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Reinventing the Mountains

Western North Carolina has a good recovery plan. Here is how to do more: build an economy that fits the mountains, belongs to the people who live there, and is ready for the next disaster.

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ABOUT THE AUTHOR

Blair H. Sheppard is the author of Reinventing the World and Ten Years to Midnight. He is dean and professor emeritus of Duke University's Fuqua School of Business and was global leader for strategy and leadership at PwC. He has lived in North Carolina since 1981 and owns land in Swannanoa, in Buncombe County.

DISCLOSURE

I have a financial interest in some of what this paper recommends, and readers should know it. I am a co-owner of Heritage Tree Recycling, a debris-recovery and biochar business in Yancey County that I started with my partner after Helene, and which worked as a subcontractor in the recovery. I personally own a carbonizer that the company rents, and the company uses a Takachar machine. Heritage may benefit from state and county programs that support biochar and local recovery work, and has done debris work on Cattail Creek in Yancey County, one of the valleys this paper discusses; it has no role in power. I also own land off Bee Tree Road in Swannanoa. The views here are my own.

Executive Summary

Two years after Hurricane Helene, Western North Carolina has a plan. The state's Western North Carolina Economic Recovery Plan, released in September 2026, is better than most recovery plans I have read. It covers 28 counties and the Qualla Boundary. It says the goal is not to restore the region to where it was but to take on the problems it carried long before the storm. It borrows from the Marshall Plan. It wants to position the mountains as a climate refuge, stop new building in the 100-year floodplain, find new markets for downed timber, including mass timber and biochar, and turn the region's recovery groups into a standing capability for the next disaster.

So this paper does not argue against the plan. It asks a simple question: could we do more? My answer is yes, and now.

As the world gets hotter, the mountains will remain one of the better places in the eastern United States to live. People are coming, and more will come. The question is not whether the mountains grow. It is whether that growth builds an economy

that fits the mountains and belongs to the people who live there, or one that pays poorly, prices out local families, and sends the money somewhere else. Helene showed both sides of that question. Much of the recovery money went to large firms from other states while the local people who did the work were squeezed. Tourism, the region's largest industry, shows both sides. Where it is locally owned, as in the restaurants, Biltmore and Cherokee, it builds wealth that stays. Where it is not, it pays poorly and its wealth flows to property owned by people who do not live here.

The plan points the right way. Here is where I would push it further:

1. **Name all four trends together.** The plan deliberately frames itself around "economic resilience." I understand why. But climate, demographics, a fractured world and technology are colliding in the mountains, and a plan for a climate refuge has to say so plainly.
2. **Ask who will own it.** Judge every industry and incentive by one test: does it build ownership, or only wages? Tourism is mixed. Where it is locally owned, as in the region's restaurants, in Biltmore and in much of Cherokee, it builds real wealth. But too much of it pays low wages and moves land into the hands of people who do not live here. Grow the locally owned kind, and let the rest be a byproduct of a living economy rather than one of its pillars.
3. **Protect what is special before growth arrives,** with mechanisms in place now, not after.
4. **Change who gets the money.** The plan says almost nothing about who held the recovery contracts. Put local firms on the disaster lists as primes, give them bridge capital, and write debris contracts for the mountains rather than for the coast.
5. **Make the region's industries its first responders.** Extend the plan's resilience spine from recovery groups and nonprofits to the firms that act in the first days.
6. **Build power people own.** Start with a flood-proof community grid in one valley, owned by the community, as the table-setter that forces the rest to move.

The Marshall Plan did not rebuild the Europe of 1938. It built a new one. The mountains deserve the same ambition.

1. Why the Mountains, and Why Now

My wife and I bought land in Swannanoa to build a home that could serve as a haven for our kids as climate change sped up elsewhere. In late September 2024, the rains from Hurricane Helene arrived. Chimney Rock, Marshall, Swannanoa and large parts of Asheville were largely washed away. More than 73,000 homes were damaged or destroyed, along with more than 9,000 sites on roads and bridges (GROW NC, 2026). The state has confirmed more than 100 deaths in North Carolina, and locals believe far more died (NCDHHS, 2025). The state puts the damage at about $60 billion (WRAL, 2025).

I visited a week after the storm. Driving up our road, you could see where a pastor who sheltered in a church was carried away when the water came through. Numbers painted on the sides of homes showed how many people had died inside.

Our neighbors were without water and power for five weeks and had to walk over a landslide to get out.

In the book I wrote that there are no climate havens anymore, and Helene proved it. But I still believe the mountains are a better place than most to live as the world heats. They are cooler. They have water. They have forests, rivers, and room. What Helene taught me is that a haven is not something you find. It is something you build. As I wrote in the book, livable places need to prepare now for the people who will come to them.

There is a striking fact to hold onto. Asheville is home to NOAA's National Centers for Environmental Information, which keeps the nation's climate and weather records, and its headquarters was itself knocked offline by Helene (E&E News, 2024). The place that holds the evidence of a changing climate is also one of the places best placed to live with it, if it prepares.

A good plan

Much has already been done. The state has appropriated more than $3 billion for the recovery, 99% of the damaged drinking water systems have been restored, and more than 99% of closed roads have reopened (GROW NC, 2026). Many people have worked themselves to exhaustion doing it.

And the region now has a plan for what comes next. The Western North Carolina Economic Recovery Plan was written for the Governor's Recovery Office for Western North Carolina (GROW NC) and released in September 2026. It organizes the region's work along nine lines of effort: infrastructure, natural resources, economic development and entrepreneurship, housing, education and workforce, health care, arts and culture, tourism, and agriculture, resting on three supports: resilience, telecommunications and leveraged capital. Each line has five- and ten-year targets and a lead. The plan brings no new money of its own. It aims to align the money that exists (GROW NC, 2026; WLOS, 2026).

It deserves real credit, and in several places it already points where this paper points:

- **It looks past the storm.** It says plainly that Helene "deepened economic challenges these communities had been carrying for years," and it puts numbers on them, which I use below.
- **It wants the mountains to be a climate refuge.** Its natural resources goals include positioning the region "proactively as a climate refuge by protecting the elevation, water resources, and biodiversity that make it one," and eliminating new construction in the 100-year floodplain, with buyouts for the most vulnerable homes.
- **It sees the forest as an industry.** It calls for new markets for Appalachian hardwoods and Helene-downed timber, "including mass timber, bio-based materials, and biochar production."
- **It builds on what is unique.** It would protect and expand the Spruce Pine high-purity quartz supply chain, the world's leading source, and recruit the processing that now happens elsewhere.

- **It knows money has to move fast.** It proposes quick-release cash for counties and towns after the next disaster, bridge financing for small businesses, and succession planning so firms stay "rooted in the region."
- **It plans for the next disaster.** Its "resilience spine" turns the 19 Long-Term Recovery Groups formed after Helene into standing community organizations, ready to act the next time.

The plan also borrows from the Marshall Plan, and takes from it one central discipline: "Recipients plan, and outside capital supports that plan." I agree with that discipline, and this paper takes it one step further. If the people of the mountains are to plan their recovery, they should also build it, own what it creates, and be paid for the work.

Recovery or reinvention

The Marshall Plan is worth remembering for another reason. It did not rebuild the Europe of 1938. It built a new one, more productive and more connected than the old. That is the difference between recovery and reinvention. Recovery asks what we lost and how to get it back. Reinvention asks what the mountains are for in the world that is coming, and how to build it.

The state's plan is a recovery plan with reinvention in it. This paper is an argument for the reinvention, built on the plan rather than against it. The roads are mostly open and the debris is mostly gone. The choices that will last fifty years are being made today: what industries to build, where to let growth go, who will own the land and the firms, and who will lead when the next disaster comes.

2. The Tidal Wave Arrives

People often ask me which of the four trends matters most. It is the wrong question. In the mountains, as everywhere, the trends collide, and each makes the others worse. They also open the region's best opportunities.

The state's plan is organized by line of effort, and it is careful about how it names the forces at work. Its own risk register notes that a plan built on climate framing "rises or falls with each administration," and so it chooses a "durable 'economic resilience'" framing instead (GROW NC, 2026). I understand that choice for a plan that must win federal money year after year. But a region cannot prepare for what it will not name. Here are the four trends, looking forward rather than back at Helene.

Exhibit 1: The Four Trends, and How They Are Arriving in the Mountains

Trend	How it is showing up now, and what is coming
Climate change	Rising heat across the South and on the coasts will make the mountains more attractive, with cooler summers and plentiful water. At the same time, heavier rain on steep land means more floods and landslides, as Helene's

Trend	How it is showing up now, and what is coming
	widespread landsliding showed (GSA Today, 2026). More fire risk, from heat and from downed timber left in the forests. Growing zones moving north and uphill, changing what can be farmed.
Demographic shifts	In-migration from hotter and costlier places: retirees, remote workers and, increasingly, people moving away from climate risk. At the same time, the region's labor force has shrunk by more than 16,000 people since 2023, mainly in Buncombe County (GROW NC, 2026). An aging population that will need more care. Young people priced out of the towns they grew up in. Too few tradespeople, nurses and caregivers, a shortage that slowed both rescue and rebuilding after Helene.
A fractured world	Reshoring and supply-chain security favor making critical things closer to home. Helene exposed how much the country depended on a single mountain factory: Baxter's plant in Marion made about 60% of the country's sterile IV fluids, and its closure caused shortages in hospitals nationwide (Healthcare Purchasing News, 2025). Spruce Pine's quartz, which the world's chip industry depends on, is the same lesson. Trade disruption in timber markets. A federal government stepping back from disaster support. Deep divides between towns and rural counties, and between the region and Raleigh and Washington.
Technological disruption	Remote work and satellite internet make it possible to live in the mountains and work anywhere. Solar, batteries and long-duration storage make local power practical in a valley. New machines turn wood waste into biochar on site. AI will change care, learning and small business. And misinformation, which after Helene spread faster than aid.

The plan touches each of these, but mostly one at a time: climate as a hazard to infrastructure, demographics as a workforce problem, the fractured world as a chance to reshore manufacturing, and technology as a set of sectors to recruit. The word “climate” appears only a handful of times in its 117 pages, and misinformation, which slowed the recovery itself, does not appear at all. The collisions are where it gets interesting.

Take growth and housing. Heat elsewhere and remote work bring people to the mountains (climate and technology). They buy homes, often as second homes or short-term rentals, and prices rise (demographics). Local workers move farther out or leave, the trades and care shortages deepen, and the people who keep the region running cannot afford to live in it. That is how a region can gain residents and lose 16,000 workers at the same time. Divided towns and counties struggle to agree on what to do (a fractured world). Each trend makes the others harder.

Take power and water. The grid and water systems were built centrally, for a smaller and calmer region. Heavier storms on steep land knock them out (climate). After Helene, places far from substations were dark for weeks and Asheville went 53 days without drinkable tap water (WUNC, 2024). Rebuilding them needs electricians and equipment operators the region does not have (demographics). Data centers and new factories elsewhere compete for the same equipment and power (technology). And agreement on how to rebuild was hard to reach (a fractured world).

Or take the forest. The Canton paper mill, which drew about two million tons of pulpwood a year, closed in 2023 after 115 years. Pulpwood standing in the forest now sells for about $6 a ton, while cutting and hauling it costs about $25. Then Helene dropped more wood on the region than it had ever handled, at the moment the market for low-grade wood had disappeared, and left downed timber in the forests as fuel for the fires that a hotter climate will bring.

What the trends land on

The trends do not arrive on a blank page. Ask people in the mountains what is wrong, and they will name problems they have argued about for years. The state’s plan names several of them, with numbers. From 1995 to 2023, payroll employment in the Helene counties grew by only 5.4%, against 40.6% for the state as a whole. Those counties lost almost 130,000 manufacturing jobs over the same years, a third of all the manufacturing jobs the state lost (GROW NC, 2026). Each of the region’s old debates got something right. The trends make each one more urgent, and some newly solvable.

Exhibit 2: What the Trends Land On in the Mountains

The long-standing problem	What the trends do to it	How reinvention moves it
“The jobs left and never came back.” Three decades of slow growth after textiles and furniture went offshore.	Reshoring and supply-chain security bring some manufacturing back, but it will choose where to go.	Industries that fit the mountains, owned in part by the people who work in them.

The long-standing problem	What the trends do to it	How reinvention moves it
“Locals can’t afford to live here.” Second homes, short-term rentals, wages that don’t match prices.	In-migration pushes prices higher still.	Homes local people own, protected land, and industries that pay a family wage.
“Tourism is all we have, and it pays too little.”	Each disaster shuts it down; each new visitor raises the price of land.	Grow the locally owned kind; build industries that fit the mountains; let tourism be a byproduct.
The forest economy lost its mill.	More wood, more fire risk, no market.	Debris and forest waste become the feedstock of a new industry.
Health care people do not trust, and too few nurses. Mission Health was sold to HCA in 2019, and the state attorney general is suing HCA over the care it promised (WUNC, 2026).	An older population needs more care; the shortage was laid bare in the rescue.	Community care that works when the roads are out (see No. 6, Who Will Care for Us?).
“Outsiders take the money.”	The Helene recovery sent much of its money out of state.	Local primes, local capital, local ownership.
Town and mountain, Raleigh and the region.	Disagreement slows every decision.	One shared picture of the region’s future, agreed before the next storm.

3. The Assumptions That No Longer Hold

The mountains were run for decades on assumptions that once made sense. The trends have made them dangerous. The state’s plan has already retired some of them, and it deserves credit for that. Others it leaves in place.

Exhibit 3: Assumptions the Mountains Must Retire

The old assumption	What changed	The new premise	The state plan
The mountains are a safe haven.	Helene.	The mountains are a better place to live, but only if they are built for it.	Retires it: “a climate refuge,” protected on purpose.
Rebuild what was there.	The same footprint will flood again.	Let the rivers run; build on safer ground.	Retires it: no new building in the 100-year floodplain, and

The old assumption	What changed	The new premise	The state plan
			buyouts.
Debris is waste to be ground, hauled and buried.	New machines turn it into a product.	Debris is the feedstock of a new industry.	Partly: new markets for downed timber, but not in the debris contracts.
Growth takes care of itself.	Growth is pricing out local families and threatens what draws people here.	Growth must be shaped, or it destroys what it came for.	Mostly silent: it plans for growth, not for what growth will cost.
Tourism can carry a region.	Much of it pays poorly, too little of it is locally owned, and it stops when disaster hits.	Tourism is a byproduct of a living economy, not its base.	Keeps it: tourism is a full line of effort.
Power and water come from somewhere central.	Homes far from substations were dark for weeks.	Local, decentralized, flood-proof power and water.	Partly: a ten-year target for microgrids and a hardened grid, led by the utilities.
Disaster response belongs to specialists from somewhere else.	Local firms acted first after Helene, then were pushed aside.	The region’s own industries are its first responders.	Partly: a standing network of recovery groups, but not of firms.
Recovery means getting back to where we were.	Where we were is what failed.	Recovery is the first step of reinvention.	Mostly retires it, in its stated aims.

The hardest of these are the ones people most want to believe: that the mountains are safe, that growth takes care of itself, and that tourism can carry a region. The least discussed are the last two, and the rest of this paper explains why they matter so much.

4. Where Value Is Moving

The trends destroy value in some places and create it in others. For the mountains, the most important question about any new value is who ends up owning it.

An ownership test

Every industry the region attracts or grows should be judged by one test: **does it build ownership, or only wages?** Wages matter. But generational wealth comes from owning things: a home, land, a share of a firm, a stake in the power that runs the valley. An industry passes the test when it pays a family wage, when local people can own part of it, and when it keeps land in local hands.

Tourism is mixed. At its best it passes the test. The region's restaurants, breweries, galleries and outfitters are mostly owned by people who live here. Biltmore, among the largest attractions in the South, is still owned and run by the family that built it. And in Cherokee, much of the tourism economy, including the casino, belongs to the Eastern Band of Cherokee Indians, which shares the profits with its enrolled members twice a year. Those are real examples of local ownership at scale, and the region should learn from them.

But two problems remain, wages and land. Asheville-area wages already trail the state, about $27.83 an hour against $31.41 for North Carolina, and the region's own workforce director points to the weight of hospitality jobs as one reason; even well-paid hospitality work pays less than manufacturing or health care (Asheville Citizen Times, 2023). And much of the wealth it does create ends up in property, increasingly owned by second-home owners and out-of-area investors through short-term rentals. Where tourism runs through short-term rentals and outside investors, it moves the land, the region's real generational asset, out of local hands. That is the same leak the Helene recovery revealed, in a quieter form.

The state's plan makes tourism one of its lines of effort. Its best idea there is "tourism nodes that double as infrastructure": state park investments that spread visitors into remote gateway communities like Chimney Rock and help them recover. I would not argue against tourism. People will keep coming for the mountains, the food, the music and the culture, and the locally owned part of tourism should be grown on purpose. But the region should not lean on it as a base. Tourism works best as a byproduct of getting everything else right: a living region, with real work and local owners, that visitors want to see because it is real. I would spend the plan's next dollar on the industries that pass the ownership test, and let visitors follow.

The plan already reaches toward ownership in two places, and both should be strengthened. Its succession planning would keep firms in local hands as their owners retire, which is one of the cheapest ways to build local ownership there is. And its proposed Disaster Opportunity Zones would bring in outside capital through tax breaks. That capital is welcome, but it should face the ownership test too, or it will buy the region rather than build it.

Buncombe County is already part of the way there. Its draft 2030 strategic plan aims to grow jobs in professional and IT services and advanced manufacturing from 22,060 to 35,300, and to raise the average wage on projects that receive county incentives from $31.44 to $45.50 an hour (Buncombe County, 2025b). That is the right direction. The ownership test asks one more question of every such project: who will own it?

Industries that fit the mountains

The scarcity of flat land is not only a problem. It is a filter. It rules out sprawling warehouses and heavy industry, and it favors small-footprint, high-value, place-based work, which is exactly what fits the mountains and what passes the ownership test. Several of these are already in the state's plan; the others belong there.

- **Climate tech companies.** Asheville already has the core of a climate cluster. NOAA's National Centers for Environmental Information keeps the nation's climate records there, alongside the Air Force's 14th Weather Squadron and NC State's North Carolina Institute for Climate Studies. The Collider, a nonprofit climate innovation center founded in 2016, has incubated dozens of climate start-ups and services firms, among them FernLeaf Interactive, which works with UNC Asheville's NEMAC and makes software that helps local governments plan for climate risk (Trajectory Magazine, 2019; Asheville Chamber, 2019). The next step is to grow beyond data and software into climate tech that is built and tested here: flood and landslide sensing, long-duration storage and community grids, biochar and carbon removal, resilient building systems, and the tools of disaster recovery. After Helene, the mountains are one of the best places in the country to prove a climate adaptation technology works. A company that tests its product in these valleys, hires here, and lets local people own part of it passes the ownership test, and makes the region more able to save itself.
- **Precision and small-footprint manufacturing,** including critical goods the country has learned not to make in only one place. Pratt & Whitney's jet-engine parts plant near Asheville, a $650 million investment that announced 325 more jobs in 2025, shows that advanced manufacturing can work here (WFAE, 2025). The plan's proposed "Futures Factory," an advanced-manufacturing hub co-funded by the federal Economic Development Administration, is the right vehicle.
- **Critical minerals, processed here.** Spruce Pine's high-purity quartz is mined and refined in the region and then largely exported to be made into the crucibles the world's chip makers depend on. The plan's call to bring that downstream work to the region is one of its best.
- **Medical and health manufacturing and care,** building on the Marion lesson, on the plan's proposed Life Sciences Initiative, and on the growing need to care for an older population.
- **Local energy:** solar, storage and community grids, installed, owned and maintained by local firms.
- **A new forest and wood economy:** biochar for farms, rivers and stormwater, with carbon removal credits on top; mass timber and other higher-value wood products, as the plan proposes; and the forest management a hotter, drier future will demand. North Carolina now pays up to $120 per cubic yard of biochar applied to farmland (NC Division of Soil and Water Conservation, 2026).
- **Resilient building:** factory-built homes, designed for mountain weather, built by local firms, perhaps from the region's own timber.
- **Food and beverage that depends on clean water and a cooler climate,** from the region's breweries, which came partly for the water (UNC School of Government, n.d.), to cool-climate and specialty farming as growing zones move north and uphill.
- **Outdoor and craft manufacturing,** from gear to the region's long tradition of craft.

- **Remote and knowledge work,** for people who bring their jobs with them, and the local services they need. The plan rightly wants to serve the remote workers who came, or stayed, after Helene.
- **River and land restoration,** and recovery itself as a capability the region can export to other mountain places.

What is special, and how to keep it

Population growth is the trend most likely to destroy what makes the mountains worth moving to. The state's plan wants growth, and plans infrastructure "sized for growth." It is right to. But it says little about what growth will cost, and short-term rentals, the sharpest edge of that cost, do not appear in it at all. The region needs mechanisms in place before the growth arrives, not after.

Exhibit 4: What Makes the Mountains Special, and How to Protect It

What is special	What threatens it	Mechanisms to protect it
Ridgelines, rivers and forests	Development on slopes and in floodplains	The plan's floodplain and climate-refuge goals, made binding; stronger use of the state's Mountain Ridge Protection Act of 1983 and of river protection; conservation easements; land trusts; rivers given room to flood
Towns at a human scale	Sprawl along the valleys	Steer growth into places that are already built and safe; make building elsewhere hard
Local families who can stay	Rising prices, investor buying, short-term rentals	Limits on short-term rentals and investor purchases; homes local people can own; legal help for families holding heirs' property, land passed down without clear title (Federal Reserve Bank of Richmond, 2024)
Appalachian and Cherokee culture, music and craft	A region remade for visitors	Support for local makers and institutions; partnership with the Eastern Band of Cherokee Indians on its own terms
Self-reliance and neighborliness	Dependence on outside firms and distant systems	Local ownership; a local recovery network; local

What is special	What threatens it	Mechanisms to protect it
		power
Clean water and cool air	Overdevelopment and pollution	Watershed protection; growth that pays its way

Two cross-cutting mechanisms make the rest work. New development should pay into a regional fund for local housing and conservation. And the counties and towns should sign a regional compact, so that one county's growth does not become another's loss. The state plan's steering committee, which already brings the counties together, is the natural place to agree it.

Here too Buncombe has made a start. Its draft strategic plan aims to steer more than 70% of new homes into designated growth areas and to conserve 20% of the county's land, about 700 acres a year (Buncombe County, 2025b). Those are exactly the kinds of mechanisms the whole region needs, set before the growth arrives rather than after.

The tension here is real, and I would rather name it than hide it. Every new arrival makes the mountains a little less like what drew them. The answer is not to close the door, which no region has managed for long, but to decide in advance what must be protected and make growth pay to protect it.

5. What Reinvention Requires

What Helene taught us about the money

Recovery after Helene was essential, and many people did heroic work. But the way the money moved explains why the region is less able to rebuild itself than it should be. This is the largest gap in the state's plan: in 117 pages, it barely mentions debris and says nothing about who held the recovery contracts. Three failures stand out.

The money was slow. More than a year after Helene, federal support covered "barely 9%" of the state's estimated $59.6 billion in damage (WRAL, 2025). Yancey County had been reimbursed about 8% of what it spent. Avery County spent about $50 million on cleanup and recovery against an annual budget of $42 million. Henderson County spent $66 million, mostly on debris, and was still owed more than $27 million in 2026 (Appalachian Voices, 2026). Rutherford County had submitted about $38 million in storm costs; a year after Helene, about $31.5 million was still pending, and the county was leaning on short-term state cash-flow loans (Rutherford County Board of Commissioners, 2025). FEMA's public assistance mostly reimburses after the fact, so whoever can carry the cost wins the work. Small local firms and small counties cannot. The plan's quick-release cash for counties and bridge financing for small businesses answer part of this. They should be extended to the local firms that do disaster work, and set up before the next storm, not after it.

Outside firms benefited most. Every one of the main debris contractors I could identify came from out of state.

Exhibit 5: Who Held the Main Contracts

Contractor	Home	Helene role in Western North Carolina	Value where known
US Army Corps of Engineers	Federal	Federal lead for debris in counties that asked for it; hired the primes	More than $2.7 billion in Helene contracting actions (USACE, 2025); about $1.6 billion to remove 6.6 million cubic yards from NC rivers (Appalachian Voices, 2026)
AshBritt	Deerfield Beach, Florida	Army Corps prime in Buncombe, Mitchell, Polk, Transylvania, Macon, McDowell, Alleghany and Chimney Rock	$121 million for private-property debris in Buncombe; $6.2 million in Transylvania (Grist, 2025)
Southern Disaster Recovery	Greenville, South Carolina	Direct prime for the City of Asheville, Haywood County, Marshall and Rutherford County	$26 million budgeted by Asheville (City of Asheville, 2024)
Debris Tech	Picayune, Mississippi	Prime in Rutherford County	Not published
Horne LLP	Mississippi	Manager of Renew NC, the $1.4 billion federal housing program	$81.5 million (NC Commerce, 2026)

The housing program tells the same story. Renew NC’s 27 general contractors hold about $63 million in contracts; the only one with North Carolina in its name holds about $210,000, roughly 0.3% (NC Commerce, 2026). By September 2026, Renew NC itself had finished 159 homes from 7,924 applications (WRAL, 2026); the state counts more than 1,250 homes repaired or rebuilt when the work of volunteer partners is included (GROW NC, 2026). Both numbers are true, and the gap between them says something: much of the housing recovery so far has been done by local volunteers, not by the contracted system.

The large firms then subcontract the work. One debris prime says in its own proposals that it may subcontract up to 60% of its debris operations (Southern Disaster Recovery, 2022). Grist described the system as “a nesting doll of contractors and subcontractors,” often not from the communities they are sent into (Grist, 2025).

A consequence of this is that there was often triple margin placed upon the work: the prime contractor, an intermediary, and the locals doing the work. A somewhat more insidious result is that there was a strong incentive to negotiate as low a price as possible with local suppliers and operators. One particularly egregious example is an individual from outside the state being paid eight times more than a local supplier for the same service. Local people lost twice: once to the storm, and again to the recovery funds.

The lists kept locals out. Much of the work went through contractors chosen before the storm, through the Army Corps' pre-awarded contracts and the state's emergency management protocols. Rutherford County's contractor was described as "a state contractor via NC Emergency Management protocols." Local firms not already on the lists could bid only as subcontractors. And pre-set contracts do not even guarantee the prices they promise: a federal audit of Florida after Hurricane Irma found pre-disaster debris contracts were not honored in 22 of 50 municipalities, with rate increases as high as $16.94 per cubic yard (DHS Office of Inspector General, 2020).

Behind all three sits a mismatch. The federal debris model grew up around coastal hurricanes: lots of flat land for staging, grinding and storage, relatively few trees, and debris that is mostly buildings and household contents. Its tools are trucks, grinders and landfills, and it pays mostly by the yard hauled. It was set before carbonizers and machines like Takachar existed. The mountains are the opposite: lots of trees and very little flat land. There was nowhere to put the piles. Buncombe County had to speed up a landfill expansion because Helene collapsed its timeline for disposal capacity (WFAE, 2025). And a model that pays by the yard rewards moving as much material as possible, which on mountain rivers meant removing too much (Grist, 2025). The state's plan wants new markets for downed timber. The debris contracts, as written, send that timber to the grinder and the landfill.

The point is not that federal money is bad. It is most of the money, and the region could not have recovered without it. The point is where it lands. Money that stays in the mountains rebuilds them twice: once in what it repairs, and again in the firms, skills and wages it leaves behind. If recipients plan, as the state's plan rightly insists, recipients should also do the work.

The larger lesson: the region's industries as its first responders

Here is what the money story hides. In the first days after Helene, before the federal system arrived, the region's own people and firms were already at work. Contractors took their own equipment into the mountains to open roads and reach stranded families. Asheville's restaurants came together to feed a devastated community, alongside churches and World Central Kitchen (Garden & Gun, 2024). Local haulers, tree crews, electricians and builders went to work for their neighbors. In the book I wrote about Sam, who took his track hoe and trucks to help people whose homes were at risk of caving in, before anyone asked him to. There were thousands like him.

Then the formal system arrived, and those same people were pushed to the bottom of it, as subcontractors to firms from other states, waiting to be paid. The region's capacity to help itself was treated as an afterthought.

The state's plan has the right instinct here. Its resilience spine would turn the 19 Long-Term Recovery Groups formed after Helene, coalitions of faith groups, nonprofits, government and business, into standing organizations that "reactivate immediately when the next shock strikes" (GROW NC, 2026). That is exactly right, and it is a real step. But those groups coordinate unmet needs, case management and volunteers. They do not clear roads, restore power or rebuild homes. The firms that do are still left to the old system.

The larger argument is this: **the industries that fit the mountains should be designed to act the moment a disaster hits.** Most of them already have something to offer. The task is to give each one a role before the storm, put it on the lists, and pay it fast. In effect, extend the resilience spine from the recovery groups to the region's industries.

Exhibit 6: Industries That Fit the Mountains, and Their Roles in a Disaster

Industry	Its everyday work	Its role in a disaster
Local energy	Solar, storage and community grids	Keep clinics, shelters, water pumps and cell towers running; restore power valley by valley
Forest and wood	Forest management, biochar, mass timber and wood products	Clear roads and debris; convert debris on site instead of hauling it
Building and trades	Factory-built homes, repairs	Emergency repairs, temporary housing, rebuilding on safer ground
Food, beverage and farming	Restaurants, breweries, farms	Feed people; supply water and food; use biochar to restore flooded fields
Care and health manufacturing	Clinics, home care, medical supplies	Reach the isolated; keep critical supplies flowing
Climate tech, data and services	Forecasting, sensing, software, storage and adaptation products	Early warning; mapping damage; trusted information against rumors
Universities and colleges	Teaching and research	Shelters, volunteers, assessment, and training the next crews
Congregations and community groups	Community life	Trusted messengers; finding the people no one else can find (already the core of the recovery groups)

This turns economic development and disaster readiness into one strategy. Every industry the region grows makes it more able to save itself. Every dollar spent on recovery builds the region's own industries rather than someone else's.

The two table-setters

In the book I argue that the way to scale fast is to find a table-setting technology or practice, one that forces the issue across the whole system, and then turn the ecosystem around it into a Gantt chart. The state's plan borrows the language of military campaigns, with lines of effort and "decisive points," milestones that unlock disproportionate leverage. A table-setter is a decisive point chosen on purpose. The mountains need one technology and one practice.

The technology: a flood-proof community power grid. In the book I named "a flood-proof solar power distribution grid in a mountain community in North Carolina" as the example of a small ecosystem that must scale quickly. Solar, long-duration storage and local distribution, sited above the floodplain, that keep a valley's homes, clinic, school, water pumps and cell towers running when the central grid fails. Iron-air batteries of the kind Form Energy makes are built to cover outages lasting several days; whether they can be sized for a single valley is one of the first things to test. A grid like this forces every other question: where to build, who owns the power, how the utility works with communities, who trains the electricians, and how the region pays. It also makes a valley more attractive to the industries that fit the mountains, and it can be owned locally and pay dividends to the people it serves.

Start in a valley that went dark for weeks. Several would make good first sites, and each would prove something different.

Exhibit 6a: Valleys Where a Community Grid Would Prove the Most

Valley	What happened to its power in Helene	What a grid there would prove
The Toe River valley around Spruce Pine and Bakersville (Mitchell County)	The worst outage share in the region: about half the county's households, roughly 6,000 people, were still without power two weeks after the storm (Carolina Public Press, 2024), and most of Bakersville was still dark on October 14. Spruce Pine's sewer plant was destroyed, and the county's water treatment system was expected to take about four years to replace (NC Health News, 2024).	That a grid is industrial infrastructure, not only a lifeline: it keeps water and sewer pumps running and protects the quartz supply chain the world's chip makers depend on.
The upper Cane River	The Cane rose 30 feet in	That power does not have

Valley	What happened to its power in Helene	What a grid there would prove
valley and Cattail Creek (Yancey County)	five hours at Burnsville (America's Electric Cooperatives, 2024). On Cattail Creek the road washed out, responders could not get in, and people died (ProPublica, 2025). Power could return only as fast as roads were rebuilt: one couple on U.S. 19W went one day short of four months without it (Spectrum News, 2025).	to wait for the road. The valley is served by a member-owned cooperative, so the ownership model is already there.
The Swannanoa valley, including Bee Tree Creek (Buncombe County)	Buncombe had the largest number of people out: more than 36,000 customers nearly two weeks after the storm (WNCT, 2024). Bee Tree was cut off for a week; neighbors ran food across the flooded creek on ropes and pulleys (Spectrum News, 2024).	That the idea works where most people live, next to Asheville, with the most attention and political weight.
Hickory Nut Gorge (Chimney Rock, Bat Cave and Lake Lure; Rutherford and Henderson counties)	A gateway economy almost wiped out; Henderson had the region's largest peak outage, about 74,000 households (Carolina Public Press, 2024).	That power keeps small locally owned businesses and gateway towns open the next time the gorge is cut off.
Marshall and the French Broad (Madison County)	The river crested at 20.1 feet against a normal 6.5; the cooperative based there lost power to all 42,000 of its meters for 42 hours (America's Electric Cooperatives, 2024).	That a county seat in the floodplain can keep its courthouse, school and clinic running.
Old Fort and the Mill Creek valley (McDowell County)	Near the Marion plant that made about 60% of the country's sterile IV fluids.	That a grid can protect a factory town making goods the country cannot do without.

Much of this territory is served by electric cooperatives, which their members already own. French Broad Electric Membership Corporation, based in Marshall,

serves parts of Madison, Yancey, Mitchell and Buncombe counties; more than 10,000 of its members were still without power eleven days after the storm (America's Electric Cooperatives, 2024). A cooperative is a natural partner for a community grid. The region should choose the first valley. My own lean is the Toe River valley, because it is the hardest case.

There is no official county-by-county record of how long outages lasted; the figures above are snapshots reported at the time. Assembling the real record, valley by valley, is one of the first jobs for the network.

The gap between this and current ambition is large. The state's plan lists "micro-grid/hardened grid" as a ten-year target for its infrastructure line, with the utilities as lead (GROW NC, 2026). Buncombe's draft strategic plan commits to 100% renewable power for county operations by 2030, which is admirable, but it aims to raise residential solar installations only from 165 to 200, about 35 more homes in eight years (Buncombe County, 2025b). A single valley grid, owned by the people it serves, would do more than that in its first year, and would not wait ten.

The practice: a standing local recovery network. A network of the region's own firms, organizations and governments, ready before the next disaster and paid to stay ready between them, joined to the plan's resilience spine:

- **Local primes, on the lists.** Pre-qualify local contractors now, help them meet federal requirements, and put them on the state's and counties' pre-event contracts as primes. Federal law already gives a preference to local firms in federal disaster contracting, under section 307 of the Stafford Act (FAR Subpart 26.2).
- **Local bridge capital.** Extend the plan's quick-release cash and bridge financing into a regional fund, run through a credit union or community lender, so local firms and small counties can carry costs while FEMA reimburses.
- **Equipment that earns its keep.** Carbonizers and biochar machines do forest, landfill and farm work in normal years and disaster work when a storm hits. A carbonizer at every landfill and debris site with room for one, as Paper No. 4 proposes, makes each a disaster site ready in advance and gives the plan's new timber markets a steady supply.
- **Contracts designed for the mountains.** Pay for streams by the foot cleared or by the job, not by the yard removed, and favor converting debris on site over grinding and hauling.
- **Pre-agreed roles for every industry,** as in Exhibit 6.
- **Trusted local information,** through congregations, fire departments and local leaders.

The network is the point, not any one member. It includes haulers, foresters, builders and electricians; nonprofits like MountainTrue, which received $10 million from the state for river cleanup; county crews like Henderson County's, which hired local firms and paid by the foot of stream cleaned; the recovery groups; and small firms like the one I co-own, which turned a disposal problem into a product.

The universities and colleges

In the state's plan the region's universities and colleges appear mostly as workforce suppliers and research partners, with a hope that one of them becomes a top-tier research university. That matters, but it is too small a role. They can:

- **Study the trends deeply,** with an honest regional account of what heat, growth and storms will do to the mountains over the next thirty years. NOAA's records in Asheville give the region a resource almost no one else has.
- **Convene,** because they are among the few institutions both town and mountain might trust.
- **Build and buy.** They hold land and buy power, food and services, and can be first customers for community grids, mass timber and biochar. Appalachian State already runs its own electric utility in Boone, New River Light and Power, which makes it a natural partner for community grids.
- **Grow the industries that fit,** through research, start-ups and partnerships: A-B Tech and the other community colleges for the trades; UNC Asheville, Western Carolina and App State for engineering, forestry, environmental science, health and the management of recovery itself.

The caution is that universities tend to study rather than build, and a plan led from a campus can set off the same town-and-mountain distrust that slowed the recovery. They should work alongside local firms, not lead from above.

The five imperatives

Exhibit 7: The Five Imperatives Applied to the Mountains

Imperative	What it means here
Study the trends deeply	A shared regional account of how heat, migration, storms, reshoring and technology will reshape the mountains, owned jointly by the counties, towns, universities and people, and naming all four trends plainly.
Focus on real things	Power, water, homes, wood, food and care; industries that make things and build ownership.
Drive ecosystem-level change	Counties and towns, the utility, colleges, local firms, lenders, congregations and the state, working on one Gantt chart. The state plan's steering committee is the start of it.
Scale fast	One valley grid, then every valley. Local primes on the lists before the next hurricane season. A carbonizer at every landfill.
Never let a crisis go to waste	Use the lessons of Helene, while they

Imperative	What it means here
	are fresh, to change both the economy and the disaster system before the next storm.

The five work only together. Study without real things is a report. Real things without an ecosystem are a pilot. An ecosystem that does not scale is a nice story. And all of it is easiest to start now.

Building on the plans

The state's plan does not stand alone. Buncombe County and its six towns adopted their own recovery plan in late 2025, with 114 projects, 31 of them in Asheville, shaped by more than 2,600 residents (Buncombe County, 2025a). The state's plan is designed to align local plans like this one without replacing them, and Buncombe, the region's largest county and the one that lost the most workers, is where the two meet most clearly.

The Buncombe plan says it plainly: Helene "was a pivot point that will likely cause jurisdictions to consider fundamentally new approaches to disaster preparedness, response, and recovery" (Buncombe County, 2025a). I agree, and I would take both plans at their word.

The Buncombe plan is organized by government and by project, with each of seven jurisdictions pursuing its projects "at its own pace." It takes power seriously: resilience hubs with alternative energy, solar for radio towers, and an Asheville project to put solar and batteries at critical city facilities, which it hopes "could be replicated by private sector or residents." But every one of those projects keeps government buildings running. None builds power that a neighborhood owns. The county also proposes to secure its own heavy equipment for disasters, and Woodfin proposes formal partnerships with congregations and community groups before the next one, both steps in the right direction. The county's draft strategic plan, which the recovery projects are aligned to, sets sensible targets for wages, growth areas and conservation, a modest one for home solar, a recycling goal of 20% that includes construction debris, and nothing on wood, biochar or who holds the disaster contracts (Buncombe County, 2025b).

Exhibit 8 brings the argument together: where the plans already point, and what more would do.

Exhibit 8: A Good Plan, and How to Do More

Where the plans already point	What more would do
Economic resilience, framed to survive changes in Washington	Name all four trends and how they collide, so the region prepares for what is actually coming.
A climate refuge; no new building in the floodplain	Protect what is special before growth arrives: ridgelines, rivers, homes local families can own, and limits on short-term rentals and investor buying.
Tourism as a line of effort; parks as	Back the locally owned kind, like the

Where the plans already point	What more would do
tourism nodes	restaurants, Biltmore and Cherokee; put the next dollar into industries that pass the ownership test; let the rest of tourism be a byproduct.
Succession planning; Disaster Opportunity Zones	Apply the ownership test to every incentive, including outside capital.
New markets for downed timber, mass timber and biochar	Write debris contracts for the mountains, and put a carbonizer at every landfill, so the timber reaches those markets instead of the grinder.
Quick-release cash for counties; small-business bridge financing	Extend both to the local firms that do disaster work, and put local firms on the lists as primes before the next storm.
Recovery groups as a standing resilience spine	Extend the spine to the region's industries, each with a pre-agreed and paid role.
Microgrids and a hardened grid in ten years; solar for government buildings	A flood-proof community grid in one valley by 2028, owned by the people it serves.
Universities as workforce and research partners	Universities as builders, buyers and conveners.
"Recipients plan, and outside capital supports that plan"	Recipients plan, build, own, and are paid for the work.

My answer to the plans is not "no." It is "yes, and now": keep the projects and the lines of effort, and measure each one against the region we need rather than the one we had.

What only the region can do

In the country papers I describe five tasks for a nation. A region has its own version:

- **Convene** the region around one picture of its future, agreed before the next storm.
- **Shape growth,** making it easy to build in the right places and hard in the wrong ones, and making growth pay to protect what is special.
- **Keep the money local,** through local primes, bridge capital and local ownership.
- **Protect those most exposed:** the elderly, the poor, and the people on the steepest land and in the deepest valleys.
- **Decide what the mountains are for.**

6. What Could Go Wrong

- **Growth outruns the mechanisms.** *Put the protections in place first; growth will not wait.*

- **Drift back to the old assumptions as memories of Helene fade.** *Agree the picture now, while the plan is new.*
- **The region fights over the plan and changes nothing.** *Start with one valley and one county that want to go first.*
- **Naming climate costs federal support.** This is the plan's own worry, and it is a fair one. *Name the trends honestly in the region's own analysis; use whatever language each funder requires in each application. The work is the same either way.*
- **Local primes fail when the storm comes.** Large firms exist for a reason: equipment, bonding and experience. *Build local capacity steadily with bonding support, training and joint ventures among local firms, and keep large firms as backup, not as the default.*
- **The utility resists community grids.** *Bring it in as a partner on reliability, where it gains as much as anyone. Where a cooperative serves the valley, start there: its members already own it.*
- **New industries bring the same leak as the worst of tourism,** with outside owners and local wages. *Apply the ownership test to every incentive.*
- **The strongest argument against this paper** is that the region simply needs its money faster, and should not be distracted by reinvention. My answer: speed and reinvention are not in conflict. A local firm with bridge capital and a pre-agreed role is faster than a national firm working through three layers of subcontractors.

7. What Should Happen Now

Each of these can be added to the state plan's existing lines of effort. None needs a new plan.

1. **Name the trends.** Add a short, honest regional account of how all four trends will reshape the mountains to the plan's next update, led by the universities with NOAA's records in Asheville.
2. **Adopt the ownership test.** Every public incentive for a new industry, and every Disaster Opportunity Zone project, should ask whether it builds local ownership, not only wages.
3. **Protect what is special before growth arrives.** Make the plan's floodplain and climate-refuge goals binding; add ridgeline and river protection, limits on short-term rentals and investor buying, a development fund for local housing and conservation, and a regional compact among the counties.
4. **Give every industry that fits the mountains a disaster role,** extending the resilience spine to firms, and put local firms on the state and county lists as primes before the next hurricane season. This also moves the old complaint that outsiders take the money.
5. **Create a local bridge fund,** building on the plan's quick-release cash and bridge financing, so local firms and small counties can carry costs while FEMA reimburses.
6. **Build the first flood-proof valley grid by 2028,** in one of the valleys in Exhibit 6a, then the next ten, with the community as owners, eight years ahead of the plan's ten-year target.

7. **Turn debris and forest waste into a regional industry:** a carbonizer at every landfill with room for one, debris contracts that favor converting on site, and a sustained market for biochar and mass timber.
8. **Make the universities and colleges partners in building,** each taking on one real project.
9. **Write down the lessons of Helene now:** who was paid, how fast, and how much stayed local, so the next disaster, here or in any mountain region, goes better.

Conclusion

Picture two futures for a child born in these mountains this year.

In one, the mountains fill up with people escaping the heat. Prices rise, the young leave, the land passes to people who visit, and the jobs that remain pay too little to buy it back. When the next storm comes, the money goes out of state again while local people wait.

In the other, the mountains become the place the world learns how to build a haven: an economy that fits the land, owned by the people who live on it, with protected ridgelines and rivers, lights that stay on in the valleys, and industries that act the moment disaster strikes. Visitors still come, because the place is real.

The region already has a good plan. The difference between those two futures is whether it does more. We chose these mountains as a haven for our family. I still believe they can be one. But a haven is not found. It is built.

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