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Vulnerability and resilience after tropical storm Irene

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In Pittsford the springs on my hillside never dried out this summer, and 8.1 inches of rain had already fallen in August when tropical storm Irene arrived two weeks ago. I expected widespread flooding — but I was still not prepared for the 5.5 inches of rain that fell in 24 hours. Our old Victorian house was built 165 years ago on a bluff far above the floodplain of the Otter Creek. The cliff is sandy and prone to landslides. After massive slides about sixty years ago, invasive shrubs and locust trees were planted to protect the bank. When Irene arrived, a landslide brought down some large trees across our power line.

With so much devastation around the state I expected to be without power for a week, so I was in awe when the CVPS crews arrived early next morning. A repair truck and a logging team with a crane worked four hours to remove a massive old maple tree and restring the lines. These repair crews had many long days ahead, but with route 4 East to Killington washed out, they had to wait for a temporary road to be built before they could even reach the cut-off mountain towns.

Big storms reveal our vulnerabilities and remind us that we must plan ahead. Our house had needed extensive work when we bought it 20 years ago. Water was flowing across the dirt basement. We dug the basement out and installed drainage pipes covered with gravel. Since then heavy rains have found ways through the old stone foundation several times. I fixed those leaks, but during Irene I needed old fiberglass roofing to divert water that was pouring from the roof away from the basement. Then in driving rain I dug a ditch, a project I had neglected for years, to channel water around the vegetable garden. But I was too late to prevent a twenty foot wide mudslide that swept away the bank nearby. Fortunately I had deliberately oversized a new culvert under our road a few years ago, and it proved just big enough at the peak of the storm.

With so much rain on wet ground, mountain streams rose swiftly, flooding towns and destroying roads and bridges across Vermont. More than a dozen mountain towns were cut off. Our road and rail networks proved vulnerable. Resilient Vermont communities got to work — long before state and federal help could be mobilized; community members were repairing roads and rescuing neighbors.

Within a few days local and state crews built emergency roads to the isolated towns. By the following Thursday, the town of Rochester received a delivery of 100 loaves of bread, sent via back roads from Baba-a-Louis bakery in Rutland. But it will take much longer to restore our entire damaged infrastructure — power, water and sewage — to its original condition.

This disaster has drawn our communities together. More frequent heavy rainfall events are likely, so let us ask the hard questions and plan ahead. Clearly we must leave more room for floodwaters. What was most critical in responding to this crisis? Did we have adequate back-up power systems, food and water supplies and fuel for heavy equipment? Do we need east-west paths across the mountains for emergency use? This was a warm-season flood, but Vermont also has had major floods with snowmelt and winter rain on frozen ground.

The Wardsboro excavator Harvey Plimpton spoke for Vermont's community spirit when he said: "Nobody gave us permission. We just started because we knew what had to be done. We put in 120 hours last week. We worked until we couldn't work. We still have a long way to go."

Central Vermont Regional Planning Commission: www.centralvtplanning.org/
Rutland Regional Planning Commission: www.rutlandrpc.org/
Vermont State Climate Office Irene page: http://www.uvm.edu/~vtstclim/?Page=Irene_flooding_2011.html