of fresh water for the long term, but it is hard to come up with a universal formula. The biggest issues no doubt arise when there are true water shortages--for example, water is being pumped from a deep aquifer that is depleting, or water from a river is being shared by a number of communities, and there is a drought. There is a possibility some might go without. Other possible causes of interruption include interruption to the electrical supply, or bankruptcy of one of the major players in the system. Civil unrest could also play a role.

Over the long term, a person probably wants to be in a part of the country (or world) where there are adequate fresh water supplies available. Most of us are not in a position to consider moving, but if one is, it seems like fresh water availability would be up near the top of the requirements for the new area.

Questions:

1. Is the possibility of water interruption too remote to even worry about?
2. What experiences do you have with alternative or supplemental water systems?
3. I offered some thoughts as to the vulnerabilities of city water systems to outages. What vulnerabilities do you see?
4. What experiences do people from outside the US have with water systems (and outages) that US residents might learn from?



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