

Hurricane Lessons in Resiliency

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By Thomas Beck, AIA, NCARB

Mother Earth is once again expressing her wrath over the apathy her children, the human race, consistently displays concerning the climate impact of their actions.

In the face of the weather catastrophe, we must acknowledge the ability to rebuild differently in order to be able to withstand future events. The immediate need is to provide prompt aid to the vast number of people impacted by the recent, historic storms. What often happens after the initial flurry of clean-up, and the housing and feeding of the displaced, is that resilient rebuilding is passed over in favor of speedy rebuilding.

Recently Governor Roy Cooper of North Carolina talked about many decisions his state has had to make, as the vulnerability of coastal communities are impacted by the increasing intensity of storms. "We have become a clean energy safe haven and we are paying attention to resiliency." He has done "a climate risk assessment and resiliency plan. You have to make tough decisions when you rebuild." (<https://files.nc.gov/ncdeq/climate-change/resilience-plan/Executive-Summary-and-Key-Findings.pdf>) Having had two "500 year" floods within 23 months of each other, the term is no longer accurate. They are using "strategies like elevation, and even buyouts." It is better to "create green space where homes and businesses used to be, to soak up river that may come from a river flood." He goes on to say, "these are tough decisions, but they are going on now." When questioned about whether mobile homes should be banned, Cooper pointed out that there is an ability to elevate those homes, and enhance their resilience, and that there is need for affordable options for his constituents. He speaks of "the importance of ensuring the electric grid is more resilient" and Cooper is thankful for the federal help that has come from the recent federal infrastructure legislation. (Gov. Cooper interview starts at 14:45 in the broadcast: <https://www.nbcnews.com/meet-the-press/video/oct-2-sen-rick-scott-gov-roy-cooper-and-nato-sec-gen-jens-stoltenberg-149699653831>)

Page 1-11 of the North Carolina Risk Assessment and Resilience Plan's strategies says "Disruptions to the electric power grid from increased storm intensity can be mitigated by securing a diverse source of utility scale and distributed generation assets such as microgrids equipped with renewable energy and battery storage devices, hardening the grid/transmission infrastructure, reducing demand for power, and modernizing existing grid assets with smart meters, controllers, automation, and analytics to manage a diverse source of power supply, transmission, and distribution system components." These same resilience strategies could be applied to our community of Estes Park.

Part of the issue with the way that many cities and towns are built is that the planners neglect to include permeable spaces to offset the influx of water. The permeable green spaces can include community gardens, as well as parks. The Conservation Trust for North Carolina discusses what that might look like and cites specific examples in North Carolina. (<https://ctnc.org/seeds-of-climate-resilience-fema-buyout-program/>; <https://ctnc.org/seeds-of-climate-resilience-rain-gardens/>;) Regarding the Princeville project "Over the next two years, this partnership will work to complete: Installation of 6,000 square feet of rain gardens and managed wetlands on vacated lots to hold up to 28,000 gallons of water per rain event; Opening of a 24-bed model community garden on vacated lots to promote local, low-carbon agriculture; Planting of trees and native plants for 250,000 gallons of water absorption and 2,900 pounds of carbon

storage per year; Creation of trails with educational and health-benefit elements at Princeville's riverfront Heritage Park" (<https://ctnc.org/turn-the-tide-for-flood-prone-communities/>)

What happens to vulnerable communities and non-property owners when housing options disappear? Pew Trusts has an excellent overview which includes some of these questions. In the conclusion to their report, Pew Trusts says "As federal agencies increasingly direct resources toward reducing disaster risk, including through new programs such as BRIC [FEMA program Building Resilient Infrastructure and Communities], those efforts must be tailored to socially vulnerable communities that need them the most. In turn, as state and local officials receive support for buyouts, they must strategically use these resources to plan for longer time horizons while working with residents to envision better outcomes through relocation and transition to lives and livelihoods away from rising floodwaters."

(<https://www.pewtrusts.org/en/research-and-analysis/reports/2022/04/property-buyouts-can-be-an-effective-solution-for-flood-prone-communities>)

An article from September 2021 details just how hard it is to benefit from some of the well-meaning programs available, in the years following Hurricane Mathew, and then Florence (<https://www.nytimes.com/2021/09/02/climate/climate-towns-bankruptcy.html>) This heartbreaking piece details towns decimated by flood, then atrophied by population loss exacerbated by conflicting government policies intended to help.

In our community of Estes Park, and in most parts of the U.S. the option of simply moving to another location because of our fire and disaster vulnerability is not a realistic one. Every state in the union has weather related vulnerabilities. Tornados. Extreme heat. Extreme cold. Drought. All of which are becoming more severe because of climate change. Any rebuilding paid for with federal government tax dollars should be done in a more resilient way. Most building projects require financing and therefore bank involvement. If we want a more resilient banking and insurance system, rebuilding requiring financing should be required to have flood insurance. However, FEMA flood regulations need to be simplified and more education should be available to the public on what those regulations require. These FEMA regulations need to be applied equally across all states and communities.

All communities in our country need low- and middle-income workers to keep the community running. If in the rebuilding process these people are left out, where will they live and how will the community continue to function? Fort Meyers Beach and Fort Meyers are tourist communities not unlike Estes Park. It is certain most wealthy property owners on Sanibel Island will rebuild, but how will the moderate-income property owners on Fort Meyers Beach, Fort Meyers and other parts of Florida impacted by Ian rebuild if they did not have flood insurance?

Here in Estes Park we are in the process of updating our Comprehensive Plan. Resiliency should be a major priority. We, like you, are in the process of reading and digesting the contents of the Draft Estes Forward Comprehensive Plan: <https://engageestes.org/> . It is essential that we all take the time to comment, and insist that resiliency be expressed in actions, not just words.

More resources:

<https://www.fema.gov/grants/mitigation>); <https://www.pewtrusts.org/en/projects/flood-prepared-communities>; <https://www.rebuild.nc.gov/homeowners-and-landlords/strategic-buyout-program>;

<https://ncgrowth.unc.edu/index.php/research-on-fema-buyouts-impacts-on-land-and-people/>;
<https://news.climate.columbia.edu/2021/06/29/are-buyouts-a-viable-tool-for-climate-adaptation/>;
<https://www.nytimes.com/2022/10/04/opinion/hurricane-ian-coast-rebuilding.html>;
<https://ncseagrant.ncsu.edu/program-areas/coastal-hazards/n-c-coastal-rivers-flood-mitigation/>

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