

## **PART IV: BUILDING COMMUNITY RESILIENCE**

### **Resilience In Community: Some of the Essentials**

Building community resilience starts with people—their energy, interests, needs, and creativity. But it ultimately has to come to grips with the infrastructure that enables any community to function. In this video we'll look at food, water, energy, and money systems, and how these can be made more resilient. We simply can't explore these in detail—diving deeply into any of these areas could easily lead to an entire video series of its own. But it's worth at least dipping our toes in the water.

Let's start with **food**. Often, resilience-building efforts begin with a community resilience assessment. A food resilience assessment might determine, for example, what proportion of the food consumed in the community is imported from 100 miles or more. After all, long food supply chains are one factor that can reduce the resilience of a community food system. Efforts could then focus on increasing local food production and reducing food miles.

Another factor in food resilience is the reliance of local farms on imported and unsustainable inputs—such as pesticides, herbicides, and fertilizers made from fossil fuels. In this case, resilience work might enlist local farmers—working through the Grange and other farmers' associations, and the county agricultural commission—to find ways to reduce use of synthetic chemicals and to promote soil-building, water-retaining, and carbon-capturing eco-farming.

Here's one example that focuses on food system localization. The city of Campbell River, British Columbia has developed an Agriculture Plan that targets food security and self-sufficiency. In 2011, when work on the plan started, the city was only 0.03 percent self-sufficient in food. The city has adopted the goal of having the capacity to grow ten percent of its food supply

by 2031 and half by 2060. To achieve the 2031 goal, 1127 hectares of land would need to be freed up for farming. Meanwhile the city is supporting community gardens, encouraging residents to take gardening courses at the local college, implementing a food map project, and it has changed bylaws to allow urban chickens in residential areas. Other communities in southern British Columbia have undertaken similar measures, and the region has developed a Bioregional Food System Design project with buy-in from local municipal governments.

**Water** is another human necessity, and the key to water resilience is the health of natural regional lakes, rivers, and streams. So, making sure they are free from pollutants and that indigenous species are thriving should be the principal resilience work in this area.

At the same time, climate change implies more droughts and more intense rain events. So developing community resilience therefore also means planning for water emergencies. Much of this planning will be geography specific, since coastal communities will face challenges different from those of inland communities in the American Southwest. Nevertheless, in nearly all instances, water conservation will play a big role in resilience efforts, and those conservation projects could include promotion of gray water systems and rain catchment systems. All communities should also assess their water treatment systems: how dependent are these systems on long supply chains, and how vulnerable are they to supply chain interruption? Can such dependencies and vulnerabilities be reduced?

Furman University in Greenville, South Carolina offers a positive example. Several years ago, the University decided to make water sustainability and resilience a priority. The Charles Townes Science Center installed a closed-loop solar/aquatic wastewater treatment system that uses natural processes to clean the building's water, mimicking the ecological processes of tidal wetlands. The water is re-circulated into the building as greywater that can be used for flushing toilets. The University also retrofitted dormitories with low-

flow shower aerators and sink aerators. Nearby Furman Lake is the site of an ongoing research project aimed at improving the quality of the entire lake environment. Students and faculty use the lake as a living laboratory to study the effects of restoration efforts on water and habitat quality.

**Energy** is our next human necessity. Here, resilience-building will focus on dealing with our existing dependency of fossil fuels—which, as we saw in videos 2, 4, and 5, create fragility in energy systems due to both supply uncertainty and environmental pollution. A more resilient energy system would be one that relies on alternative sources that are renewable and more local—such as solar, wind, geothermal, and hydro.

The shift to renewable energy will require changes in both the ways we produce energy and the ways we use it. Since most renewable energy sources produce electricity directly, it makes sense to electrify our energy-using devices as much as possible—whether in transportation, building heating, or manufacturing. Solar and wind power are also intermittent, so we need to find ways to shift demand to times of maximum energy availability. We also need to explore energy storage options.

A more resilient energy system will also be more localized, which also provides the opportunity to have more *local, democratic control* over energy—who owns it, who benefits from it. One of our first priorities in building a more resilient energy system should be to reduce demand wherever possible; that will make nearly any supply problem that much easier to deal with. We'll explore energy demand issues further in terms of transportation, manufacturing, and buildings in the next video.

Local control over an increasingly renewable energy system is the goal of a concept known as “community choice aggregation.” One such effort, Marin Clean Energy in northern California, <https://www.mcecleanenergy.org/our-history/> was launched in 2010. Marin County's electricity had previously been supplied by Pacific Gas and Electric, a statewide commercial utility. In 2002,

California passed a bill allowing groups of communities to purchase power on behalf of their residents and businesses, supported by revenues rather than taxpayer subsidies. The group that spearheaded Marin Clean Power was motivated not just to reduce costs to power users, but to shift supplies as quickly as possible to renewable electricity providers. The public utility now has more than 195 megawatts of California renewable electricity under development, and has committed over \$500 million to the development of local renewable projects within its service area.

Even though **money** is a dimensionless, weightless human construct, a fragile money system can pose as many risks to a community as a dysfunctional food, energy, or water system. Our financial system is designed to work under conditions of perpetual growth; but in the real world, nothing grows forever. And in economic history we see that for every boom, there was a bust. This suggests that if a community is to insulate itself against busts, it should also be wary of booms—for example, in real estate values, technology investment, or resource extraction. Local control of banking and investment should also be a goal. That might mean supporting local credit unions over national mega-banks, and supporting local or regional exchanges where community members can invest their savings in local businesses. Local currencies can also help keep wealth circulating within the community, where it does the most good.

Here's an example of the benefits of keeping money local. The Bank of North Dakota is the only state-owned bank in America. It has earned record profits in recent years, even when private-sector banks were losing billions. It currently has \$4 billion under management, and creates its own credit. It was started in 1919, as the populist movement swept the northern plains. The bank is the depository for all state tax collections and fees, and therefore has a captive deposit base, and pays a competitive rate to the state treasurer. The bank takes those funds and plows them back into the state of North Dakota in

the form of loans, typically ones targeted at economic development in agriculture, energy, and education. The bank also has disaster-aid loan programs ready to go in the event of a flood or other catastrophic event. It was set up to partner with commercial banks rather than to compete with them. Most loans are originated by local banks or credit unions; the state bank participates in the loan, shares risk, and buys down the interest rate. Profits from the bank are returned to the state treasury. As a result, over many decades North Dakota's economy has consistently outperformed that of any other state on a per-capita basis, especially during national recessions.

In this video we've talked about covering four bases: food, water, energy, and money. If any one of these essentials goes haywire, a community loses its support capacity very quickly. Building community resilience means rolling up our sleeves and getting involved in the nuts and bolts of how society works.