

Ten Years of Transformative Thinking

A PUBLICATION OF THE
ISLAND PRESS SHORT-FORM PROGRAM

About the Island Press Short-form Program

At Island Press, we are advocates for change and stewards of knowledge in many forms. Since our inception, our mission has been clear: to provide the best ideas and information to those seeking to understand and protect the environment and create sustainable, equitable solutions to its complex problems. We pursue this mission in a rapidly changing media environment. Increasingly, important conversations take place across blogs, online media outlets, and social media.

While books continue to be at the heart of our work, we understand that not everyone has the time or resources to write a book, or it may not be the most effective format for their message. That's why Island Press is proud to offer its Short-form Program as a resource for writers, advocates, nonprofits, and other change agents.

The program provides editorial and marketing support to create original articles, op-eds, and other "short-form" writing on a variety of topics including urban resilience, climate change, environmental justice, energy, conservation, green infrastructure, transportation, planning, design, food, water, and public health. We publish these written pieces in a variety of online and print media outlets and share them on other digital and social media platforms. Importantly, many of our short-form contributors bring new and underrepresented voices to the public conversation on environmental issues.

For more information, and to find out how you can get involved, visit www.islandpress.org/shortform.

About the Freedom Together Foundation

The FREEDOM TOGETHER FOUNDATION supports people who have been denied power to build it so that they can change unjust systems and create a more democratic, inclusive, and sustainable society.

About The Kresge Foundation and Its Environment Program

THE KRESGE FOUNDATION is a private, national foundation that works to expand equity and opportunities in America's cities through grant making and social investing in arts and culture, education, environment, health, human services, and community development, nationally and in Detroit, Fresno, Memphis, and New Orleans. In collaboration with its partners, Kresge helps create pathways for people with low incomes to improve their life circumstances and join the economic mainstream.

Kresge's Environment Program helps cities combat and adapt to climate change while advancing racial and economic justice. The program's vision is that people in cities are protected from the short- and long-term impacts of climate change because their communities have transitioned to renewable energy, prepared for climate impacts, and elevated equity as a priority to ensure that everyone shares in the benefits. The foundation advocates that cities address climate change mitigation and adaptation concurrently; elevates the leadership, inclusion, and influence of people of color, people with low incomes, and equity-focused organizations in climate change-related decision-making; and builds the capacity of public sector staff, urban practitioners, and community leaders and fosters connections between and among them.

About Island Press

Since 1984, the nonprofit organization Island Press has been stimulating, shaping, and communicating ideas that are essential for solving environmental problems worldwide. With more than 1,000 titles in print and some 30 new releases each year, we are the nation's leading publisher on environmental issues. We identify innovative thinkers and emerging trends in the environmental field. We work with world-renowned experts and authors to develop cross-disciplinary solutions to environmental challenges.

Island Press designs and executes educational campaigns in conjunction with our authors to communicate their critical messages in print, in person, and online using the latest technologies, innovative programs, and the media. Our goal is to reach targeted audiences—scientists, policymakers, environmental advocates, urban planners, the media, and concerned citizens—with information that can be used to create the framework for long-term ecological health and human well-being.

Island Press gratefully acknowledges the support of The Kresge Foundation and the Freedom Together Foundation, without whose partnership this journal would not be possible.

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Island Press's mission is to provide the best ideas and information to those seeking to understand and protect the environment and create solutions to its complex problems. <u>Click here to get our newsletter</u> for the latest news on authors, events, and free book giveaways.

Resilience Matters

Ten Years of Transformative Thinking

A Publication of the Island Press Short-form Program



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Introduction

A Decade of Progress Toward a Fairer, Greener, and More Resilient Future

LAURIE MAZUR

In these tumultuous times, "resilience" has become something of a buzzword. It is the subject of scholarly books and self-help podcasts; of government programs and many, many conferences. But what does resilience mean, exactly? And can it help us survive and thrive in the era of climate change?

Ten years ago, Island Press set out to answer those questions. As a nonprofit environmental publisher, Island Press has long worked to explore—and share—the best thinking on how to protect the planet and its people. So, we partnered with a diverse group of thinkers to publish articles and op-eds that envision a truly resilient future. In these pages, you'll find a sampling of that work.

The authors whose work is collected here include activists, academics, planners, and public officials. Each of their writings is a miniature time capsule, capturing real-time takes on the upheavals of the last decade: hurricanes and wildfires, political shifts, the global pandemic. Their articles and op-eds originally appeared in a wide array of outlets, from local newspapers to *The New York Times*, as well as in more-specialized publications. And while their perspectives and subjects differ, their writings share several themes in common.

First, they show that resilience is not about "bouncing back" to the disastrous status quo. Today, the destabilized climate poses unparalleled risks to human health, safety, and economic well-being. And in a world of rising inequality, those risks are not equally shared: low-income communities and people of color are hit first and worst by climate change impacts. So, "bouncing back" to a status quo that increases greenhouse gases and widens inequality will only magnify human suffering.

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That dark possibility is not our only option. Indeed, the need for resilience could spark positive transformations on many fronts. That's because true resilience calls us to rethink the design of our communities and the systems that meet human needs, while rectifying the inequities that leave too many people vulnerable to disaster. This is what resilience means to us.

The good news is that these transformations are already under way. In "Flood Survivors Find Common Ground in a Divided Nation" (page 52), you will meet a conservative, home-schooling mother from Virginia who joined forces with flood victims across the US through an organization called Higher Ground. Together, they are working to stop development in floodplains, promote water-absorbing "green infrastructure," and organize home buyouts in areas that flood repeatedly.

In "Energy Democracy: People Power for a Cleaner Planet" (page 130), you can read about One Voice, an activist group in Mississippi that is fighting for cheaper, cleaner energy by restoring democratic control to the state's rural electric cooperatives. And "Finding Climate Solutions in Communities Instead of Labs" (page 57) tells the story of a community group, Catalyst Miami, that compelled its city to address extreme heat. When city officials said they lacked data, the group partnered with local universities to place heat and humidity sensors throughout the city. Now Miami has an extreme heat action plan that is saving lives—and serving as a national model.

The coming years will certainly test our collective resilience. Last year was the hottest in recorded history, and climate change is taking an ever-greater toll on our health, our economy, and the places we call home. These metastasizing impacts are now met with official denial and the rollback of climate initiatives. But, even in these polarized times, people are rising to the great environmental and moral challenges before us. In these pages, they show us how to build a fairer, greener, and more resilient future.

Section I Climate Adaptation & Resilience

We Can't Have Resilience Without Justice

Denise Fairchild

Originally published January 27, 2015 in Grist

Michael Brown. Eric Garner. Tamir Rice. John Crawford III. Levar Jones.

Their deaths—and those of too many others—illuminate the ghastly toll of racism and impunity. It's a toll we can measure in lives lost, and in communities seared by violence.

But here's a casualty you might have missed: *trust*. When people feel unfairly targeted by the police, when good cops fear reprisal from angry communities, trust—the invisible thread that holds livable communities together—unravels.

If we are going to get real about resilience in an age of climate change and other large-scale disruptions, trust looms large.

Think about it. If people don't trust the authorities, will they pay attention when it's time to evacuate? Will first responders venture into communities of color to rescue the most vulnerable? Will people from different backgrounds and neighborhoods join hands to rebuild?

It's not just about climate-related disaster, either. If an epidemic is raging, will sick people remain quarantined, or will they flee and infect others? (That's what has happened during the Ebola epidemic in West Africa, where people's reasons to distrust the authorities could fill an encyclopedia.)

Here in the US, it's easy to trace the roots of distrust—from the original sin of slavery to the structural racism that endures.

But what about the roots of resilience? How can we repair trust and build communities that can survive and thrive in a disaster-prone world?

I'd say it's about rights, respect, and responsibility for planet, places, and people. It's about building a society that not only protects and

improves our environment, but also engages its citizens through a truly just democratic process.

Fairness is key. In a resilient society, both opportunity and risk are shared by all.

Rather than a winner-take-all economy, where the rich get richer and the rest are just getting by (or not), a resilient economy invests in education and opportunity for *everyone*.

For example, in New Orleans, where more than half of African-American men are out of work, the Emerald Cities Collaborative is working with the mayor's office to employ disadvantaged residents in efforts to build a stronger, more sustainable city. (Bonus: The city's investment is greening and strengthening its water, sewer, and other public infrastructure to be resilient against extreme weather.) A fundamental, unanticipated task, however, is rebuilding residents' trust that this public commitment and community engagement process are authentic and will make a difference in their lives. Building a resilient city requires rebuilding trust, especially in communities that have suffered from broken promises and lives.

And, in a resilient society, the burden of risk is shared equally, whether you live in the Lower Ninth Ward or the Upper East Side. That's not the case in the US today, where low-income people and people of color face disproportionate risks from every kind of environmental problem—from extreme weather events to health impacts from pollution, like asthma. That's a huge problem for frontline communities. But it's also a problem for Americans as a whole, because a society that dumps risks on marginalized people is more likely to ignore those risks—until it's too late. As Naomi Klein has observed, "Once decision-makers start rationalizing the sacrificing of some lives, it's awfully hard to stop."

There are lots of ways to reduce risk in vulnerable communities. We can, for example, invest in urban infrastructure and high-quality affordable housing. We can patch holes in the social safety net and improve public health. And we can make sure that low-income people and people of color are fully engaged in decision-making at all levels.

Trust is key to resilience in a volatile world. For trust to thrive, we need to know that the police and the courts have our backs. We need

to feel like we are all in this together, that we all have a chance to make good, and that when things go wrong, we will face it together. But trust isn't something that can be airlifted in to communities in crisis. It has to be built from the ground up.

Where there is no justice, there is no trust. And where there is no trust, we will not be resilient to the shocks and surprises of the future.

Bounce Forward: Building Resilience for Dangerous Times

LAURIE MAZUR

Originally published January 1, 2016 in Solutions

When Superstorm Sandy came ashore in 2012, thousands of New Yorkers were plunged into what seemed like an earlier century. No lights. No heat. No refrigeration. No elevators. On the upper floors of high-rise apartment buildings, the taps went dry and toilets would not flush.

For the poorest New Yorkers, this went on for weeks. Less than a mile from the seat of global capitalism where stock traders were back at work soon after the storm, residents of public housing rifled through dumpsters full of discarded food looking for something to eat.

Sandy was many things: a disaster that cost hundreds of lives and billions of dollars, a wake-up call on climate change, and a reminder of the fragility of the systems that hold our civilization together.

It is a reminder we would do well to heed. We live in a time of wrenching change and widening inequality, of growing vulnerability to disaster. The good news is that there is much we can do to make our communities stronger, fairer, and more resilient. That does not, however, mean "bouncing back" to the status quo that got us into this mess in the first place. Instead, it means bouncing forward to a world that is more sustainable and just.

The New Normal

It's safe to say that we've never been here before. While change is a constant in natural and social history, the pace, scale, and impact of change today is utterly without precedent.

Part of that change is environmental, reflecting our wholesale transformation of the natural world. Over the last half century or so, human beings have altered the planet's ecosystems more than in all of previous history combined—clearing forests, diverting rivers, replacing the riotous diversity of nature with uniform monocultures. Those changes have improved the lives of many, but they have weakened nature's ability to protect and sustain us in the long term.

Most ominously, we are changing the climate. Through industry, agriculture, and the business of daily life, humans have increased the carbon dioxide in the atmosphere by 40 percent above pre-Industrial Era levels, trapping heat and warming the planet. The impacts are increasingly visible: in monstrous storms and devastating droughts, spiking food prices, and wrecked infrastructure. Climate-related disasters in North America have nearly quintupled since 1980.

On our altered planet, the past is no longer a reliable guide to the future. Temperature records are broken on a regular basis and "hundred-year storms" arrive every few years. October 2015 was the warmest October in recorded history by a wide margin—a record that may be broken again by the time you read this. And 2015 is shaping up to be the warmest year ever.

As the planet warms and climate disasters multiply, there are more people in harm's way than ever before. The global population has tripled in the last hundred years, with most of that growth taking place in coastal areas that are exposed to rising sea-levels.

At the same time, our world is rocked by enormous technological and social changes. More than any previous generation, we are connected by dense global networks of commerce and communication. Those networks can accelerate the spread of innovation, information, and opportunity, but they can also spread disaster. For example, the financial crisis that began in 2007 was triggered by risky mortgage lending in the United States, but in an interconnected global economy, its impacts continue to reverberate around the world. Other threats from Ebola to terrorism—can easily hop a plane and go from local to global overnight.

The complex systems that keep our lights on and our refrigerators full would have dazzled our agrarian ancestors—but they are surprisingly vulnerable. For example, Big Food's globe-spanning supply chains are easily disrupted and its vast monocultures susceptible to drought and disease. The electrical grid is ridiculously fragile. According to the Federal Energy Regulatory Commission, if saboteurs or disaster were to destroy just nine substations and one transformer manufacturer, "the entire United States grid would be down for at least 18 months, probably longer." A massive solar storm, similar to one that occurred in 1859, could take down the grid and interfere with essential electronics—putting the world as we know it on indefinite hold.

In the face of these new and sobering risks, all people are not equally vulnerable. That's because we live in an era of stark and growing inequality. The richest one percent of the world's population lays claim to 46 percent of the world's wealth; the bottom half—some 3.5 billion people—together possess less than one percent of global assets. Not surprisingly, the poor bear the brunt of climate and other disasters. In this unequal world, the affluent seize opportunities and shield themselves from harm, while the poor face greater risks with fewer resources. These dynamics are self-reinforcing: the rich get richer while the poor fall farther behind.

Defining Resilience

In these turbulent times, the concept of "resilience" has growing appeal. Lately it's been the subject of serious books and breezy articles, of high-minded initiatives and countless conferences. After Sandy, it was triumphantly plastered on city buses, declaring storm-ravaged New Jersey "A State of Resilience."

But what is resilience, exactly? Recently, Island Press—a nonprofit that provides ideas and information on environmental problems and solutions—set out to answer that question. To that end, we reviewed relevant literature in the natural and social sciences and interviewed dozens of scholars, activists, and practitioners. Based on that inquiry, we define resilience as "the capacity of a community to anticipate, plan for, and mitigate the risks—and seize the opportunities—associated with environmental and social change."

Resilience is an idea with potentially transformative power. The need to protect our communities from climate impacts and other threats asks us to rethink the systems that supply our basic needs. It asks us to live within planetary limits and to avoid further destabilizing natural systems. It asks us to eradicate the inequities that magnify vulnerability to disaster, and to distribute opportunities more fairly—so that all people have a chance to adapt and thrive in a fast-changing world.

But the transformative potential of resilience is far from assured. Too often, resilience is defined narrowly as a community's capacity to "bounce back" after a disaster. For example, the self-declared "State of Resilience" rebounded after Sandy by building even bigger houses on the Jersey Shore. Bouncing back to a status quo that degrades the environment, increases greenhouse gases, and widens inequality will only make us more vulnerable in the longer term.

Here, we offer an alternative path—a framework for communities to consider as they endeavor to become more resilient to the shocks and surprises of the future. This framework is neither definitive nor universal; it is best seen as a jumping-off point for communities to begin their own conversation.

Ask-Analyze-Act

The process of building resilience is not value-neutral; decisions about what to protect and strengthen reflect deeply entrenched values and power structures. Should public funds be used to build seawalls around Wall Street or to put solar panels on a housing project? The first step is to **ask** what in the community must be strengthened, against what threats or changes, and for whose benefit.

The next step is to **analyze** the systems that supply a community's needs. Resilient systems and communities have certain characteristics in common:

- **Diversity:** A system with diverse components will have a wide range of responses to change and is therefore unlikely to fail all at once. This is why a healthy, mixed forest is less vulnerable to fire or disease than a tree farm. Similarly, a city with a diverse economic base is less vulnerable to economic upheaval than one that relies on a single industry.
- **Redundancy:** A resilient system has multiple ways to perform basic functions so that the failure of any one component does

not cause the entire system to crash. For example, a multimodal transportation system that includes a variety of public transit options as well as opportunities for walking and bicycling will weather disruptions better than a system that relies wholly on automobiles.

- **Modularity:** Modular systems that can be self-sufficient when disconnected from larger networks will fare better in times of change. For example, people living in a city with a robust local food culture (nearby farms, a farmer's market) will be less likely to go hungry if there is a disruption in national or global supply chains. Modularity allows a community or system to manage its connectivity to larger regions and the world; it is a way to guard against "contagions" from a hyper-connected, globalized economy.
- **Tight feedbacks:** A resilient system has tight feedbacks, allowing it to quickly detect changes in its constituent parts and respond appropriately. If a reservoir is low, for example, water conservation measures may be put in place. But in today's globalized economy, consumers may be thousands of miles away from the source of resources on which they depend—so feedback loops go slack. Inequality also weakens feedbacks, as affluent communities routinely outsource production and pollution to poorer ones.
- **Social capital:** For an individual, social capital is about relationships with family, friends, and colleagues. In communities, social capital can be measured by levels of trust, cohesion of social networks, and the quality of leadership. In a disaster, social capital can literally mean the difference between life and death. Resilient communities build social capital with public spaces that encourage interaction and with traditions and institutions that enable neighbors to help one another.
- Agency: Resilient people have a sense of control over their destiny; resilient cities fully engage their citizens in decision making. Fundamentally, agency is about power: personal and political. Strategies to build agency include community organizing, education, public health and society initiatives, and civic engagement.

- Equity: Equity means that opportunities—and risks—are equally shared. It is a building block of social cohesion—the sense that "we're all in it together" that enables communities to cooperate in times of disaster. And equity improves performance on a broad range of human development indicators—physical and mental health, public safety, social capital—that form the bedrock of individual and community resilience.
- **Inclusiveness:** Inclusive social institutions—economic, political, and cultural—can strengthen resilience at every level, by increasing social capital, agency, and equity. In an inclusive society, power and opportunity are shared broadly, not concentrated in the hands of a few. Inclusive governance has practical benefits. For example, it tightens feedback loops so that problems are more readily detected, and it expands the depth and diversity of knowledge available for problem solving.
- Innovation: A resilient system generates novel responses while learning and adapting to changing conditions. In nature, this is accomplished by evolution. In human society, it requires innovation—the ability and willingness to try new things. The capacity to innovate derives from the qualities described above. A diverse system generates more novelty than a monoculture; in social systems, innovation often comes from the margins. An inclusive society is better able to engage the agency and creativity of all of its citizens. And tight feedbacks provide timely and accurate information about changing conditions, which is essential for appropriate innovation.

Finally, communities must **act** by protecting, restoring, adapting and, if necessary, transforming—the systems on which they depend. Building resilience in complex systems may require all of the above.

Take, for example, the electrical grid, which, as noted above, is staggeringly vulnerable to disruption. A more resilient grid requires persisting—urgent action to protect vulnerable links in the chain. It also requires adapting—measures to make the grid more redundant and modular, as some are doing now. For example, Co-op City, a housing complex in the Bronx, kept their lights on during Superstorm Sandy with a microgrid that disconnected temporarily from the larger system. But ultimately—given the limited supply and disastrous climate effects of fossil fuels—the existing electrical grid must be transformed to one that relies instead on a diverse array of renewable power sources.

Resilience requires a holistic view: focusing myopically on the system at a single scale, or managing for a single outcome, is likely to yield surprises from unanticipated feedbacks. So managing resilient communities begins with an understanding of systems and their functions at many scales, from many perspectives. And it calls for a certain amount of humility, an admission of what we cannot know.

To avoid a narrow focus, interventions to build resilience can try to solve more than one problem. For example, energy efficiency in affordable housing can help low-income people save money on utilities. It also makes homes more habitable during power outages so that residents can shelter in place during a disaster. And it reduces energy usage, mitigating climate change and improving air quality and public health.

There are many other such win-win solutions. For example, the Evergreen Cooperatives of Cleveland are employee-owned, for-profit companies—laundry services, urban farms, and renewable energy whose green jobs pay a living wage and enable workers to build equity. Because Evergreen is linked to the supply chains of the city's anchor institutions, it helps keep financial resources in the community. Evergreen builds resilience by protecting workers from the vicissitudes of the global economy and also by protecting the ecosystems on which the city depends.

Bounce Forward

Facing an unknowable future, we can build resilience with win–win strategies like distributed, renewable energy; local food; and greater social equity. These strategies will help protect our communities from a broad range of disruptions and help create a world that is more sustainable and just.

Resilience, in essence, is about strengthening our connections to the natural world and to one another. We may live in cities, divorced from nature, but we are not exempt from nature's laws. To survive and thrive in these disruptive times, we need to reconnect to the values that enabled our species to overcome hard times through the millennia. Those values were out in force after Superstorm Sandy, when "Occupy Sandy" mustered volunteers to provide food, clothing, transportation, generators, and other vital assistance to storm victims. One Occupy supporter summed up the group's philosophy: "We're all in this together, so let's help each other out."

How to Turn Neighborhoods Into Hubs of Resilience

Taj James and Rosa González

Originally published April 14, 2017 in Yes!

Think of it as a silver lining to the gathering dark clouds. We live in an era of extraordinary disruption, from the serial crises of a changing climate to the wrenching shifts of a globalized economy. But in that disruption lies the potential for positive transformation.

Addressing climate change requires adapting to the impacts that are already here—heat waves, droughts, superstorms, and more—while preventing and mitigating future impacts. Taking these challenges seriously calls for radical changes in the way we live. It calls us to zero out our carbon emissions, and to rethink the systems that shape our lives, including the economy, food, and power. It calls us to fundamentally transition from a world of domination and extraction to a world of regeneration, resilience, and interdependence.

It's a tall order, no doubt, but that transition is already underway. In our work with movement builders on the front lines of the transition, we've identified two key guideposts—connectedness and equity—that point us toward the world we want.

Connectedness is the recognition that our well-being is inextricably tied to that of other people and the planet itself. It means there are no throwaway people, no throwaway places, no throwaway anything. In fact, there's no "away"; there's just here. In practice, connectedness is about lifting up the voices of the marginalized, and it means regenerating forgotten places, from industrial brownfields to hollowed-out rural towns and Rust Belt cities. The second guidepost, equity, is about recognizing and repairing the harm generated by situations of extreme power imbalance. Equity is about building power from the bottom up.

When communities are fully engaged in problem-solving, they

come up with holistic solutions that address complex, interlocking challenges. Here are three.

Sunset Park, Brooklyn, New York

When Superstorm Sandy ripped through the Eastern Seaboard in 2012, the waterfront neighborhood of Sunset Park was hit hard. Power lines toppled and businesses were shuttered. The neighborhood's industrial district flooded, washing toxic residue into nearby residential areas.

But as the people of Sunset Park worked together to rebuild, a hopeful possibility emerged. What if the neighborhood rebuilt in ways that made the local economy more resilient and equitable, while limiting the impact of climate change? That's the vision of UPROSE, a grassroots environmental justice group that took root in Sunset Park 50 years ago.

"Superstorm Sandy was a real wakeup call for our community," says UPROSE director Elizabeth Yeampierre. "Climate change is here now, and waterfront communities like ours are extremely vulnerable." The neighborhood's low-income, immigrant residents were especially at risk, so in the aftermath of Superstorm Sandy, they turned to UPROSE for a community organizing effort to prepare for a wetter, more uncertain future.

The plan they came up with builds climate resilience while protecting the environment, health, and—crucially—jobs.

The point is not simply to rebuild what was there before; UPROSE members don't want more jobs in the same dirty industries that had polluted the neighborhood for decades. "We have a lot of businesses on the waterfront, and we want to keep them here because people need places to work," Yeampierre says. "But we want safe places to work." To that end, UPROSE has joined forces with labor unions, the Center for Working Families, and business owners to transform Sunset Park's industrial space into a manufacturing hub that produces environmentally friendly building and construction materials, powered by renewable energy. And they are encouraging these industries to hire locally.

It's a plan that addresses many problems at once. In a city with skyrocketing inequality and rampant gentrification, it could help preserve the blue-collar jobs that once anchored the middle class. At the same time, it could reduce toxic hazards and make Sunset Park a safer, healthier place to live. And it could reduce the carbon emissions that are driving that change.

The process of developing the plan was as transformational as the plan itself. UPROSE consults with residents on the future they want, then arms them with the tools they need to make that vision a reality. Some residents take on the role of block captains and gather input and educate their neighbors on city planning processes. Through partnerships with researchers, residents conduct participatory action research on issues of concern. It's a deeply democratic, holistic approach that builds local power and increases community control over resources—key elements of community resilience.

Buffalo, New York

Left behind by the globalized economy, Buffalo has lost more than half its population since 1950. By 2005, when the community group People United for Sustainable Housing (PUSH) Buffalo was founded, residents of the West Side neighborhood were struggling with unemployment, rampant blight, and high energy costs.

At that time, there were an estimated 23,000 vacant homes in Buffalo. PUSH took on a state housing agency that was using vacant buildings to speculate on Wall Street, and got the buildings turned over to the community—with funding to fix them up.

Next, PUSH brought together hundreds of community residents to craft a plan for a large, blighted area. The result is a 25-squareblock Green Development Zone (GDZ), which is now a model of energy-efficient, affordable housing. PUSH and its nonprofit development company rehabilitate homes in the GDZ, installing efficiency upgrades, like insulation and geothermal heating, that dramatically lower residents' utility bills. The organization won a New York state grant to build 46 new homes, including a net zero house, which produces as much energy as it consumes.

The GDZ doubles as a jobs program. Through its construction projects, PUSH has cultivated a growing network of contractors who are committed to hiring locally. And PUSH successfully advocated for New York's Green Jobs-Green New York program, which seeks to create 35,000 jobs while providing energy upgrades and retrofits for 1 million homes across the state.

Across the West Side, PUSH has transformed the urban landscape. In partnership with Buffalo Niagara Riverkeeper and the Massachusetts Avenue Project, PUSH has turned trash-strewn, vacant lots into state-of-the-art rain gardens, small urban farms, and aquaponics greenhouses. These urban oases bolster food security, while providing much-needed green space.

Richmond, California

A predominantly low-income community of color is challenging the oil giant that has long dominated their city.

In Richmond, the 3,000-acre Chevron refinery looms over the city with towering smokestacks and tangled pipes going in every direction. The largest of its kind in California, the Chevron refinery showers Richmond with unpronounceable toxic chemicals and periodic fiery explosions that put residents at risk. As a major source of jobs and tax revenue, Chevron has long held outsized influence on the city's politics. But, fed up with their toxic neighbor, residents are working to counterbalance the company's political muscle.

The first step was to activate community power. A coalition of local nonprofits including the Asian Pacific Environmental Network (APEN), Communities for a Better Environment (CBE), the Alliance of Californians for Community Empowerment (ACCE), the Richmond Progressive Alliance, and Faith-Works brought residents together to devise solutions to community problems.

The coalition organized forums and rallies, held regular learning institutes for decision-makers, and encouraged public participation at planning commission meetings. In this way, residents reshaped their city's General Plan to make Richmond less reliant on Chevron. The new General Plan emphasizes green industries, anti-displacement policies, and better mass transit systems. Now, the coalition is at work translating the plan into projects, programs, and laws.

At the same time, the Our Power campaign in Richmond is working to build community control over essential resources, such as food, land, water, and energy. Our Power partners with Cooperation Richmond, a local co-op incubator and loan fund that helps low-income residents create their own cooperatively owned businesses. The group holds the annual Our Power Festival, which brings together residents, small businesses, and the public sector to envision a transition to local energy management.

Despite this groundswell of community organizing, Chevron continued to hold sway on the City Council. So the organizers switched to electoral tactics to supporting progressive candidates who would stand up to the oil giant. And it worked. In 2014, despite millions of dollars invested in the election by Chevron, residents voted in candidates aligned with community values and renewable energy.

"Winning political power, especially in this political moment, is critical for communities at the intersection of poverty and pollution," says APEN Action executive director Miya Yoshitani. "If we are going to win back our democracy from the hands of corporations, and win the powerful vision we have for living local economies, we need to invest in organizing the power of the people and the polls in all our neighborhoods."
Interdependence and Its Discontents

Shade Shutters and Laurie Mazur

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A few years ago, a man named Mike Vilhauer was fishing near Sunset Lake, in California's Sierra Nevada mountains. He wandered into the woods to look for bait, and promptly got lost. For the next five days, he lived off the land—drinking from a stream, sleeping in a rocky cave, eating the occasional dandelion. After Vilhauer's rescue, national and international news outlets breathlessly described his "fight for survival," "against the odds."

Vilhauer's survival seems like an impressive achievement, until you stop to consider that he was simply doing what humans did, day in and day out, for most of the last 200,000 years. Of necessity, our distant ancestors had wide-ranging survival skills: they foraged, hunted, herded, and built shelters. It's only in the last few millennia that we have taken on increasingly specialized roles. Today, we are fry cooks and nuclear physicists, bloggers and plumbers—but few of us retain the general skills that were once a prerequisite for survival.

This is *interdependence*, which now defines us—as individuals, communities, and nations—as never before. Interdependence means that we don't all have to farm, or build houses, or make semiconductors. Instead, our complex social systems rely on the division of labor and exchange of goods and services to meet human needs. When people concentrate their labors on what each does best, all of society benefits—or so said Adam Smith in 1776 at the dawn of modern economic thinking.

A few years later David Ricardo extended this idea to nations, claiming that if each country focuses its production capacity on what it does better than anyone else—exploiting their comparative advantage—all nations will be better off. Later, this thinking became a pillar of the post-World War II international order. Interdependence theory which holds that nations that depend on each other economically are more likely to work harmoniously together—has shaped thinking in Washington for almost three-quarters of a century.

Interdependence has obvious upsides. It is wondrously efficient, as it removes the redundancies of effort involved when everyone has to, say, can their own fruit—or when every nation has to grow its own rice or mill its own steel. And interdependence has coincided with an extraordinary period of peace and prosperity in the industrialized world.

But there are downsides as well. As a society's efforts are divided into ever more discrete tasks, each member of that society becomes ever more dependent on others for the production of social goods and, ultimately, for survival—as Mike Vilhauer learned on his ill-fated fishing trip.

Interdependent societies are more connected and integrated, but they are also more fragile, more brittle, and more vulnerable to cascading failures. So while highly integrated societies can accomplish feats that no group of unspecialized laborers could dream of, they do not do so well when subjected to shocks such as earthquakes, epidemics, financial crises, and political conflict. A generation ago, such shocks generally had only local effects. But in today's hyper-connected world, a disruption in one place can swiftly cascade across the entire planet, threatening global supplies of goods and information. That's what happened after the Tohoku disaster in Japan in 2011, the Wall Street crash of 2008, and the SARS epidemic of 2002. Accordingly, the World Economic Forum has warned of "the prospect of rapid contagion through increasingly interconnected systems and the threat of disastrous impacts."

If your community is tightly entwined with global markets, it is vulnerable to impacts from distant disasters. In one recent study, researchers measured the economic interdependence of 364 US metropolitan areas; they then looked at how those cities fared during the Great Recession. The researchers found that the most integrated, interdependent cities (typically also the largest cities) suffered greater drops in economic performance and took longer to recover than their less-integrated counterparts.

Interdependence can pose geopolitical threats, as well. Our economic ties to other nations expose us to potential acts of coercion and extortion by key trading partners. Two decades ago, no nation had the capacity to cut off the flow of critical materials or information to the US population. Today, a simple embargo or blockade could halt the supply of vital drugs, electronics, and financial information.

That danger is real and present. A recent RAND Corporation report, prepared for the National Intelligence Council, found that China has quietly cornered the market on raw materials that lay at the base of most high-tech manufacturing supply chains. For example, China now controls 97% of the world's supply of rare earth elements, which are essential to manufacturing everything from iPhones to advanced military technology. That gives China extraordinary leverage over the US economy and national security. It is not difficult to imagine a scenario (a trade war; escalating tensions in the South China Sea) where such leverage would come in handy.

These dangers do not, however, warrant a wholesale retreat from interdependence. This is not an endorsement of Trumpist "build the wall" isolationism and nationalism. It would not serve us as individuals, or as a nation, to wall ourselves off from the rest of humanity in pursuit of self-sufficiency. That path could leave us isolated and friendless in a dangerous world. And it would dampen the dynamism that comes with global trade in goods and ideas.

As with any set of trade-offs, there is a sweet spot to be found somewhere between hyper-connectedness and rigorous self-sufficiency. What might that look like?

For individuals and families, it could mean planning for inevitable disruptions—natural, social, and economic. Not by moving to a survivalist compound, but by developing small-scale, local backups for the globe-spanning systems that supply essential goods and services. Begin by considering how you would obtain the essentials—food, water, and power—if supply chains are cut off.

Often, solutions are best generated at the community level. For example, small-scale "microgrids," powered by renewable energy, offer an increasingly viable alternative to the huge but fragile mega-grid that supplies most Americans with energy. That's how Co-op City, a housing complex in the Bronx, kept the lights on during Superstorm Sandy in 2012.

Similarly, robust local food networks can keep food on the table in times of crisis. Though local food now accounts for a small share of American agricultural markets, that can change quickly: During World War II, Americans planted "Victory Gardens" to help the war effort and produced 40 percent of the vegetables grown in the US.

At the national level, we can work to decrease dependence on China and others for raw materials. And we can place limits on the outsourcing of key industries, while nurturing a diverse industrial base in the US. Some industries already enjoy protection from global competition; for example, the American shipbuilding industry is propped up by legislation that prevents naval warships from being built outside the US. In this and similar cases, costs to efficiency may be counterbalanced by gains in national security and economic resilience.

It won't be easy to strike the right balance between of self-sufficiency and interdependence. But it is important to get it right. Otherwise, like Mike Vilhauer, we may find ourselves wandering in the woods, fighting for survival against the odds.

Fairness After the Flood

Chrishelle Palay

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A s the floodwaters slowly recede, people throughout the upper Midwest are struggling to salvage their homes, their farms, and their lives. Some will readily bounce back. But others—including those who are the most vulnerable—may enter a downward spiral from which they can't recover.

Floods and other natural disasters are sometimes seen as great levelers, affecting rich and poor alike. The reality is different. New research published by the American Sociological Association shows that disasters—and the federal aid that follows—leave affluent, White communities better off, while their poor neighbors of color slip deeper into poverty. That has certainly been our experience in Houston, where—a year and a half after Hurricane Harvey—many of my low-income neighbors are still waiting for help.

In many low-income communities, what are called natural disasters are layered upon long-standing harms and inequities. Our communities are reeling from disinvestment, redlining, industrial decline, and the lack of affordable housing. Floods and other disasters can exacerbate those problems—and inequities in federal disaster assistance can make matters worse.

In Miami-Dade County, Florida, Hurricane Irma damaged four times as many rental units as homeowner-occupied units. But this disparity was not reflected in federal disaster assistance; homeowners in one accounting received three times as much assistance as renters. Because communities of color are overrepresented among renters, this disparity worsens racial inequity in recovery.

In Puerto Rico, many low-income residents who lost their homes in Hurricanes Irma and Maria were denied assistance. Many live in homes that were built by hand and passed down through generations; nearly half lack clear titles to their properties. But FEMA required homeowners to present formal titles to access emergency funds. So, of the 1.1 million households who requested help from FEMA, 58 percent were denied.

And, from New Orleans' Lower Ninth Ward to the Jersey Shore, low-income communities are displaced by disaster, while their wealthier counterparts are allowed to rebuild.

It doesn't have to be this way. After Harvey, my nonprofit group joined with our community and partners to develop a framework of four basic rights that are key to equitable recovery:

- The right to stay and return home to neighborhoods that have adequate storm protection and other essential public infrastructure—especially in neighborhoods that have experienced long-standing public and private disinvestment. Renters, including those in subsidized housing, must have a right to stay in safe and accessible housing.
- The right to choose whether and where they want to relocate. Survivors must be informed of all housing opportunities and options available to them.
- The right to equal treatment. Every neighborhood—regardless of the race, ethnicity, economic status, or disability of its residents—must be provided quality, equal levels of flood protection, and equal access to essential public infrastructure.
- The right to have a say. We must ensure that people in forgotten communities are included and their feedback is seriously considered. Survivors must help design the recovery, know where they are in the process, and be empowered to speak and be heard, in their own language.

Our hearts go out to those in the Midwest who have joined the ever-growing ranks of disaster survivors. As they have learned, disasters aren't fair. But federal disaster assistance—paid for by our tax dollars—should be.

Across the US, Flood Survivors Are Growing in Number—and They Aren't Just Seeking Restitution, but Answers

LAURIE MAZUR

Originally published April 23, 2019 in Ensia

S usan Liley didn't set out to become an activist. "A grandma, that's all I am," she says. But when her hometown of De Soto, Missouri, flooded four times in three years, Liley felt called to act.

After the first couple of floods, Liley did what she could do to help her neighbors: She dragged waterlogged furniture from a friend's home and delivered eggs from her chickens to those without electricity. But the third time around, Liley says, "I got mad."

Across the US, flood survivors are growing in number and—like Liley—they're getting mad and fighting back. From city streets to subdivisions and trailer parks, they are comparing notes with neighbors and asking hard questions about the rising tide. They are messaging each other on Facebook, packing meeting halls and lawyering up. And, increasingly, they are seeking not just restitution, but *answers*. Flood survivors are identifying the root causes of repeated flooding and working toward solutions.

Most recently, their ranks were swelled by a March "bomb cyclone" in the Upper Midwest, which unleashed catastrophic flooding that was visible from space. According to the 2018 National Climate Assessment, climate change is driving more severe floods in many parts of the country.

Sea-level rise is inundating coastal cities, where "sunny-day flooding" is now a thing. Rising seas contribute to high-tide flooding, which has grown by a factor of five to 10 since the 1960s in many US coastal communities—and that trend is expected to accelerate in the future. Farther inland, increased rainfall is a major culprit. Because a warmer atmosphere holds more water vapor, the past few decades have seen many more "heavy precipitation events," especially in the Northeast, Midwest and upper Great Plains. In the Northeast, for example, heavy rains pack 50 percent more water than they did before 1991. Not surprisingly, those deluges have led to more flooding from Albany, New York, to Duluth, Minnesota.

Not Just the Climate

But climate isn't the only reason we are seeing more floods. Ill-conceived development, especially in flood-prone areas, replaces water-absorbing forests and wetlands with impermeable surfaces—so there is simply nowhere for all that water to go. While the risks of building in a flood-plain may seem obvious, such construction continues nonetheless—in part because waterfront properties are in high demand, commanding premium prices that boost real estate tax income for local governments.

In De Soto, both factors are at play. There is more precipitation, according to Liley: "It used to be 3 or 4 inches of rain, and now we get 7 to 10." But the town also hugs the banks of flood-prone Joachim Creek. Over the years, construction of new homes and roads has thwarted the creek's natural drainage and put more people in harm's way.

Liley remembers tragedy striking in 2003, when a flash flood in Joachim Creek led to one death. "We didn't realize it was a preview of things to come," Liley says. In 2013, another flash flood killed two people: an elderly woman who was washed away by the torrent, and another who died while being evacuated. When De Soto flooded again in 2015, Liley reached her limit. "Three of us ladies were talking on Facebook and said we have to do something. So we met the next morning, and organized the Citizen's Committee for Flood Relief."

The committee's first priority was to figure out some kind of early warning system. While coastal and riverine floods can be (imperfectly) predicted in advance, flash floods by definition arrive unannounced. Second, they sought to understand the root causes of repeated flooding and address them.

Higher Ground

Liley's group got a powerful assist from an organization called Higher Ground (formerly Flood Forum USA). A project of the nonprofit Anthropocene Alliance, Higher Ground is the largest national flood survivor network in the US. It currently links 43 flood survivor groups in 20 US states—inland and coastal, urban and rural, representing a wide range of demographics and political affiliations. Higher Ground was founded by Harriet Festing, a former British civil servant and goat farmer who came to the US in 2011 when a Conservative government eliminated the climate and energy department for which she worked. Festing took a job with the Center for Neighborhood Technology in Chicago. There she met a woman named Helen Lekavich, a hairstylist-turned-organizer who demonstrated what a passionate group of flood survivors could accomplish.

After enduring repeated floods in her town of Midlothian, Lekavich and her neighbors organized a group called Floodlothian Midlothian, which eventually won a US\$7.6 million flood control project from the Metropolitan Water Reclamation District. With 41 million people estimated to be living in flood zones, Festing says, "imagine if we could find Helen Lekaviches across the country and create a unified voice! So that's what we set out to do." She reached out to survivors' groups—finding them on Facebook, in local media, and through word of mouth—and Higher Ground was born.

"The leadership to address flooding and other climate impacts needs to come directly from the people and communities that are most affected," says Festing. But these issues are complex, requiring expertise beyond the understanding (and pocketbooks) of survivor groups. So, in partnership with the American Geophysical Union's Thriving Earth Exchange and three other partners, Higher Ground matches flood survivors with experts in hydrology, floodplain management, citizen weather monitoring, insurance, law, case management, planning, and architecture.

And Higher Ground links survivors' groups with one another, so they can trade notes and strategies—for example, by holding a monthly videoconference and leadership forum. In De Soto, Higher Ground matched Liley's group with scientists from Saint Louis University and the US Geological Survey who helped create a simple but effective flood warning system. Sensors in Joachim Creek now send messages to a phone app that pings residents when the creek rises over a certain level. "When it's 8 feet over, we're in trouble," says Liley. "But when it's 10 feet over, you better be out of there because it's going to be in homes."

Higher Ground helped Liley's group petition their senators and members of Congress to commission a US\$200,000 watershed study for the city of De Soto. Conducted by the US Army Corps of Engineers and its state-level Silver Jackets team, Liley says the study will show how green infrastructure, such as restored wetlands and parks, can minimize flood risk along Joachim Creek. The study's completion was delayed by the recent federal government shutdown. And other hurdles remain—namely money. "All this work that the Corps of Engineers has done, without funding for implementation, we will get nowhere," Liley says. Still, identifying the problem is a crucial first step.

A Flooding Whodunit

Sometimes, identifying the problem has all the drama of a whodunit. That's how it played out in Richwood, Texas, where residents rode out Hurricane Harvey without any notable flooding.

Then, "four days after Harvey vamoosed on out of here, water started backing up into our neighborhood," remembers Kevin McKinney, a self-employed transportation safety consultant.

McKinney had 3 feet of water in his home for nine days. "I lost everything I had," he says. Yet, despite Harvey's historic rainfall totals, something did not sit right for McKinney and his neighbors. "There are people who have lived here for 45 to 50 years, and never, ever flooded," McKinney says. "Why now?"

Richwood residents did some investigating; one even deployed a camera-equipped drone to get a bird's-eye view. They claim to have discovered that the City of Lake Jackson used pumps and sandbags to divert floodwater to Richwood's Bastrop Reservoir, which overflowed into Richwood residents' homes. "They had three pumps going at 6,800 gallons a minute, running for 10 days," says McKinney. "The water was actually flowing uphill."The City of Lake Jackson denies the charges.

The people of Richwood organized. They formed a Facebook group called Flood Victims of Richwood and called meetings that packed a local church. And they joined up with Higher Ground, which matched them to a hydrologist who is using lidar data to analyze the post-Harvey flood. Now more than 400 homeowners are suing the City of Lake Jackson for US\$45 million, according to Matias Adrogue, the lawyer representing the citizens of Richwood who brought the lawsuit.

McKinney says the goal of the lawsuit is to find out what happened and make sure it doesn't happen again. And he wants to see the survivors compensated for their losses. But there is a deeper principle of fairness he wants to address: "We need to find a solution together," McKinney says. "You just don't flood your neighbors."

The Rich Get Richer

Questions of fairness are increasingly on flood survivors' minds. Floods are sometimes seen as equal-opportunity disasters that affect rich and poor alike. But a substantial body of research (highlighted in a recent exposé by NPR) shows that federal aid actually leaves wealthy, White communities better off after natural disasters—while the reverse is true for low-income communities of color.

Constance C. Luo, a community organizer for the Texas Organizing Project in Houston, has seen this play out in the recovery from Hurricane Harvey. "Harvey did not discriminate," she says. "People in richer areas did severely flood, and it was terrible. But whether you got assistance depended on things like the flexibility of your employer or whether you had flood insurance. So many wealthy families found themselves to be prosperous after Harvey, while other families go bankrupt."

The people who went bankrupt, Luo says, are those who work low-wage jobs and cannot take time off work to navigate the complex bureaucracy of disaster assistance. A disproportionate number come from the low-income African-American and Latino neighborhoods of Northeast Houston, where a lack of investment in infrastructure and poor drainage led to a high number of flooded homes.

Given that disparity, the Texas Organizing Project fought for—and won—a county program that prioritizes investment in low-income neighborhoods for flood recovery and prevention. But that plan has drawn fierce opposition from affluent Houstonians who say bond funds should be evenly dispersed throughout the city. "The question," says Luo, "is whether the bond projects should be equal to everyone, or *equitable*—weighted toward neighborhoods that traditionally have had very little attention to their flood infrastructure. We stand on the side of equity."

To bolster its case for equitable flood recovery, the Texas Organizing Project joined up with Higher Ground in 2018. The group was matched with geologist Edith Newton Wilson, owner of Rock Whisperer LLC in Tulsa, Oklahoma, who is mapping flood risks in Northeast Houston. The maps show high and low ground, bayous, drainage infrastructure, and other factors that shape risk and resilience.

For Luo and other community residents, the maps are revelatory. "There's real power to being able to identify your place on a map, and say 'Oh! People on the other blocks near me suffer from this, too! Oh! We're all in the floodplain! That's why our insurance is so high."" In this way, the mapping project is educating Northeast Houstonians about flood risk management—and providing vital data for advocacy. "I strongly believe that community, fighting hand in hand with science, is an unbeatable force," says Luo.

The Future of Flooding

That unbeatable force will have much to contend with in the decades to come, as climate change and development raise flood risks across the US. In some places, those risks pose an almost existential challenge; the future of the community hinges on finding better ways to channel, divert and live with water.

Charleston, South Carolina, is one such place. Thanks to sea-level rise, land subsidence, and development in low-lying areas, Charleston is

on track to experience sunny-day flooding more than half the year—187 days—by 2045.

"What does that mean?" asks Eileen Dougherty, who runs a commercial fishing business in Charleston. "That's going to massively change the way that we live. That affects our basic safety services, our firefighters. Can the ambulance get to your house? Can children get to school? So, we have a lot of things to look at here in Charleston."

Dougherty—like Liley and McKinney—became an unwitting activist on this issue when her land began to flood. The culprit, she believed, was the new 294-unit apartment building next door, which had altered the soil and the flow of water through the neighborhood. She reached out for help from the local municipalities, to no avail. Dougherty now believes that development in Charleston takes what she calls a "whack-a-mole approach," where large developments are popping up at an alarming rate without adequate drainage solutions and are flooding surrounding properties.

So Dougherty got involved with a group called Fix Flooding First another Higher Ground affiliate—because she wants to see a more comprehensive approach. "We need to have all the municipalities, the governing agencies, on the same page with building and zoning in a way that incorporates best practices," she says. "We need to build in a way that preserves our natural environment, preserves our culture and preserves our ability to have that tourism revenue. And I think we can do all that."

While each community's challenges are unique, common themes and challenges call out for action at the state or federal level—and even in the most vulnerable places, there is much that can be done to reduce the toll of flooding. For example, across the nation, developers continue to build in floodplains, finding work-arounds to ordinances and federal regulations—and, according to Festing, they sometimes adopt dubious tactics to do so. Higher Ground members are alerting one another to these tactics and reporting them to the appropriate authorities, Festing says. In this way, they hope to spark change at a national scale.

There is no way to sugarcoat the challenges ahead. But as the waters rise, so do awareness and determination. Flood survivors are no longer simply victims; they are an ever-growing constituency for change. They are asking vitally important questions. They are challenging longstanding development practices and demanding a more equitable distribution of risks and rewards. They are grappling with the changing climate and its implications for the places we call home.

And they are joining forces. "The big resonating thing that runs through my mind is unity," says Dougherty. "If you can create a united voice, a united front, that is very powerful."

Despairing About the Climate Crisis? Read This

LAURIE MAZUR

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Perhaps you are depressed about last year's IPCC report, which said we have about a decade to head off catastrophic climate change. Or you are reeling from the UN's recent warning that we may doom one million species to extinction. These days, the relentless tide of bad news can take a toll on our mental health—and on our motivation to stay in the fight. How can we find that sweet spot between denial and despair?

Susanne Moser has given it some thought.

In fact, Moser has been thinking about climate change since the mid-1980s, when—as a high school student in Germany—she read an article on the subject in one of her mother's magazines. She came to the US to complete a doctorate on climate-related issues, and her long resume includes stints at the Union of Concerned Scientists and the National Center for Atmospheric Research, as well as academic postings at Harvard and Stanford universities. Moser has always been ahead of the curve: she was writing about climate adaptation back in the early 1990s, before that was a thing. Today, in addition to advising governments, nonprofits, foundations, and others on climate change adaptation and the transformational changes required to maintain the kind of conditions that allow for a functional society, much less one in which all people and nature can thrive, Moser spends a lot of time thinking about the psychological demands of this fraught moment.

In a conversation with *Earth Island Journal* and Island Press, Moser talks about communicating bad climate news, the benefits of "functional denial," the varied flavors of hope, and the better world we can build in the wreckage of life as we know it.

- LM: So you've been trying to get people to pay attention to climate change for decades now. We always hear in the communications field that fear is not motivating, that scaring the bejesus out of people is not productive. But personally, I feel quite motivated by fear. And the science is fearful. Should we pull our punches on that?
- SM: Well, there is no doubt that fear is motivational, or else we would not be here as a species. Right? If we were not afraid of the lions coming out of the grass, we'd be eaten by them. But if you only scare people without telling them what the hell they can do with their fear and how to translate that into protective or remedial action, then you lose them. There are two reactions we have to a threat: we either deal with the threat, or we deal with the *feeling* about the threat.

The first option actually reduces the threat. You reduce it, you run away from it, or you build a seawall against it. The other one is, I don't want to look this awful issue in the face because I don't know what to do. So I'm going to stick my head in the sand.

The same is true with shame, which can sometimes move some people. Guilt can, anger can, love can, but if you don't know how to translate them into anything, then even positive feelings won't do any good.

- LM: Well, certainly, plenty of us are scared. These days, if you're not terrified, you're not paying attention. So, how can we recognize the trouble we're in and still get out of bed in the morning?
- SM: Yeah, that's a really good question. Certainly, for me, one of the reasons to get out of bed is that we really haven't tried everything. Having done miserably at communication, having done miserably at policy, having done miserably at market responses to climate change gives us a ton of hope, because we could do so much better.

The other thing is we're short-sighted human beings on many counts, and yet our species has managed to build cathedrals that took 300 years apiece. So it's not like we can't. The future isn't written yet. It is still open in terms of how it's going to be shaped. Still, what we have to realize—and what's dawning on many people now—is that we have put a lot of CO₂ in the atmosphere that won't just come out tomorrow. That's why we have to make space for grief, fear, and all the rest of it in public spaces and in our private lives.

We're dealing with a global system that's highly interconnected. We have set so many things in motion that if you tried to control it right now, you couldn't. We have sailed a ship, and the question is, are we going to keep blowing wind into its sails and sending it off into even more troubled waters, or are we going to do what we can to smooth out the waters, and make sure the opening to the harbor is wide enough for everyone?

There is a ton of space left in terms of what we can do. We can't just do anything we want, because of the things we have already set in motion, but we can stop making it worse, and there are so many options to deal with the challenges and to make life much less miserable for the vast majority of the world's people.

So I think it's a matter of priorities and values, and reckoning with what we have done. In the public sphere, it's called political work. In the private sphere, there is deeply personal transformational work that needs to be done.

- LM: You've talked about something you call "functional denial." What does that look like?
- SM: The denial part is what we all have. It is incredibly hard to look the realities we have created in the eye. The functional part is that we have to keep going regardless. On a daily basis, I have to get up in the morning, I have to pay my bills, I have to do my work. I function as if the world were just the regular old world in which everything stays the same and I don't have to worry too much about anything. If you look at my daily life, it would look like that.

If you look more carefully, you might see changes or choices I've made to try to avoid adding to the problem. But by and large, I get out of bed, I drink my tea, I do my life as if nothing else was going on. And at the same time, every single day, I face what we have created. If you ask me to stop for a minute and say, *How do you feel about that?* it can paralyze me. I have so much grief about it. I have such anger about it. It's all one big morass of emotions that I have about what we, humans, had the audacity to create out of blindness, and then out of greed and whatever.

So it's that simultaneity of being fully aware and conscious and not denying the gravity of what we're creating, and also having to get up in the morning and provide for my family and fulfill my obligations in my work.

For me, functional denial is actually a form of hope.

LM: Say more about that.

SM: I've come to the conclusion we have very little hope literacy in this country, and in the world, actually. There are many different flavors of hope.

One is sometimes called grounded hope, active hope, or authentic hope. That's where you are not at all convinced that there is a positive outcome at the end of your labors. It's not like you're working towards winning something grand. You don't know that you'll able to achieve that. But you *do* know that you cannot live with yourself if you do not do everything toward a positive outcome.

And then there's "radical hope," a term coined by a man named Jonathan Lear, an anthropologist. With radical hope, you don't know at all whether the outcome is positive or negative. Neither the means nor the ends are clear, and you have to reinvent yourself completely to come to peace with whatever that new future is. Between grounded hope and radical hope, that's what we're going to need for climate change.

- LM: It sounds like radical hope is useful in times of great uncertainty.
- SM: Oh, absolutely. Lear came up with that term in the context of studying a Native American tribe that had lost everything: their land, their livelihoods, their culture, their freedom—they had to completely remake themselves in order to survive.

They had a great leader in helping them make that transformation. We don't currently have anyone in this country or in this world that I see who understands what radical cultural transformation requires in terms of leadership.

- LM: It seems in fact that our leaders are doing precisely the opposite at this moment of uncertainty, and promising us a return to some ethereal status quo that we're clearly not going back to, even if that were desirable.
- SM: What's interesting is that I've come to understand uncertainty as a necessary condition for hope. If you're perfectly certain that "It's going to be fine" or "It's going to be hell," you don't need hope, because you know exactly what's going to happen.

And what people like Trump and other radical right-wingers in particular promise is a kind of certainty: "America is going to be great again, it's going to be purely White, and we're going to have great economy and we're the best." That's all a form of certainty.

Whereas, "The future is going to look very different, and I can't tell you how, but we're going to have to go through that together and figure it out and create it"—that's uncertainty, that requires work. It's very unpopular.

- LM: We're so bad at handling uncertainty. It's very unsettling.
- SM: Well, it's unsettling, and it's difficult work, we're bad at it, and that is the grounds for transformation. I have absolutely zero illusion about how hard this is going to be and that we have absolutely no guarantee we're going to make it to the other side. So, I'll tell you that up front.

But, because we're finally loosening from those set ways, there's actually opportunity. You cannot transform if you stay the same. It sounds trite, but if you hold on to the way it has been, you're going to stay the same. So you have to let go of the cliff, and you're going to look like a fool, you're going to make a lot of mistakes—my god, you're going to go scratching down the cliff. It's not going to look pretty, but it's the only way you have a chance of actually changing.

- LM: We do seem to be going off a cliff, as a society, so it's helpful to see that as a necessary transformation.
- SM: Yeah, and this is the kind of framing that we need, and the kind

of leadership that we need, to help us understand that this is a process. It's a very archetypal process. Maybe we've never been at this much risk, as a species, but it's not like we have never had to go through anything similar.

Maybe migration is a good example. You have to let go of your homeland, and you set off on a ship in the ocean. You don't know whether the boat is going to hold up or whether the captain knows anything about where he's going. That's a metaphorically perfect illustration of what we're doing. We let go of something old in order to go through great uncertainty and come to a new place where we unfold in new ways.

Building new models is part of staying hopeful about our ability to control our own destiny and fight for alternatives to the things that are making people feel so vulnerable and undervalued and unable to meet their family's basic needs.

- LM: There are people out there who are skipping the hope part, who believe that it's inevitable that climate change or something else will cause the collapse of civilization, and they're getting ready for that. I'm thinking of the Dark Mountain Project, and various prepper communities on the political left and right. What do you think of that approach?
- SM: What's interesting to me is that they skipped right from one certainty, "We're going to be fine, it's not going to be bad," to another certainty, "We're all screwed."

For example, Jem Bendell in the UK has put forward a deep adaptation agenda. On his Facebook page, on his Linked-In group, he basically forbids a conversation about anything in-between, "We're going to be fine" on the one hand and "We're screwed, we're going to die out in the next five decades."

For Bendell, and also the Dark Mountain Project, they are finding community with each other and building social capital that is absolutely crucial to get through the tough spot that we're going through.

But the preppers—the people who just buy their generator and their guns and store food for three months—I'm worried about them. In America where there's so many guns, we're going to shoot each other, and it's very scary to me. It's a very individualistic, survivalist approach, whereas the Dark Mountain Project and Jem Bendell's deep adaptation are actually doing some of the deep psychological and social work required to get to a different place.

- LM: So, community is a key ingredient of the transformational change that needs to happen if we're going to come out on the other side of this?
- SM: There's no doubt that the harsh conditions we're currently creating will make us dependent on each other in ways we don't even know yet. We're so focused on, "Can I protect myself from this; can I survive on whatever?" Even, "Where can I move?" as if there is a place to hide from this global change. But to have any chance of surviving as a species, we need to share resources, to bring the weakest and most marginalized into the center of our communities, and yeah, we're going to get a lesson in dependence and interdependence like you haven't seen. Well, none of us have seen. I say, *Stay put if you can and get to know your neighbors!*
- LM: I could not agree more with that prescription, but I also can't help but notice that that doesn't seem to be the direction we're headed in as a society.
- SM: It's not just the climate news but also the societal condition the political inability to make anything happen across partisan lines—that feed into people's despair. Fostering social capital, wherever we are—in the workplace, at the neighborhood level, in the communities—is absolutely crucial.

Hope doesn't hinge on a rosy picture of the future. I really believe that the amount of suffering and the amount of cruelty that we're capable of is very large. But I also believe that people do have a heart and are desperate for something other than what this currently is.

There are millions of people who don't know how to engage with this in a constructive way and feel powerless, which is feeding their despair, but who are not on board with the viciousness and hatred and divisiveness that you can get on TV every minute of the day.

LM: It's really true. And the way we live now in this culture, which

has caused climate change, is such a radical break from most of human history. Returning to a more cooperative way of living could be like coming home.

- SM: Yeah. It is relearning something that we once knew, at least on a species level. We keep talking about the three Fs: fight, flight, or freeze, but there is a fourth one, and that's the one that actually helped us survive.
- LM: What's that?
- SM: The forming of bonds, or the be-friending. That's the piece that got to us to cooperate as a species and recognize that we have greater advantage when we work together as opposed to everyone for themselves. This is biology. It is in the genetic history of our species. We are here because we cooperated. It's part of us.
- LM: With the story of climate change, there's so much loss: loss of the familiar, of places we love, of the stable climate that gave us a huge boost as a species. Are there things to be gained as well from moving out of that certainty?
- SM: I certainly think so. The loss is tremendous and heartbreaking on so many levels, both the human suffering and the wiping out of other species, the loss of places, seasons. And it strikes me that it seems so much easier to imagine these losses than to imagine that we could change ourselves and create a different form of living on the planet.

It is really crucial that we learn to imagine what we could gain. If we can't imagine it, it's more difficult to create. It'll make us dependent on accidents, serendipities.

When [atmospheric concentration of carbon passed] 415 parts per million, people were saying that we had never had these kinds of atmospheric conditions during the time that *homo sapiens* have been on this planet. And we're now moving to double that, and beyond.

So we're having to deal with completely new environmental conditions, and we will be changed by that. Can we imagine that? No. Can we try to imagine that we're not just clobbering each other over the head or blowing each other up? I can imagine something different.

- LM: When you imagine it, what is the best thing about that new world?
- SM: That we will be a nondominant species again. I'm not the first one to say that. But it's basically the idea of keeping the Anthropocene to a really thin layer in the geologic record and being one among many species that live on this planet within the confines of its resources, without damaging it, and in fact making it part of our species' purpose to recreate and nourish the conditions for the continuity of life.

In my highest aspirations for the human species, that's what we will be: servants of life.

This interview has been edited for clarity and length.

Rethink Resilience for the Era of COVID-19 and Climate Change

JALONNE L. WHITE-NEWSOME

Originally published June 11, 2020 in Next City

Last month, unusually heavy rain breached two aging dams in Midland, Michigan, forcing thousands to flee their homes. As the waters rose, displaced residents had to choose between risking exposure to COVID-19 in a shelter and sleeping in their cars. Further south in Detroit, where my mother lives, heavy rains and failing infrastructure caused sewage backups—yet another public health threat in an African-American neighborhood ravaged by the coronavirus.

Michigan is not unique. Across the US, climate change and COVID-19 are playing out in tandem. The warming planet drives increasingly extreme weather, compounding the pandemic's impacts and complicating disaster response. At the same time, these dual threats have exposed the profound inequities that divide and weaken us.

In the midst of these crises, Americans have been lauded for their resilience. But the praise rings hollow as we are asked to recover from tragedies that could have been prevented, and when the most vulnerable are asked to shoulder the heaviest burden. It's time to rethink resilience for the era of COVID-19 and climate change.

Resilience is typically defined as the capacity to bounce back after a crisis. A better definition comes from an organization called Dignity & Power Now in their Healing Justice Toolkit: "The purpose of resilience is not to build the capacity to endure more harm," they write. "We build resilience to be more skillful in confronting the systems that have harmed us."

That means reckoning with racism and other inequities that put some people at greater risk. We know that low-income communities and people of color are hit first and worst by both climate change and the coronavirus. Across the US, African Americans are dying of COVID-19 at three times the rate of White people.

Much has been written about the health disparities that have cost Black and Brown lives in the pandemic. Those include unequal access to care, exposure to pollution, and the devastating physical and mental health impacts of racism. During the pandemic, I have personally seen friends and family turned away from COVID testing, treated with disrespect when admitted to the hospital, and—in some cases—coerced to sign Do Not Resuscitate agreements.

I have also seen the disproportionate impact of climate change on communities of color. Longstanding discrimination means that Black and Brown communities are often situated in less-desirable, flood-prone areas. And neighborhoods that were subject to redlining have more concrete than green space—making them more vulnerable to extreme heat, the deadliest impact of climate change.

While low-income communities and people of color are on the frontlines of COVID and climate change, they are also taking the lead on rethinking resilience. For example, Groundwork USA's Climate-Safe Neighborhood program is connecting the dots between redlining and climate change impacts. Through science, advocacy, and community voice, they are working to make cities more sustainable and equitable.

Rethinking resilience means prioritizing resources for known areas of vulnerability, lowering barriers to prevention and treatment, and calling out racism within our systems and institutions. It means centering Black, Brown, and low-income communities in crisis response. And it means seizing opportunities to make changes in our systems that will reduce vulnerability.

Information is power, and vulnerable communities need access to timely, accurate information to protect themselves. But that access has been lacking in both the climate and COVID crises. We need to democratize data, by collecting granular information on climate and health risks, fully disaggregated by race and gender. That data must be shared with affected populations, in multiple languages, to guide prevention and preparedness.

Finally, rapid response is key, because vulnerable communities do not have the luxury or privilege of time. In the pandemic and in climate crises, time can literally mean the difference between life and death; between a small disruption and a total disaster. Institutions and systems must step up by being adaptable and flexible, removing barriers that prevent resources—federal agency responses, deployment of stimulus dollars, water infrastructure—from getting where they are needed most.

Low-income communities and people of color are bearing the brunt of the COVID-19 pandemic, as well as the long-term impacts of a changing climate. In this context, resilience must mean more than enduring the unendurable, or bouncing back to "normal." Real resilience demands that we recognize structural racism and rectify the injustices that rob Black and Brown people, and poor people, of agency and power. It demands that we rethink our responses to climate change and COVID-19, by remaking the systems that have harmed us.

How Cities Can Fight Inequality and Climate Change at Once

TIFFANY GANTHIER

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The year 2020 has been one of reckoning with the inequities that shape American life. The killing of George Floyd, among others, has brought national attention to how people of color are targeted by law enforcement. And the disproportionate death toll from COVID-19 among Black and Latinx people has revealed longstanding inequities in health and access to care.

It is no surprise, then, that our greatest existential challenge—climate change—also reflects racial disparities and the widening gulf between rich and poor. Climate change does not affect all people equally: low-income communities and people of color are hit first and worst by climate impacts, such as extreme heat and flooding. Struggling communities also receive fewer resources for recovery, so disasters push many into a downward spiral of poverty and vulnerability.

But while climate change illuminates our nation's racial and class divides, the steps we take to address it also offer opportunities to build a fairer future.

As cities prepare for the impacts of warming that are now inevitable, many are already addressing inequity head-on. My colleagues and I at the Georgetown Climate Center collected more than 100 case studies of equitable climate adaptation as part of our recently released Equitable Adaptation Toolkit for state and local governments and community leaders.

While local strategies vary widely, some universal rules apply. Truly resilient communities have what they need to withstand impacts and recover quickly after a flood or storm, as well as prepare for the next one.

We found that equitable adaptation starts with understanding *inequitable* impacts. That's why, in Richmond, Virginia, young "citizen scientists" with the nonprofit group Groundwork RVA fanned out across the city, measuring heat levels in a wide range of neighborhoods. They discovered dramatically higher temperatures in low-income Black neighborhoods with more pavement and less green space. Their findings are now guiding an update of the city's master plan.

With an understanding of who's at risk and why, governments and nonprofits can focus their efforts on the most vulnerable. In Miami, Florida, more than half of residents are one disaster away from falling into financial crisis. Catalyst Miami, a community group, created a disaster matched savings account to bolster families' financial resilience. The program offers a 1-to-1 match to encourage savings, and helps households build assets through coaching and lending circles.

Equity considerations can also be built directly into climate adaptation efforts. In Prince George's County, Maryland, climate change has brought increased flooding and water-quality problems. At the same time, this majority-Black county struggled to rebound from the Great Recession. In response, the county launched a public-private partnership with twin goals: to reduce storm-related flooding by constructing green infrastructure, and to give a leg up to small and minority-owned businesses by hiring them to carry out the work. The partnership has so far met or exceeded all of its environmental and equity objectives, on time and under budget.

Integrating equity is a twofold process. *Procedural* equity ensures those who are most impacted have a seat at the table to help shape decisions. *Substantive* equity means outcomes that fairly distribute the benefits of new programs and investments, while seeking to remedy historic discrimination and underinvestment.

Philadelphia's community Heat Relief Plan is a great example of both. The plan started with vigorous community engagement in a low-income, mostly Latinx neighborhood—"Beat the Heat" parties and an environmental wellness fair, followed by a resident survey and interviews. The resulting plan identifies literal hot spots and targets efforts to keep residents in those communities cool and healthy.

In Philadelphia and other cities here and around the world, climate change is now a fact of daily life. While there is much we can still do to limit its scale and impact, our previous carbon emissions guarantee a warmer, more disaster-prone world for years to come. Inequity, on the other hand, is a choice—a condition that flows from countless policy decisions. As we brace for climate change, we can choose to share risks and rewards more fairly, and protect those who are most vulnerable in an uncertain future. When we choose that path, we will be taking an important step toward a world that is safer, and more just, for all people.

Flood Survivors Find Common Ground in a Divided Nation

LAURIE MAZUR

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Virginia Wasserberg is a lifelong Republican, a deeply conservative home-schooling mom from Southeast Virginia.

Once a month, she logs onto Zoom to join an unlikely crew: there's a community organizer from Austin, Texas; a grandmother from rural Missouri; and an environmental justice activist from Port Arthur, Texas.

Wasserberg and her Zoom companions are members of Higher Ground, a national network of flood survivors. On paper, they don't have much in common. They span the income spectrum from working class to relatively affluent. They are African-American, White and Latinx; Democrats and Republicans; conservatives, moderates, and progressives. But they share one important experience: they are all dealing with floods in their homes and neighborhoods.

As the planet warms, those floods are becoming more severe. Stronger, wetter storms overflow the banks of Midwestern rivers, while hurricanes and sea-level rise inundate coastal communities. Antiquated infrastructure and short-sighted building practices make the problem worse. But as the waters are rising, so are flood survivors. Higher Ground, a project of the Florida-based nonprofit Anthropocene Alliance, now has 70 chapters in 22 states, plus Puerto Rico.

Wasserberg's experience is typical of the group's members. "On October 7, 2016, I couldn't have cared less about climate change," she said. "On October 8, a disaster woke me up." That disaster was a massive storm surge from Hurricane Matthew, which flooded her Virginia Beach home. "As soon as we got back in the house, I started looking around and saying, 'How did this happen and how can we prevent it from happening again?" she said. That inquiry led Wasserberg to a new understanding of the science—and the politics—behind flooding and climate change.

Wasserberg got involved in her local civic league, then started organizing her neighbors through a group called Stop the Flooding Now. The group's Facebook site was spotted by Harriet Festing, director of the Anthropocene Alliance, who reached out. Soon, Wasserberg was connecting with others in similar straits. "I discovered that there were other people, not just in my community but throughout my country, who had the same problems I was having," Wasserberg said.

She met other flood survivors, including Dr. Gloria Horning, who is battling a dangerous new development in her flood-prone neighborhood in Pensacola, Florida. The group also includes Frances Acuña, whose Austin neighborhood experienced several "100-year" floods in the span of a few years, and David Southgate, whose neighbors in Ponce Playa, Puerto Rico, face possible displacement because of coastal erosion and flooding from climate-driven storms.

The first priority for Higher Ground members is to educate themselves—and others—on the root causes of flooding. To that end, Festing connects local groups with volunteer scientists from the Thriving Earth Exchange (TEX), a project of the American Geophysical Union.

Wasserberg was matched with Dr. Michelle Covi, a coastal resources expert at Old Dominion University. Covi linked her scientific explanations to real-life impacts: "She'd explain how what we are seeing on a graph translates to the water that's in my front yard," said Wasserberg. "It expanded my understanding, unlike anything ever could."

Linking Climate Change Science to Real World Impacts

That pragmatic approach—linking climate science to what's happening in our front yards—has helped Wasserberg talk to her fellow conservatives, as well. Early on, a Higher Ground member from the Midwest counseled Wasserberg to lead with the *what*, rather than the *why*: "Just to get in the conversation, you start with 'something is happening," she said. "The main thing is to keep focused on the flooding. Once people start discussing the *what*, it's completely natural to end up on the *why*. That's how it's worked for me." Dr. Horning agrees: "In Florida, climate change is a dirty word," she said. "Our governor doesn't believe in it; our senators don't believe in it; lots of Republicans in the community don't believe in it. But when you show them pictures and say, 'this happened, and this happened,' they say, 'well, maybe she's got a point.""

In addition to illuminating challenges, Higher Ground members share solutions. They learn about what works from one another, and through seminars and trainings with experts. "We've learned about rain gardens, bioswales and other green infrastructure," said David Southgate. They also get schooled on the politics of flooding: "We've learned how big money influences the creation of flood maps that allow developers to build in areas where they shouldn't be building," Southgate said.

Practical knowledge and political savvy make Higher Ground members effective advocates. "We are not just complaining," said Frances Acuña, "we are offering choices and recommendations and offering to build a working relationship."

And Higher Ground members "train it forward," passing on what they've learned to others in their communities. "I've learned a lot about how to speak to your representative or your senator," said Acuña, "so now I'm doing a training for the community to teach back what I've learned, because it's important."

Solutions to Flooding

Higher Ground's approach is getting results. Wasserberg's work in Virginia Beach sparked new building regulations; major capital projects to mitigate flooding—including tidal gates—are also in the works. Frances Acuña helped win a citywide flood-control resolution, and she now advises local officials on green infrastructure and disaster response. The community group David Southgate volunteers with, Un Nuevo Amanecer, persuaded the Army Corps of Engineers to launch a study that will guide climate adaptation in Ponce Playa.

Other Higher Ground members have successfully halted developments in flood-prone areas, instituted green infrastructure programs, promoted cleanups at toxic waste sites in areas that flood, and organized home buyouts. Recently, a member group called Rosewood Strong in Socastee, South Carolina, secured \$13 million in federal funding to buy out 60 repeatedly flooded homes and use the land for green infrastructure.

But you could say that the group's greatest achievement lies in those monthly Zoom calls. Today, Americans have sorted ourselves into communities defined by geography, demography, ideology—and opportunities to communicate across those divides are exceedingly rare. But the shared trauma of flooding offers an opening.

"Floodwaters don't recognize geographical boundaries, political boundaries, or racial boundaries," said Wasserberg. "That was the catalyst for me to join with other people who had different perspectives, politically speaking. They had the same experience I had; they had water in their homes, just like me. We all found that common ground."

The Circle of Trust

We live in a society of weaponized information, where media outlets at opposing ends of the political spectrum no longer share a basic perception of reality. It's an atmosphere of metastasizing mistrust and contempt that threatens the very foundation of democracy. And yet: here is a diverse group of Americans, sharing information and making common cause. Like many conservatives, Wasserberg does not trust the mainstream media. But she does put faith in the information she gets from her fellow flood survivors and affiliated experts. "It's almost like a trust circle," she said.

Of course, Higher Ground is not an island; the bitter politics of this moment are not absent here. When partisan passions reached a fever pitch around the 2020 elections, Wasserberg stepped away from activism for a few months, fearing that her conservatism would make her a target. And she declines to sign on to Higher Ground initiatives that don't align with her politics. But that does not affect her relationships with other members of the group. "There's room for us to be who we are," she said.

The group's winning formula does not guarantee success. Indeed, Higher Ground members are often locked in a struggle with entrenched local power structures. Dr. Steven Emerman, a TEX volunteer who advises several local flood-survivor groups, observed that facts are often no match for ideology: "I've never seen a case where you take a city council member who's totally pro development, and you show him or her the facts about flooding, and they just change their mind." Victories are rarely permanent: as long as there is money to be made—or votes to be gained—by building in flood-prone areas, the flooding will continue.

What is needed is a sea change in our politics. That will require new understanding of flood risks, and of how those are made worse by a changing climate. That, in turn, requires communication across the gaping divides in American society. We need a wider "circle of trust."

Like other members of Higher Ground, Virginia Wasserberg is doing her part. Recently, she launched an initiative to put climate change and sea-level rise on the platforms of Republican candidates, and to hold them accountable once they are in office.

"Republicans like myself who care about the environment need to stand up and do something about it," she said. "We can't just sit on the sidelines and let this be a political issue. It's a human issue."

Finding Climate Solutions in Communities Instead of Labs

LAURIE MAZUR

Originally published July 24, 2023 in Environmental Health News

People living in Miami's low-income neighborhoods knew it was dangerously hot. Whether they were waiting for a bus, working construction, or merely trying to sleep without air conditioning, they knew the ever-rising temperatures posed a threat to their health and well-being.

That's why Catalyst Miami, a community-based nonprofit, made extreme heat a top priority. But when Catalyst organizers took their concerns to the local government, they received a Catch-22-like response: officials didn't have data on extreme heat, so they couldn't address the problem.

Catalyst Miami set out to collect the missing data. Partnering with local universities, volunteers placed heat and humidity sensors throughout the community, at bus stops and other places where people were suffering in the heat.

Their findings were stunning: temperatures were often 30 degrees Fahrenheit higher than those announced by the Weather Channel. Official measures of temperature are taken in a breezy spot at the airport—where no one is waiting for a bus.

It's a problematic approach to climate change and health. Too often, analysis and problem solving take place removed from real people's lives, while problems at the ground level are misunderstood or ignored.

Catalyst Miami, and many other community-based nonprofits, are working to change that.

A Community-Led Approach to Extreme Heat

Across the US, community groups are taking on the climate crisis from the ground up. Several are part of the Kresge Foundation's Climate Change, Health and Equity initiative, a joint effort of Kresge's health and environment grantmaking teams.

The initiative grew from the mismatch between those experiencing the worst effects of climate change and those devising solutions. "Due to generations of racist policies and practices, low-income communities and communities of color are most at risk from the health impacts of climate change," Shamar Bibbins, a senior program officer in Kresge's environment program, said. "But they are often excluded from the policymaking table. That's a problem because it's members of the community who are closest to the problem and they have the experience and expertise to co-create effective and equitable solutions."

The first step is to ask community members what they are experiencing. Catalyst Miami surveyed local residents and medical professionals about their top climate-related concerns. "We already knew it was going to be heat," said Catalyst Miami CEO Zelalem Adefris, "but the surveys confirmed what we'd been hearing for years."

In Austin, Texas, a group called Go Austin/Vamos Austin (GAVA) listened to community concerns and changed its mission in response. Originally founded to tackle the upstream causes of childhood obesity, GAVA's organizers pivoted after two devastating floods inundated Southeast Austin neighborhoods, where they're based. Realizing that climate change guarantees similar floods in the future, "we had no business continuing to work in these neighborhoods if we weren't going to take on these issues," said Carmen Llanes, GAVA's executive director. The group now has support from the Kresge Foundation's initiative to address health and climate issues defined by the community—including flooding.

Once community priorities are identified, residents can help documenting the problem. Many groups are partnering with universities to conduct citizen science efforts—like Catalyst Miami's heat sensor project—in which residents collect data to "groundtruth" other information sources. For example, GAVA worked with the University of Texas to compare NOAA's climate data to residents' lived experience.
In New York City, WE ACT for Environmental Justice, another Kresge Foundation grantee, launched the Harlem Heat Project in 2016, partnering with researchers, media and residents to measure heat inside apartment buildings. More recently, WE ACT members surveyed the city's cooling centers to understand how well these places are serving residents.

Climate Injustice

As these citizen science efforts show, the view from the bus stop is different from that of policymakers in air-conditioned offices. It's not just that environmental conditions are different on the ground; it's also about the conditions in people's lives. "The people who are most vulnerable to climate impacts are often coping with chronic illness, housing insecurity, financial insecurity, job insecurity— on top of systemic and institutional and interpersonal racism," said Sonal Jessel, WE ACT's director of policy. "People are dealing with bundles of hardships."

Those hardships intersect and compound sometimes in deadly ways. "On really hot days, people don't turn on their air conditioners because then their bills get too high and they can't pay them," said Jessel. "So, people die in their homes. Or they end up having to be hospitalized for heat stroke." A recent study confirmed that New Yorkers found dead in their homes from heat either didn't have air conditioning on or lacked air conditioning altogether.

Moreover, the legacy of redlining and other racist policies has left Black and Brown neighborhoods more vulnerable to climate impacts. Crowded with polluting industries and deprived of parks and green spaces, these neighborhoods are hotter and more flood-prone than their wealthier, Whiter counterparts.

Those intersecting hardships call for solutions that address the real conditions of residents' lives. "You can't assume everyone has air conditioning or can afford to turn it on," said Adefris of Catalyst Miami. "You can't assume everyone works in an office." That's why grantees involve residents at every stage of problem solving—from identifying priorities to devising solutions.

It's an approach that differs markedly from typical planning processes, said Ucha Abbah, climate resilience project manager at GAVA. Usually, planners will announce a project and solicit public comments, "but they only want to hear from the community about one specific thing," Abbah said. "An equitable process involves the community at every step, from inception to implementation."

Climate Solutions That Work for Everyone

This more-equitable approach is getting results. In Miami, data from the heat sensor project helped spur the appointment of the nation's first chief heat officer, who is charged with developing and deploying a comprehensive action plan for extreme heat. Catalyst Miami successfully advocated for opening the committee's meetings to the public: "There were around 50 participants in every single meeting," said Adefris, "and people talked about the issues and the solutions they would recommend. Our community is full of solutions."

Now being implemented, Miami's extreme heat plan includes measures to keep people cool in their homes—by retrofitting public housing with efficient air conditioning units, for example—as well as protections for outdoor workers and efforts to expand the tree canopy.

In New York City, WE ACT helped win a program that distributes free air conditioning units to low-income households throughout the city. And WE ACT is fighting for the state's energy assistance program to subsidize utility costs for air conditioning in the summer, as well as for heating during the winter.

In Austin, GAVA won funding for infrastructure improvements to reduce flooding in long-ignored, flood-prone neighborhoods in South Austin. The group also advocates for equitable investments in the city's tree canopy and green spaces. And GAVA's climate navigator program trains residents to anticipate, prepare for, and respond to flooding and other climate shocks and stressors.

Deeply rooted in their communities, these grassroots groups bring important and overlooked perspectives to climate challenges and solutions. And their approach—taking on the climate crisis from the ground up—has multiple, far-reaching benefits.

Consider, for example, those Miami residents exposed to dangerous heat while waiting for the bus. Solutions to their predicament include more-frequent bus service as well as investments in shade trees and structures. The benefits—better transit; a greener, cooler city; lower healthcare costs—accrue to everyone.

While solutions made by and for the most privileged leave too many people at risk, "the solutions that work best for the most vulnerable people in our community are the solutions that are going to work for everyone," said Adefris.

How "Unbuilding" Can Help Weather Climate Disasters

LAURIE MAZUR

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Waters are rising everywhere, it seems. Earlier this year, storms flooded communities from California to Missouri. In the Upper Midwest, heavy snowpack melted during an unseasonable warm spell, inundating towns along the Mississippi River. And the city of Fort Lauderdale, Florida, found itself underwater after more than 2 feet of rain fell during an eight-hour period in April.

There's more where that came from.

In a warming world, we can expect ever more devastating floods. That's because a warmer atmosphere can contain more water vapor, which can mean more precipitation. As warming ocean water expands and glaciers melt, sea levels also rise, with grim implications for those who live along the coast.

How can communities prepare for all that water? For decades, we have tried to protect communities in flood plains with more building: seawalls, levees, concrete river channels and pumping stations.

This concrete and metal infrastructure is important, but the next wave of development needs to be about "unbuilding"—using plantings and landscaping to turn low-lying areas from gray funnels to green sponges. This approach favors waterfront parks, rain gardens and other natural features that soak up floodwater before it backs up into streets and basements.

This nature-based work—also called green infrastructure—is happening all over the country, and the world. Often, it is led by residents of color, who in the US have borne the brunt of past flooding and received less federal aid after disasters.

Furthering that work, dozens of community organizations have

become part of a network, the Anthropocene Alliance, or A₂, that helps local groups implement green solutions to flooding.

The partnership has proven fruitful for many.

"A2 is a small organization but we have in our ranks many brilliant community leaders," says Harriet Festing, A2's executive director. "That means we can do big things together, like prove that green infrastructure can both mitigate climate change and produce safer, healthier and more enjoyable urban spaces."

Transforming the Waterfront

Unbuilding can serve multiple purposes in lower-income communities, which often have less green space than their wealthier counterparts. That's certainly true in New York City's South Bronx, a heavily Latino, Black and immigrant neighborhood that is also part of the poorest congressional district in the US. Largely encircled by three major highways, the area hosts four polluting "peaker" power plants, multiple waste-transfer stations and distribution warehouses that bring polluting truck traffic. Not coincidentally, the South Bronx has been home to high rates of asthma and premature death.

Sitting at the confluence of the East and Harlem rivers, the South Bronx is also vulnerable to flooding. In 2012, Superstorm Sandy brought a waist-high deluge. But the area's waterfront also offers tantalizing possibilities for natural beauty and recreation in a community that could benefit greatly from more green space.

"The polluting facilities, the vulnerable waterfront and the lack of open green space all dramatically reduce the quality of life for people living in this neighborhood," says Arif Ullah, executive director of the nonprofit advocacy organization South Bronx Unite. "It also determines in a large way what kind of life a child can have."

Today, much of the South Bronx waterfront is a forbidding industrial zone, warding off residents with barriers like highways and barbed wire. A plan from the Army Corps of Engineers has threatened to worsen those conditions with construction of an on-land seawall.

Neighborhood residents have a better idea. South Bronx Unite has developed a community-envisioned plan for the waterfront, one that Ullah says includes "open, green spaces that community members can use, that also serve as a meaningful defense against flooding and help mitigate pollution."

The community plan previously won the backing of an advisory committee to the state Department of Environmental Conservation and garnered recognition from the New York City Department of Parks and Recreation. Now, all it needs is funding.

For South Bronx Unite—and many other community groups with good ideas—this is the hard part. Navigating the maze of public and private funding opportunities, each with its own requirements and mountain of paperwork, is daunting. A2 is helping South Bronx Unite raise funds for pre-development work so that the waterfront plan will be "shovel-ready" and able to attract major funding.

Keeping It Green

Sometimes the best way to prevent flooding is to protect green space that already exists. In Newark, New Jersey, another A2 member, the Weequahic Park Association, is working to restore a 311-acre park designed by the Olmsted Brothers firm—a legacy of Frederick Law Olmsted of Central Park fame—at the turn of the last century.

Anchored by an 80-acre lake, Weequahic Park is a green island in an ocean of concrete. Hard by Newark airport and a busy container port, the park is surrounded by heavy—and polluting—industry. The mostly low-income Black and Latino neighborhoods near the park face multiple environmental assaults. Fumes from constant truck traffic contribute to high childhood asthma rates in Newark, as well as elevated cancer risks.

These neighborhoods, too, are vulnerable to flooding. Once a vast expanse of wetlands bordering Newark Bay, the area around the airport is now covered by hard surfaces that cannot absorb floodwaters. So heavy rains mean swamped cars and waterlogged basements. And, given the city's concentration of industrial facilities, those floodwaters can be contaminated with toxic chemicals.

The Weequahic Park Association was founded in the 1990s by neighbors concerned about the park's disrepair. They succeeded in making improvements: replacing dead trees, preventing shoreline erosion and adding recreational amenities. But there is still much to be done. The park's lake hides deep layers of sludge from nearby industrial sites; visitors are not supposed to boat, and eating fish caught in its waters is not recommended.

Despite its degraded state, the park serves a vital function for the people of Newark. "During the pandemic, parks and green spaces became a sanctuary," says Wynnie-Fred Victor Hinds, the Weequahic Park Association's executive director.

Hinds sees an even bigger role for Weequahic Park as climate change unfolds. She describes the park as a "resilience hub"—a reference to critical infrastructure that reduces the harmful impacts of climate change while providing respite and recreation. The park's forested areas can absorb floodwaters and clean the air; its cooling shade can mitigate the urban heat island effect.

Hinds and her neighbors have developed an expansive plan for the park's future. Dredged and cleaned, the lake could again support boating, healthy fishing and other aquatic life. Native trees and pollinator gardens would nourish beneficial insects and wildlife.

"The park could be a conservation laboratory," Hinds says, "where experts and community scientists could study the ecosystem and find solutions to flooding and other problems."

Hinds and other members of the association are now working with A2 to raise funds to make that vision a reality.

Amplifying Community Voices

Preparing for a hotter, wetter future starts with admitting a problem exists.

"But in the Southeast, you have quite a number of folks who are climate deniers," says Omar Muhammad, executive director of the Lowcountry Alliance for Model Communities in North Charleston, South Carolina. "That leads to planning for the built environment that doesn't account for climate impacts."

In Rosemont, a predominantly Black community within Charleston, those impacts have arrived. For years, residents have waded through flooded streets after heavy rain, and the problem was getting worse. But local officials remained unconvinced and unconcerned. "Historically, decision-makers tend to pay attention to areas that speak up, that demand a response from their government," Muhammad says. "Communities that do not have that elevated voice—like Rosemont—get left out of the conversations, they get left out of the decision-making. And when a disaster happens, it's, 'Oops, we forgot about them."

To help solve that problem, LAMC deployed a tactic known as "photovoice"—encouraging residents to document conditions with their cellphones, then presenting those photos and stories to Charleston's mayor and chief resilience officer.

"Within days, the community got a response from the city of Charleston, asking, 'How can we help?" Muhammad says.

That exchange netted a \$100,000 commitment from the city to help Rosemont develop a community-led resilience plan. Next, LAMC and its partners worked with A2 to raise an additional \$300,000 from the National Fish and Wildlife Foundation and the National Oceanic and Atmospheric Administration, with the goal of identifying and implementing green infrastructure projects to curb flooding in the area.

Possible projects include a living shoreline that restores the marshland that once soaked up storm surges, as well as rain gardens and rain barrels on private property that collect water and slowly release it back into the system without overwhelming it.

And though it's partnering with experts like hydrologists and landscape architects for the Rosemont project, LAMC is not relying solely on the opinions of experts.

"We want to put in place solutions that are long term, that are sustainable, that address the issues that the community is identifying," Muhammad says. "For that to work, our residents must be involved at every point of the project."

To that end, LAMC has created community advisory boards that center residents' voices and lived experiences.

"This leads to the type of solutions that the community will embrace," Muhammad says.

In Rosemont—as in the South Bronx and Newark—the push for "unbuilding" and green infrastructure comes from communities on the front lines of the climate emergency. Long ignored and underinvested, these neighborhoods are coping with legacy pollution and the fresh threat of climate impacts. They are getting organized and speaking up. And they are devising plans that aim to remedy long-standing injustices while building a greener, more resilient future.

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Older People Suffer the Most in Climate Disasters. We Need to Plan and Prepare for That.

DANIELLE ARIGONI

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The summer of 2023 was a wake-up call on climate change. We may remember it for the deadly wildfire in Maui, but that was just one of the nation's major climate-fueled disasters of the year. Phoenix withstood a monthlong stretch of 110-plus-degree days. Canadian wildfires raged, bringing code-red air quality to the northeastern US And torrential rain caused widespread flooding in Vermont.

As of early September, the nation had logged 23 disasters that each caused more than \$1 billion in damage, surpassing the 2022 total of 18 such disasters and far outpacing the previous average of just eight per year.

While the growing number and severity of climate disasters endanger everyone, the threat to lives is particularly acute for the fastest-growing group of Americans: older adults. In Hurricane Katrina (2005), for example, people over 60 accounted for two-thirds of the 1,300-plus fatalities. In California's Camp Fire (2018), 85 percent of those who died were people over 60; in the winter storms in Buffalo, N.Y. (2022), it was 63 percent. The trend line remains virtually unchanged across disasters over the last nearly 20 years, reflecting our nation's failure to sufficiently prepare for this new climate reality.

Leaders can no longer effectively plan for climate resilience without considering the aging of the population. A hundred years ago, people over 65 represented one of every 20 people in the US; today they account for one in six. In about 10 years, there will be more people over 65 than under 18 in the US.

These intersecting trend lines underscore the need for a new vision of

resilience in the face of climate change and for action by local, regional and state leaders to plan for that future.

To protect the safety and well-being of older adults in climate-fueled disasters, leaders must begin by acknowledging the realities and the needs of our over-60 population. While many are able-bodied, financially secure and independent, others are not. Many older adults live with health conditions that present mobility challenges both inside and beyond the home. The vast majority, 96 percent, reside in their homes, not in congregate settings. And older adults typically outlive their ability to drive by seven to 10 years, becoming dependent on friends, family or public transit, which is problematic in times of emergency.

Others lack the income to stockpile supplies or weatherize their homes, much less repair damage after a disaster—particularly the 15 percent of older adults who live at or below the poverty line. In addition, one in nine people over 65 experiences dementia, Alzheimer's or other forms of cognitive decline, which can impact their ability to assess and mitigate risk. And many do not use the Internet in the home or smartphones routinely, limiting access to information, online registration systems and social media that serves as a real-time community discussion forum.

We can build a more resilient future if leaders anticipate—and account for—the challenges facing older adults. That means creating more dense, resilient, affordable and accessible housing through incentives like zoning change, better building codes and public funding. This would help address the housing needs of older adults, while fostering the social connectedness that helps protect people and ultimately save lives.

A resilient future for all also requires more alternatives to driving, in the form of accessible public transit with sheltered bus stops, as well as walkable and bikeable routes. This would help meet the daily mobility needs of older adults and provide redundancy in times of emergency.

And it is critical that local leaders design and implement communication systems and an array of community-based supports, such as home health aides trained to anticipate the climate-related needs of their patients, to ensure that timely information and help reach older adults.

Local, regional and state leaders understand that complex problems require partnership among many disciplines and across public and private sectors. Achieving climate resilience for an aging nation is no different, presenting critical roles for utilities, health-care providers, advocates for the aging and emergency managers.

Some communities are leading the way by centering the needs of older adults in their planning efforts. During the COVID-19 pandemic, for example, Washington, DC, officials realized that they needed multiple modes of communication to reach older adults, so they piloted the AlertDC program, which provides emergency updates to residents through email, phone and text. In Austin, Texas, service agencies increased coordination to help older adults access emergency help. San Francisco boosted the preparedness of older residents and people with disabilities by planning for the evacuation of people with mobility challenges from multistory buildings.

What does tomorrow bring? More of the same, likely: More intense weather events. More disasters in which older adults die at twice or three times the rates of other age groups. That is, unless communities and the leaders who serve them commit to a vision of climate resilience that truly accounts for the needs of older adults and centers their needs and voices in planning efforts.

Section II Policy & Funding

How (and Why) the Federal Government Should Help American Cities Manage Storms and Rising Seas

Jeff Peterson

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A s the planet warms, American coastal cities face more intense storms and steadily rising sea levels. For some, geography is kind; land lost to storms and sea level rise is likely to be minimal. For others, the critical mass of the city is at risk of periodic flooding from storm surges followed by gradual, permanent inundation by a rising sea.

Cities, however, can't respond to this crisis on their own. The federal government needs to make sure that programs it manages, like flood insurance and disaster assistance, are not making matters worse and take steps to help cities develop effective response strategies.

Coastal Flood Risk

Coastal cities have always faced flood risks from major storms. These storms kill hundreds and destroy homes, businesses, and communities. In 2017, Hurricanes Harvey, Irma, and Maria caused over 3,000 deaths and generated some \$265 billion in damages. The following year, Hurricanes Michael and Florence killed over 100 and caused \$50 billion in damages. Much of this destruction was a result of storm surges. These storm surges vary in height depending on the storm but can be significant. For example, storm surges in New York during Hurricane Sandy approached 10 feet.

Unfortunately, a warming climate is likely to make coastal storms more intense. Supercharged storms will bring increased precipitation and higher storm surges, resulting in more widespread flooding.

Historically, the damage from coastal storms was limited in scope

and the flood water slowly drained away as storms passed. But a warmer climate means melting glaciers and ice sheets, which is causing sea level to rise at an accelerating rate. Unlike storm flooding, the coastal flooding that comes with rising sea level occurs everywhere and comes to stay. Global sea level is likely to rise between 2 and 4 feet by 2100 and could rise by as much as 8 feet in a worst-case scenario. And sea levels will keep rising for several centuries after 2100, with as much as 30 feet possible by 2200.

Federal Government Support for Coastal Cities

Cities around the country are responding to the challenges of coastal storms and rising seas. Some are simply assessing the risks and engaging the public. Several cities, such as Boston, have benefited from "design challenges" in which teams of experts outline innovative approaches to managing flood risks. Others, including Galveston and Charleston, have constructed major coastal protection structures such as seawalls. Still others, notably New York City, are employing regulatory or financial tools including buyouts of property at risk.

The federal government has a critical role to play in helping cities manage future flood challenges. Until recently, federal agencies were reliable partners providing communities the most current science on storms and rising seas. They need to return to that job. Major national programs such as the flood insurance and disaster assistance programs need to be modernized to account for new understanding of coastal risks. Federal agencies also need to coordinate among states and communities and manage critical infrastructure assets and ecological resources. And, the federal government can provide financial support needed to advance this work.

As a first step, the federal government needs to help cities steer new development away from risky places. The population living in risky coastal areas is expected to double by 2060, making the coastal flood problem more difficult and expensive. Making information about flood risks widely available would slow this growth. The federal government should improve public understanding of flooding by adopting a national standard for disclosure of flood and sea level rise risk at the time of sale of a property. In addition, the federal flood insurance program should take the bold step of declining to provide insurance for new development in coastal areas likely to be inundated by rising seas.

Cities are making progress in planning for coastal storms and rising seas; federal financial support for this work would assure more consistent progress around the country. The federal government needs to make grants to both states and large cities to support planning for storms and rising seas and implementation of response actions. Cities need to be able to tailor plans to local conditions but the federal government can promote best practices, like engagement of low-income communities and communities of color and cooperation with neighboring jurisdictions.

Finally, coastal homeowners need help to avoid devastating financial losses as growing flood risks drive down property values. Cities can afford to buy out some property owners, but in most cases they do not have the resources to acquire the many properties that are at risk. The federal government is best equipped to assist homeowners by, for example, buying risky property well ahead of rising sea levels. Current owners could stay until the property becomes unsafe, paying rent but not flood insurance premiums. The federal government would pay local property taxes.

Structural Protection vs. Relocation: The Federal Role

A critical choice that cities face in addressing coastal flood risk is whether to build engineered protection structures like seawalls or to step back from areas at risk of flooding. The federal government needs to participate in these decisions.

Structural protection and relocation strategies both have pros and cons. And, cities are likely to need financial assistance from the federal government to implement either approach. But, even the federal government will not be able to fund everything everywhere. The federal government should look at coastal flood risk around the country and set priorities for the funding that is available. Knowing about how much federal assistance to expect would help cities choose a financially feasible strategy.

Powerful storms and rising seas are not only a threat to cities and other communities. Also in the crosshairs are critical infrastructure, such as military bases, transportation assets, and water treatment facilities. The federal government needs to work with state and local governments to protect or relocate those facilities. In addition, ecosystems, such as beaches and coastal wetlands, need space to migrate landward as seas rise. The federal government, along with cities and states, must figure out how best to coordinate coastal flood plans developed by cities with larger scale efforts to protect critical infrastructure and ecological resources along the coast.

Finally, large cities need to think about how their strategy for managing storm flooding and rising seas will fit with the strategies of neighboring communities. What if large cities stand their ground but neighboring communities can't afford to and instead move to safer places? The federal government needs to work with communities large and small to promote a coordinated approach to the coastline.

America's large coastal cities have a lot at stake as they develop strategies to respond to coastal storms and rising seas. The federal government needs to do more to support this important work.

Climate Justice in Frontline Communities: Here's How to (Really) Help

KATHERINE EGLAND AND HILTON KELLEY

Originally published March 24, 2020 in The Hill

A s global warming accelerates, there's a push by environmental groups and philanthropic foundations to engage with communities on the frontlines of the climate crisis. We are long-time activists from those communities, and we welcome the reinforcements. But we also have thoughts on how to make sure that well-meaning efforts to help are actually helpful.

Low-income communities and communities of color are particularly vulnerable to the impacts of global warming. Research shows that low-income people are more likely to live in flood-prone areas and are less likely to receive federal aid once flooded. Abandoned by politicians and government, we need support from the philanthropic sector and nonprofits to build equitable climate resilience.

There's another reason for engaging frontline communities: This is how we win on climate. Global warming is a crisis, and we can't rely on environmental nonprofits alone to tackle it. By combining the resources of national organizations with the experience and knowledge of those most impacted—low-income people, African Americans, Latinos, and First Nations—we can build a diverse and powerful coalition for climate justice.

But frontline communities and their leaders, especially those of color, have learned to be wary of outside assistance. Based on our experiences living and working in these communities, here's our advice on how to (really) help:

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1. We need power and adequate funding

The most common criticism of environmental nonprofits and foundations is that they swoop down into communities to run an event or offer an insufficient grant and swoop back out. The event or grant is offered on their terms, and the community is expected to be grateful. We can do better. Working with frontline communities requires a genuine partnership where the community leads the process, has access to the experts, and has the funds to cover their costs.

2. We welcome your authority, knowledge and resources

But climate isn't the only reason we are seeing more floods. Ill-conceived development, especially in flood-prone areas, replaces water-absorbing forests and wetlands with impermeable surfaces—so there is simply nowhere for all that water to go. While the risks of building in a flood-plain may seem obvious, such construction continues nonetheless—in part because waterfront properties are in high demand, commanding premium prices that boost real estate tax income for local governments.

3. Helping means staying

One of the leaders in Higher Ground has been working solidly for three years as a full-time volunteer to protect a wetland from development. An environmental organization offered to help. They did some graphics, sent some tweets (without mentioning the name of the community leader), got some glory and disappeared. This is one of many reasons why frontline communities feel aggrieved. Our fight is long. We need you to stick with us, through our successes and failures, and we need you to elevate our voices.

4. It's not our profession

The people we work with are suffering from the impacts of climate change—some have lost their homes, livelihoods and assets as a consequence. And we face a constant barrage of environmental injustices. One of us (Hilton) lives in Port Arthur, Texas, home to the nation's largest oil refinery —and some of the highest levels of toxic air releases in the country. Asthma and cancer rates in the predominantly African-American West Side are among the highest in the state. Our neighbors have jobs and families to care for; many are elderly. They care deeply about their environment, but it's not their profession. We need to engage them with thought and care—put food on the table, offer childcare, and host events at times and places that work for them.

5. We are experts

We aren't scientists or experts on resilience, and we welcome and need technical assistance. But we are experts on our community and how the impacts of climate change are playing out. We can show you the watermarks of flooding and point to where the floodwaters spill over. We can share the stories of neighbors who escaped. We also know that building resilience is as much about social and environmental assets as it is about science, and we know who and what those assets are.

6. Ditch (most of) the tool kits

Guidance documents, best-practice case studies and tool kits may work well for city governments, but they aren't for us—except when they are developed by us. Please come directly to our community, meet with our people, let us show you what we know, and then share your knowledge and resources with us.

7. We are environmental activists

There's a false belief that people of color and low-income Americans don't care about the environment or climate change and that someone must persuade us to care. Research (and our own experience) shows otherwise. We don't need a lesson on why we should care; we need solutions.

8. Accept conflict

We like to partner with our cities and counties, truly we do, but sometimes their hunger for development dollars and neglect for our concerns mean that first we have to fight them. Climate justice is political, and we need partners willing to accept politics and conflict.

9. Don't lead with retreat

Some people say, "If you're flooding, why don't you just move?" We recognize the vulnerability of our communities to climate change, sea-level rise, and urban flooding. We know that some neighborhoods will have to move. But first we must spend time building trust. Research shows that government is quick to armor the homes of wealthier communities while declaring poor neighborhoods unsalvageable. (See, for example, post-Katrina New Orleans.) We support managed retreat as Plan B, but first we have to explore Plan A.

Those of us who live in—and fight for—frontline communities welcome assistance in the form of resources and expertise. But the best way to help us isn't by "helping"—it's by seeing us as equal partners and allies in the struggle for climate justice.

How Philanthropy Can Meet the Moment: The Vital Importance of Trust

Shamar Bibbins

Originally published August 7, 2020 in Nonprofit Quarterly

You've heard the saying, "Change moves at the speed of trust." In the climate movement, we have serious trust issues. Frontline, community-based organizations—often with leaders who are Black, Indigenous, and people of color (BIPOC)—are at the forefront of movements on climate, racial justice, and more. But too often, funders do not trust these groups with the resources they need. And this limits our ability to achieve transformative change.

As a Black woman who cares about the environment, humanity, and the healing of all people, my work at the intersection of social justice, racial equity, and environmental protection has never been easy. I have fought enough battles to understand that change takes time, but I am at a breaking point.

I am frustrated, saddened, and increasingly impatient with the pace of change—and with the lack of trust that holds us back.

Most climate victories have been won with BIPOC-led frontline groups at the center. We simply cannot succeed without the authentic leadership of these groups. And yet, about half of philanthropic funding on climate issues goes to 20 national organizations, 90 percent of which are led by White people, 80 percent by men.

It's not just climate. Frontline groups are responding in real time to many of the most urgent issues facing our communities. And, while women of color are the backbone of frontline groups, only 0.6 percent of US philanthropic dollars go to women-of-color-led organizations. Overall, organizations led by people of color receive less grant money, with more strings attached, than White-led groups. Why?

The historical and systemic racism that infects every part of our society is certainly to blame. Despite countervailing evidence, many funders do not trust BIPOC leaders to be strategic problem solvers in their own communities. Too often, funders take a top-down approach that centers technical expertise, misdiagnosing the root of the problem, and creating narrow solutions that diminish community voice and leadership.

If we want to take on the crucial issues of our time, funders need to trust—and support—frontline leadership.

The Ecosystem of Change

Change looks different on the frontlines. Rather than focusing on a single issue—climate change, say, or housing—frontline groups confront multiple problems at once. They take a holistic, "ecosystem" approach that acknowledges connections among issues like racism, climate impacts, and health disparities.

Because they are rooted in the community, frontline groups respond quickly to emergent concerns. Consider PUSH Buffalo, a community organization in Buffalo, New York, that works on affordable housing, energy efficiency, and job training. When COVID-19 hit, PUSH met the moment. Street teams already in place to educate neighbors about free energy-efficiency upgrades helped deliver groceries and medical supplies. Existing grants for affordable housing were redirected to rent relief. And School 77, an abandoned campus that PUSH renovated and converted to solar-powered affordable housing, became a mutual aid hub. These solutions were launched as soon as the crisis hit, weeks before Congress passed its first stimulus bill.

In California's Bay Area, the Asian Pacific Environmental Network (APEN) also pivoted, preventing evictions and utility shutoffs, providing PPE (personal protective equipment) to essential workers, and organizing protests against police violence. Like most frontline groups, APEN keeps its eyes on the long-term prize while responding to immediate needs. "We know we need to transition away from an extractive economy based on profit and pollution," says APEN executive director Miya Yoshitani. And, because APEN works in communities that are economically dependent on fossil fuels, "we need to do it in a way that centers the people who are most impacted." That's why APEN is working to build locally controlled clean energy resources and strengthening the social safety net for workers and residents.

Meeting community needs is the key to truly transformative change, says Nathaniel Smith, founder and chief equity officer of the Partnership for Southern Equity. "Revolutions are usually seeded and supported by the folks who are suffering the most. But the people who are suffering aren't usually the ones that design or create the theories of change," says Smith. "Why is that? It's not because they're not brilliant or because they don't have the answer. It's because they are hungry."

The Partnership is working with neighbors suffering from the current crisis, launching a COVID-19 fund to support basic needs, and leading a campaign to prevent utility shutoffs. "By ensuring that people are in the position to feed their families, that they have shelter, that their utilities are on, we give them a chance to think bigger than just about survival," says Smith.

In addition to seeing the connections between immediate needs and long-term transformation, many frontline groups see themselves as connected to a larger movement. Take, for example, Black Visions Collective, a Minneapolis-based community group. In the aftermath of George Floyd's murder, Black Visions held trainings for medics and protesters, hosted marches and meetings, and organized mutual aid efforts. This work caught the attention of media, and donations poured in. But Black Visions' staff were not aiming to build a large, well-heeled organization. "We see ourselves as a part of a larger ecosystem of organizing," they explained in a letter to supporters. So they urged potential donors to give money to other underfunded groups, instead. Now, they are working to give away some \$200,000 to a broad range of allied projects and groups.

This Is How We Win

Working from a carefully built foundation of trust, BIPOC-led frontline groups punch above their weight

In the state of New York, frontline groups—including PUSH Buffalo, ALIGN (Alliance for a Greater New York), and the New York City Environmental Justice Alliance—were central to the passage of the 2019 Climate Leadership and Community Protection Act. Widely hailed, the Act calls for the state to get 70 percent of its electricity from renewables by 2030, and to go carbon-free by 2040. Frontline groups won important environmental justice provisions, including a target for disadvantaged communities to receive 40 percent of the benefits from state climate programs.

And in Portland, Oregon, BIPOC-led community groups prevailed when voters resoundingly approved a measure to create the Clean Energy Fund in November 2018. The fund imposes a surcharge on retailers with more than \$1 billion in annual sales, generating \$30 million a year for renewable energy, job training, local food production, and green infrastructure. The fund directs resources to Portlanders impacted by climate change but excluded from the emerging low-carbon economy.

Even when high-profile policy victories remain elusive, organizing and movement-building can prove transformative. Two years ago, in the state of Washington, frontline communities of color came together with labor, environmentalists, public health leaders, and others to draft a carbon tax initiative. "It was the largest and most diverse coalition that had ever come together on climate," says Aiko Schaefer, former director of Front and Centered, "and it produced the most groundbreaking, most innovative policy proposal."

Although the ballot initiative was defeated (after unprecedented spending by fossil fuel interests), that coalition has changed the conversation about climate in Washington and beyond—from a technocratic approach centered on reducing emissions, to a more reparative focus on helping impacted communities. As a result, when Governor Jay Inslee (D) signed a bill the following year that requires 100-percent renewable energy by 2045, the coalition won provisions that ensure equitable benefits for low-income households.

Funders: Follow the Frontline Leaders

There are many reasons for the success of frontline groups and coalitions. First, their holistic approach aligns with people's lived experience. Most of us care about more than one issue; we want good jobs *and* a livable planet, for example. That's even truer for those living with the compounding, intersectional harms of racism, poverty, and environmental injustice. Community-led problem-solving is tailored to the local context and garners more buy-in. And the "ecosystem" approach enables community groups to broaden their base of support, nurture reciprocal relationships, and build a stronger, more adaptable movement ecosystem.

Unfortunately, these approaches put frontline groups at odds with prevailing philanthropic culture. Foundations typically segment giving by issue—for example, viewing climate change, poverty, and health as separate concerns. Even when they are seen as intersecting issues, funding priorities most often are not aligned to support a holistic, multi-issue frame. Moreover, most funding comes in the form of support for specific projects. This leaves community groups with little financial flexibility.

I entered the field of climate philanthropy in 2014, and I am pleased to say that a lot has changed since then. There is greater awareness, at least, that the environmental movement has a problem with diversity, equity, and inclusion, resulting in notable shifts among climate funders and more equitable approaches to grant making. This is progress, but it is insufficient.

Some funders are taking bold steps. The Solutions Project—for which I serve as a philanthropic trustee—made and delivered on a commitment last year to direct 95 percent of grant dollars, technical assistance, and other resources to support leaders of color; 80 percent of the project's funding goes to women-of-color-led groups.

Amid the current crises, trustees (predominantly women of color in philanthropy and frontline communities) did away with grant reporting and traditional proposals. As executive director Sarah Shanley Hope observes, "Frontline leaders have been doing the work for hella long and often times for free. We can break that extractive cycle and move money, media, and momentum behind their leadership with trust and speed."

The Kresge Foundation, where I work, offers another great example. Since 2014, Kresge's Environment Program has helped cities combat and adapt to climate change while advancing racial and economic equity. To that end, Kresge makes investments that help elevate the leadership, inclusion, and influence of people of color, people with low incomes, and equity-focused organizations in climate-change-related decision-making. A milestone \$29 million investment made during my first year at the foundation helped "flip the frame" of Kresge's climate investments. Rather than fund mainstream environmental groups, hoping they might strengthen their competency around equity, Kresge funded frontline leaders whose work was already grounded in equity, to deepen their climate engagement.

More Work Ahead

Yet there remains much more that philanthropy must do.

Funders must rebuild trust with frontline organizers and believe that those closest to the problems have the solutions. This does not mean that we do not need technical solutions or deep collaboration across multiple sectors. But the urgency of the moment and the needed pace of change require shifts in thinking and culture, as well as new tools and strategies that elevate, support, and celebrate BIPOC communities.

Here's how to start:

- **Support BIPOC leaders.** Funders must correct the longstanding bias against supporting leaders of color. We can start by listening to the recommendations—on strategy, on organizations to support within the ecosystem, and on processes like metrics and evaluation—of those rooted in the communities we seek to impact.
- Use intermediaries to invest in frontline groups. For large foundations without relationships on the ground, it is certainly easier to make a few big grants. Funders who can't give directly to frontline groups can make grants to intermediary funds that do the work of managing relationships and grants. Recent years have seen a growing number of intermediary funds that focus on supporting local, grassroots, and frontline BIPOC leaders. These include national funds such as The Solutions Project, the Climate & Clean Energy Equity Fund, the Fund to Build Grassroots Power, The Building Equity & Alignment Fund, and NDN Collective; and local/regional funds such as Regenesis and the Hive Fund for Climate and Gender Justice.
- **Be flexible.** Support frontline groups' holistic, multi-issue approach by providing general support whenever possible, and by allowing grantees to repurpose project funding in response to

emerging needs and opportunities. Especially in times of crisis, funders can rethink burdensome reporting and evaluation requirements. For example, The Solutions Project realized its media tracker, which was already a part of its technical capacity programming for frontline grantees, could also serve as easy documentation of grantee outcomes.

- **Support the ecosystem.** Recognize that movement-building requires time and resources by providing support for coalitions and alliances, as well as individual organizations.
- Offer support beyond grant dollars. Unlike their well-resourced counterparts, frontline groups typically lack specialized staff for communications, technology, development, and more. Funders can fill these gaps by supporting ecosystem-level fundraising, peer-learning opportunities, capacity-building, and technical assistance. At this time, when grantees aren't able to meet and convene in person, funders can support virtual gatherings and online learning.

Meet the Moment

Change moves at the speed of trust. But BIPOC and poor communities have always borne the burden of proving that they can be trusted.

It took decades of cries from Black mothers—who knew for certain that there were links between their sick or dying babies and the environmental hazards in our neighborhoods—before our government agencies took action.

It took all of America to witness the public murder of George Floyd on television to trust that when Black people say I CAN'T BREATHE, we aren't overstating the facts.

It took thousands of deaths in the aftermath of Hurricane Katrina to spotlight Black communities' outsized vulnerability to climate hazards.

And it has taken COVID-19's disproportionate toll on Black and Brown people to bring widespread attention to our nation's glaring disparities in health care and employment.

Although often ignored by philanthropy, BIPOC-led frontline groups have spent years building trust and making change in their communities. Today, they are leading movements that are filling the streets and making the links between short-term needs and long-term transformation. And they are radically rethinking energy and economic systems to prevent climate chaos and build shared prosperity. "This moment is what our movements are built for," says Miya Yoshitani of APEN.

Philanthropy can help meet this moment—but only if we trust the visionary leadership of those on the front lines.

Environmental Funders: The Problem Isn't Just Diversity. It's Access to Money.

LOIS DEBACKER AND JACQUELINE PATTERSON

Originally published April 6, 2021 in Inside Philanthropy

For years, we've heard the calls for more diversity in the environmental movement. It's certainly true that the "big green" groups—and their boards—remain mostly White. But the fact is, there is plenty of diversity among those who are fighting for a cleaner, healthier environment.

Across the US, environmental justice groups are shutting down coal-fired power plants, getting the lead out of drinking water, advancing access to sustainable and healthy housing, and engaging in other actions to address a plethora of environmental injustices. This includes efforts to mitigate climate change while preparing for its impacts. Rooted in Black, Indigenous, and people of color (BIPOC) communities, environmental justice groups have a track record of wins, a deep bench of talent, and earned trust that enables them to mobilize the communities where they live and work.

What too many BIPOC and environmental justice groups lack is money.

Only about 1% of environmental grantmaking from 12 of the largest environmental funders went to environmental justice groups, according to a 2020 report by the Building Equity and Alignment Initiative. Research from scholars at Northwestern University found that half of philanthropic funding on climate issues goes to 20 national organizations; that data was then analyzed by the Solutions Project in 2019 finding 90% of those organizations to be led by White people, 80% by men.

Funders need to step up their investments in BIPOC-led environmental justice groups—not just because it's the right thing to do, but because it's the way to win on climate change and other environmental issues. Here's why.

First, those closest to the problem are the ones who can identify solutions. People of color live in communities that are disproportionately affected by environmental problems—from air and water pollution to climate change. Residents of these communities hold a wealth of hard-earned wisdom: They know which streets flood when it rains and which local leaders have the people's trust. Without the input and engagement of those on the front lines, even the best-intentioned solutions can be ineffective or harmful.

Second, BIPOC-led organizations have a demonstrated track record of success. With sophisticated strategies and tireless organizing, BIPOC-led groups have produced transformational action on climate and environmental racism. For example, environmental justice groups—including the New York City Environmental Justice Alliance, PUSH Buffalo, and ALIGN—played key roles in passing New York state's 2019 Climate Leadership and Community Protection Act. The act calls for 70% renewable energy statewide by 2030, and full carbon neutrality by 2040. Importantly, environmental justice groups won provisions that will make the act more equitable, including a target for disadvantaged communities to receive 40% of the benefits from state climate programs.

Third, BIPOC-led environmental justice groups take an approach that differs from the dominant green-group paradigm. These groups put *people* at the center of climate change and other environmental issues, advocating for change that improves lives in the near term. While attentive to the need for emissions reductions, an environmental justice approach to climate change emphasizes the health benefits of reduced air pollution and the promise of good jobs in renewable energy.

As they're rooted in communities, environmental justice groups can talk about the issues in a way that resonates with people's everyday lives. This more holistic approach is effective because, in the words of Audre Lorde, "There is no thing as a single-issue struggle because we do not live single-issue lives." People care about the planet *and* their paycheck, about the health of their family *and* of the natural world.

Given everything that BIPOC-led environmental justice groups bring to the table, why don't these groups garner more philanthropic support? On climate change, at least, there's a long history of focusing on the technical aspects of the problem while neglecting its human and political dimensions. And there is implicit bias in who funders think of as the "experts"—too many tend to favor those with technical skills over those with essential knowledge of place-based challenges and solutions.

Many funders also harbor misperceptions about the capacity of community-based groups to absorb funding. In our experience with environmental justice groups, there is no shortage of talented leaders and capable organizations that are ready for additional investment. These hard-working, multi-tasking leaders and groups are limited only by the hours in the day and the resources available for their work.

Finally, funders don't know *who* they don't know. Environmental philanthropy remains overwhelmingly White, as are funders' personal and collegial networks. So when funders ask their networks about promising leaders and organizations, the answers tend to reflect the demographics of those doing the asking.

It doesn't have to be this way. Last month, the Donors of Color Network issued a powerful challenge to funders, asking them to direct 30% of their grantmaking to BIPOC-led groups accountable to their communities. We fully support this approach. The Kresge Foundation is among 11 funders that have taken the pledge to date. And the NAACP is elevating the pledge while uplifting the work of communities and BIPOC-led organizations on the frontlines of addressing climate change.

There's still more that funders can do. They can, for example, construct grantmaking portfolios that include the full set of partners needed to bring about change: front-line groups, mainstream organizations, and movement and environmental justice networks. They can commit to relationship building and access, and build deeper connections with environmental justice groups, grounded in trust. They can leverage the power of intermediaries as a complement to direct grants to community-based groups.

And they can walk the walk on dismantling structural racism by examining and transforming the cultures within foundations and grantmaker affinity groups. That means hiring diverse staff who bring new connections to the work. Ideally, it means requiring grantees to go beyond minimal DEI practices: standards for justice, equity, diversity, and inclusion (JEDI) must be transformative and ensure that internal and external practices are explicitly anti-racist.

Finally, funders can bring an equity lens to everything they do. The Kresge Foundation, for example, is explicitly incorporating racial justice into our strategy and aligning investments accordingly. Recently, Kresge earmarked \$30 million in new grantmaking for racial equity work, building on existing commitments.

Today, however, most environmental philanthropy is not aligned with the greatest need, or opportunity, in our field. We can change that—not simply by advocating for more diversity in the "big green" groups, but by stepping up support for BIPOC-led environmental justice organizations that are fighting, and winning, the battle to protect people and the planet.

Memo to the Biden Administration: What Not to Do on Climate

JACQUELINE PATTERSON

Originally published April 21, 2021 in Thomson Reuters Foundation News

Recently, I had the opportunity to advise a wealthy individual on their personal giving. I spent a considerable amount of time providing a written memo on how to support grassroots-led efforts to address climate change. But when the resulting plan was made public, I read it with horror. Evidently, in my extensive guidance on what *to* do, my recommendations lacked clarity on what *not* to do.

Now, I've fielded many requests to weigh in on the Biden-Harris administration's climate plans. In coalition with many other organizations, I have helped craft various "100 days" documents, spotlighting the critical need to center frontline communities, advance intersectional solutions, and implement a just transition.

However, it occurs to me that I should not make the same mistake in failing to illuminate the traps to avoid.

There is so very much at stake. Between climate change, COVID-19, the economic crisis, and racial injustice, you could say we are in the midst of a *syndemic*—an interconnected series of epidemics with shared, systemic roots. Unless those root causes are addressed, crises will continue to sprout like the heads of a hydra, with marginalized group the most impacted.

Climate "solutions" that ignore these interrelated challenges will not be effective or just. Here are some of the all-too-common false solutions, omissions, and past patterns we must avoid:

1. Carbon pricing

Carbon-pricing allows polluters to pay a nominal fee, or sell and trade the "right" to emit greenhouse gases. Too often, this results in polluters increasing emissions in places where it is cheapest to pollute, intensifying the lethal poisoning of BIPOC communities.

2. Propping up polluters

Strategies that support harmful natural gas, nuclear, biomass, biofuels, and carbon capture and sequestration are largely driven by the need to pacify powerful constituencies. Efforts to address the climate crisis will fail if they are counterbalanced by coddling of polluters.

3. Supporting investor-owned utilities

It's not just the energy sources that are problematic; we can't continue to support a failed utility business model that lines the pockets of investors and CEOs while heartlessly turning off energy access to impoverished people, often with fatal results.

4. Technofixes

Too many are looking for easy answers so we can geoengineer our way out of the climate crisis. But, as Martin Luther King said, "All progress is precarious and the solution to one problem brings us face to face with another problem." Tinkering with complex planetary systems—by, for example, using aerosols to control the earth's temperature—is likely to yield unforeseen and even deadly consequences.

5. Single-issue solutions

In the words of Audre Lorde, "There is no such thing as a single-issue struggle because we do not live *single-issue lives*." Solutions that address multiple problems at once—for example, creating well-paid jobs while building efficient, resilient homes—are both effective and politically popular.

6. Ignoring grinding poverty

Too many communities' rights and well-being have been historically ignored and neglected in the fight against climate change, including Freedman's settlements, unincorporated areas, deep rural communities, and some urban communities. Our definition of "disadvantaged communities" must include and prioritize them.
7. Assuming a rising tide lifts all boats

From Urban Renewal (known as "negro removal") to Opportunity Zones, many programs for economic development have turned out to be ineffective or even harmful—uprooting and destroying communities they intended to help. Without intentionality and community driven planning processes, climate action plans could have similar results.

8. Separating domestic and foreign policy.

Failure to link fair immigration policy with outsized US responsibility for climate change deflects responsibility for a key driver of immigration. And failure to link the decline of coal burning in the US with a moratorium on coal exports just shifts pollution overseas.

9. Accepting the linkage between money and politics

The fossil fuel industry and other corporate interests have a stranglehold on our legislatures and, to some extent, our courts. But we need not accept that. To advance and uphold true democracy, this administration must get money out of politics once and for all.

10. Failure to address racism and anti-Indigeneity

Climate change and systemic racism are inherently linked as Black and Brown communities bear the worst impacts of environmental harm. Continuing to ignore treaty rights and avoid meaningful reparations legislation would be a failure to address this wrong.

11. Deploying "Weapons of Math Destruction"

Too often, policies are driven by algorithms and formulas that reinforce inequality, such as funding community amenities from taxes that leave marginalized communities even worse off and without critical climate infrastructure. Even the upcoming Executive Order on Climate Related Risks, if not anchored by equity measures, will deepen disparities.

12. Incrementalism/low ambition

This is no time to make small tweaks to a fundamentally flawed system. To change systemically rooted problems, we need, bold, ambitious, transformational policymaking.

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We must avoid the well-worn traps and failed policies outlined above. And, as we define what it means to truly "build back better" we can and must do so with principles, policies, and practices that are anchored in regeneration, cooperation, and democracy.

Communities of Color Lead the Way to a Resilient Future— Congress Should Follow

Angela Chalk and Lois DeBacker

Originally published November 29, 2021 in The Hill

In a rapidly warming world, we can expect ever-stronger storms, more-intense rainfall, and increasingly damaging floods. Many majority-Black neighborhoods in New Orleans offer a glimpse of the new normal. Inundated by Hurricane Katrina in 2005, residents now endure regular flooding that keeps them locked in an endless cycle of recovery.

But there is good news, too. In New Orleans, many are adapting to the new normal, with community-led green infrastructure. In contrast to gray infrastructure—such as pipes and canals that move stormwater—green infrastructure relies on nature to reduce flooding. Parks, street trees, retention ponds, and other green features can absorb rainfall and take the pressure off overworked drainage systems. What's more, creating and maintaining green infrastructure can create jobs and revitalize communities.

A new report from a coalition of community groups, including Water Wise Gulf South and Earth Economics, found that every dollar invested in green infrastructure projects in New Orleans produces six times higher returns in economic, social, and environmental benefits, with the potential for tens of millions of dollars in additional local benefits annually. Other cities are successfully using this strategy: New York City has already saved \$1.5 billion by incorporating green infrastructure into its municipal stormwater infrastructure planning.

There is a lot we must do to address urban flooding, and green infrastructure is an important part of the solution. Since 2013, Healthy Community Services, in partnership with the Greater Tremé Consortium, the Upper 9th Ward Bunny Friend Neighborhood Association and Water Wise Gulf South, has planted more than 500 trees and implemented over 150 green infrastructure projects—adding more than 50,000 gallons of storm water retention capacity to flood-prone areas. Last month, these groups hosted a groundbreaking event on a new project to combat flooding at one of New Orleans' critical hurricane evacuation routes, the intersection of Saint Bernard Avenue and North Claiborne. The project was one of three large-scale anti-flooding developments in New Orleans' Seventh and Upper Ninth Wards and Tremé, which are among the most heavily impacted neighborhoods.

Despite the fact that Black and Brown neighborhoods are hit first and worst by flooding and other climate change impacts, community leaders of color are out in front of the efforts to build a more resilient future. Black-led community groups are spearheading this work, often without any local or federal government assistance. This must change. Direct funding support from all levels of government is urgently needed to help cities combat the impacts of climate change. While support from philanthropy is integral, philanthropy can't and will never take the place of government.

This is true across the country—not just in low-lying areas of the Gulf South. Research shows that flood damage will cost the US \$20 billion this year alone and is expected to rise by 61 percent in 30 years. Just this year, we saw deadly floods in the desert Southwest, the Carolinas and Tennessee, the Northeast and elsewhere.

Unlike its gray counterpart, green infrastructure can provide important benefits for residents: leafy places to exercise and play; cleaner air; and shade that reduces the "urban heat island" effect.

Equally important, green infrastructure brings jobs to local community members and provides opportunities to build wealth for everyone. Numerous reports and research studies predict that jobs linked to green infrastructure will expand in the coming years. Building and maintaining green infrastructure offers a chance for workers currently underrepresented in the workforce to earn competitive wages.

The solutions that work best are those led by residents themselves. Communities of color are closest to the problem of urban flooding, therefore are closest to the most effective solutions. But that doesn't mean organizations led by people of color should have to do this work on their own. Support from the government—and continued support from philanthropy—could enable these and other organizations to scale up the innovative solutions that have been pioneered in New Orleans—and replicate this success in flood-prone places all across the nation.

In many majority-Black neighborhoods in New Orleans, residents have been living in the new normal for years. Now, cities across the US are confronting similar challenges. Biden just signed one of the first substantial investments in climate infrastructure—it's tremendous progress but it's not enough. As we look to execute this funding properly across the country, these communities can offer a blueprint for a more climate-resilient future. The Biden administration has designated 40 percent of federal funding opportunities in the bipartisan infrastructure framework and Build Back Better bill to be directed toward organizations supporting Black, Indigenous and people of color (BIPOC) and serving underrepresented communities with their Justice40 initiative. By providing more resources for community-led green infrastructure projects, Congress can make that future a reality.

SEC: Step Up on Climate Change

DANIEL REICH

Originally published July 10, 2022 in The Hill

It is no secret that time is running out to address climate change. The Earth is now warmer than any time since before the last ice age. Children born this year could live to see parts of the Eastern seaboard swallowed by the ocean and, by the end of this century, climate change could be the cause of 4.6 million excess deaths each year.

Despite this urgent challenge, last week the Supreme Court gutted the Environmental Protection Agency's (EPA) capacity to mitigate climate change. Justice Elena Kagan said it bluntly, "Today the Court strips the Environmental Protection Agency of the power Congress gave it to respond to 'the most pressing challenge of our time." In a gridlocked Congress, there are not enough votes to enact meaningful legislation to address climate change, such as a carbon tax. And Biden's climate plan to promote electric vehicles is being eviscerated by the Senate.

Rather than despair, it's time to get "creative" on climate, says Gina McCarthy, President Biden's national climate adviser and former EPA administrator during the Obama administration.

Here's a creative—and underutilized—strategy. The federal Securities and Exchange Commission (SEC) can shift investment away from fossil fuels, while protecting investors and stockholders, by requiring publicly traded corporations to disclose their impact on (and vulnerability to) climate change.

In fact, SEC's Regulation S-K was clarified in 2010 to emphasize that climate disclosures are required. According to CERES, a nonprofit that evaluates climate disclosures, "nearly half of the 600 largest US companies ... still do not provide decision-useful disclosures on climate-related risks. Those that do often provide disclosures that are merely boilerplate or too brief, and effectively meaningless." Worse, the SEC has taken zero enforcement actions to comply with the 2010 clarification of Regulation S-K.

The result is that businesses shortchange investors and the public by "green washing"—providing glowing reports of their activities that are not supported by their business practices.

Encouragingly, the SEC recently proposed a new, more expansive rule to require climate disclosures. But the proposed rule has extended compliance dates for the most basic information. This means that assuming the SEC decides to enforce the proposed rule—it would take effect in three years, at the earliest.

In other words, the SEC is acting too late to assist in the current Biden climate agenda. If the next president is hostile to climate action, or if future leadership of the SEC is unwilling to enforce climate-related regulations, the expanded rule will be a fruitless gesture.

That's why the SEC must act now. It can start with enforcement of the rule already on the books. There is strong legal authority and an existing regulatory framework for this approach. Further, there is a private bar willing to file shareholder suits if inaccurate or misleading information is disclosed.

In addition, the SEC can move up its compliance schedule for its proposed regulation. This will not be an unfair surprise to corporations, as they have been on notice for at least 12 years since the 2010 regulation was issued. And there's more the SEC can do, as outlined in a detailed action plan submitted to the SEC by the Environmental Protection Network.

Policymakers and the courts can argue over whether Congress or federal agencies should take the lead on climate action. But it's hard to argue that investors should be kept in the dark on climate impacts. That's why the SEC must step up, before it's too late.

Electrify Equitably: Philanthropic Partnership Centers Frontline Communities in Decarbonization

LAURIE MAZUR

Originally published October 17, 2022 in Inside Philanthropy

Electrify everything" has emerged as a slogan in some quarters of the climate movement. The idea is to replace gas- and oil-burning appliances and vehicles with electric ones, powered by renewable energy.

Certainly, there is much to be gained by this approach—including lower greenhouse gas emissions and cleaner air. Buildings are especially ripe for electrification, as they produce about 13% of US emissions. And we now know that burning fossil fuels in our homes produces toxins linked to cancer and respiratory disease.

But in the rush to electrify, we might just do more harm than good. Stark economic and racial inequities mean that people of color and low-income communities bear the heaviest burdens from our current fossil-fueled energy system—from high prices to poor air quality. If electrification proceeds without understanding and addressing those inequities, it will only deepen them.

Enter the Equitable Building Electrification Fund: A Collaboration for Frontline Communities. Born of a collaborative effort among community-based organizations, funders and social impact networks working at the intersection of climate, energy and justice, the fund launched in 2021. Initial support came from the Heising-Simons Foundation, the Kresge Foundation and the Summit Foundation; the Builders Initiative joined in May 2022.

The fund seeks to advance an equitable transition to building electrification for the communities most impacted by the negative consequences of fossil fuels. To that end, it moves money and power to front-line communities—supporting grassroots groups that have long fought for environmental and social justice, but are often overlooked by funders. With grassroots leaders at the helm, and front-line groups at the center, the fund is treading new ground for philanthropy.

The Promise and Peril of Electrification

The potential gains from electrification are impressive—starting with removal of a hefty slice of climate-changing greenhouse gas emissions. Reducing dependence on fossil fuels could also insulate our economy—and our wallets—from geopolitical events that have recently sent costs soaring.

Importantly, electrification could help right the wrongs that fossil fuels have inflicted on so many. From the scarred mountaintops of Appalachia to inner-city neighborhoods choked with air pollution, fossil fuels have taken a profound toll on the health and well-being of working-class communities and people of color. Investment in electrification could be targeted to those most-impacted communities, which have the most to gain. It could serve as a "wealth transfer," said Bridget Vial, an organizer with the Michigan Environmental Justice Coalition, "where people in our communities are trained to do the work and invest in our homes and communities."

Unfortunately, that's not the usual trajectory for new, green technologies. For example, when rooftop solar became available, affluent homeowners with disposable income were the early adopters. "Low-wealth families and communities of color were left behind," said Jessica Boehland, senior program officer at the Kresge Foundation. To this day, those communities lack access to cost-saving solar energy and to jobs in clean energy.

A few years ago, building electrification was on the same path. Early electrification efforts focused on the scientific and technical challenges of decarbonization, but "it was a conversation about buildings, devoid of people," said Martha Arguello, executive director of Physicians for Social Responsibility-Los Angeles. "Some thought it was almost a bother to bring up issues of social and environmental justice because, you know, it's a climate emergency. But we also have an injustice emergency."

Ignoring that injustice emergency could make things worse for

overburdened communities. For example, without measures to make electrification affordable, low-income families could be stranded with failing gas utilities and higher energy prices. And without a wholesale shift to renewable power generation, electrification could ramp up demand at fossil-fueled power plants, which are disproportionately located in communities of color.

The recently passed Inflation Reduction Act (IRA), with its historic investments in clean energy, has raised the stakes even higher. Unless those funds are carefully targeted, marginalized communities could once again be shut out of the game-changing cost savings, job opportunities and health benefits that clean energy can provide.

What's more, the IRA includes agreements for more fossil fuel buildout that will adversely impact marginalized communities. "Environmental and climate justice leaders have long educated us on the dangers of sacrifice zones," said Jennifer Somers, the fund's facilitator and manager. "IRA programs must ensure that conditions in front-line communities aren't made worse, and that solutions to the climate crisis include addressing energy burdens in limited-wealth communities and communities of color."

Indeed, the IRA—and decarbonization more generally—must address the climate *and* injustice emergencies. "If you address both together," Arguello said, "you actually come up with solutions that work better."

Making Equitable Electrification a Reality

To seize the opportunity of equitable electrification, community groups need resources to make their voices heard. "Meeting the demands of the climate crisis is going to take a massive investment in electrifying homes that puts communities and people at the center," Vial said.

Recognizing the need for people-centered policy on electrification, a group of community-based organizations working on environmental justice, energy democracy, civil rights, housing and consumer advocacy began meeting in 2019. Eventually, like-minded funders joined the fold. "We saw a need to get more resources to community-based groups, and for a new mechanism to enable that to happen," Boehland said.

That new mechanism-the Equitable Building Electrification Fund:

A Collaboration for Frontline Communities—launched with initial assets of \$1.8 million. The fund regranted to 10 community groups in its first round and is now issuing a \$50 million call to action to advance equitable decarbonization efforts across the country.

Fund grantees are working to take equitable electrification from concept to reality. The Michigan Environmental Justice Coalition, for example, is calculating the cost to electrify the state's low-income communities. In California, staff of the Center for Race, Poverty, and the Environment serve as "community energy navigators" to help rural, off-the-grid communities leapfrog from propane to solar-powered electricity. Fund grantees have already achieved significant wins: for instance, Physicians for Social Responsibility-Los Angeles helped broaden the city's definition of climate policy to ensure that limited-wealth communities, and renters in particular, are incorporated into climate and electrification plans at the city and state level.

Beyond its impact on policy and practice, the fund is breaking new ground for philanthropy. It is led by a governance assembly that includes environmental justice advocates who shape the fund's grantmaking strategy. (Grantmakers from Kresge, Heising-Simons, the Builders Initiative and the Merck Family Fund also serve on the governance assembly.) Early on, the assembly dispensed with the standard grant application process, allowing applicants to choose an interview rather than a written proposal, if they wish. Assembly members also reworked a scoring system for prospective grantees that may have shortchanged worthy applicants.

"We are not judging people by how many characters they can put on a sheet of paper. We get a feel for the person, the organization, and their commitment to and vision for the work," said Jacqui Patterson, executive director of the Chisholm Legacy Project, who serves on the fund's governance assembly.

That revised application process resulted in a diverse cohort of grantees. "We have folks who are leading on policy, folks who are implementing projects, and folks who can help tell the story," Patterson said. "It's a nice tapestry of gifts, talents and outcomes."

Importantly, the fund does not dictate solutions. "We're all on the same page in terms of the highest-level goals," said Laura Wisland, program officer at the Heising-Simons Foundation. "But community groups are in the best position to know what solutions will work best in their community. The fund is not saying we know what the answer is, but instead creating resources to let thousands of flowers and creative ideas bloom."

The Speed of Trust

It's an approach that is deeply rooted in trust. According to Darryl Young, who recently left the Summit Foundation to head up the Merck Family Fund, building trust is a constant, ongoing process. At the fund's inception, he said, "[Building trust] required community-based organizations to accept funders into the conversation. And it required funders to come into the conversation humbly and quietly."

Together, the funders and community practitioners who developed the fund also created a set of principles of transformative partnership, inspired by the principles for a Just Transition and the Jemez Principles for Democratic Organizing, aimed at equalizing power and cultivating mutual respect.

The painstaking process of building trust may seem at odds with the urgency the climate crisis demands. But as Caroline Farrell, executive director of the Center for Race, Poverty, and the Environment, observes, choosing between trust-building and speed is "a false choice." Organizing is about building relationships and trust, which form the basis of sound policy that can win broad support. "If you take time to do the policy right, you'll actually move faster," Farrell said. Indeed, change moves at the speed of trust. That is true at the community level, and also within the larger community of organizations and funders working on equitable electrification.

Building that larger community has been a priority for the fund's governance assembly. To that end, the fund fosters shared learning among funders and grantees. "The learning community is incredibly important," said Logan Atkinson-Burke, executive director of the Alliance for Affordable Energy, who serves on the governance assembly. "We are not just saying, 'here is money to do the thing you are doing, but here is also support to learn.""

That support is proving essential to grantees who are essentially building a new field from scratch. "We get to meet folks from rural Virginia to the City of Detroit who are working on similar projects or who are approaching it totally differently," said Vial of the Michigan Environmental Justice Coalition. "This is something I am really excited to be a part of, and I really need the information."

It is still early days for the Equitable Building Electrification Fund, but its leaders have bold hopes for the future. Wisland at Heising-Simons wants the fund to grow in dollars, capacity and partnerships. Patterson at the Chisholm Legacy Project hopes that "equitable" becomes the inevitable preface to "building electrification." Boehland at Kresge wants to see deep partnership with community groups become the norm in shaping policy.

And all want to see the fund's novel approach light a new path for philanthropy. "The world is telling us that the ways of doing it in the past are not working," Patterson said. "So we need to think outside the confines of traditional philanthropy."

What the Supreme Court Decision on Affirmative Action Means for Climate Equity Policy

Jacqueline Patterson, Aiko Schaefer, and Alvaro S. Sanchez

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C limate justice is racial justice. There is no way to talk about equitable, effective, and just solutions to climate change without also talking about the disproportionate burdens that communities of color shoulder as the planet warms. The legacies of systemic racism and discrimination mean that today, communities of color are more likely to live in polluted, climate-vulnerable neighborhoods with limited capacity and resources to build resilience or bounce back after a climate disaster.

The inextricable link between race and climate vulnerability demands race-conscious policies to mitigate climate effects for these communities. But the Supreme Court's recent decision to ban affirmative action in college admissions could derail progress in our collective fight to slow climate change and address the long legacy of racial injustice in this country.

To be clear, efforts to fight climate change by explicitly targeting race as a decision-making factor do not currently exist. Rather, the federal government and some states, including California, use complex, data-driven methodologies to identify "disadvantaged" communities where environmental pollution and poor socioeconomic outcomes are most prevalent. But because race is the number one indicator of people living near polluting facilities, we know that by any measure, low-income people of color suffer first and worst from climate change and its impacts.

Race-Conscious Policy

Even before the recent Supreme Court decision, legal constraints on race-conscious policy caused misunderstanding, tension, and division between frontline communities working on climate equity and the local governments representing them.

For example, the Biden administration decided not to include race as a factor in a screening tool designed to support the implementation of Justice40, an executive order meant to address environmental injustice by funneling resources to disproportionately impacted communities. In California, a state where affirmative action has been outlawed in education, public employment, and government contracting since 1996, legal constraints on the use of race-conscious policy has resulted in hesitancy to apply it even in areas where the ban is not in effect, such as in environmental policy.

Moving forward with a "colorblind" approach to climate justice risks making our efforts less effective, more costly, and slower. The formula for success requires that climate and race are as inextricably woven together in our solutions as they are in the world in which we live.

Still, places with decades-old bans on affirmative action show us how to advance racial justice in climate solutions, despite perceived legal limitations. We start by being race-conscious in our policy goals, seeking explicitly to combat discrimination and eliminate racial disparities. As Stephen Menendian at the Othering & Belonging Institute points out in his helpful legal guidance, federal law broadly permits government entities to try to reduce disparities, though the policy *implementation*—the specific mechanisms and criteria for distributing burdens and benefits to advance race-conscious policy goals—must generally be race-neutral. But we can be explicit about race in measuring what matters and assessing the racial impact of our policies.

The new affordable housing policy in Berkeley, CA, prioritizing residents affected by redlining and other housing discrimination, is a succinct example of this approach. The policy's goal is explicit about race—to stem the loss of Black residents from the city. However, the implementation mechanism is race-neutral—affordable housing priority goes to people who have been displaced by transit infrastructure or live in formerly redlined areas. Gathering disaggregated demographic data on who gets the priority affordable housing will illuminate the extent to which the legal, race-neutral implementation mechanism is achieving the race-explicit policy goal and inform future iterations.

The Impact of Banning Affirmative Action

The precedent-shattering affirmative action decision must be understood as just one part of conservatives' broad and long-term strategy to undermine racial justice. Right-wing actors have always fought to preserve White supremacy in our institutions, including through the interpretation and application of the law. Over the years, they have reinterpreted the Equal Protection Clause of the Constitution to mean that the government should be colorblind except in very limited instances that address a shrinking set of court-defined "compelling state interests." Even then, race-conscious government action is required to be narrowly tailored and pass a strict scrutiny test in order to be legal.

The Trump-appointed majority on the court sent a strong signal that they take a dim view of efforts to explicitly advance racial justice with race-conscious government action. The prominence of the Supreme Court decision will almost certainly embolden conservative activists to launch even more lawsuits against any kind of government policy or program that appears to center race or serve the purpose of advancing racial justice. Government officials and their lawyers are likely to take preventive measures—such as narrowing or completely scrapping policy initiatives—to avoid the risk of being sued or losing a lawsuit, as we've already seen with Justice40.

Such chilling effects have the potential to significantly erode progress on climate resilience, especially for marginalized communities.

Movement Toward Equity

Despite the recent decision, our organizations and many others across the United States continue to advocate for and implement climate policy that addresses racial disparities through several key actions:

- Educate: Proactively share information about the link between racism and existing inequities in our world and inform decision-makers about the scope and limits of the SCOTUS decision.
- **Unite:** Connect with communities and grow our membership to incubate a large-scale, long-term strategy to build equitable climate policy.
- **Pilot:** Push forward race-conscious approaches to fighting climate change to test effectiveness and political will.
- **Organize:** Sign people up to vote, advocate to change government structures that hinder our progress, and win over hearts and minds by showing people how these issues connect to their everyday lives.

At the Greenlining Institute, our work linking climate work with equity underlies our advocacy efforts to include race-conscious language in state and federal policies. The institute advocates for policies and tools that make equity a rigorous practice rather than a commitment or ideal to strive toward. Equity for the institute means that policy design, planning, implementation, and evaluation include concrete steps that transform behaviors, institutions, and systems to support communities of color. This is why in 2020 the institute proposed legislation to create a statewide Office of Racial Equity. Our proposal ultimately resulted in the approval of a statewide Racial Equity Commission, tasked with creating a racial equity framework and moving California closer to an equitable future.

Similarly, the Just Solutions Collective works to broaden and deepen the understanding of equitable and effective policies and projects to build the capacity of BIPOC frontline communities to replicate, scale, and build support for justice-centered solutions. As a national movement partner organization, the collective works to implement equitable and effective climate policies and programs at a scale and pace that match the urgency of the climate crisis.

On a more grassroots level, The Chisholm Legacy Project: A Resource Hub for Black Frontline Climate Justice Leadership is rooted in a Just Transition Framework, serving as a vehicle to connect Black communities on the frontlines of climate justice with the resources to actualize visions through regenerative, cooperative, democratic systems.

We know from experience that race-conscious policies can effectively tackle discrimination and build climate resilience. In the face of attacks on race-conscious policies, climate justice leaders, policymakers, and local governments must continue to come together to affirm their shared commitment to racial justice and collaborate on strategies that meet this moment.

How Climate Resilience Can Curb a Crisis in Homeowners' Insurance

LAURIE MAZUR

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From the fire-scorched hills of California to the storm-battered Florida coast, Americans struggle to obtain—or afford—insurance coverage for their homes. When disaster strikes, these homeowners face the loss of shelter, safety and their major financial asset.

This deepening crisis in homeowners' insurance is fundamentally about risk. In a world transformed by climate change, the risk of loss and damage from powerful storms, floods and wildfires is metastasizing. In 2023, estimates indicate insured losses from natural disasters topped \$100 billion globally for the sixth time since 2017. The US accounted for nearly 75% of losses through the first three quarters of the year.

To cut their own losses, insurance companies are fleeing vulnerable states, including Florida, California and Louisiana. Companies also are raising rates: Home insurance prices jumped 35% between 2021 and 2023.

"Climate change is an ongoing challenge, so those rates are not coming down," says Eleanor Kitzman, who previously served as insurance commissioner in both South Carolina and Texas and is now a resilience and insurance consultant in Austin, Texas.

That challenge has policymakers, insurers and community members searching for solutions. Many states offer public insurance through a FAIR Plan or wind pools, which provide bare-bones, high-cost coverage for homeowners who can't get a commercial policy. Some are seeing the emergence of parametric insurance, which offers fast and flexible funding in the aftermath of a disaster.

But the most promising solutions may be the simplest. Since risk is at the root of the crisis, making homes more climate-resilient could go a long way toward keeping homeowners safer—and insurable.

Keep the Roof On

Ever wonder how your home would fare in a hurricane, or a tornado? The answer may be found in a cavernous building in rural South Carolina. There, the Insurance Institute for Business & Home Safety, a nonprofit research group funded by the insurance industry, puts buildings to the test. Houses are blasted with simulated wind and rain; faux hail rains down on their roofs. In this way, IBHS has developed a set of building standards, called FORTIFIED, aimed at withstanding an increasingly unforgiving climate. (The group also has developed standards for fire resistance, called Wildfire Prepared Home.)

The difference is dramatic. An IBHS video shows a conventionally built home next to a FORTIFIED home, with both subjected to powerful winds. The conventional home folds like a house of cards, while the FORTIFIED home loses a shingle or two.

FORTIFIED building standards come in three levels. The most basic level, Fortified Roof, involves using locking nails to help keep the roof on, which is key to preventing irreversible damage. Those who want more protection can go for the silver standard by strengthening windows and doors, or choose the gold level and secure the house to its foundation.

These building practices are neither high-tech nor prohibitively expensive. For re-roofing an existing 2,000-square-foot home, costs can typically range up to \$3,000. According to Julie Shiyou-Woodard, president and CEO of the nonprofit Smart Home America, FORTI-FIED adds from 1% to 3% percent to the cost of new home construction.

"That's not going to price anyone out of a mortgage or put a builder out of business," Shiyou-Woodard says. Yet, she says, that modest investment reduces the risk of loss and displacement by 60% to 80%.

Higher Standards for All

Given the apparent advantages of a FORTIFIED home, why aren't all homes built or retrofitted to these standards? Policymakers in some hard-hit states have been asking that question and developing strategies to make resilient housing the norm. Alabama is leading the way. With an average of more than 40 tornadoes a year and 60 miles of coast along the storm-churning Gulf of Mexico, the state has long been vulnerable to climate disaster.

"Now, add in climate change," says Brian Powell, director of the Office of Risk and Resilience at the Alabama Department of Insurance. "We're seeing bigger storms, especially large hurricanes, and they are coming in more frequently now."

By 2010, Powell says, most insurance companies had stopped writing policies along the Alabama coast. "If you could find it, insurance was very expensive," he says. "So there were a lot of people who just couldn't afford to insure their properties."

The state established the Strengthen Alabama Homes program to help mitigate risk and lure insurers back. With funding from licensing fees on insurance agents, the program offers grants of up to \$10,000 to homeowners who use FORTIFIED standards to windproof their homes.

The state also has passed legislation that requires insurers to offer discounted premiums to homeowners who fortify their homes. While insurers initially balked at such a mandate, they have come to embrace it.

"It actually balances their books," Shiyou-Woodard says. "If they are writing lower-risk policies, they can stay in business."

Today, Alabama boasts 45,000 FORTIFIED homes—about 80% of the nation's total. And more states are following suit. Louisiana's Fortify Homes Program is essentially a carbon copy of the Alabama program, and Powell says similar efforts are underway in Minnesota, South Carolina, Connecticut and Kentucky. Florida has its own stringent standards for storm resistance, which are credited with saving newer homes during Hurricane Ian in 2022.

Modernizing building codes to include FORTIFIED and similar standards can go a long way toward climate-proofing homes and communities. For example, a study by IBHS and CoreLogic found that modern building codes cut the expected increase in post-hurricane mortgage delinquency rates in half. Still, these standards remain the exception, rather than the rule: In 2020, the Federal Emergency Management Agency stated that nearly two-thirds of US counties, cities and towns had not adopted modern building codes. But localities can take action, even without guidance from higher levels of government. While Alabama lacks a mandatory statewide building code, jurisdictions in the coastal counties of Mobile and Baldwin have adopted requirements based on FORTIFIED standards. Better building codes mean higher community ratings from the insurance industry—and lower rates for homeowners.

Protecting the Most Vulnerable

Still, resilient homes remain out of reach for too many people and communities. Low-income communities and communities of color are often sited in vulnerable areas, where they are hit disproportionately by climate change impacts. Too many people in these communities cannot afford homeowners' insurance, even with a discount—much less a FORTIFIED Roof.

"People have to choose: Do I pay the insurance or pay for prescriptions, food, transportation? That's the reality for so many families," Shiyou-Woodard says. "And these are the people we depend on to open the grocery store and teach our children and fight fires. God forbid they don't have insurance when a Cat 4 hurricane passes over. But if they're in a resilient home that stays safe and dry, that's a game changer for that family and for us as a nation."

The goal of resilient, affordable housing is not just a pipe dream. When Hurricane Ida passed over a nearly completed but still unoccupied FORTIFIED housing project, the development came through the storm virtually unscathed, despite catastrophic damage nearby. After repeated hurricanes, the state of Louisiana specified that multifamily, affordable housing built in affected counties with federal disaster block grant funding should be built to FORTIFIED standards.

The strategy also stretches beyond state boundaries: The Department of Housing and Urban Development, which administers block grants for disaster recovery, requires grantees to mitigate climate risks, and FORTIFIED standards are highly encouraged.

Attaching higher standards to public spending makes sense, says Michael Newman, general counsel at IBHS: "When we are building with taxpayers' money, we should only have to build once," he says.

Right now, those higher standards apply only to rebuilding after a

disaster. But they could be deployed more broadly, says Carolyn Kousky, associate vice president for economics and policy at the Environmental Defense Fund. "We need to find ways to incentivize state action through federal dollars."

Applying FORTIFIED standards to existing and new homes is "a no-brainer," Kousky says. And while the challenge of scaling it up is considerable, "the other solutions to climate risk—like relocating vulnerable communities—are even harder."

On the heels of the hottest year ever recorded, we must make our homes and communities climate resilient. As Shiyou-Woodard says, "We simply know how to do this now. We know how to build resilience. And there is enough money to do it. We just need to bring everyone to the table and get it done."

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Biden's Green Investments Aren't Just Benefiting Cities

E. Benjamin Money

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When you think of the Biden Administration's climate investments, you may imagine subsidies for Tesla drivers in affluent coastal cities. But those investments are helping Americans at all income levels, in both small towns and urban areas. One example: The Biden Administration is bringing clean, resilient solar power to federally funded health centers across the nation.

As a senior vice president at the National Association of Community Health Centers, I can vouch for the importance of this work. The 1,400 health centers comprise a vital safety net, serving patients regardless of their ability to pay. Most of the centers' 31.5 million patients are people with low incomes; many live in remote areas where other healthcare options are lacking.

Those patients are especially vulnerable when disasters or power outages shut down their local health center. And both are increasingly common: In 2023, the United States saw a record-breaking twenty-eight climate-related disasters with damages topping \$1 billion each. Extreme weather, along with chronically underfunded utility grids, has caused a dramatic increase in power outages in recent years.

During a power outage, lifesaving medicines go bad, staff can't access electronic health records, and essential medical equipment—such as x-ray machines and ventilators—shuts down. That's what happened in 2021 when Hurricane Ida knocked out power lines across Louisiana. At CrescentCare Community Health Center in New Orleans, a diesel backup generator failed, spoiling refrigerated vaccines and rendering medical equipment useless. Doctors were unable to care for patients when they needed it most. But CrescentCare is better prepared for the next natural disaster. Thanks, in part, to generous new tax credits in the Inflation Reduction Act, CrescentCare is installing solar panels with a battery backup (solar plus storage) that will keep the power flowing even when the grid goes down.

CrescentCare will soon be joined by many others. Last month, the Department of Energy announced \$57 million in funding for the CHARGE Partnership, which will install these panels at up to 175 clinics across the rural southeast—in Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

In addition to ensuring access to care in a storm-prone region, the CHARGE Partnership anticipates that solar plus storage will enable the health centers to save up to \$45 million in energy costs. The clinics will also reduce their greenhouse gas emissions—lowering the risk of future climate disasters.

We know that solar plus storage is a game changer for community health centers. In 2017, Hurricanes Irma and Maria devastated Puerto Rico, shutting down many of the island's health centers. Nearly 3,000 people died. Afterward, Direct Relief installed solar plus storage at eight community health centers. When a fire took down the island's power grid in 2022, those health centers were able to continue operating at full capacity.

In our evermore polarized nation, it's easy to lose sight of our common interests. But we all need to be able to access healthcare, especially when the power grid goes down. The Biden Administration's investments in clean, resilient solar energy are not just for the privileged few. They could be keeping the lights on at a clinic near you.

Section III

Resilient, Equitable Systems: Energy, Water, Health, Food

Milwaukee Is Showing How Urban Gardening Can Heal a City

LAURIE MAZUR

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It's a chilly spring morning in Milwaukee; rain falls softly from a pigeon-gray sky. Yet here, in a parking lot in a rundown section of town, a couple dozen volunteers have assembled for the Victory Garden Initiative's (VGI) ninth-annual "Blitz." They will spend this soggy Saturday building raised-bed gardens in yards across town—from the suburbs to the urban core. Over the course of the two-week event, they will prepare more than 500 beds, adding to the 3,000 gardens VGI has already installed throughout the city.

A few weekends later on the north side of town, more than 100 people gather for movie night in Alice's Garden, a public urban farm. Picnickers spread out on a grassy area, surrounded by fragrant herbs and neat raised beds, while a group of girls dance to Lil Jon's "Turn Down for What." As the moon rises, they will snuggle up on blankets to watch *Moana* on a portable screen.

This is what community gardening looks like in Milwaukee, a Rust Belt city that has become a hive of urban agriculture over the last few decades.

In addition to a multitude of backyard plots, this city of nearly 600,000 residents boasts 177 community gardens, 30 farms, and 26 farmers' markets—more, per capita, than any other American city. Thanks to city council legislation, residents can sell produce they grow in their home gardens at farm stands and markets and are allowed to keep chickens and bees in their yards. Concurrently, a half-dozen "farm-to-table" restaurants have sprung up in the last decade.

Milwaukee's vibrant food culture is a bright spot in a city that's working hard to reinvent itself. Like much of the industrial Midwest, Milwaukee has been hemorrhaging manufacturing jobs since the 1960s. Almost 30 percent of the city's population lives in poverty—twice the rate for the nation as a whole.

Racial tensions are palpable here as well. As the most segregated metropolitan region in the country, Milwaukee is statistically one of the worst places for African-Americans to live. Last summer, after a police officer shot Sylville Smith, a 23-year-old Black man, during a traffic stop, the city was convulsed by the worst racial unrest in 50 years.

Despite the city's difficulties, a number of factors have positioned Milwaukee to become a pioneer in urban gardening. First is its location in a farm state with several colleges of agriculture and public health and an active cooperative extension system, which started promoting urban agriculture back in the 1960s—before it was cool. Second, there's its surplus of vacant lots, remnants of the Great Recession, often used as growing spaces.

Additionally, Milwaukee is home to several urban agriculture champions. Tom Barrett, who has served as Mayor since 2004, supports all things green and sustainable. And urban agriculture icon Will Allen, founder of Growing Power, also looms large in this city's food movement. Allen showed it is possible to produce astounding quantities of food year-round in unpromising urban environments, winning a MacArthur "genius award" in 2008 and making *TIME*'s list of 100 Most Influential People in 2010. He now trains gardeners across the country and the world.

While some of Milwaukee's active urban gardeners have been at it for decades, following traditions passed down through the generations, others—fed up with what they see as a broken food system—have turned to the soil more recently.

Despite their varied backgrounds and histories, Milwaukee's gardeners share many goals, both practical and profound: They want to feed their families healthful, nutritious, affordable food; they want to reconnect with the land, with their history, with one another; and others even hope to heal divisions that have plagued Milwaukee—and our nation as a whole. Is urban gardening the key to making that possible?

Garden Leaders on a Mission

Named for the gardens Americans planted during the first and second World Wars to free up resources for the war effort, the Victory Garden Initiative has come a long way from its ragtag start.

Today, with a staff of five and dozens of loyal volunteers, the group makes backyard gardening accessible to virtually anyone in Milwaukee. For a small fee—as little as \$20 for low-income residents—VGI will build a raised bed, fill it with soil, and follow up with seeds and gardening lessons. VGI also maintains a 1.5-acre urban farm, trains food leaders and young gardeners, and plants fruit and nut trees throughout the city.

Dressed in a flannel shirt and ripped jeans, her long gray-blond hair pulled into a messy bun, executive director Gretchen Mead has a clear vision of what "victory" means today: She wants to see communities grow their own food, creating a socially just, environmentally sustainable, nutritious food system for all.

Venice Williams, executive director of Alice's Garden, which hosted the movie night, also believes in the transformative power of gardening, though she bristles at the idea of the garden project as part of the "food movement."

"It's not a 'movement," said Williams, a Pittsburgh native of African-American and Choctaw descent who speaks with the cadences of a preacher (she is, in fact, a Lutheran minister). "There's nothing I'm doing that my family hasn't done for generations. That's true for so many in my world, who have kept gardening in backyards, front yards, driveways—a hosta here, a collard there—but without the recognition or the paychecks or the grants."

Inside Alice's Garden gates, there are 122 irrigated garden plots that can be rented for \$15 to \$50 a year. There are also yoga classes, movie nights, reading circles, a jobs program for teens, and an annual women's full-moon retreat.

On any given summer day, Alice's Garden hosts visitors with varied backgrounds and purposes: Laotian immigrants tend their cabbages and chilies, adults with alcoholic parents share their stories in a circle, the elderly son of Mississippi sharecroppers passes down ancestral wisdom to "herbal apprentices." "We use the garden as the carrot—pun intended—to get people to come through the gates, and impact their quality of life," Williams said. "Do we need to come back to healthier living across the board to address our isolation, our brokenness? Yes. Can community agriculture help? Without a doubt."

Many Reasons to Till the Soil

Milwaukee's urban gardeners are indeed a diverse lot, as are their motivations.

For some, it's simply about the food. "It just tastes better than the stuff you get at the grocery store that's traveled 2,500 miles," said one VGI volunteer, a self-described conservative.

Gardening is a viable option for those who want to eat organic food but can't afford to shop at Whole Foods. "It's good to actually know that there's no pesticides on it, that it's fresh and real," said Judy, a recipient of a raised-bed VGI garden in her yard.

Additionally, gardening gets people off the couch and out of the house. "Most of us go from our house boxes to our car boxes, and we just don't go outside," said Lyness Barnette, a volunteer at VGI's urban farm.

For Sid Singh, a doctor in a local hospital volunteering during VGI's Blitz, gardening conjures memories of his childhood in India, where his family maintained a small kitchen garden. "I would pick vegetables right off the plant and eat them," he recalled.

Growing traditional foods can root members of Milwaukee's growing refugee community in their new home. "Refugees come here and they are totally out of their element," said VGI's Mead, who has recently helped install garden beds for refugees from Syria. "They only get support for a short time. A lot of them come from farming backgrounds, so gardening can help them feel at home. It's a way to help them succeed."

Tim McCollow, program manager of Home Gr/own Milwaukee (also known as "the Mayor's food guy"), ticks off well-documented benefits of healthy, green spaces: stabilizing crime, raising property values, helping people eat better. And gardens can cement community.

"They help folks on the block get to know each other, care about each other, watch out for each other," said McCollow. "It brings the generations together, with grandparents teaching kids how to garden." Raising the next generation of gardeners (and eaters) is also important to Antoine Carter of Groundwork Milwaukee, which has helped build 95 gardens and orchards throughout the city. Instead of hiring contractors, Groundwork employs neighborhood youth. It's an opportunity to instill habits that can last a lifetime, says Carter. Some of the kids Carter has mentored have gone on to work on food and environmental issues. "But I'm just happy if they eat better, appreciate greens, and shop at farmers' markets," Carter said.

Scaling Up Urban Agriculture Efforts

None of these benefits are easy to measure. It's hard to say whether gardening makes a dent in Milwaukee's level of food insecurity or a substantial improvement in public health. McCollow said the city and others involved in local food production—"are too busy doing to measure."

But one could measure success by the growth of the Milwaukee Food Council, an umbrella organization for local food groups, whose membership grew from 20 to more than 60 over the last few years.

And in surveys, more than half of VGI gardeners say their backyard gardens supply 25 percent of their fruits and vegetables. "Here's what we can say for sure, more people in Milwaukee are growing their own food," said Mead.

Still, it's likely that backyard and community gardens account for a small fraction of the food people eat—even in a local food mecca like Milwaukee. Many wonder if there's a way to grow that percentage.

Tim McCollow is working to scale up hyper-local, homegrown food to offer an alternative to the industrial food complex, in part by removing the hurdles gardeners face. In partnership with Groundwork, McCollow's program makes it easy for would-be community gardeners to acquire land. The city is helping install rainwater storage systems and is looking into fitting the area's abandoned warehouses and industrial sites with grow lights to enable year-round production.

Will Allen of Growing Power also supports scaling up urban agriculture. Rather than tinkering at the edges of industrial food, he wants to remake the whole system.

"This is not a movement anymore. It's a revolution," he said. To that

end, Growing Power has pushed the envelope of intensive agriculture. At its peak, its 20 farm sites in Milwaukee and Chicago have produced more than 1 million pounds of food a year on just 300 acres. Allen has made it a priority to bring that bountiful harvest to the most underserved areas—low-income communities of color where liquor stores are plentiful and supermarkets few.

Allen's vision of a thriving local food sector has fired up a new generation of food and gardening entrepreneurs—people like Damian Coleman, CEO of ELYVE Organics, a company that composts food waste from stores and restaurants and sells the final product through garden centers and nonprofit groups.

For Coleman, local food is more than a business opportunity: it's part of his vision of an economically thriving, recession-proof African-American community. "If you grow your own food, there's no grocery bill," he said. "If you have solar panels on your roof, there's no electric bill. It's up to people in the community to realize that vision. We can't wait for someone to come in to the neighborhood and say, 'This is what you need.""

Embodying and Transcending Tensions

Big and small, nonprofit and for-profit, Milwaukee's urban gardeners have created something larger than the sum of their parts. "It may seem like the groups are disjointed, working on their own thing," said Antoine Carter of Groundwork Milwaukee. "But we support each other."

Milwaukee's racial and class tensions are—perhaps inevitably—present within the city's community of gardeners. "There are 'haves' and 'have-nots' who value healthy local food," said Carter. "But the haves will always look a certain way at the have-nots."

"Racial tensions are so high that everything you do—or don't do—is looked at through a racial lens," added Mead of VGI.

While Milwaukee's urban gardeners embody those tensions, they also, on occasion, transcend them. Working together, or just hanging out, the crowd at Alice's Garden spans the rainbow of humanity.

"There are people who would never have met one another if they hadn't come through the gates of this garden," said Venice Williams. "I've always thought that if the world outside these gates was more like inside, this city would be a different place."

Outside those gates, we're still a long way from a just and sustainable world. Given that reality, community gardening, on its own, can't make us whole. But, as Williams observes, "When you cultivate community along with food, any context can be transformed."

Energy Democracy: People Power for a Cleaner Planet

Denise Fairchild

Originally published January 11, 2018 in Colorlines

There's a power grab under way in Washington—a reverse Robin Hood strategy that transfers resources from working people to corporations and the 1 percent. It's also reversing the global movement to replace dirty energy with renewables, in spite of the health and environmental impacts. Beneficiaries include the fossil fuel industry and multinational enterprises.

Energy democracy is a strategy to take some of those resources back, by putting power—literally—in the hands of the people. It has potentially game-changing benefits for low-income people and communities of color. To understand the promise of energy democracy, we need to consider the problems with our current systems of power, both the political variety and the kind that recharges your iPhone. (Spoiler: they are very closely connected.)

Today, our lives and economy are powered by fossil fuels: coal, oil, and gas. There are some notable downsides to this arrangement. First, burning fossil fuel pollutes our air and water, while wrapping Earth's atmosphere in a blanket of heat-trapping carbon dioxide that is rapidly changing the climate. As a result, we are suffering ever-more deadly heat waves, crop failures, supercharged storms and catastrophic wildfires.

While no one can completely escape the effects of climate change, it won't surprise you to learn that low-income people and people of color take the brunt of it. Those communities are least able to afford the rising price of food and other necessities, often lack access to health services, live in neighborhoods that are most vulnerable to floods and heat waves, and lack financial resources to bounce back after disasters. For example, according to a recent study by the NAACP, low-income, African-American women suffered the highest rates of injury and
mortality in Hurricane Katrina. And because power plants and refineries are more likely to be sited in low-income communities of color, those communities have much higher rates of asthma, cancer and premature death.

At the same time, our fossil-fuel powered energy system has insidious effects on democracy and civic life. That massive, centralized system produces huge profits for the handful of corporations that control it. And, as wealth is increasingly concentrated in the hands of the few, their political power has grown. (Consider, for example, the outsized influence of the Koch brothers.) The concentration of power, literal and otherwise, distorts public priorities and undermines democracy. That's why the Trump Administration chose to withdraw the United States from the Paris Climate Accord, though seven out of 10 Americans wanted to stay in. It also explains the astonishing \$5.3 trillion in subsidies and other benefits that the world's governments bestow upon the oil industry every year. In the US alone, fossil fuel production receives \$20 billion in subsidies each year.

So what's the answer? A rapid transition to solar, wind and other clean-energy technologies is one part. But renewables alone can't address the corrosive concentration of power in our society. Instead, we need an energy democracy movement that wrests control and ownership out of the hands of corporate interests, reclaiming it as a vital resource for advancing the environmental, economic and social-justice needs of our communities.

That movement is already under way. It seeks to bring energy resources under public or community control. It confronts the racial and other injustices at the heart of our current energy system, and prioritizes the needs and concerns of working families and communities of color in the struggle to define a new energy future.

While no community has energy democracy completely figured out, there are works in progress across the country that give us a glimpse of what's possible. In Mississippi, for example, a group called One Voice is fighting to restore democratic control of the state's rural electric cooperatives. During the Great Depression, those co-ops were founded to bring electricity to the state's poorest, returning profits to their ratepayer members. But over the generations, electric cooperatives came instead to resemble their profit-making counterparts. Most enjoy monopolies in their service areas and are heavily reliant on coal power. Co-op members—who are entitled to influence policy by voting for the board of directors—are not engaged in the planning, design and decision-making processes.

Perhaps as a result, Mississippi's 26 electric co-ops sit on assets of \$5.2 billion, while their impoverished, largely African-American customers pay as much as 42 percent of their income on electricity. And only 6 percent of the co-ops' board members are Black, in a state that is 37 percent Black. To tackle these problems, One Voice is educating ratepayers about the rights and responsibilities of board members, the structure of co-ops, and the changing dynamics of the energy sector. Importantly, it offers guidance on how to effectively engage in membership meetings and cultivates community leaders to serve on co-op boards.

And there's more. From Oakland, California to New York State, local and state governments are experimenting with "Community Choice" programs that could ideally give communities control over where their electricity comes from and how their ratepayer dollars are spent. In the South Bronx, a public housing resident council called Mothers on the Move is leveraging the New York City Housing Authority's investments in energy efficiency to conduct education and training in energy conservation and careers. And, across the Northeastern US a consumer-owned energy cooperative called Co-op Power is nurturing community-owned energy enterprises, including a biodiesel plant in Greenfield, Massachusetts, that produces fuel from recycled cooking oil, an energy-efficiency company called Energia in western Massachusetts that trains and employs young people of color, and a community-based solar development company, Resonant Energy, that uses innovative financing strategies to bring rooftop solar to low-income households in Boston.

These energy democracy initiatives are as diverse as the communities that launched them, but they have some things in common. They all go beyond simple "techno-fixes" to address power dynamics. And fundamentally, they recognize that energy—both fossil fuels and renewables—is not simply a commodity to be bought and sold; it is part of the commons—a precious global resource that must be respected, conserved and equitably shared. That recognition poses a direct threat to the 1 percenters who now control our energy and political power. We should not expect them to give it up without a fight. (Neither did the slave-owners who enjoyed a similar lock on power in the antebellum South.) Energy democracy is a powerful way to fight back, by empowering people and communities to build a society worth living in.

We Must Fix the Broken Water Cycle Before It Dooms Civilization—Again

Sandra Postel

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Managing water—making sure there's enough while keeping inundation at bay—is a central function of civilization. History is littered with impressive cultures that didn't get it right, sealing their doom—from the Sumerians of ancient Mesopotamia to the Hohokam of the American Southwest.

It might seem that such lessons don't apply to modern-day Americans, with our reservoirs and dams and water treatment plants. Certainly, our water-management systems are a marvel. They re-route rivers and make the desert bloom; they enable most of us to shower, flush, eat, and drink while barely giving water a thought.

But, increasingly, these systems are failing to deliver. Just ask farmers in the western United States whose wells have run dry. Or fishermen whose livelihoods depend on coastal waters degraded by toxic algal blooms. Or ask refugees from recent floods in Puerto Rico or Texas.

The massive water systems that undergird our civilization involve a Faustian bargain: They allow us to control water to suit our needs, but in doing so they break the water cycle—the natural storage, cleansing, and flow of water in healthy forests, rivers, soils, wetlands, and aquifers. Dams and reservoirs store water so we can use it when needed, but they also block fish migrations, destroy habitats, and trap sediment that replenishes deltas, which then leaves coastal residents vulnerable to storms and flooding. The draining of wetlands has opened up vast areas for crop production, but has left rivers and streams vulnerable to pollution that creates massive "dead zones" in coastal areas. Large-scale pumping of groundwater has led to a boom in agricultural production, but is now rapidly depleting aquifers that have stored water for thousands of years. And our water challenges are only getting harder. The changing climate has thrown hydrologic cycles out of whack, making it difficult to ensure continuous supply and protect against floods. It's little wonder that in 2016 the World Economic Forum declared water crises to be the top global threat to society over the next decade.

So what do we do? One lesson is key: We can't keep doing what we've always done and expect a different result. More and more, water security is going to depend on working with nature, rather than against it.

Take the risks to our drinking water from wildfires and the land erosion and flooding that often follow them. Fire is essential to a healthy forest, but during much of the twentieth century, foresters snuffed fires out quickly to protect timber resources and nearby communities. As a result, many forests have become dense and overgrown, so when fires do break out they burn hotter and faster, especially in times of drought. On average, fires in the United States now consume twice as much area per year as three decades ago.

In the western US, where about two-thirds of the water supply comes from forested land, that trend spells trouble. In New Mexico, where the three biggest wildfires in the state's recorded history have occurred since 2000, The Nature Conservancy spearheaded the Rio Grande Water Fund to restore the watershed and protect downstream drinking water supplies. To date, the fund has acquired \$33.6 million in public and private contributions and restored some 70,000 acres of watershed lands.

Pioneering cities are also turning to nature to mitigate urban flooding. As metropolises from Houston, Texas, to Copenhagen, Denmark, have seen, intense storms can overwhelm drainage systems, flood streets and homes, and rack up damages in the tens or hundreds of billions of dollars. With rising temperatures boosting storm intensity, urban flooding is bound to worsen.

In response, urban designers are mimicking nature and encouraging rain to do what it did before concrete and asphalt covered the landscape: Soak into the earth, replenish groundwater, and flow gradually back to rivers and streams. After experiencing two 100-year floods within six years, Copenhagen decided that instead of upgrading its drainage pipes and other "gray" infrastructure, it would strategically expand and redesign parks and other public spaces to capture and store more rainwater. Overall, the city's \$1.3 billion investment in such "green infrastructure" is estimated to cost half as much as a more conventional gray-infrastructure approach, while beautifying the city.

One of the biggest threats to water security is literally out of sight and out of mind: The depletion of groundwater. Farmers are draining aquifers in many of the world's most productive food-producing regions, from the north plain of China to the Central Valley of California. Just as a bank account shrinks when withdrawals exceed deposits, so does a groundwater account. Today at least 10% of the world's food depends on the unsustainable use of groundwater. In effect we are consuming tomorrow's water to grow today's food, which begs the question: What about tomorrow?

One answer comes from California, where a new law and severe drought have compelled innovation. Farmers are partnering with scientists and conservationists to recharge groundwater by inundating farm fields with wintertime floodwater, which then seeps through the soil to the aquifer below. Such groundwater recharge could slow depletion in the eastern San Joaquin Valley by 12-20%. Moreover, it could expand water storage for dramatically less than the cost of a proposed dam on the upper San Joaquin River.

Another neglected water source can be found right below our feet. The world's soils can hold eight times more water than all rivers combined, yet agricultural practices deplete soils, causing that critical water reservoir to shrink. But this can be fixed by rebuilding soil health. By eliminating tillage and planting cover crops, farmers can build the soil's carbon content and enable it to store more water. Even a one percentage-point increase in soil organic carbon can increase water-holding capacity by some 18,000 gallons per acre. Yet farmers plant cover crops on less than 3% of US farmland and practice conservation agriculture on only about 7% of cropland worldwide.

Scaling up those practices could slow climate change by keeping more carbon in the soil, while curbing the nitrogen and phosphorus pollution that fuels algal growth and the creation of low-oxygen "dead zones" in lakes and estuaries around the world. Even a modest shift in taxpayer-funded farm subsidies could help spread these practices.

Perhaps the most visible sign of our broken water cycle is when rivers, diverted for agriculture, simply dry up. But here, too, innovative collaborations are getting rivers flowing again. In the Verde Valley of Arizona, conservationists and farmers have partnered to modernize nineteenth-century ditch systems, testing new approaches that enable irrigators to take only the water they need while leaving the rest for the river. In places, the Verde—a lifeline for birds and wildlife in the American Southwest—now has twice the summertime flow it had before.

The benefits of such smarter water management ripple out: farmers get an upgraded irrigation system; birds and wildlife get critical habitat; residents and visitors get more boating and recreational opportunities; and local businesses get more revenue. This is good business as well as good stewardship: In the Colorado River Basin, of which the Verde is a part, economic activity that generates some \$25.6 billion a year depends on water staying *in* rivers rather than taking it out of them.

We can choose to fix our broken water cycle. To be sure, it will take more investment, incentives, and shifts in policy to transform our relationship with water from one of command-and-control to a working partnership. But the payoffs will be big and enduring, as this style of water management restores rather than degrades the natural world.

If the 20th century was the age of dams, diversions, and depletion, the 21st can be the age of replenishment, the time when we apply our ingenuity to living in balance with nature and building resilience to the climatic changes under way. In so doing, we might avoid the fate of the Sumerians and Hohokam—and leave a healthy water cycle for future generations.

A Public School That Not Only Keeps Children Safe, but Heals

Suzanne Bohan

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A fter the mass shooting at a high school in Parkland, Florida earlier this year, schools are at the epicenter of national debates on gun violence and mental health. How can teachers and administrators deal with troubled students? And how can they make schools safer for all?

It's not the first time that schools have been asked to address social problems that originate far outside their hallways. In a nation where more than 40 percent of kids are from low-income families, school teachers and staff regularly cope with problems far larger than algebra equations. Too often, their students are hungry, in need of medical care, traumatized by domestic violence, fearful of gangs, and living with perilous housing security or homelessness. Distressed kids act out their troubles in school, and overworked teachers often double as social workers.

Now, post-Parkland, some have called on us to "harden" our schools. President Trump and others have advocated arming teachers and recruiting former police and military personnel for school duty. The National Rifle Association is promoting its plan to re-envision schools as windowless bunkers surrounded by impenetrable fencing.

But it is not necessary to model our schools after prisons. There are ways to create safe, nurturing schools where kids can learn, even in the face of extreme poverty and social challenges. Just ask Godwin Higa, the former principal of Cherokee Point Elementary School in the City Heights neighborhood of San Diego.

Under Higa's leadership, in 2015 Cherokee Point officially became a "trauma-informed school"—a model that proved so successful, the San Diego school board expanded it districtwide. The elementary school is now a place where everyone from the principal to the school custodian seeks to understand and heal the difficult experiences that cause kids to act out. It's an approach that calls for revised disciplinary practices, social-emotional instruction, school-wide training about trauma, strong parental engagement, and intensive individual support where needed, as well as partnerships with community organizations to support these efforts.

Those partnerships, in fact, were crucial to the endeavor's extraordinary outcome, which wouldn't have been possible without support from local nonprofits. The success in San Diego in codifying a culture of care on K-12 campuses affirms the growing call in the civic sector for nonprofits to explore more partnerships with school districts to leverage resources and launch programs with staying power.

Trauma-informed schools were inspired by the *American Journal* of *Preventative Medicine*'s groundbreaking 1998 Adverse Childhood Experiences (ACE) Study, which found devastating long-term effects from traumatic experiences such as abuse, neglect, and close encounters with substance abuse and domestic violence. The ACE Study and subsequent research found that the toxic stress of childhood trauma can actually damage the structure and function of a child's brain. In this way, trauma can contribute to a range of problems, from poor school performance to violence, risky behavior, and early death.

Such trauma is distressingly common. The National Survey of Children's Exposure to Violence reports that nearly 60 percent of American schoolchildren have been exposed to violence in the past year, with more than one in ten reporting five or more exposures.

Many of the nearly 600 students at Cherokee Point have experienced trauma in the form of strife at home, fear of their parents being deported, and neighborhood violence and crime. But this K-5 school is an oasis of calm—and not because the perpetrators of misbehavior have been banished.

When a student at Cherokee Point acts out, punishment is not the first response. An administrator or teacher will likely ask, "What happened to you?"—not "What's wrong with you?" As Higa explains, "When you ask, 'What's wrong with you?' it's totally negative right away, versus 'What's happening to you, you don't seem right.' As soon as we say that, the kids look at you like 'How did you know that I'm feeling down today?" When they're done talking, usually the child feels better and returns to class, the disruptive behavior occurs less often and generally fades away after a few more talks, and a trusting bond is formed, he said.

Higa, who has a kindly smile, warm eyes, and close-cut black hair turning gray, said his own difficult childhood animated his compassion for children dealing with adversity. Even though he was just two years old, he still distinctly remembers a dish thrown against a wall in anger the same year his parents divorced. He grew up in Hawaii, on his grandfather's hog farm on Oahu, and money was always scarce. His father left his life after the divorce, and his mother died when he was sixteen.

Those early experiences informed Higa's approach as an educator. Even before he heard about trauma-informed schools, Higa made a commitment to educating the "whole child"—understanding students' social and emotional worlds in addition to their academic needs, and substituting empathy for harsh discipline.

When Higa joined Cherokee Point as principal in 2008, stacks of discipline referrals from teachers and other staff awaited him. Under the traditional system, those often led to detention, suspension, or even expulsion. That first year, he suspended seven students, not too high a number, but more than he was comfortable with. So, over the objections of some teachers, Higa took a new approach to discipline. Rather than being sent home, a student who acted out might be asked to sit out recess and contemplate misbehavior. Higa also instituted a restorative justice approach, in which any child causing harm to another acknowledges it and makes amends.

For example, a teacher called Higa to a classroom after a girl began throwing chairs. He surveyed the chaos and then assured the girl that although the classroom was a mess, it could be cleaned up. What was important, he told her, was that he wanted to know what was going on with her. He left the classroom with the agitated student and took a walk with her around the campus while she described what was distressing her. Higa said he told her he understood that people have bad days and asked her to think about it before she did something like that again and contact him if she felt she might. He explained, "If you feel you're going to get angry, just tell the teacher, 'Can I go see Mr. Higa?' And so we worked out a plan. Within a week, she said, 'You know, I'm not going to do that anymore." And she didn't, Higa said.

Early in his tenure at Cherokee Point, Higa realized that hunger might account for some student misconduct. He arranged a free breakfast for every child—in a school where 100 percent of the children qualify for free and reduced-price meals because of their household income. Student behavior quickly improved, staff noticed. He also turned the elementary school into a community school, developing partnerships between the school and local nonprofits, which created an array of new services on campus to benefit not only students and parents, but also the neighborhood. In 2010, for example, a local food bank needed a distribution center, and he offered his school site. "So I have 4,000 pounds of fruits and vegetables come every other week. Parents come and pick up their food, no judgments."

In 2011, Higa received a call from a "Peace Promotion Momentum Team," affiliated with The California Endowment's Building Healthy Communities (BHC) campaign. The team shared his whole-child philosophy and offered powerful new support to help make his vision a reality. They asked Higa if he was interested in implementing a restorative justice and wellness program on his campus-goals that perfectly fit his own-with grant funding from the BHC campaign. "So I said, 'Of course," Higa said. The \$684,000 grant launched the Wellness and Restorative Practice Partnership, run in consultation with several San Diego State University professors. Among the partnership's aims: increase on-campus and in-home health care services for students and their parents; develop youth leadership to drive change on campus and in the community; create a positive climate that prevents conflicts; and-critically-train campus staff, from teachers to custodians, as well as parents and students, in restorative practices, which entail repairing harm while building relationships.

With the influx of new resources in both funding and personnel, a transformation took hold. Medical professionals now give every student a dental, eye, and physical exam, and free counseling is available for any parent or student who requests it. Along with Higa's already compassionate approach, the restorative practices training reinforced a culture of respect between students and staff, creating an all-important sense of safety for students. Higa remembers a few years ago overhearing a

kitchen staff worker "screaming and yelling at the kids." He said, "You are not going to speak to kids this way. If you continue to do this, I'm going to have to go to the next step. And I want to help you. Do you have issues at home? Whatever is making you this way, I want to help you."

The results have been dramatic. A few years after implementing the new approach, suspensions at Cherokee Point fell to zero, and there have been none since then. Given the calm pervading the campus, Higa stopped staffing a campus police officer in 2015. "All he did was stand around," Higa recalled. The officer once told him, "I have more problems with adults coming in the wrong way in the parking lot than kids." The school police chief pulled the officer and told Higa to call if they were needed. They have not been called since.

The same trauma-informed approach now practiced at Cherokee Point is being adopted in schools across the US. The state of Washington has implemented a Compassionate Schools Initiative; Massachusetts created a Flexible Framework for Helping Traumatized Students Learn program, which arose from a sustained campaign by the Massachusetts Advocates for Children for trauma-sensitive approaches at schools. Several state departments of education now provide resources to address trauma, including Illinois, Wisconsin, and Massachusetts. In Idaho, 75 percent of school districts have sent staff to attend Idaho State University's mental health training program, which includes trauma education. The Menominee Indian School District in Wisconsin has embraced trauma-informed schools and practices throughout its community. And in Washington, DC, where one in four children lives in poverty-half in some neighborhoods-the Children's Law Center has successfully advocated for additional trauma training for several hundred educators.

Like Cherokee Point, other trauma-informed schools are seeing dramatic improvements. Lincoln High School in Walla Walla, Washington (which was profiled in the documentary *Paper Tigers*) saw an 85 percent reduction in suspensions after adopting a trauma-informed approach.

In the wake of the Parkland shooting—and other eruptions of violence that afflict schools and communities—Cherokee Point and other trauma-informed schools offer a powerful model of an effective alternative approach with lasting benefits. A large number of education

experts agree that hardening our schools will not end violence on school campuses. Instead, they urge school administrators to adopt a public-health approach, and to treat traumatized or troubled children with compassion and care to foster healing and cultivate healthy school climates—and to welcome community partners in supporting that work.

A 2016 article in *The Atlantic*, "Fixing Schools Outside of Schools," describes how more school districts are turning to nonprofits and foundations to form partnerships in order to offer a wider array of student supports, with the growing realization that schools thrive with this teamwork. These partnerships also give school districts latitude to innovate and try new approaches. The article, however, notes how little of educational philanthropic dollars actually trickle down to the K-12 level, with most going to higher education.

The Center for American Progress prepared a report on cultivating these kinds of collaborative efforts, called *Achieving Results through Community School Partnerships*. Schools that partner with nonprofit organizations outperformed those who don't in state tests, as well as in graduation and dropout rates, the report stated. As one school superintendent was quoted as saying, "Quite frankly, we can't resolve [school] issues in isolation. It takes a community effort."

The report offers ample advice on establishing and maintaining such partnerships, including ensuring that all partners develop a common vision and agreed-upon mechanism for mutual accountability, and that all parties cultivate open, candid dialogue about challenges and solutions.

Noemi Villegas, Ed.D., an instructional support officer with the San Diego Unified School District who is involved in implementing the districtwide trauma-informed training, also said it's critical for potential partners to understand the structure of a school district and the various populations of students served, and to keep an open mind as to what's needed. Sometimes, she said, a community organization arrives with offers for services the district already has, but the schools could use support on other fronts.

"So we can bring the experiential knowledge that we have from inside the district," Villegas said. Partners can then work with them to rethink strategies, and "align and maximize resources," she added.

How Farmers Can Survive Tariffs: Diversify

Gary Paul Nabhan

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In America's farm country, the fear is palpable. In recent months, I've talked to dairy farm owners in Wisconsin, grain and soy farmers in the Dakotas, and stockmen in California who worry that President Donald Trump's tariff wars will trigger a new farm crisis. Many predict hard times to rival the epidemic of bankruptcies that devastated American farms in the 1980s.

The tariffs aren't helping, it's true. But Trump's trade dispute is just the latest factor in a longer-term decline in farm income. Other pressures have been wearing down farmers' reserves of capital, soil and patience for years. There's the rising cost of energy, water, and agrichemicals, for example, and a rash of climate disasters.

Yet the roots of the problem go even deeper—to the massive monocultures that dominate the American heartland.

Much of our nation's agricultural land is devoted to two crops: corn and soybeans. Those endless fields of corn and soy are a marvel of modern agribusiness, but they are vulnerable to the vicissitudes of markets and Mother Nature. Think of it as a stock portfolio invested in just two companies.

When the prices of those crops fall on the global commodity markets, farmers take a big hit. The price of soybeans has fallen by more than half since 2012, from about \$17 to \$8 per bushel. Taxpayers are also on the hook: soy farmers will receive \$3.6 billion—76 percent—of the \$4.7 billion allocated for Trump's farm bailout so far.

To sidestep a crisis of epic proportions, policymakers need to refrain from trying to prop up the status quo with more price supports and emergency relief. Instead, we should invest in a new model of agriculture: diversified farms that supply grains, dairy, meats, and other produce to a variety of markets.

The good news is that this new model already exists. Today, innovative producers are working at several different scales of vegetable, fruit, and meat production. They have found ways to reduce inputs, land debt and delivery costs to bring their direct-marketed foods to consumers for less than conventional farmers can do.

By 2015, 167,000 US farms and ranches were direct-marketing fresh and value-added foods in their home regions. Those family-owned operations produce nearly \$9 billion worth of diverse crops each year. And they are proving economically resilient: As USDA economist Nigel Key has found, "Farms that market directly to consumers through farmstands, farmers markets or CSAs (community-supported agriculture) have higher business survival rates."

How do they do it? Their operations typically have a more favorable asset-to-debt ratio because they purchase less machinery, use fewer costly agrichemicals, and have lower interest payments.

Importantly, these farmers are focused on meeting the needs of their rural neighbors and nearby urban "green market" consumers, rather than on the distant—and fickle—foreign markets now involved in the tariff wars. They retail their fresh and value-added foods through more than 8,700 farmers markets and 7,400 CSAs across the US, returning more than three times their revenues in multiplier effects that ripple through and enrich their own communities.

In the last two decades, the number of farmers' markets in the United States has grown nearly five-fold. What's more, these farmers are building alliances with each other through marketing co-ops and with consumers in nearby metro areas in ways that can heal the rural-urban divide.

Even if the tariff wars pass, American farmers remain vulnerable. Doubling down on commodity monocultures won't help. To prevent the next crisis, we must nurture a new kind of agriculture: diversified farms that serve the needs of farmers and consumers alike.

Build a Border Wall? Here's an Idea That's Better for Communities and the Climate

GARY PAUL NABHAN

Originally published February 20, 2019 in The Revelator

President Trump has declared a national emergency to fund a wall along our nation's southern border. The border wall issue has bitterly divided people across the United States, becoming a vivid symbol of political deadlock.

But for many of us who actually live along the US-Mexico border, the wall is simply beside the point. We know that a wall can't fix the problems that straddle the boundary between our nations; nor will it build on our shared strengths. So a group of us—ranchers, farmers, conservationists, chefs, carpenters, small business owners and public-health professionals from both sides of the border—have come up with a better idea. We call it the Mesquite Manifesto.

Our plan would tackle the root causes of problems that affect border communities on both sides. While the media have fixated on the difficult conditions in Mexico (and other Central American nations) that propel immigrants northward, there are real problems on the US side too. The poverty rate in this region is twice as high as for the nation as a whole, and joblessness drives many into the lucrative drug trade. Poor diets and inadequate healthcare contribute to high rates of disease: Nearly one-third of those who live along the border suffer from diabetes. And a rapidly growing population, along with rising demand from industry and agriculture, is stressing the region's limited water supply—a problem made worse by the changing climate.

To address these problems and build a sustainable future for the region as a whole, we look to mesquite, the iconic native tree that grows in every county and *municipio* along the border. Its gnarly branches have provided food, fuel, medicine, shade and shelter to Indigenous communities in the borderlands for more than eight millennia.

Deep-rooted mesquite trees such as velvet mesquite (*Prosopis* velutina) and honey mesquite (*Prosopis glandulosa*) are remarkably drought-resistant, anchoring the arid desert land and fixing nitrogen to improve the soil. Their seeds contain more protein than soybeans and can be milled to make flour with a low glycemic index, which helps regulate blood sugar.

It's no wonder that mesquite long sustained Indigenous communities in this fragile land. What *is* remarkable is that mesquite is seen as a nuisance tree by many who live here now. Indeed there's scientific consensus that mesquites are among the most "under-managed" resources on our continent, though they cover nearly 200 million acres of arid and semi-arid lands in Mexico and the United States.

We believe that targeted investments in restoring and managing mesquite could become—dollar for dollar and peso for peso—the most cost-effective investment ever made in the future of arid America.

- Mesquite-pod flour, which is now used in baking, brewing and in the preparation of low-glycemic food products, sells in many states for \$22-24 per pound;
- Sustainably harvested hardwoods that are of stunning color, texture, shape and durability. Mesquite wood can be sold for \$5-10 per board foot, to be used by furniture makers, floor designers, guitar-makers and builders;
- Fuelwood that is already valued at \$200-400 million per year by the "mesquite barbecue" industry, which now uses trees selectively harvested from rangelands in the US Southwest;
- Mesquite honey, which is already a multimillion-dollar industry in most states along the border;
- Other products with emerging markets, including biofuels, biochar, culinary and medicinal gums, and mesquite-smoked beer, coffee and whiskey.

We propose the establishment of capacity-building centers to develop mesquite-based industries in every watershed crossing the border. These centers could provide bilingual training in a variety of skills related to arid lands agro-forestry and sustainable forest-product development. Schools and churches that have been closed down in impoverished rural areas and border cities could be renovated by local construction workers and repurposed as training centers for a binational "Green New Deal" effort.

There are many bilingual teachers, researchers, craftsmen, brewers and chefs who already have the capacity to train and mentor others in range management, ecological restoration, permaculture, hardwood craftsmanship and furniture making, honeybee management, mesquite pod milling, brewing and baking, and the marketing of non-timber forest products.

Mesquite could be cultivated on private, state and federal rangeland (but not in parks or wildlife refuges, which should remain pristine). Millions of acres could be managed in ways that restore, rather than exploit, the land. For example, the trees can be pruned or thinned for their wood, rather than clearcut. And seedpods can be selectively harvested to leave enough for wildlife and regeneration.

Managing mesquite in this way could produce environmental benefits. Mesquite forests and the plant communities they shape offer numerous "ecosystem services," including wildlife habitat for beneficial insects, birds and bats involved in pollination and pest control; flood control; heat amelioration in urban settings; and recreational amenities such as birdwatching and the hunting of gamebirds like quail and doves.

Communities on both sides of the US-Mexico border need help. We do not, however, need a multibillion-dollar wall of concrete or steel. Instead, let us recognize our shared culture, economy and geography—and value the tree that has long sustained the people of this unforgiving land. By investing in mesquite, we can build a restorative economy that enables communities on both sides of the border to prosper and thrive.

The Green New Deal Means Power to the People

Denise Fairchild and Anthony Giancatarino

Originally published April 3, 2019 in The Progressive

The debate over the Green New Deal is growing more intense, but generating more heat than light. In some quarters, there is outright hysteria. ("Alexandria Ocasio-Cortez is coming for your hamburgers!") But there is also a misperception across the political spectrum that the transition to green energy requires top-down, centralized control, as Mitch McConnell recently claimed.

In fact, the transition to renewable energy envisioned in the Green New Deal holds the potential for a radical decentralization of power. That's the promise of "energy democracy," which could put power, quite literally, in the hands of the people. It is the opposite of our current system, a centralized monolith that produces huge profits (and outsized political clout) for the handful of corporations that control it.

Instead, energy democracy can return power generation to local or community control. It can bring needed jobs and investment to communities that have paid dearly for fossil-fueled power. That includes the scarred mountain towns of Appalachia, the low-income neighborhoods shadowed by power plants and refineries, and communities being displaced by sea-level rise. Thankfully, these impacted communities are already sowing the seeds of energy democracy.

For example, in the working-class city of Richmond, California, community groups have organized a "green zone" for locally owned, renewable energy projects in the shadows of a Chevron refinery. And in nearby Oakland, the People Power Solar Cooperative has created a community-owned solar project where residents pay less than the utility rate for electricity. Additional cost savings are reinvested into new cooperative energy projects. In the Mississippi Delta, residents are reclaiming community control of rural electric cooperatives. Created as part of the original New Deal, those member-owned co-ops have lost their way, behaving more like investor-owned utilities. Rather than serve the people, they charge top dollar for dirty energy while making decisions behind closed doors. So groups like One Voice are fighting for more accountability, transparency, and community control—and training residents to run for co-op boards.

And in North Philadelphia, a group called Serenity Soular has piloted solar installation training programs and plans to create a worker cooperative owned by women and people of color. In this way, the community can build wealth and address racial inequity in the green energy jobs boom.

The Green New Deal can build on these efforts, but that will require new strategies, governing structures, institutions, and investments. One promising model is Community Choice Aggregation (CCA), which has been adopted by seven states. CCAs aim to break the power monopoly by allowing local governments to leverage purchasing power and shop around for better rates and greener energy, and to potentially invest in new decentralized distribution systems. If residents are fairly represented at the governing table, CCAs can transform how energy planning and decision-making is made.

The fossil-fuel era has seen ever-greater concentrations of money and power in the hands of a few, while damaging the lives of many. It is time for that era to end. The Green New Deal could usher in a new day of people power by bringing broad-based prosperity to those who have been left behind. That's a new deal we can all get behind.

Our Food System's Reckoning With Nature Is Coming

KEVIN D. WALKER

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n a pleasant spring afternoon nearly five decades ago, I accompanied my father as he walked through our peach and cherry orchards near the Wasatch Mountains of Utah.

The bright colors of pastel blossoms in full display did little to ease the anxiety in his face. The cold and snow of winter had given way to warming temperatures announcing an early spring. As swelling tree buds transformed into blossoms, they became vulnerable to freezing temperatures when colder weather returned.

The recent hard spring frost worried him. The reckoning about to happen was unavoidable.

As we walked between rows of trees, he plucked random blossoms for further inspection. Peeling back the petals he looked for the tiny ovary nestled at the flower's base. A still green color brought a sigh of relief. A brown or black color foretold the loss of fruit.

Experiences like these taught me no matter how hard we worked as farmers, food availability always comes down to nature and the environment.

Reckoning with Warming

Such memories are never far from the surface when I see images of farmland and farm equipment submerged under water, stranded cattle with no place to go and nothing to eat, or fires raining destruction across vast landscapes.

Farmers today are having to reckon with the unwanted consequences of a warming planet.

From global records first kept in 1850, 17 of the 18 hottest years happened after 2000. In the US alone, since 1980, there have been 241 extreme climatic events, each exceeding \$1 billion in losses. In the past three years, the average number of billion-dollar losses has more than doubled the long-term trend.

Severe flooding in the Midwest, where much of the nation's grains and meat animals are raised; intense drought followed by fires then torrential rains in California, the country's number one agricultural state; a record-challenging tornado season—all serve notice that the new normal is anything but normal.

After each event, the reckoning always follows.

Lost Connections

Having to reconcile availability of food with nature and the environment is as old as farming itself. No longer content to roam and live from what they could hunt and gather, our ancestors devised ways to stay in one place, alter their surroundings, and boost the supply of food.

By 1804, more than two million years since humans first arrived on the scene, the one billion population threshold was crossed. A mere 123 years later, the population doubled, then doubled again within half a century. Adding the latest one billion people took less than 13 years.

Behind the meteoric rise in population growth and prosperity was human ingenuity that ratcheted up levels of food. Yet the unprecedented abundance of food—which Americans now take for granted—never came with guarantees as to how long it would continue.

In a presentation to health promoters and nutritionists last month, I asked: "Where does food really come from?"

Their choices were: (a) supermarkets and restaurants; (b) "free" markets; (c) farmers; (d) all of the above; or (e) none of the above. More than eight in 10 selected an answer between options (a) through (d).

Their answers, which reflect the domination of the modern food system in the way we live and relate to food, were not unexpected. America's latest connection to food had taken hold in less than two full-lifetimes.

Today, all we need to know about food is the location of the nearest supermarket or restaurant. All we need to do is bring money. Want more food? Bring more money.

Societal confidence in our ability to pump out food nonstop has made it easy to avoid reconciling our self-made food system with nature and the environment.

Patenting processes of nature, limiting the diversity of other species, or saturating the environment with chemicals and concentrated animal waste are examples of outcomes we haven't accounted for.

Why?

From Increasing Food to Controlling It

In a matter of decades, innovation from science driving the latest technologies promised to solve any unforeseen consequences. Our ability to increase the supply of food had morphed into presumed *control* over the availability of food.

And the need to consider that somehow our actions and mindsets might one day lessen food availability was easily ignored.

From ancestors whose lives were subservient to food, food had become subservient to us. An understanding of where food comes from had faded fast.

Back on the farm, peeling back a blossom to reveal a darkened ovary meant one thing—the absence of life that a day earlier was alive and doing well. We could buy more tree seedlings, prepare more soil, plant more trees, and prune more branches. We could inject more energy and effort through machinery, petroleum, and labor.

But what we couldn't replace was nature and the environment.

Each tiny ovary was proof that food comes from life. Such life is only possible when the diversity of nature, with its estimated 8.7 million species, combines with an environment attuned to sustain life, while drawing from the finite resources of our planet.

Growing up, I watched as nature and the environment bestowed life and took life away. Some years our orchards were barren, notwithstanding our best efforts. Other years, young peaches came in so thick they had to be thinned to keep tree branches from breaking and provide room for remaining fruit to mature.

Our food does not come from supermarkets and restaurants, "free" markets, farmers, or the food system. The magic behind food, in all its

wondrous forms, is nature and the environment. With good reason, there are no monoculture fields of corn in Death Valley, or banana plantations in Alaska.

The answer to the question I posed was (e), none of the above.

Our Biggest Threat? Indifference

We have it backwards when we build and never question a food system that puts ourselves at the center. Believing that food is beholden to us and under our control is reminiscent of medieval times when popular beliefs had the Sun revolving around the Earth.

More recently, farmers blamed the Dust Bowl of the 1930s on drought and wind, when farming practices and market incentives were the real forces. In the end, they were paid to change the way they farmed without having to change the way they thought.

Today's relationship to food banishes nature and the environment to the periphery of how we live, instead of at the center. The biggest threat we face is not external but comes from within—it's apathy.

Evidence of widespread indifference is on display when we do not question our approach to food despite rising temperatures, extreme flooding, extended fire seasons, or prolonged droughts—all manifestations of a warming planet.

Carbon dioxide's capacity to retain heat in the atmosphere was known 150 years ago. And we have long known that humans are driving countless species to extinction: a recent United Nations report, years in the making by more than 300 authors in 50 countries, warns that one million species are now in danger of vanishing.

What is happening around us encompasses more than food; yet it's worth asking ourselves: if food was scarce, would we have more respect for the laws of nature and realities of a finite planet?

Our dependence on the well-being of other species is absolute. The laws of nature apply universally. The realities of a finite planet never change.

It's worth reflecting on what we forfeit when we minimize our relationship with nature and the environment. We lose an appreciation for how millions of living species grant us life; admiration for the only planet known to support life in a galaxy of lifeless planets; gratitude to be alive at a time when we are not bound by what was once an everyday struggle to overcome food scarcity; and availability of more than 300,000 edible plants, even though our food system diet relies on just a handful.

We also lose the acknowledgment of what food brings to our lives beyond nourishment: cooperation, communities guided by shared norms, pursuing common interests, powers of observation that led to science, grounding our mindsets in reality.

The challenge ahead is to value food enough to know that a reckoning is long overdue. Reconciling our mindset and actions with nature and the environment will always be essential for our survival.

Equity, Health, Resilience, and Jobs: Lessons from the Just Growth Circle

Elizabeth Sawin, Nathaniel Smith, and Tina Anderson Smith

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onsider this familiar pattern, easily recognizable in cities around
the United States today:

A group of well-meaning urban planners, city leaders, conservationists, and businesses restore an urban watershed with parks, trails, and greenspace. Water quality improves; the potential for well-being, health, and climate resilience is widely celebrated. But, as the neighborhood improves, property values spike, and a wave of gentrification and displacement ensues. On top of that, most of the jobs go to people who live outside the community.

But, in one neighborhood in Atlanta, we are seeing a different pattern play out:

Leaders of the watershed restoration project commit to community involvement, to holding meetings at times that residents can attend, and to making space for community perspectives. The planning process involves partners with knowledge about equity and affordable housing. They stand up for community self-determination and racial and economic equity, even with large corporate partners who have the potential to support (or drop) the project. The resulting restoration plan includes a commitment to protect against displacement and steer the benefits—and jobs—to those who need them most.

Complex systems theory suggests that, when undesirable patterns are the *status quo*, the way to generate more desirable patterns is to shift the underlying conditions of the system—particularly the skills

of individuals, their networks of connection, and the values from which they operate.

No system shift is the result of a single intervention. But leaders in the Atlanta watershed restoration project have told us that their project is turning out differently because they are *acting* differently. And they are acting differently, in part, because of their participation in an equitable growth coalition called the Just Growth Circle, which promotes cross-sectoral collaboration at the nexus of health, water, climate, housing, jobs, and racial equity.

The Just Growth Circle grew from an unusual collaboration between the Atlanta-based Partnership for Southern Equity (PSE) and Climate Interactive, an international organization that specializes in systems-level work. The Circle is helping Atlantans understand the complex urban systems they inhabit and identify opportunities to promote equitable outcomes. To that end, members of the Circle participate in diverse networks based on a solid foundation of trust. These are not temporary, transactional alliances; the Circle aims to build relationships that will endure as the city grows and evolves, seizing opportunities for meaningful change along the way.

Relationships forged in the Just Growth Circle are changing the way its members think and work. As one founder of the watershed restoration project said, "[When I first came to a Circle meeting] I was nervous and intimidated because I didn't know anybody Now I work very closely with [some of them] and they have been profoundly influential on me personally. Specifically, in this project, they have helped me steer it toward advocating for community benefits and ... thinking ahead about community impact."

This approach produces results. As noted above, Circle members helped shape the watershed restoration plan, securing commitments to protect against displacement and to benefit marginalized neighborhoods. Circle members were also instrumental in helping update a city agency's \$1.2 billion capital improvement plan, winning provisions for equitable hiring and procurement.

Results like these show the potential to leverage modest investments—in convening and supporting people's learning, development, and networking—to influence spending that is orders of magnitude larger. The few hundred thousand dollars invested in the Circle have helped shape the deployment of a billion dollars in capital improvements. Add to that the millions that will be invested in watershed restoration, additional millions contemplated for parks, and further millions for historic district development, and the scale of the opportunity becomes clear.

The full impact of the Just Growth Circle won't be known for decades, but early results are promising. So, we want to share what we've learned with the hope that our approaches might be useful elsewhere.

Synergistic Solutions Are Feasible in Theory, Difficult in Practice

We know from groups such as the World Health Organization and Transport for London, as well as an article in *International Labour Review*, that—at least in theory—you can promote sustainability, resilience, and climate protection, while also creating jobs and improving health, well-being, and racial equity.

However, what is possible in theory often remains out of reach in practice. A (non-exhaustive) list of obstacles includes:

- Incentives that work against collaboration get in the way, including lack of time and capacity to pull collaborations together, battles over jurisdiction, and budgetary mechanisms that prevent pooling funds.
- Lack of partnerships wide enough to span all the expertise needed; for example, when experts in conservation don't know anyone who works on affordable housing, or vice versa.
- Lack of trust or shared vision. When opportunities arise to work across sectors, there may not be time and space for the listening, learning, and working things out required to truly move together.
- The legacy of structural racism, which influences everything from voting rights, to access to capital, to educational opportunities—all of which influence how innovative projects like those described above play out and who is able to participate in them.

Given ample time, sufficient resources, and facilitation and skill building on issues like racial equity, these challenges are surmountable. But under the pressures of time, heavy workloads, and competing priorities, many opportunities slip by.

A Novel Approach to Generating Synergistic Solutions

Launched in 2016 and supported with funding from the Surdna Foundation, the Just Growth Circle brings together almost 70 people from frontline organizations, city government, business, health, conservation, philanthropy, housing, universities, and more. A small grants program administered by the Circle helps support the participation of smaller, community-based organizations. Knowledge, learning, and resources flow within the Circle; at any one moment, the "expert" addressing the group may be a city official, a nonprofit leader, or a member of a frontline community group.

The Circle began as a much smaller group, with members focused solely on water, conservation, and equity. It has since grown to include members focused on health, jobs, housing, and more. We anticipate it continuing for many years, building and strengthening relationships between the many different sectors whose common interests meet in decisions about infrastructure, racial equity, sustainability, and green space.

The Just Growth Circle relies on a three-part facilitation/design team:

- PSE brings a focus on equity, values-based organizing, and deep knowledge of local politics, and provides ongoing stew-ardship of the Circle.
- Climate Interactive helps the group develop maps that pool the knowledge of Circle members and shapes the project design from a systems perspective.
- Anderson Smith Consulting plays an adaptive learning and evaluation role, helping participants and the facilitation team reflect upon what is emerging and flagging instances where participants ask for changes in content or process.

Our approach treats the evolving city as a complex system, shaped by thousands of decisions—about investment, policy, hiring, design, and affordability. This complex system can't be controlled or managed from the top, but it can be influenced by:

- Supporting the development of relationships among previously disconnected groups;
- Focusing on racial equity as an explicit value;
- Building shared understanding of the whole system, how it works, where it is subject to influence, and where unanticipated side effects must be guarded against; and
- Supporting the development of skills and courage to enable people to take bold action in moments of opportunity and resistance.

The Atlanta Context

Atlanta faces multiple challenges. The city has, over recent years, earned the unfortunate distinction of being the most economically inequitable city in the US. It has set ambitious climate change mitigation goals that will require large-scale retrofitting and new infrastructure. There is also ongoing litigation about unequal access to the ballot in Georgia's 2018 elections. Atlanta is vulnerable to climate change impacts, especially stormwater flooding from increasingly intense precipitation. All of these challenges must be tackled against the backdrop of rapid population growth that is expected to continue for decades

Each of these challenges is complex and difficult. And they are interconnected: sometimes the solutions to one challenge (say climate resilience) make other challenges (say equity) more difficult, as when investments in green, sustainable infrastructure contribute to rising housing costs, gentrification, and displacement. These situations, where a solution to one problem worsens another, can rarely be resolved without skillful multi-sectoral collaboration.

At other times, a solution to one challenge (say climate change) may help address another (say a need for good local jobs), as when infrastructure projects that reduce carbon also provide opportunities for job creation and wealth building. These solutions, too, require skillful multi-sectoral collaboration.

The interlocking nature of these issues is a feature (not a bug!) of the complex systems we live and work within.

Atlanta, like all cities, is a complex system. The city and region could move forward into many different possible futures. The Just Growth Circle intends that over time—via sustained, strategic engagements we can help tilt the city towards health, equity, and sustainability.

Assumptions Driving Our Project Design

We see infrastructure investment—from planning to allocation of funds to construction to use of the finished product—as a key area of intervention. Infrastructure built today determines greenhouse gas emissions and resilience for the future. How infrastructure is implemented could provide new opportunities for wealth-building and improved health—or set off a wave of gentrification.

Within this process, we recognize moments of opportunity may arise to steer towards outcomes like equity, climate protection, and health. Those moments may arise when making decisions about finance, design, local hiring, job training, affordability, sustainability, and/or resilience.

Wielding influence at these critical moments requires aligning multiple interests (say a health group and a conservation group joining forces to fund the expansion of green space). These moments are often fleeting; unless groups with common interests are connected in advance, the moment can pass before enough trust and shared vision are established. Effective intervention, in short, requires prior community-building.

Relationships built over time have enabled Circle members to seize the moment to insert equity principles into Atlanta's Green Infrastructure Strategic Action Plan. "A window of opportunity opened up," says one Circle member. "The timing was right.... We put the Shared Equity Values that the Just Growth Circle developed into the plan because several members of the Green Infrastructure Task Force are also members of the Circle."

The timing of openings is influenced by elections, technological advances, and—increasingly—extreme weather events. We know that

moments of opportunity will come, but we cannot know what they will be or where or when they will happen. Therefore, intervention design must be flexible and adaptive.

Finally, when transforming systems to promote new patterns of behavior, it matters who acts. True solutions will incorporate the wisdom and desires of groups with the most at stake, particularly local community groups, people from low-wealth communities, and people of color. In status quo systems, these groups often lack a voice in infrastructure decisions that will affect them. Effective interventions must support the leadership of members of impacted groups.

Design Elements of the Just Growth Circle

The Just Growth Circle has evolved a set of practices, ways of convening, and shared understandings that boost effectiveness in the midst of systemic complexity, uncertainty, and rapid change. Like the complex system itself, all of the elements are mutually interconnected and reinforcing, but for clarity we will name them by category.

Connecting an Ecosystem

Because no one group has the funding, power, or political clout to direct investment or policy towards sustainability, resilience, and equity, we aim to foster partnerships and relationships among unlikely partners. And, because of disparities in influence and access to decision-making, we work to ensure that those relationships include a mix of groups and individuals with traditional access to power and decision-making, as well as groups and individuals typically outside of those formal decision-making processes.

Such relationships can help members understand—and utilize—their place in the civic ecosystem. As one participant from a conservation-oriented organization said, "I better understand my own gatekeeper role.... [Now I am asking] 'how do we leverage our own power and influence?' I see that I can use my role to create opportunities and a platform for those that do not have the same [opportunities]."

Each group meeting includes a "project clinic" where members present on their work in the context of the consensus values. The Just Growth Circle Shared Values:

- **Respect Communities.** Value communities as critical partners, inviting meaningful participation, leadership, and input during all phases of the project.
- Strengthen Communities. Improve the quality of life for current residents as well as the overall wellness of the surrounding communities.
- Heal Environmental Injustice. Prioritize investment in communities that have felt the cost and burden of poor infrastructure in the past.
- Anticipate and Protect Against Displacement. Partner with others to manage the impacts of increased surrounding property values on vulnerable neighbors.

Growing Relationships

Because relationships take time to grow, we aim to "pre-grow" relationships and networks that are flexible and adaptable. The Circle is a space where members can share honestly about successes and failures—and explore issues like structural racism and how it impacts their work.

"I think the success of the Just Growth Circle is all about the diverse mixture of the people who attend and the leadership style of the meeting facilitators," said one participant, who is active in her predominantly African American community and who works on homelessness issues in Fulton County. "In the last session we discussed race and our individual histories. That brief conversation was so powerful, it has motivated me to plan similar discussions in my neighborhood."

By sharing stories about confronting racism and structural inequity in their own work, Circle members improve each other's skills and comfort in such conversations. Many have mentioned how Circle conversations have built their own courage for speaking out about racial equity.

Guiding Action With Shared Values

Because the Just Growth Circle operates over long time spans against a backdrop of constant change, there is a need for coherence and continuity. Shared values are also important to enable Just Growth Circle to challenge norms within systems—capitalism, the US, the South, to name a few—that for centuries have not reflected or resulted in racial equity. In short, since we seek transformation, our work focuses on values to catalyze that transformation.

The Just Growth Circle consensus values are four principles that emerged from the group in its first year and which have been refined slightly over time. While group members work in different sectors and employ different strategies, these shared values help potential new members determine if they are aligned with the group and provide focus for everything the group does.

Creating Shared Conceptual Maps

Seizing moments of opportunity often requires coordination across different parts of a system or over time. For example, initiating job training early on in project planning will ensure that workers from the local community are ready for work when construction begins. To help draw out these interconnections, we have used systems mapping techniques. These shared maps provide a common language, offer a vehicle for talking about strategy and gaps, and have driven the expansion of the Circle's breadth of membership.

Learning, but Also Acting

For most of us, steering complex systems requires new skills and capacities. Project clinics and small grants offer two ways for participants to access new ideas, tools, and resources. But not all needed capacities are technical. Some are about encouraging participants to reflect and act on their own deepest values, even (or especially) when that is not comfortable. By providing the support of committed fellow risk-takers and allowing space for uncertainty, questioning, and informal peer coaching, we help participants bolster their own courage. In a system shaped by historical inequities, where the status quo points to a slow improvement in equity at best, individuals empowered with courage and commitment are a necessary part of steering systems towards transformational change.

Self-Steering, yet Also Nurtured

The Just Growth Circle is a self-organizing system, steered by the questions, interests, and needs of participants. For instance, a six-month exploration of gentrification and displacement emerged from the group's desire to better understand strategies to avoid gentrification. At the same time, a design and facilitation team, anchored by PSE and Climate Interactive, meets regularly in design meetings. PSE conducts continuous outreach to support current members and connect with potential new members between formal meetings.

Looking Forward

The impacts of the Just Growth Circle are only beginning. We expect many of the subtle changes we observe now to continue creating ripples long into the future. The Circle will continue to meet, grow, learn, and evolve, making new connections and digging deeper into complex topics—from public finance, to climate change, to gentrification and displacement. We expect that impacts from the Just Growth Circle will continue to spur conversations that might not otherwise happen, bring equity into conversations and policies, and change the way that future investments are made. We expect that these decisions will in turn shape the complex, dynamic ecosystem that is Atlanta.

In a time of tremendous need and constrained budgets, the Just Growth Circle process can be powerful. A modest amount of a constrained resource (grant dollars) unlocks a complex adaptive process that maximizes human creativity, network effects, knowledge pooling, and learning. Like Buckminster Fuller's trimtab or Donella Meadows's leverage point, the Just Growth Circle process allows small groups of people with limited resources to transform much larger, better-resourced systems.

Many indicators suggest that the future will be less stable and more uncertain than the past, and the flexible, adaptable, and self-organizing nature of the Just Growth Circle is a key advantage under conditions of uncertainty. The topics under consideration, the participants, and the emerging opportunities have all shifted during the short lifetime of the Circle and will certainly continue to evolve. But the values, relationships, skills, and personal capacities the Circle has nurtured will endure and grow—as will the potential for transformational change.
Heat Is Deadly—Even in Montana. But the City of Missoula Is Doing Something About It

LAURIE MAZUR

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When you think of cities impacted by the urban heat island effect, you probably think of steamy Houston or the concrete jungle of New York. Missoula, Montana probably doesn't come to mind.

But, thanks to climate change, Missoula is getting hotter, with average temperatures expected to climb 2-5 degrees Fahrenheit over the next couple of decades.

In a city where extreme heat is new and air conditioning is rare, rising temperatures can be deadly—especially for the elderly and other vulnerable groups. Worse, the city sits in a valley that collects smoke from wildfires, which are expected to get worse in a warming world. So, when residents throw open their windows to cool off, they are often assaulted by unhealthy air.

Missoula is tackling this problem head-on. The city recently partnered with scientists affiliated with the Thriving Earth Exchange, a project of the American Geophysical Union, to map heat patterns and vulnerable populations. Armed with that data, the city and its nonprofit partners are devising strategies to keep Missoula cool.

Missoula was already ahead of the curve on climate adaptation. The city formalized a farsighted Conservation and Climate Action Plan in 2013 and appointed an Energy Conservation Coordinator, Chase Jones, whose job is to "lose sleep" over implementing the plan. (Jones likes to joke that he has increased his coffee intake as a result.)

And, since 2015, a nonprofit called Climate Smart Missoula has worked with the city to reduce the community's carbon footprint and increase its resilience. While it is still in its earliest stages, the story of Missoula's work-inprogress suggests lessons for other cities and towns facing similar conditions.

Understand the Threat

It's important to know that extreme heat is the deadliest climate impact, causing at least 1,100 deaths each year in the US—more than any other weather-related hazard. Heat kills *directly*, by heat stroke (or hyper-thermia); and *indirectly*, by exacerbating chronic conditions such as cardiovascular disease, respiratory disease, and diabetes.

Cities are hardest-hit, because their expanses of concrete and asphalt absorb and hold heat. That is why air temperatures in cities can be as much as 22°F higher than in the surrounding countryside. Higher temperatures drive increased energy use, which contributes to poor air quality.

Air pollution, in turn, exacerbates asthma and other respiratory conditions.

In Missoula and elsewhere, the urban heat island effect disproportionately affects the most vulnerable, including low-income households, children, and the elderly.

And higher latitudes are no guarantee of safety: in fact, the CDC reports that some of the deadliest recent heat waves have taken place in Northern cities that are ill-prepared for extreme heat.

Build Partnerships to Map the Problem

The city of Missoula and Climate Smart Missoula had already done the hard work of devising a plan to reduce carbon emissions. But adapting to excessive heat required different kinds of data and expertise. So, the city reached out to connect with the Thriving Earth Exchange (TEX).

TEX, which works to help solve environmental problems by matching communities with knowledgeable scientists and nonprofits was an instant, natural fit. "TEX really suited Missoula's situation," says Chase Jones, "because it recognizes that there is sometimes a gap in capacity and skills and resources in local governments around energy and climate change issues." TEX connected the city with an expert right in their backyard: Anna Klene, a professor of geography at the University of Montana. Klene was joined by climatologist Nick Silverman, and then recruited graduate student Julie Tompkins to create a detailed map of Missoula's heat problem.

Layer the Data

As a first step, Silverman used satellite imagery to map the city's land surface temperature. But the city wanted to add a socioeconomic component to better identify neighborhoods most at risk. "We wanted to look on a neighborhood-by-neighborhood, block-by-block basis and see where the most sensitive populations in Missoula are impacted by heat," says Julie Tompkins.

So Tompkins delved into block-level data from the Census Bureau's American Community Survey, focusing on factors—including age, income level and type of housing—that help determine susceptibility to heat impacts. Those data were layered with the heat map, showing literal hot spots and vulnerable populations.

Then, using the layered data, "I could go to those neighborhoods and see, 'There is low-income housing here. There is a mobile home court here. There is senior housing here." Tompkins says.

Get Information to Those Who Can Put It to Use

The next step was to get the mapping data "in the heads and in the work plans of those who could apply it," says Chase Jones. To that end, the team shares its findings with health officials, the City's Energy and Climate Team, planners, and others.

The goal is to show how warming impacts the people of Missoula and build that into city services and plans. For example, parks officials can use this map, together with additional research and mapping efforts, to prioritize neighborhoods for tree-planting and pocket parks and build shade structures on exposed trails.

Health and social service agencies can initiate efforts to educate, look after, and provide resources for vulnerable residents. Planners can find ways to slow the march of concrete and asphalt. Development agreements can incentivize cooling strategies such as light-colored roofs and shade features, while preserving the urban forest and integrating green infrastructure.

Much of that work is already under way in Missoula, says Jones. But the new data "emboldens them to do even more of the good work they're doing," he says, "so that we break up that concrete; we have cool, shady places; and everyone can access it no matter what their income level or health situation."

The heat data are also advancing a conversation about the mental health impacts of climate change, says Amy Cilimburg, Director of Climate Smart Missoula.

For example, rising temperatures are linked to an increase in domestic violence. "That means that police and first responders need to find ways to cool down the temperature as well as the situation," says Cilimburg, "because people are not at their best when they are hot."

A Holistic Approach

The city of Missoula and its nonprofit partners are beginning to use multilayered data to consider how rising temperatures connect to a broad range of problems, from asthma to violence. Linked problems require holistic solutions: "You can't look at heat impacts in isolation," says Cilimburg, "A cross-sector approach will get you farther as a community."

That approach is bearing fruit in Missoula, where extreme heat is becoming part of the conversation on public health, housing, development, parks and more. In this way, Missoula is "mainstreaming" climate adaptation.

"It's a way to build capacity, understanding and innovation that's better than building your own little silo around climate," says Jones. He adds that "intentional integration into existing agency, systems, planning, and community is an approach that we hope results in broader change and more expansive impact."

There are practical benefits to this holistic approach. Because, just as the problems compound one another—as when extreme heat worsens air quality—the solutions can have positive synergistic effects. For example, cooling the city with shade trees and light roofs will result in lower energy use and reduced greenhouse gas emissions—a win for mitigation.

Those efforts will also improve air quality and reduce health impacts.

And the biggest beneficiaries of those positive changes are the city's most vulnerable people: low-income families that can't afford air conditioning; people with chronic health conditions; children and the elderly.

That's a win for equity, says Jones. And for resilience, because "in the end, our city is only as strong as its most-vulnerable residents."

In a Pandemic, We Need Green Spaces More Than Ever

CATE MINGOYA-LAFORTUNE

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A swe settle into our new normal—two parents working from home with an active 2-year-old—my family is in a constant search for age-appropriate, socially distant entertainment. The few playgrounds near us are padlocked shut to keep kids off the slides and swings, and each day is a new hunt for opportunities to burn off energy. When my husband and daughter left the house today to get some fresh air, I asked them to bring home sticks for a crafting project. But even after a lengthy walk—at least by 2-year old standards—they came home empty handed. There simply weren't any sticks to be found.

Our neighborhood stick shortage is connected to a much larger national problem. My beloved hometown of Somerville, Massachusetts, is one of the densest cities in New England with little green space compared with other cities in the state. The sparse tree canopies and extensive pavement in my city have little to do with neighborhood preference and everything to do with a long history of federally backed housing segregation.

In the 1930s, the Home Owner's Loan Corporation created a series of "residential security maps"—redlining maps—designating Black and Brown communities as too risky for investment and ineligible for newly available federally backed mortgages. Even though redlining was outlawed by the Fair Housing Act in 1968, we are still prying loose its grip today.

Redlining locked in patterns of poverty and disinvestment. It denied mortgages to Black families, cementing a racial gap in homeownership and wealth that has persisted into the 21st century. Formerly redlined neighborhoods still have relatively low homeownership rates, home values and credit scores. Our neighborhoods receive fewer services and investments: We get the bus depots and sewage treatment plants; others get the parks and street trees.

As a result, my neighbors are more vulnerable to climate change. Lacking substantial tree cover and green space, new research shows that formerly redlined neighborhoods are about 2.6°C (4.7°F) hotter, on average, than comparable communities. Low-income communities of color are literal hot spots for the urban heat island effect—a deadly impact of climate change. Impermeable surfaces and a lack of green space also make our neighborhoods more vulnerable to flooding, and many of my neighbors may be unable to absorb the costs of these crises.

Today, our communities are likely to be disproportionately harmed by the health, economic and social costs of the COVID-19 pandemic. The pollution sources clustered in our neighborhoods mean poor air quality and soaring rates of asthma and other respiratory diseases, underlying health conditions that increase the severity of COVID-19. And sparse green space will make it harder for us to stay healthy and sane while limited in our activities.

But there is hope. Across the country, community members, activists and organizers are fighting back. They're drawing attention to the legacies of redlining and pushing policymakers to address the harm caused by these racist policies. In five cities—Denver, Colorado; Elizabeth, New Jersey; Richmond, California; Metro Providence, Rhode Island; and Richmond, Virginia—residents of formerly redlined neighborhoods are working to make their communities greener, safer and more equitable. Partnering with five local trusts, my organization, Groundwork USA, launched the Climate Safe Neighborhoods Partnership to use data-driven community organizing to make our formerly redlined communities safer from the impacts of extreme heat and flooding—and now coronavirus.

The Climate Safe Neighborhoods Partnership helps educate communities about the relationship between historical redlining practices and current climate risks. We then work with residents to prioritize changes they'd like to see in their communities and build the capacity of community leaders to intervene in municipal budgeting, planning and decision-making.

In New Jersey, for example, seasonal flooding leads to frequent overflows of wastewater from sewers directly into the Elizabeth River, exposing residents to untreated wastewater. Groundwork Elizabeth's Climate Safe Task Force is working to bring community voices to the county's plan to design the sewer system. In Colorado, Groundwork Denver is empowering residents to organize and advocate for green-space funding to combat the disproportionately high temperatures and flooding experienced in their neighborhoods. In Virginia, Groundwork RVA is doing door-to-door community education and capacity building so that impacted residents can advocate for green community infrastructure in the city's Master Planning process.

The projects are different, but the goals are the same: to empower disinvested neighborhoods to become more resilient to disasters of all kinds, and to make sure that people who live in these neighborhoods are driving that change.

For me, this is personal. I want my daughter to grow up with green space to run in and clean air to breathe, under the cooling shade of trees. I want her to be safe from the heat waves, floods and pandemics of the future. I want her to know that fighting for justice and the safety of others is just as important as fighting for herself.

I know that my neighborhood isn't barren of sticks by accident, and it isn't going to get better by accident. As writer James Baldwin once observed, "History is not the past. It is the present." Racist history makes low-income communities of color more vulnerable to crises from climate change to COVID-19. Understanding that, we can we address the root causes of the problem and, most importantly, solve it.

The Other Crisis Facing Our Health Care System: Climate Change

LAURIE MAZUR

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E ven before COVID-19 put the American health care system to the test, that system was under strain from another invisible enemy: climate change.

Dr. Cheryl Holder remembers her first encounter with that enemy. An elderly patient with chronic obstructive pulmonary disease—let's call her Annie Mae—came to Holder in desperation because she couldn't afford to refill her inhaler. Miami was in the grip of a stultifying heat wave, something that's increasingly common in a warming world. The heat made it hard for Annie Mae to breathe, so she was running her air conditioning unit night and day, and racking up an electric bill she could barely afford to pay. Now her lifesaving inhaler was financially out of reach.

For Holder, who teaches at Florida International University, Annie Mae's predicament revealed the insidious effects of climate change, especially on the most vulnerable.

"For people living in poverty, heat waves and other climate impacts can set off a cascade of bad outcomes," Holder says—including illness, eviction and even death. The pandemic and its economic fallout have only increased vulnerability, especially among the poor and people of color.

Holder co-founded Florida Clinicians for Climate Action, which works to educate doctors, patients and policymakers about the links between climate change and health. She is not alone: Today, many in the health care sector are sizing up the threat of climate change and taking action in their practices, in their facilities and in the communities they serve. And some are taking a broader, more holistic view of health care—considering their responsibility to address the malignant mix of factors that leave patients like Annie Mae gasping for breath.

The Elephant in the Waiting Room

No one can guess the ultimate toll of COVID-19, but climate change has the potential to cause even more sickness and death. Indeed, a 2009 report by a Lancet and University College London Commission called climate change "potentially the biggest global health threat in the 21st century." Rising temperatures bring ever-more deadly heat waves, wildfires, storms and flooding. As a result, doctors see more heat stroke, heart disease and asthma, as well as diseases—such as Zika and dengue fever—that have jumped to new locations. The toll of climate change on health is so great—and so underappreciated—that Gary Cohen, president of Health Care Without Harm, calls it "the elephant in the waiting room."

Also underappreciated is how the health care sector contributes to the climate crisis. Health care's greenhouse gas emissions made up 10% of the US total in 2013. Globally, if health care were its own country, it would be the fifth-largest emitter on the planet.

But if the health care sector is part of the problem, it can also be part of the solution. With its massive carbon footprint and mandate to promote wellness (or, at least, to do no harm), health care is well-positioned to bend the arc of greenhouse gas emissions.

Leading the charge is the US Health Care Climate Council, convened by Health Care Without Harm in 2014. The council represents 19 health systems in 36 states, with the systems' annual collective operating revenue totaling more than \$215 billion. Council members are reducing their carbon footprints, readying their facilities for extreme weather, and educating and preparing their communities for the impacts of climate change.

And they are making progress. Dignity Health, which is part of CommonSpirit Health, a nonprofit Catholic hospital system, has nearly met its goal to reduce its greenhouse gas emissions by 40% by the end of 2020. Ohio-based Cleveland Clinic, with facilities in multiple states, has cut energy use intensity by 19% since 2010. Collectively, council members produce or purchase more than 1 million megawatt hours of renewable energy each year.

Council members also leverage their economic and political power to move markets and policy. For example, Dignity Health advocated successfully for California's groundbreaking climate legislation, which set ambitious goals for a transition to renewable energy and a path to achieve them.

Health care systems can open legislators' doors that may remain closed to, say, environmental groups. That's been true for Cleveland Clinic, which is the largest employer in Ohio. Jon Utech, senior director of the clinic's Office for a Healthy Environment, says his team meets with state and federal policymakers to educate them about the health dimensions of climate change and its impact on hospitals: "We go in and say, 'Hey, climate change is real. It's happening now and it's affecting the health of the residents of your district or your state.""

Climate-Proof Health Care

While working to head off the worst climate scenarios, health care systems are also adapting to the warming that is now inevitable. In the wake of the deadly chaos that engulfed hospitals in New Orleans due to Hurricane Katrina—and more recent hospital closures from hurricanes Sandy and Harvey—they are fortifying their facilities for an era of supercharged storms, fires and floods. Health systems that invest in sustainable, resilient facilities, such as Spaulding Rehabilitation Hospital in Boston, find that savings on operating costs, not to mention lives saved and damages avoided, far outweigh extra construction costs.

"Our climate strategy started with mitigation, but moved to this concept of resilience," Utech says. For Cleveland Clinic, that means adopting building standards geared to the weather of the future, rather than the past. And it means addressing climate-related risks in the supply chain so that food and medicine remains available in a crisis.

Most importantly, Utech says, Cleveland Clinic is partnering with local and state officials on emergency management plans that ensure continued operation and patient access during disasters.

Thinking Outside the Hospital Walls

"It's not just about preparing your facility," says Rachelle Wenger, system vice president for public policy and advocacy engagement at CommonSpirit Health. "Health care systems are thinking about resilience within our hospitals, as well as in the communities we serve." For CommonSpirit Health, these actions flow from a recognition that "human health is inextricably connected to the health of our planet and a commitment to the most vulnerable," Wenger says.

For that reason, CommonSpirit Health is working to ensure that the benefits of clean energy are available to all. Along with other religious health care systems, CommonSpirit Health, through Dignity Health, invests in the Solar Energy and Loan Fund (SELF) in Florida that provides low-interest loans to low- and middle-income households for solar panels and efficiency upgrades. SELF hopes to prevent the problem that faced Annie Mae by helping vulnerable Florida residents cool their homes without breaking the bank.

Nonprofit hospitals—a category that includes nearly 60% of the nation's community hospitals—have another reason to help out their neighbors: They receive substantial tax benefits for providing benefits to the community. To that end, the Affordable Care Act requires non-profit hospitals to conduct regular assessments of local health needs.

The ACA also urges health care systems to look upstream at the complex factors that shape health and well-being. Indeed, it's estimated that just 20% of health depends on clinical care; the other 80% is derived from health behaviors and social determinants of health such as income and the environment. Armed with that understanding, health providers can adopt a holistic approach to wellness that reduces the need for costly medical intervention.

"Health is dependent on so many things—where you live, where you work, your economic situation," says Dr. Holder of Florida International University. "Climate change adds an additional burden. We need to help patients connect the dots, so they can protect themselves."

Hospitals' efforts to connect climate change to the social determinants of health are still emerging. According to Denise Fairchild, president of the Emerald Cities Collaborative, the potential is enormous: "Community-based organizations have been working on resilience for decades, by fighting for environmental justice, safe and affordable housing, community infrastructure and economic opportunities. But this work is still at a cottage-industry level. By combining the resources of health care institutions with the assets of communities, we can deliver community climate resilience at scale."

Anchoring Communities

One way to scale up community benefits is by leveraging hospitals' role as "anchor institutions." Unlike corporations, which might pull up stakes in search of cheaper labor, anchor institutions such as universities and hospitals remain rooted in their communities. Hospitals are often major employers, and they command large budgets for services such as catering and laundry. But too often, that spending benefits national corporations rather than the hospital's neighbors.

In the depths of the Great Recession, The Democracy Collaborative co-founder Ted Howard set out to change that. Howard partnered with multiple anchor institutions in Cleveland—including Cleveland Clinic—to launch the Evergreen Cooperatives. Evergreen's trio of businesses now supply fresh produce, renewable energy and laundry services to the city's anchor institutions.

These worker-owned cooperatives can pay good wages and offer competitive pricing to their clients, because they don't need to provide hefty profits to shareholders. In an area where 60% of residents earn less than \$25,000 annually, Evergreen provides living-wage jobs with benefits to some 120 people, about 30% of whom have an ownership stake in the company.

Now, through the Healthcare Anchor Network, some 45 health systems across the country are working to create similar synergies in their communities.

The Greatest Global Health Opportunity

The changing climate is indeed the greatest health threat of our time. But, as the 2015 Lancet Commission on Health and Climate Change found, tackling it could also offer the greatest "global opportunity" of the 21st century. That opportunity could be more fully realized if the health care sector deploys its considerable resources to heal the climate and protect communities.

Health systems have the means and a moral imperative to reduce planet-warming carbon emissions. And, increasingly, health care providers are looking upstream to the social and environmental factors that drive sickness and health. The COVID-19 pandemic has revealed disparities in health outcomes that parallel inequities of race and class. Those same inequities make people like Annie Mae much more vulnerable in a warming world.

Addressing climate change and inequity represents a significant shift for a sector that has long focused on clinical care. But many believe it is a necessary one.

"If our healing mission is to have meaning and relevancy today, health care must change course," says CommonSpirit Health's Wenger. "Successfully transforming health care depends on not just what we do within the four walls of hospitals, but also on the part we play to further the health and well-being of communities and the planet—how we ultimately show up in the world."

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Western Wildfires Could Worsen Inequality

 $Melissa \ Jones$

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ike so much else in 2020, the wildfires engulfing the western half of the United States are without precedent.

They have advanced with astonishing speed, leaping 25 miles overnight and sending a towering pillar of smoke into the stratosphere. At this writing, the blazes have claimed at least three dozen lives, burned more than five million acres, and forced hundreds of thousands of people from their homes.

The fires have also sparked a public health crisis. Much of the western US and Canada is wreathed in acrid smoke, resulting in some of the world's worst air quality. Wildfire smoke exacerbates asthma and other respiratory problems and is linked to increases in heart attacks and strokes. Smoke inhalation can also alter immune function, increasing susceptibility to infections such as COVID-19.

Wildfire smoke affects everyone in its path, but not all people suffer equally.

Wildfires have a disproportionate impact on the health of low-income families and people of color. These groups are more likely to be segregated into areas with unhealthy levels of air pollution—putting them at greater risk of sickness and death from both COVID-19 and wildfire smoke.

The current crises may be unprecedented, but health disparities have long been with us. Across the US, there are large and growing gaps in health and life expectancy based on race, class, and where people live. Lower-income people in struggling rural towns and pollution-choked urban areas die, on average, more than a decade earlier than their wealthy counterparts. A large share of health disparities owe to societal conditions such as low-paying jobs and high housing costs, which combine to create chronic stress, and environmental issues that expose low income families to toxins and unhealthy conditions. The wildfires now raging across the West could worsen existing inequities, widening the gaps between rich and poor, healthy and sick.

But it doesn't have to be that way.

Some cities—including Louisville, KY, San Francisco, CA, and Seattle, WA—are working to improve health outcomes by incorporating racial equity into the way they respond to disasters.

For example, early in the COVID-19 pandemic, the San Francisco Department of Public Health stepped up outreach and testing in Black and Latinx communities, partnering with community-based organizations and faith groups to reach across cultural barriers.

These three cities have also appointed "equity officers," who determine which groups are most in harm's way and deploy resources accordingly. Equity officers think about what each community needs to be safe, including special strategies to ensure that frontline workers are protected from smoke and exposure to COVID-19.

Increasingly, the unprecedented is our daily reality. And as new threats compound old injustices, too many Americans are consigned to poverty and poor health. To prevent that, we must recognize the disproportionate impact of disasters on already-struggling communities and make sure disaster response addresses their needs.

More broadly, we need to make sure all Americans have access to healthy neighborhoods, good jobs, and quality education—the building blocks of a long and healthy life.

Don't Fall for the Hydrogen Hype

Eddie Bautista and Lewis Milford

Originally published January 5, 2021 in Morning Consult

A number of reputable outlets have touted hydrogen as an emissions-free energy source. Even the newspaper of record, *The New York Times*, recently described hydrogen as a "clean burning fuel."

In fact, it's hard to read an energy article without encountering the new hydrogen hype. But these reports get a critical scientific detail wrong.

Hydrogen does produce little more than water when used in fuel cells to make electricity. Fuel cell technology has great promise for use in vehicles and various industrial applications.

But that's not what the gas and utility industries have in mind. Instead, they intend to blend hydrogen with natural gas and burn it in power plants, just as they have burned oil, coal or gas for decades.

When hydrogen is burned it emits little or no carbon dioxide—that's the good news. The bad news is that hydrogen combustion produces dangerously high levels of nitrogen oxides—scientific studies indicate that burning hydrogen could produce NOx levels six times higher than burning methane.

Long-term exposure to NOx increases the risk of respiratory conditions and heightens sensitivity to allergens. NOx is also a precursor to particulate pollution and ground-level ozone, which are both associated with severe adverse health effects—including higher death rates from COVID-19. Urban communities of color are already heavily burdened by these pollutants.

The fossil fuel and utility industries certainly are aware of the non-CO₂ emissions produced by burning hydrogen. A report issued by Mitsubishi, which is developing a hydrogen- and gas-burning plant in Utah—applauded as the future of the hydrogen economy—notes that the new plant still "will produce NOx and CO₂ emissions equivalent to those from modern natural gas plants." Even the Trump administration's Department of Energy identifies hydrogen combustion as a problem. A recent DOE report found that "additional R&D is needed" to control NOx emissions from blended hydrogen and natural gas combustion.

Yet despite these emissions problems, plans are moving ahead to blend and burn hydrogen with natural gas in new or reconfigured power plants across the country. Such efforts are under way throughout the American West, and two global finance giants recently proposed a new hydrogen-and-gas plant in Ohio. Gas-fired power plants in Florida, Virginia and California will add hydrogen to the fuel mix starting next year.

In New York, there are plans to burn a hydrogen-natural gas blend in urban "peaker" plants. These plants, which fire up to meet times of high energy demand, are among the most egregious polluters. They are typically located in low-income areas and communities of color, often in areas with high levels of NOx pollution. Utilities are under pressure to close these noxious plants and replace them with clean, renewable energy sources.

However, by adding "clean" hydrogen to the fuel mix, these outdated plants will get a new lease on life. Hydrogen combustion will justify continued operation of natural gas plants and gas infrastructure. After all, a natural gas plant that burns 20 percent hydrogen will still need 80 percent fossil gas. And once established, hydrogen demonstration projects are likely to expand and become the new "industry standard." This could well lock in gas plant usage for the next few decades, despite the coming competition from renewables and battery storage and other cleaner sources. It's a masterful and audacious survival plan.

But it has not gone without protest. Environmental justice advocates have already raised objections to a blending project in Los Angeles. In the East, a coalition of environmental organizations have called on New York state officials to evaluate the environmental, climate and public health impacts of burning hydrogen in New York City neighborhoods.

These groups have the right idea. We should not impose experimental NOx-producing power plants on communities without independent public health investigations before any permitting proceeds. This is especially important in low-income communities of color, which will bear the brunt of these schemes. We need to call a pause on hydrogen combustion until the NOx problem is fully understood and addressed by objective experts.

We already know what could happen if we don't. A few decades ago, to stave off climate change, European governments pushed for diesel engines in cars. Diesel engines don't produce CO₂ emissions, but they do produce copious levels of NOx. Unfortunately, NOx was not factored into the EU climate policy trade-off.

In the last few years, European and US government agencies discovered that European car manufacturers secretly manipulated emissions data to disguise the levels of NOx produced by their diesel vehicles. The "Diesel-gate" scandal was the unfortunate but predicable result of ignoring NOx emissions at the outset of a climate fight. Sadly, so were thousands of premature deaths each year from increased air pollution.

Let's not rerun that failed experiment in the US power sector.

This country's history of energy production is littered with hyperbolic marketing claims about revolutionary, free or harmless ways to generate power. While various productive uses of hydrogen may someday be the real climate deal, the "clean" hydrogen combustion schemes breathlessly promoted in the press today are little more than dangerous hype.

Heat Kills. But It Doesn't Have To.

Mayra Cruz

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You probably didn't know that today is National Heat Awareness Day. You're not alone: Extreme heat doesn't get nearly enough attention, though it is the deadliest climate impact. In fact, heat has killed more people in the last 10 years, on average, than any other weather phenomenon. Because of climate change, that toll is likely to grow—unless we take action. Fortunately, there's a lot we can do to keep our cool in a rapidly warming world.

It's hot, and getting hotter. Global temperatures have risen by two degrees Fahrenheit since the pre-industrial era; by the middle of this century, the mercury could rise beyond what our bodies can endure. Well before then, there is a growing risk from heat waves, which have increased in intensity, frequency and duration since the 1950s.

Extreme heat affects our health in ways both obvious and subtle. It can kill directly, by raising a person's core body temperature (heat stroke), and indirectly, by exacerbating chronic conditions such as heart disease, respiratory illness and diabetes. New evidence suggests that extreme heat contributes to poor pregnancy outcomes, including low birth weight and stillbirth.

But the toll of extreme heat does not affect all people equally: Black and Brown communities are among the hardest hit. The rate of heat-related deaths for Black Americans is 150% to 200% greater than for White Americans. Latinos in the US are also more vulnerable, as they are more likely to live in Sunbelt states and to work in industries, such as agriculture and construction, that put them at higher risk.

And low-income neighborhoods are hotter than their more affluent counterparts, which have less heat-retaining concrete and more cooling trees. These risks are compounding: In many American cities, low-income neighborhoods with more residents of color can be 5 to 20 degrees hotter than wealthier, Whiter parts of the same city. Here in Miami, Florida, with our steamy summers and vulnerable populations, we may be ground zero for heat impacts in the US. But we are also taking the lead in addressing the problem. The Miami Climate Health Equity Coalition, an alliance of community groups (including my organization, Catalyst Miami), physicians and nonprofits, is working to raise awareness of extreme heat and devise solutions. And we are not alone: Similar efforts are underway in communities across the country, from New York City to Missoula, Montana. While every community is different, here are some strategies that have proven effective.

Assess the problem, engage the people. Good policy starts with good data, but—given the extreme disparities in temperature within cities—you can't tell how hot it is from the weather report. That's why community groups are launching citizen science projects to collect on-the-ground temperatures where it matters most. In Miami, local residents and college students fan out with tiny heat-sensing iButtons, measuring heat in places where people congregate, such as bus stops and public parks. A similar project in Richmond, Virginia, called "Throwing Shade in RVA," combined heat-data collection with STEM training for teens in affected neighborhoods. Armed with that data, these projects engage people in the hardest-hit communities, because those most impacted are best positioned to devise solutions.

Make home cooling affordable. During heat waves, people with low and fixed incomes are often forced to choose between running the air conditioner (if they have one) and paying for food and medicine. To bring the cost down, we can expand energy efficiency and weatherization programs, as well as affordable loan programs for solar energy and home improvement. Wraparound social services are essential to strengthen the safety net for vulnerable families. And providing free portable air conditioning units to those who can't afford them can save on health costs—and save lives.

Protect outdoor workerz. No one is more vulnerable to extreme heat than those who labor outdoors, picking our crops and building our homes. We can protect those workers by supporting legislation that requires employers to provide language-accessible training in heat illness prevention, as well as first-aid measures and access to clean drinking water and shade.

Expand access to green space. The difference in heat levels between

rich and poor neighborhoods reflects a similar chasm in access to parks and green space. But groups like Groundwork USA are working to right this historical wrong, partnering with residents of underinvested neighborhoods in cities including Denver, Colorado and Elizabeth, New Jersey to make their communities greener and cooler.

Treat heat like other hazards. Despite its deadliness, extreme heat does not get the attention and focus it deserves. But that can change. In response to community pressure, Miami-Dade County recently appointed its first ever "chief heat officer." On a national level, the Extreme Heat Resilience Alliance wants to raise awareness by naming and ranking heat waves, as we do with tropical storms (Katrina, Category 5). In any case, extreme heat should be part of disaster planning and response at all levels of government.

Support a just transition to 100% clean energy. Unless we take action to bend the curve of greenhouse gas emissions, climate change could overtake our best efforts to fight extreme heat. That's why we must rapidly shift to 100% renewable energy, while ensuring that those most impacted by the changing climate are first in line to reap the benefits of a clean-energy economy.

Here in Miami, we are on the frontlines of a changing climate. To our northern neighbors, the threat of extreme heat may seem as distant as palm trees and white-sand beaches. But, as climate change advances, more American cities will experience Miami-like heat. For example, researchers predict that the climate in Washington will feel like present-day Greenville, Mississippi by 2080. On National Heat Awareness Day, all Americans should take stock of this growing problem—and take action to reduce its deadly toll.

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Climate Change Calls for a New Hippocratic Oath

Gary Cohen

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During the COVID-19 crisis, the health care sector has stood at the epicenter of our collective trauma. In addition to taking care of people sickened by the virus, health professionals have served as messengers and truth tellers, providing the credible information Americans need to protect themselves. Health leaders have also shaped policy in real time that aimed to reduce the public health damage of the spreading virus.

You could say COVID-19 has been a dress rehearsal for an even larger crisis: climate change. Here, too, health professionals are at the center of community response and resilience. Given this pivotal role, it is time to reconsider the roles and responsibilities of health care providers. It is time, in short, for a new Hippocratic Oath. We must ask: What does it mean to "do no harm" in a world threatened by climate change?

Climate change is many things: a drain on our economy, a driver of global migration, a national security threat. It is also the greatest health threat we face today.

Fossil fuel combustion is heating up the planet, triggering more superstorms, killer heat waves, and infectious disease outbreaks. And air pollution from burning fossil fuels is also one of the leading causes of illness and premature death in the United States and globally. According to a recent report from the Harvard School of Public Health, in 2018, eight million people worldwide died prematurely from pollution caused by the burning of fossil fuels—far more than AIDS, malaria, and tuberculosis combined.

All of these impacts are likely to increase in frequency, intensity, and geographic range in the decades to come—with dire effects on

public health. Indeed, between 2030 and 2050, climate change is likely to cause some 250,000 additional deaths each year.

Fossil fuel combustion exacts an economic, as well as human, toll. For example, the health costs of air pollution and climate change already far exceed \$800 billion per year in the United States, a number that is likely to grow exponentially over this century.

And, like COVID-19, climate change is a force multiplier for the social, racial, and economic disparities that disfigure our society. Weather disasters are increasing in frequency and severity across the country, and low-income communities and people of color are hit hardest. Climate impacts are layered on top of preexisting conditions—such as high rates of asthma and diabetes—in vulnerable communities, leading to worse health outcomes. Moreover, polluting factories, waste dumps, and diesel truck routes are more likely to be sited in communities of color. Even the amount of tree cover to mitigate the heat island effect is less in Black and Brown communities—so the rate of heat-related deaths among Black people is up to 200 percent greater than for non-Hispanic Whites.

In a warming, unequal world, it is impossible to tend to patients' health without addressing the larger environmental and social context—just as it would be absurd to ignore a raging pandemic. That is why physicians are increasingly speaking out in favor of measures to tackle climate change. Doctors are reframing the climate crisis to focus on people's health—a narrative to which people across the political spectrum can relate.

And the health sector as a whole has begun to leverage its power to bend the curve of greenhouse gas emissions. This is key because the sector represents almost 20 percent of the US economy, and a tenth of emissions. Globally, if the health sector were a country, it would be the fifth-largest emitter of greenhouse gases. So, by decarbonizing the health care sector, we can immediately improve the health of Americans, reduce diseases, and slash health care costs.

This work is well under way. Members of US Health Care Climate Council—a program of Health Care Without Harm, with representation from 18 health systems in 34 states—are reducing their carbon footprints and preparing their communities for the impacts of climate change. For example, a number of systems are supporting home weatherization programs that can reduce fossil fuel use, reduce environmental exposures in low-income homes, and reduce residents' energy bills to free up money for other essential expenses such as food and medicines.

They are also making progress in transitioning away from fossil fuels for their energy needs. As of 2019, Health Care Climate Council members collectively produced or purchased more than one million megawatt hours of renewable energy each year. Cleveland Clinic, a member of the Health Care Climate Council with facilities in multiple states, has cut energy use intensity by nearly a third since 2010, while serving more patients than ever.

At the same time, the health sector is harnessing the enormous clout of hospitals and insurers to drive innovation and transform markets. Some health systems are using their purchasing power to support the transition to renewable energy, sustainable food systems, and a circular economy. Others are "buying local" to diversify supply chains and support economic health and wealth in the communities they serve. Twelve health systems recently announced their participation in an Impact Purchasing Commitment that requires them to double their racial diversity spend over the next five years, increase their local purchasing, and choose from a number of other strategies to reduce their climate footprint and detox their supply chain.

The past year vividly illustrated the essential role of health care workers and systems. It also showed, yet again, that our health as individuals cannot be divorced from the larger context—whether that is a pandemic, poverty, or a rapidly warming planet. Indeed, it's estimated that just 10 percent to 20 percent of health depends on clinical care; the rest is derived from "social determinants of health" such as income, racial disparities, and the environment.

The health care sector occupies a unique position in US society both as an economic behemoth and as a profession with an ethical commitment to "do no harm." That power and purpose can be leveraged to take on the twin crises of climate change and inequity.

To that end, we must expand the health sector's mission beyond patient care, to include healing communities and the planet. This is the new social contract between the health sector and the communities they serve. This is the new Hippocratic Oath.

Lead in Water Harms Red States, Too

MAUREEN CUNNINGHAM

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ead in drinking water is an urgent national problem, but you wouldn't know it from listening to certain members of Congress.

This neurotoxin known to cause devastating cognitive and behavioral problems is especially harmful for infants and children. Today, there are an estimated 10 million lead pipes carrying—and potentially contaminating—US drinking water. Replacing those pipes is essential to safeguarding public health and ensuring safe drinking water for all.

But last fall, 200 House Republicans voted against spending \$15 billion to replace lead service lines, as part of the bipartisan infrastructure law. Thirty Republican senators also voted against the law.

While debating funding for lead pipe replacement in the Build Back Better Act, which would have contributed billions more, several Republican members of the House Energy and Commerce Committee balked at this investment, casting it as only a problem in big cities disproportionately located in blue states. Indeed, Oklahoma GOP Congressman Markwayne Mullin called lead funding "a bailout for cities."

Despite such rhetoric, red states also have a significant lead problem. Of the 15 states with the highest number of lead service lines, seven voted for President Donald Trump in 2020. For example, solid red Missouri, ironically nicknamed the "lead state" as a former global producer of lead, has an estimated 330,000 lead service lines, the sixth highest in the nation. (Of Missouri's seven House members, all but one voted against the infrastructure bill.)

Or consider Indiana, with 290,000 lead service lines. Indiana's seven House GOP members and both its senators voted against the bipartisan infrastructure law. In the House committee hearing described above, Indiana Representative Larry Bucshon said lead service lines were "the result of decades and decades of mismanagement, in my view, at the local level," suggesting they are not the federal government's responsibility.

While lead-contaminated water may be associated with cities such as Flint and Newark, lead water pipes are just as big of a problem in less urban states. Iowa and Kansas, with 160,000 lead lines each, are among the top six states for lead pipes per capita; Texas has a whopping 270,000 lead lines.

If members of Congress could put partisan politics aside, they would have a real chance to solve this problem through new technologies, innovative strategies, and contracting and procurement reforms. Leaders from both sides of the political aisle can also make the case for funding to match the scale of states' lead pipe problem.

Today, we have an opportunity to address lead in drinking water. If we saw this as a national problem, not a red- or a blue-state one, we just might be able to come together and solve it.

Essential Hospitals Can Lead a Holistic Approach to Climate and Health

Kalpana Ramiah and Gary Cohen

Originally published November 23, 2022 in The Hill

Health care systems are on the front lines of the climate crisis anchoring disaster response while coping with growing health impacts from heatwaves, wildfires and other weather-related threats. Hardest hit are essential hospitals, which care for the nation's most climate-vulnerable patients.

Within this challenge lies an opportunity. Given their stature in the most-impacted communities, essential hospitals could lead a holistic approach to climate and health. But in a time of strained resources and unrelenting demand, most lack the capacity to do so. With more federal funding, essential hospitals could improve health, equity and climate resilience in the most vulnerable communities.

The need for resilience is clear: climate change is impacting human and planetary health, and the window of opportunity to secure a livable future is closing fast.

Extreme heat, the deadliest climate impact, exacerbates chronic conditions such as heart disease, respiratory illness and diabetes. Rising temperatures trigger other insidious effects on human health and well-being, including food-, water- and vector-borne illness, along with mental health impacts and more.

The health burdens of climate change are not borne equally. While all Americans are at risk, low-income communities and communities of color are particularly vulnerable. Worse, climate impacts are layered atop existing inequities. Low-income communities and communities of color already bear higher disease burdens and lower life expectancies than more affluent and White populations. In effect, climate change is a threat multiplier for factors that contribute to disease and widen inequality. These challenges are felt most acutely by the country's essential hospitals, which care for patients regardless of their insured status or ability to pay. Essential hospitals provide a disproportionate share of the nation's uncompensated care and typically operate with little or no profit margin. The patients who rely on essential hospitals are often economically disadvantaged, members of historically underrepresented racial and ethnic groups, often with complex clinical needs—all factors that put them at heightened risk from the health impacts of climate change.

Essential hospitals—and the health sector generally—have considerable power to effect change. Representing nearly 20 percent of US GDP, the health sector can leverage its purchasing power to drive the transition to clean energy and a low-carbon supply chain. And essential hospitals serve as vital anchor institutions in the most-impacted communities, where they can address the factors that heighten vulnerability.

The health sector also plays a role in actually causing climate change. Despite its healing mission and commitment to "do no harm," the health care industry is among the most carbon-intensive service sectors in the industrialized world, producing up to 4.6 percent of all greenhouse gas emissions. The US health care system is responsible for about one-quarter of the global sector's emissions—a larger share than any other nation. This outsized impact provides an important lever for change.

While the problems of climate change and inequity create a vicious cycle of harm, the solutions to these problems can create a "virtuous circle" of mutually reinforcing benefits. For example, emissions reductions that also cut air pollution can immediately mitigate suffering from asthma and other respiratory diseases. And less air pollution means lower health care costs and reduced pressure on overburdened hospitals.

The potential benefits are staggering. In the United States, eliminating fossil fuel pollution could save 100,000 lives and \$880 billion annually. Over the long term, air quality improvements alone could substantially offset, or even exceed, the costs of climate change mitigation.

With the motive and the means to address climate change and

inequity, health systems are taking action. For example, Washington state-based Providence hospital system is reducing waste, switching to renewable energy, purchasing local and sustainable foods and phasing out climate-changing anesthetic agents. Providence has cut emissions at its hospitals by nearly 12 percent, and 26 of its facilities operate entirely on renewable energy.

And the Impact Purchasing Commitment, created by the Healthcare Anchor Network in partnership with Practice Greenhealth and Health Care Without Harm, directs health care purchasing toward industries that decrease their carbon footprint, produce safer products and services and grow economic opportunities for businesses owned by people of color and women.

Despite resource constraints, members of America's Essential Hospitals are also taking steps to reduce their energy use and lower emissions. For example, Atrium Health in North Carolina cut energy use by 20 percent, winning the US Environmental Protection Agency's (EPA) "Energy Star Partner of the Year" award for three consecutive years. The resulting cost savings enabled Atrium to donate \$10 million toward affordable housing in the communities it serves.

Importantly, essential hospitals are working to build environmental and social resilience in the communities they serve. For example, Boston Medical Center—one of the largest essential hospital and level I trauma centers in New England—worked with local stakeholders to identify the top challenges facing its patient population: housing instability and food insecurity. In response, Boston Medical Center has invested nearly \$7 million since 2017 to support community projects on housing and nutritional health.

These inspiring examples notwithstanding, relatively few essential hospitals have the capacity to mitigate and prepare for climate change.

That could change. Currently, there is unprecedented momentum at the intersection of climate, health and equity. In addition to issuing an executive order requiring federal agencies to decarbonize their facilities, the Biden administration created a new Office of Climate Change and Health Equity in the Department of Health and Human Services. This new office launched the Health Care Sector Climate Pledge, asking health care stakeholders to commit to halving their greenhouse gas emissions by 2030 and building more climate-resilient infrastructure. It's a call to action that has already been met by 102 of the nation's largest health systems.

President Biden also signed into law the Inflation Reduction Act, which will invest \$369 billion to drive the growth of clean energy and cut the nation's carbon footprint. It will deliver financial support to enable health systems to cut emissions, while helping overburdened communities reduce pollution and make zero-emission infrastructure more affordable.

Collectively, these initiatives create a unique opportunity for transformation in the health sector. To achieve the greatest impact, the federal government must prioritize investments in essential hospitals that serve communities on the front lines of climate change and health inequity. With more resources, essential hospitals can engage communities to define and implement just, equitable solutions to the great climate and health challenges of our time.

Georgia Should Protect Workers from Extreme Heat, Just Like It Does High School Athletes

Charles E. Moore

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ast month, Florida Gov. Ron DeSantis signed a bill that prevents cities and towns from protecting workers from deadly heat. The bill will scuttle local regulations that require employers to provide outdoor workers with lifesaving water, rest and shade on hot days.

Workers seeking better treatment might head to Georgia, instead. But they will find that our state cares more for the health of high school football players than for the workers who harvest our food, repair our roofs and toil on our highways.

Increasingly, outdoor workers put their health—and their lives—at risk just to do their jobs. Extreme heat is the No. 1 weather-related cause of death in the United States, killing more people than hurricanes, floods and tornadoes combined. As the planet warms, the toll will only grow. Last year was the hottest year in history, by far—and 2024 is shaping up to be even hotter.

I have seen the toll of extreme heat firsthand. As a physician, I volunteer in a mobile health clinic in South Georgia, where I often treat migrant farmworkers. Many of those workers have extensive rashes from exposure to pesticides. Others wear multiple layers of clothing, even in the sweltering heat, to protect their skin from the chemicals. Too often, those workers show signs of excessive sun exposure, heat exhaustion or syncope (fainting or dizziness). Some workers tell me that if they mention the need for sun protection or additional hydration, they will be fired.

There are a few states that protect workers from heat, but Georgia isn't one of them. California, Oregon and Washington require employers to provide shade and clean drinking water when the temperature reaches a certain point. And though better enforcement is needed, these laws are helping to prevent heat-related illnesses and deaths.

Georgia is, however, a national leader in protecting high school athletes from heat. For years, our state had some of the highest rates of heat-related deaths among high school football players. In the humid heat our state is known for, sweat evaporates very slowly and the body works harder to keep itself cool — sometimes leading to deadly heat strokes.

So, in 2012, the Georgia High School Association took action. It required schools to use the Wet Bulb Globe Temperature (WBGT) calculator to measure air temperature, humidity and radiant temperature. Based on the readings, coaches must provide a certain number of breaks per hour. As the readings rise higher, more protections are added, including changing the sports attire, shortening the time that players are out in the elements or canceling practice altogether.

Shouldn't outdoor workers have the same protections?

As we prepare for another record-breaking hot summer, state and local officials must take steps to protect workers from extreme heat. Outdoor workers need safeguards, such as access to shade and hydration. Employers should be required to use a WBGT to monitor temperature and limit heat exposure accordingly. We also need mechanisms for workers to report unsafe conditions without losing their jobs.

Our state is a national leader in protecting high school athletes from dangerous heat. It's time to do the same for those who earn their living by toiling under the hot Georgia sun.

Section IV

Transportation, Infrastructure, & Built Environment
If Roads Are Gridlocked in Rush Hour, What Happens When Disaster Strikes?

LAURIE MAZUR

Originally published January 8, 2016 in The Guardian

I was late for an appointment, sitting in traffic on one of the major arteries out of Washington, DC. It was miserable, barely moving traffic of the kind that makes you whimper with frustration as yet another green light turns yellow, then red, as you inch along.

Then I happened to notice a roadside sign that read: "Evacuation Route." And I tried to imagine fleeing from a major crisis—a terrorist attack, say, or climate-change enhanced superstorm—on a road that can't even handle the daily evacuation called "rush" hour.

Here in DC, we claim the worst traffic in the US. Non-apocalyptic events, such as the lighting of the National Christmas Tree or a couple of inches of snow, routinely induce gridlock. An ice storm or rare earthquake can mean commuters spending the night in their cars.

Washington may be an extreme case, but it is not alone. In many American cities, transportation systems are dysfunctional on a good day, much less in a crisis. In a world that is increasingly prone to extreme weather and other disruptions, our transportation systems may fail us when we need them most.

That's what happened when Hurricane Katrina slammed the Gulf Coast in 2005. Millions fled by car before the storm, creating monumental traffic and fuel shortages. But a quarter of New Orleans's residents, including many of the poorest and most vulnerable, did not have access to cars. More than 100,000 people were left in the city when the levees broke, creating a humanitarian disaster that took nearly 2,000 lives and displaced hundreds of thousands more.

Moreover, the sorry state of our nation's infrastructure (which has earned a grade of D+ from the American Society of Civil Engineers) means greater vulnerability to damage from climate and other disasters. When Superstorm Sandy came ashore in 2012, it flooded New York's subway system and submerged runways at La Guardia Airport. And the 2010 "superflood" in Tennessee and Kentucky destroyed highways and bridges; people drowned in their cars on the flooded interstate.

Our transportation systems are frustrating on a good day, and potentially deadly on a bad one. But what could a more resilient system look like? First, it wouldn't be all about cars.

"Dedicating all of our right-of-way to car movement leaves us in a very precarious position when there is a disaster," says Gabe Klein, author of *Start-Up City* and former transportation commissioner for DC and Chicago. A "multimodal" system, which includes trains, buses, bike paths and ferries in addition to cars, will fare better in times of crisis and upheaval—and is, of course, much more equitable.

Such a transportation system requires an upgrade of our crumbling infrastructure with an eye to the new climate reality. According to Emil Frankel, who served as assistant secretary for transportation policy at the US Department of Transportation, many highways, rail lines and airports on the East and Gulf Coasts are in danger of being inundated by sea-level rise. That means planners must deal with those challenges up front. "Anticipating sea-level rise will add costs to projects," says Frankel, "but it costs less to build a bridge higher and stronger than it does to replace it after it's destroyed."

As we upgrade our ageing infrastructure, however, it's important to remember that hi-tech solutions aren't always the answer. Gabe Klein recalls that when Superstorm Sandy hit, New York City had upgraded some trains to a sophisticated IT-based dispatch system. "When the tunnels flooded, guess what?" says Klein. "Those trains were the ones that didn't work. It fried all the systems. The old electro-mechanical systems that hadn't been switched over were the only trains that ran."

Klein also notes the importance of "redundancy" in electronic systems. "I'm not going to name them," he says, "but there are systems—signal systems, critical infrastructure and even entire transit systems—that are completely unprepared and subject to one single point of failure. You have to have a lot of redundancy, so that all your information isn't subject to one massive server failure."

Money, of course, is a challenge—especially when Washington's political gridlock is as bad as its traffic. Frankel is not optimistic about

the prospects for proactive federal funding: "We have a shortfall of over \$2 trillion to bring the nation's infrastructure to a state of good repair—and that does not include the cost of also making it resilient."

The federal government steps in only after a disaster, with FEMA emergency funds. But while regulations state that those funds must be used to "build it back to what it was," in fact the feds "are now allowing states, localities and transportation authorities to rebuild to higher and more resilient standards with FEMA money," Frankel says.

Still, with all the immediate needs facing cities today, it is difficult to muster funds to prepare for crises that may or may not occur. That's why we need a new way of thinking about resilient transportation, says Sue Zielinski, who runs SMART—a transportation think tank at the University of Michigan.

"Resilience is not just something we do in case something terrible happens," Zielinski says. "It's about creating the kinds of places we want to live in that work for us in good times and bad."

Many of the qualities that define a resilient transportation system robust infrastructure, many ways to get around, access for all—would also make our cities better places to live. And by shifting the focus away from cars, we will also reduce our carbon emissions and slow the advance of climate change. The best way to weather a disaster is to make sure it doesn't happen in the first place.

Parks: Not Just for Picnics

MITCHELL SILVER

Originally published November 17, 2016 in Public Square

For generations, parks were viewed simply as an amenity, a way to beautify a city. Whether they were planned for gardens, sports, or picnicking, parks were rarely seen as central to public safety and health. But that is beginning to change.

As cities around the world continue their growth, the role of parks is shifting. Parks are no longer seen as something nice to have, but rather as a vital system within the city's overall network of infrastructure. These hard-working public spaces are probably the biggest untapped resource for cities in this century. Why? Livable, sustainable cities must balance density with open space for the health of their residents, their environments, and their economies.

From physical and mental health, to economic development, to resilience and sustainability, parks offer myriad tangible benefits. New York City's parks, which attract more than 130 million visits a year, model those benefits to the world. For example, our parks are crucial to the city's resiliency efforts: NYC's shoreline parks in the Rockaways and Coney Island are being rebuilt since Hurricane Sandy to withstand rising sea levels and storm surges, and to protect waterfront communities. And thanks to our collaboration with the NYC Department of Environmental Protection, our parks have become sites of crucial green infrastructure like rain gardens and storm water-collecting bioswales.

Alongside their environmental benefits, parks have demonstrated time and time again their ability to stabilize communities and drive economic development. According to the Trust for Public Land, well-maintained parks add 15 percent to the value of homes within 500 feet. Our experience in New York bears that out. For example, in under a decade the world-famous High Line has brought more than two billion dollars in new real estate investment to the surrounding community—an enormous return on investment for a \$153 million park. An older but well-loved landmark can also drive value: Central Park generates \$1 billion dollars of economic benefits annually.

Now we're working to bring the benefits of well-maintained parks to all New Yorkers, with our \$285 million Community Parks Initiative, which will completely rebuild more than 60 historically underserved parks across the five boroughs.

New York is the city I know best, and I am proud of the progress we have made. But as I have traveled, I have seen many cities begin to take parks seriously as part of their urban infrastructure. Houston's Buffalo Bayou Park, for example, was created a century ago to control the flooding of local waterways and to provide a recreational area for the city. Now, it is one of the nation's finest urban parks—and a core element of Houston's water management infrastructure. On the other side of the globe, Singapore's spectacular Gardens by the Bay not only offer Singaporeans an awe-inspiring new public space, but they are built to clean and filter water and cultivate biodiversity of flora and fauna.

Lawmakers, designers, and planners the world over are learning that well-designed, well-maintained open spaces makes cities work. As our urban centers become more dense, let's make sure that our investments—and innovation—in city parks matches their importance in our lives.

Urban Planning Can't Happen Without Black People in the Room—Yet It Does

CHARLES D. ELLISON

Originally published May 18, 2017 in Public Square

S it at the tables where people are deciding where the new high school will go, or whether to expand the bus depot, and you'll probably need to ask, "Where are all the people of color?" In 2017, it is—still—a fact that most of the people who design, plan and build our cities lack the diversity of those same places.

At CNU 25 in Seattle, a distinguished panel of experts confronted this problem. Moderated by Shelley Poticha, Director of Urban Solutions at the Natural Resources Defense Council, the panel featured Ron Sims, former Deputy Secretary of the Department of Housing and Urban Development (HUD); Justin Garret Moore, Executive Director of the New York City Public Design Commission; and Emily Talen, professor of urbanism at the University of Chicago.

Designers and planners are a melanin-challenged group, the panelists observed. For example, less than 10 percent of architects are African-American or Latino, though those groups make up more than 30 percent of the US population. And only 15 percent of architects are women. "The people who are creating our cities are predominantly White men," said Moore.

That lack of diversity contributes to poor outcomes for African-Americans and Latinos. In America's cities, people of color *still*—inhabit neighborhoods marked by underinvestment, lack of access to employment, environmental hazards and high crime rates. Those separate and unequal places are the result of generations of racialized policies—from redlining and zoning to misguided "urban renewal."

And, as New Urbanists well know, our lives are shaped by the places we live. "Zip codes are not just addresses," said Sims, "they are life determinants. Tell me your zip code, and I can predict how much you earn, when you will die, and whether you will get kicked out of school."

The places we live affect our bodies even at the molecular level. Children from crime-ridden neighborhoods have higher levels of cortisol, a stress hormone, which is linked to learning problems, as well as a host of physical and mental illnesses. Environmental factors like toxins and stress can actually alter our genes, creating changes in our brains that last a lifetime. So the people who design and plan cities are "fooling around with people's genes without their permission," said Sims.

The New Urbanist movement has an important role to play, said Talen, in connecting the dots between equity and the built environment. The challenge is not new: the question of how to build livable cities that serve all people has preoccupied urbanists—including Ebenezer Howard, Le Corbusier and Jacobs—since the 19th century. CNU itself has addressed aspects of this issue; for example, by launching an affordability initiative a decade ago.

But much more remains to be done. First, it's crucial to build a pipeline of diverse talent, said Moore. Moore recalled his own entry into the field when, at age 14, he was hired as an intern for CSO Architects in Indianapolis. While designing a gymnasium for Moore's high school, CSO was asked to hire two summer interns from the school. Two decades later, both of those interns—Black males from an underperforming inner-city public high school—have careers in the planning and design professions. "Someone really should replicate that on a much larger scale," said Moore.

And the field must address other barriers, as well. Once on the job, designers and planners of color face a gauntlet of cultural challenges and microaggressions. As an African-American male in the profession, "I am basically a unicorn," said Moore. "When I go to meetings, people assume I'm not the person in charge." Ron Sims recalled that, when he served as Deputy Secretary at HUD, "someone at a meeting asked me to get them a drink." He added with a sigh, "Hey, it happens."

To diversify the planning process, it's crucial to find better ways to engage with communities of color. "Town Hall meetings don't work," said Sims, because the people who speak up don't necessarily represent the community. Instead, designers and planners must seek out a neighborhood's most trusted individuals and organizations. And respect the diversity *within* communities, said Sims: "Don't assume that all people of color have the same priorities."

The dynamics of community meetings are also important. "We need to ask, 'Who is at the table?" said Moore. "Who is heading the table, and facilitating the discussion?" And, importantly: "Who is calling the meeting in the first place?"

In short, creating cities that work for everyone will require big changes in who does urban planning, and how. To bring about those changes, designers and planners must make diversity a "metaprinciple" of their work, said Talen. Every design project should be measured by whether it helps—or hurts—the goal of building diverse, inclusive places to live, she added.

It will not be easy to diversify the process of urban design and planning, but it is essential that we do so. The places we live shape our lives in ways both trivial and profound; the power to shape those places is central to self-determination, growth and power. As Jane Jacobs once wrote, "Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody."

The Netherlands Cleared the Cars from Its Cities. Why Can't London or New York?

Chris Bruntlett and Melissa Bruntlett

Originally published August 9, 2019 in CityMetric

The past few months have seen an uptick in cycling deaths in cities around the world. In New York City alone, 18 people had been killed in cycling collisions by the middle of 2019, nearly doubling the city's total for the whole of 2018.

It's a sad irony that the increase in fatalities comes as countless municipalities have committed to Vision Zero—a plan to eliminate all traffic fatalities and severe injuries.

While the ethos behind Vision Zero is commendable, the vision itself is only as good as the actions taken to support it. The commitment from elected officials needs to be more than just lip service or nothing will get better—in fact, it will just get worse. The first step is prioritizing safer space on our streets.

An ever-growing number of cities are building fully separated cycle tracks to help reduce conflict between road users. London's cycleways are an excellent example of Transport for London's commitment to getting more people on bicycles while also keeping them safe on that city's notoriously hostile streets. New York City itself has spent nearly a decade taming its streets with protected cycle lanes. To some extent, these efforts are working, as more people who formerly wouldn't cycle are giving it a try.

So with all this investment in safer streets, why the increase in cycling deaths? Simply put, the investment is not commensurate with the latent demand, creating gaps that are hot spots for conflict. Intersections remain some of the most dangerous places for cyclists, who are left exposed to conditions that are designed and optimized for car travel. That, often coupled with incomplete cycling networks, means that drivers and cyclists are left to their own devices to navigate the streets. When pitted against each other, there is one obvious "winner."

Tensions have been rising between road users for decades now, since the first Critical Mass was held in San Francisco in 1992. Transport mode tribalism has contributed to intense confrontations between those on bikes and in cars. For many cycling advocates, the fight for the democratization of our streets can start to feel hopeless.

But there are signs of history repeating itself, perhaps for the better. Following one of the recent cycling fatalities in New York City, activists took to the streets to demand the City increase its efforts to protect cyclists. They hosted a die-in in Washington Square Park—a macabre, albeit poignant, statement that road fatalities of cyclists is not an acceptable status quo.

The die-in echoed historic demonstrations that took place in Amsterdam in the mid-1970s, as part of the Stop de Kindermoord (stop the child murder) movement. The Dutch uprising followed a dramatic increase in automobile traffic, and a corresponding rash of traffic fatalities that took the lives of 400 children in 1971. Now, just as in the Netherlands nearly 40 years ago, it is the people of New York City who are demanding change.

It's not just New Yorkers. In San Diego, San Francisco, Boston, Milwaukee, Glasgow, and Wellington, NZ, human beings are literally putting themselves in harm's way to create a physical divide between cars and those traveling on bicycles. The "People Protected Bike Lane," a form of tactical urbanism, is becoming an increasing common form of protest. In these cities, adults stand alongside children to demand better conditions, just as Dutch families did in the 70s. It's a clear statement that the right to space is an equity issue with no age limit.

The fact is that we've been here before. Perhaps on different shores, but the conditions are the same. Growing congestion coupled with increased demand on limited space make our streets hostile places. If those who have been elected to serve are truly committed to a Vision Zero future, it needs to be more than just talk. Proactive policies that create safer conditions through a combination of traffic calming, complete networks, and separated facilities will go a long way to encouraging cycling without increasing fatalities at the same time. The question is, can we learn from more recent mistakes and see the lessons that are laid out for us from history? If New York's die-in shows us anything, it's that we can take inspiration from the activist spirit of the past to demand better for our cities. Just as the Dutch stood up and ultimately created some of the most cycling friendly streets on the planet, so too can New Yorkers, Londoners, and others around the world. The people are asking; now it's up to our representatives to answer the call.

Fix It and They Will Come

LAURIE MAZUR

Originally published December 1, 2019 in The Progressive

Five years ago, the First Unitarian Universalist Church of Essex County, New Jersey, had serious problems. Chunks of plaster fell from the walls of its 126-year-old sanctuary. A raccoon had taken up residence in the box gutters that drained the roof, causing a bad leak. The rickety wooden ramp leading up to the front door was an accident (and a lawsuit) waiting to happen.

Worse, the congregation had dwindled to just thirty members, less than half of what it had been a decade earlier. Its part-time minister found himself preaching each Sunday morning to a small handful of congregants.

"We were discussing, should we go out of business?" says congregation member Mindy Fullilove, a professor of urban policy and health at the New School, about twenty miles away in New York City.

The church, she explains, entered "a complicated year of discernment" during which it partnered with others to embrace a new strategy for expanding the church's role as a center of community life. With help from a nonprofit crowdfunding platform called ioby (the acronym stands for "in our backyards"), First UU repaired its buildings and opened its doors to the people of its struggling neighborhood.

Today, the church, minus its minister, is a hive of activity—sewing classes, labor organizing, potlucks, a local music festival. As neighbors gather again under the church's (non-leaking) roof, they are spinning new webs of connection, strengthening the filaments of trust and fellowship that hold this community together.

First UU sits just off Main Street in Orange, New Jersey, a city of about 30,000 people near Newark. In many ways, Orange exemplifies the policies that have shaped America's post-industrial cities, with a devastating impact on working-class communities.

Orange emerged as an industrial powerhouse after the Civil War; by

the turn of the twentieth century, its thirty-four hat-making factories earned it the nickname "Hat City." The city's residents built Victorian mansions, parks, and libraries, while enclaves of Italian, Irish, and African American factory workers thrived and grew.

The fruits of prosperity in Orange were always distributed unevenly. Even in its glory days, the city was rigidly segregated by race, ethnicity, and class, with inferior schools and services in the poorer parts of town. Then, starting in the 1930s, redlining steered investment away from African American and immigrant neighborhoods, spreading blight and deepening the wealth gap. And in the 1960s, construction of an interstate highway through the center of town sped the exodus of White residents—and capital—to the suburbs.

Today, nearly 90 percent of Orange residents are Black or Latinx, including a large population of Caribbean immigrants. More than two-thirds of the city's households get by on less than \$50,000 a year; one in four of its people live in poverty.

Mindy Fullilove grew up in Orange, the daughter of an African American labor and community organizer and a White legal secretary. Fullilove left at the age of sixteen and pursued a career as a psychiatrist and urbanist (*The New York Times* credited her with "put[ting] entire cities on the couch"). In books that include *Root Shock* and *Urban Alchemy*, Fullilove has explored the policies that disfigured cities like Orange, offering strategies to repair our frayed urban fabric.

Fullilove visited Orange in 2007 to celebrate the fiftieth anniversary of a successful campaign to desegregate the city's schools, and for the first time fell in love with her hometown. While the challenges were evident, she was struck by the vitality of the city's people and its built environment. So she moved back to the area and rejoined First UU, which she had attended as a child.

Much had changed in the thirty years that Fullilove had been away. Orange had lost some of its luster. Despite its segregation and pockets of poverty, the Orange of Fullilove's youth had been full of thriving institutions—houses of worship, unions, settlement houses, community centers, a hospital—which nurtured a dense web of social connections, anchoring civic life. At the city's sesquicentennial in 1956, President Dwight Eisenhower was moved to remark, "Your public services and neighborly spirit are an example to the nation." But one by one, the venerable institutions of Orange began closing their doors. Orange Memorial Hospital shut down in 2004; the YWCA of Essex and West Hudson declared bankruptcy in 2013. The First Presbyterian Church of Orange, founded *300 years ago*, gave it up in 2010.

What does it mean for a community to lose its anchor institutions? You could say the loss signals a growing void at the heart of our society—and democracy. When Alexis de Tocqueville visited the United States in the 1830s, he marveled at how "Americans of all ages, all stations in life ... are forever forming associations." Those associations—"religious, moral, serious, futile, very general and very limited, immensely large and very minute"—form the connective tissue of a healthy democracy.

Two decades ago in his book *Bowling Alone*, Robert Putnam warned that the connections that held communities together are weakening. Americans are increasingly less likely to gather in churches, union halls, and, yes, bowling alleys. The reasons for the decline (including union-busting and longer work hours) are complex, but the cost is clear: Our stock of social capital—the networks of reciprocity and trust that turn "me" into "we"—is dangerously depleted.

Sadly, the trends Putnam identified have only worsened since then, though now, when the average American spends twenty-four hours a week online, we are more likely to be scrolling—or trolling—alone.

By all indicators, First UU—with its dwindling membership and crumbling buildings—was set to be the next anchor institution in Orange to go under. Congregants and board members struggled with the agonizing decision to close.

Then a visiting Unitarian minister named John Gilmore (also known as Om Prakash) got them thinking. He noted that those crumbling buildings—a sanctuary, parish hall, and parish house—were assets, not liabilities. He urged First UU to make its space available to the neighborhood for various uses and take its place at the center of a revitalized community.

This approach is in keeping with "asset-based community development," the idea of building on what works, rather than focusing on what's broken. Even (or especially) in historically under-resourced neighborhoods, residents possess deep reserves of skill, talent, and human connection. The best solutions emerge where residents can readily put those assets to work.

"So what we did," Fullilove relates, "was take the money we had for a minister and use it to hire a managing director of our buildings, and to create what we call The HUUB."The name is not an acronym, but represents the hub of community activity HUUB aims to be, with the two "U"s of "Unitarian Universalism" at its core. According to the church's website, the mission of The HUUB is "to turn the buildings and land we own, the Church's most valuable assets, outward to be a welcoming resource for the people of Orange."

Charlie Wirene was hired to manage the buildings and The HUUB. As a former contractor and graduate of the Parsons Design and Urban Ecologies program at the New School, "Charlie has a really good sense of city making and a really good sense of how you care for buildings," says Fullilove. "That was a remarkable match because we had buildings and we wanted to build community."

Wirene began by recruiting a group of "listening fellows"—twentysomethings from the neighborhood—to design projects and events that reflect community interests and concerns.

For example, Holly Barszcz started a monthly potluck dinner that draws a cross-section of neighbors to the parish hall. Khemani Gibson hosted an "immigrant dreams roundtable" to get recent arrivals more engaged in civic life. Ray Sykes put on a quarterly hip-hop concert series. Stephen Batiz launched an after-school art studio for kids.

The fellows also collaborate on group projects. After a recent spike in gang violence that left community members hurting and scared, the fellows co-led a workshop on collective recovery from trauma.

Some of the fellows' projects are ephemeral; others, including the potlucks and art studio, are ongoing. All provide a hotline from the community to the church. "It's a way of getting to know our neighbors, not coming in with answers from the outside," Wirene says.

But there was still the problem of the raccoon, and the falling plaster, which would take money to fix. So the church turned to ioby, the nonprofit crowdfunding platform. In addition to providing an online platform for receiving tax-free donations, ioby coached the team at First UU on how to frame their message and craft a fundraising plan. "Not having a lot of development or fundraising experience, it was great to have a framework and guide to build from," says Wirene, adding that the platform's intensive support helps demystify what can be an intimidating process. "Ioby gave us strategies and tools, which is super helpful when you're talking about money—kind of a taboo topic."

The crowdfunding campaign met its target: over a month in 2018, First UU raised \$35,115 on ioby for The HUUB, mostly from church neighbors, congregants, and friends. Another ioby campaign in 2019 netted nearly \$21,000. The online campaigns leveraged other donations, including matching grants from the Fund for Unitarian Universalist Social Responsibility and a gift from a major donor.

Altogether, Wirene says The HUUB's various fundraising efforts brought in more than \$117,000 in two years, enough to fix the leaky roof, replaster and paint the walls, and banish the raccoon.

But the benefits of the fundraising campaign are not just financial. "Over time, you're building your story, you're building your supporter base, you're building enthusiasm," says Fullilove. "People don't just give money. They come to events, they take part."

Organizations from the neighborhood routinely use the HUUB space. There are diaper drives and concerts, sewing classes, theater rehearsals, and "Know Your Rights" trainings for immigrants. There are Bible-study groups and religious services led by local congregations that sublet from The HUUB. There are parties and weddings and post-funeral repasts.

The church rents out some of its refurbished space to groups that serve the community. The anchor tenant is the University of Orange, a "free people's university that builds collective capacity for people to create more equitable cities." The school, founded by Fullilove and Orange residents, organizes an annual Music City Festival that showcases local talent. Other tenants include the National Domestic Workers Alliance, the Laundry Workers Center, and the Lanbi Center for Humanities and Civics, which provides support and citizenship classes to Haitian immigrants.

And, in the midst of it all, First UU lives on—as a church. "We had to figure out what were we going to do without a minister," Fullilove says. "Some said, 'We're just a community outreach hub,' and I was like, 'No, we need to have some form of worship.' Our guiding principle, from St. James, is: Faith without works is dead, but also works without faith is dead."

In that spirit, the church developed a monthly lay-led service where invited speakers talk about their faith and works. Today, for the first time in years, First UU's membership is growing. Still, as a student of American cities, Fullilove understands the limits of this work.

"So much of our research has been watching how cities have trashed poor minority communities and how states have trashed poor minority cities, and the power of that trashing is so great that it's a larger system. For the people embedded within it, it's like a tsunami of disinvestment," she says. "So, you've got to look at assets, you've got to look at protective factors, but you've also got to stop the trashing."

But one virtue of asset-based community development is that it builds skills and capacities that can't be taken away. Fullilove likens it to the Black community's work to promote literacy during Reconstruction. "People got educated as fast as they could," she says. "Then, even with the defeat of Reconstruction, you couldn't take away that knowledge."

The threats keep coming. The latest, Fullilove says, is a plan to demolish some of Orange's historic Main Street (a key community asset) and put market-rate housing in its place.

Still, First UU and The HUUB continue their patient, necessary work: nurturing the capacities of their neighbors and providing space literal and otherwise—to define and solve problems. Whatever the future holds for this city and its people, those capacities will endure.

Build Infrastructure for the Future

LAURIE MAZUR

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n an ordinary day, you probably don't think much about infrastructure. You twist a knob, and clean water flows from the tap. The daily commute is uneventful. Wires transmit electricity, powering everything from dialysis machines to Netflix.

The mechanisms that enable these wonders remain—for most of us—out of sight and out of mind.

But, in twenty-first-century America, that may be changing. There are the epic failures: drinking water poisoned by lead or algae; commuter train derailments; collapsing highway bridges and pedestrian walkways. And then there are the daily frustrations, including gridlocked traffic, power outages, and rising utility rates. These failures, big and small, illuminate the dire state of our nation's infrastructure.

In 2017, US infrastructure received a dismal "D+" in a quadrennial report card issued by the American Society of Civil Engineers. According to ASCE, we'll need to spend \$2 trillion over ten years to bring water, transportation, the electric grid, and other systems up to a passable "B."

Consider the systems that deliver clean water to your tap. Many of those pipes and pumps date back to the Eisenhower Administration—or, in the case of some plumbing in Washington, D.C., to the era of the Civil War. There are some 240,000 water main breaks in the United States every year, which waste more than two trillion gallons of treated drinking water.

While infrastructure needs are growing, federal support has shrunk, aside from a brief flurry of spending funded by President Barack Obama's stimulus package in 2009. The federal government's share of capital spending on water infrastructure, for instance, fell from 63 percent in 1977 to just 9 percent in 2014.

In cities with aging water systems, utilities are raising rates to make

up for declining federal investment. The lowest 20 percent of income earners now pay up to one-fifth of their monthly income on water. In Detroit, thousands of families had their water shut off in 2018 when they couldn't keep up with skyrocketing bills.

Worse, estimates by the civil engineers organization do not factor in climate change, which is now upon us. As the world faces a ten-year deadline to radically reduce greenhouse gas emissions to avoid catastrophic warming, the transportation and power sectors together account for nearly 60 percent of US emissions. Every time a highway is widened or a new coal-fired power plant built, we are doubling down on fossil-fuel dependence—and locking in high emissions for decades to come. We need to replace or augment current systems with carbon-light alternatives.

At the same time, our infrastructure must be retooled to withstand the climate impacts that are now inevitable. Communities are confronting problems they've never seen before, like extreme heat in Montana, annual "500-year" rain events in Houston, and "sunny-day flooding" in Norfolk, Virginia, and Miami. The impacts of climate change are already straining the nation's aging infrastructure, and the worst is yet to come—with low-income communities facing the harshest impacts. The Trump Administration nevertheless proposed a policy change that would exclude all climate considerations from infrastructure planning.

However, the challenges we face can be seen as opportunities. Reinventing infrastructure could reconfigure American life by heading off the worst climate impacts, while also spurring job growth. "If we do it the right way, if we pair investments with smart labor policies, we can create and sustain the kind of good, stable union jobs that we know this country sorely needs," says Larry Willis, president of the AFL-CIO's Transportation Trades Department.

The federal government is key to transforming infrastructure because the scale of spending needed is on par with other massive federal undertakings, like continent-spanning railroads, highways, and rural electrification—the original New Deal projects that succeeded because of forward-thinking leadership that galvanized the nation.

So, what would a progressive vision for infrastructure look like in 2020? Here are some guideposts.

For starters, every dollar spent on US infrastructure must bend the arc of carbon emissions toward zero. On transportation, that means transforming our gas-guzzling car problem.

Most federal transportation spending now goes to surface roads through the Highway Trust Fund. But public transit is a much more energy-efficient way to get people from place to place. Notes Steven Higashide of TransitCenter, "A highway lane can carry about 2,000 people per hour per direction. Buses can carry four or five times that number. With rail, you can carry perhaps 25,000 people per hour."

While it's important to keep existing roads and bridges in good repair, a climate-smart transportation policy would "stop widening highways," says Christof Spieler of the design firm Huitt-Zollars. Numerous studies have shown that added highway capacity simply leads to more driving, along with more congestion and emissions.

"A single highway project is often measured in the billions of dollars," Spieler says. "You can buy a lot of bus shelters for a billion dollars." He advocates a much stronger intercity bus and rail network, coordinated and partially funded by the federal government. Spieler adds that by fully taxing trucks for their impact on highways, we could spur a rapid shift to freight rail.

In the power sector, the challenge is to complete the transition from fossil fuels to renewables, while radically improving the energy efficiency of our built environment.

The good news is that cheap, clean renewables are ascendant, while dirty coal-powered plants are being phased out. The price of renewables has fallen dramatically over the last decade, while game-changing battery storage provides steady power when the wind doesn't blow and the sun doesn't shine. Still, thanks to the fracking boom and the enduring power of the oil and gas industry, the United States still gets 63 percent of its power from fossil fuels.

In the power sector, the federal government plays a lesser role, since most Americans get their electricity from investor-owned utilities. But the government could help speed the clean-energy transition by funding research, development, and pilot projects, and through tax credits and incentives, as the Obama Administration did to improve the energy efficiency of the nation's building stock. At the very least, the federal government could stop subsidizing the fossil fuel industry to the tune of \$20 billion a year, undercutting state-level efforts to promote clean energy.

The power sector must also transform to withstand the hotter, wilder weather of the future. In 2012, Superstorm Sandy left eight million homes in the dark—some for as long as a month—and last year, a Californian utility shut off power to hundreds of thousands of customers to avoid sparking wildfires. Our vast, sprawling power grid is so interconnected that an overgrown tree in Ohio can take out power for fifty million people along the East Coast.

According to Denise Fairchild of Emerald Cities Collaborative, a resilient power system includes distributed renewable technologies, such as solar, plus battery storage and microgrids that can keep the lights on in a crisis. The federal government could help states and localities by funding research and innovation to ensure that these technologies are affordable, accessible, and appropriate—especially for vulnerable communities.

Meanwhile, water-treatment facilities are typically built in the lowest-lying parts of communities, where they are vulnerable to sea-level rise and storm surges; these must be fortified with flood walls and backup power. The water sector, says Scott Berry of the US Water Alliance, "needs to plan for a future that looks climatologically different from the one that we have right now. The management of water is going to be critical in adapting and building resilience."

In some cases, nature is the most resilient infrastructure. Forests and wetlands absorb floods and filter drinking water; dunes and mangroves block storm surges. Protecting or restoring these natural services can be cheaper and more effective than trying to replace them with pipes and concrete. The federal government can help promote "green infrastructure," such as protected areas, parks, and rain gardens for stormwater management and flood prevention. And it can tackle the perverse incentives that spur unchecked development in floodplains.

Given decades of inequitable funding for everything from transit to broadband, a progressive infrastructure plan must prioritize spending in underinvested communities, both to improve services and to create economic opportunity. And it can create a more equitable future by tying federal spending to workers' wages and benefits, labor rights, and community involvement. "There's got to be an equity plan so those communities most impacted are receiving the first dollars out," says Fairchild. "And we need a collaborative planning process, where communities are at the table with the public planners and private developers."

Investing in the right kinds of infrastructure can have far-reaching benefits. For example, a decentralized power-generation system could bring jobs and investment to communities that have been sacrificed to fossil fuels, from the ravaged mountain towns of Appalachia to the urban neighborhoods overshadowed by power plants and refineries.

Addressing the transit gap in low-income areas would have similarly transformative effects. A groundbreaking study by Raj Chetty and Nathaniel Hendren of Harvard University found that low-income families in counties with the longest average commute times had the slimmest chance of moving up the economic ladder. Connecting marginalized communities to jobs and opportunity is essential to closing the chasm between America's rich and poor.

And while investing in transformative change, the federal government must relieve the heavy burden of utility costs on low-income families. It can create programs to help poor people pay for essential water and power, similar to those now in place for food and heat.

Trump's ill-fated 2018 infrastructure plan offered just \$200 billion in federal funds; the remaining \$1.3 trillion was expected to come from private investors, states, and localities. But the private sector's record on infrastructure is mixed. Investors won't invest without the promise of high rates of return. And when private investment does occur, it can send costs soaring: In Bayonne, New Jersey, water bills rose almost 28 percent after private entities took charge of the city's public water system.

But public-private partnerships can work—if government attaches the right conditions. When Prince George's County, Maryland, teamed up with the engineering firm Corvias to launch its Clean Water Partnership in 2015, a performance contract set out two objectives: to improve stormwater management with green infrastructure and to hire local small and minority-owned businesses to carry out the work. The partnership has so far met or exceeded all of its economic, social, and environmental objectives—on time and under budget. To build an infrastructure for the future, we need to spend more. But we also need to spend smarter, by taking a systems approach to infrastructure. As Spieler puts it, "We should use every infrastructure project as a chance to solve as many problems as possible."

A more holistic approach can save money while turning problems into solutions. For example, the city of Lille, in France, now powers its bus fleet with treated methane gas produced by its sewage-treatment plant and its organic waste facility. The federal government can help find similar solutions, by encouraging cross-disciplinary research and interagency collaboration.

Finally, we must protect our investments in infrastructure by making sure they are properly maintained—notes Hillary Brown of the City College of New York, "Nobody wants to put money into maintenance. They'd rather have a new bridge named after them. We've got to have a culture shift, because we don't have the luxury of rebuilding these things when they fail every few years."

The sorry state of our nation's infrastructure has drawn back the curtain, revealing systems that are unsustainable and unjust. With that insight, we can rebuild for a greener, fairer, more prosperous future.

When Confederate Monuments Fall, Action-Based Empathy Can Create Inclusive Public Spaces

Elgin Cleckley

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June 10 is a day I'll never forget. I had just walked away from chatting with a former architecture student I had the pleasure teaching at nearby University of Virginia. We met for a physical distancing chat, near the center of Charlottesville's Downtown Mall. Seeing the infamous Robert E. Lee statue a few blocks away, the student and I talked about Gov. Ralph Northam's order to remove a similar statue in Richmond in response to the national reckoning sparked by the murder of George Floyd.

I started to head east, looking up to the Paramount Theater, now holding the words "Black Lives Matter" on the marquee. Looking down, I realized that a White woman was approaching. She asked, "Can I say something to you?" from a safe distance. I paused before I responded, a little unsure of what to say, before I heard "Sure" come out above my mask.

She took off her mask and sunglasses to look me in the eyes. "I just wanted to say that I'm sorry about all that's going on. I'm also sorry about my ancestors," she said. "And one more thing: I love you." As she caught her breath, all seemed so quiet all of a sudden. "Thank you very much. I appreciate it. That's very kind of you." I replied, turning to walk home.

I've never experienced anything like this, such a direct display of empathy. As I kept walking, I thought of the days after the events of August 2017 as I passed the site where Heather Heyer was murdered and more than 30 others were injured. Those days, some White people would look me directly in the eyes and say hello with intensity—but it felt like sympathy. What's emerging at this moment is empathy—not as a perceived soft skill, but as a strong, connective, driving force for human interaction. Call it action-based empathy.

Jenna Wortham of *The New York Times* notes that, for three months, Americans have been living in a state of "hypervigilance and anxiety, coping with feelings of uncertainty, fear, and vulnerability—things many Black Americans experience regularly." During this time, our empathy grew for essential workers, and the impacts on communities of color became front and center.

My interaction with a woman on a warm June day was the product of this confluence—moving beyond thoughts and prayers to action-based empathy to support the humanity of Black people. Such empathy has fueled demand to remove racist symbols from our public spaces. These symbols are familiar to us here in Virginia, where Confederate monuments loom over 220 public spaces. We've been watching intently as Confederate statues come down in Birmingham, Mobile, Louisville, and Alexandria—with Jefferson Davis toppled days ago by protesters in Richmond.

In Charlottesville, the current conversation about statues and monuments began in 2016 when student and community activist Zyhana Bryant petitioned the city council to remove the Lee statue and rename its park. Bryant's petition charged the work of the City's Blue Ribbon Commission on Race, Memorials, and Public Spaces, which led the city council to vote to remove both Robert E. Lee in Lee Park and Stonewall Jackson Statue in Court Square—resulting in the 2017 White supremacist Unite the Right rally and accompanying violence.

This movement's action-based empathy led to Gov. Ralph Northam's June 4th decision to remove the Lee statue in Richmond, and earlier, to sign legislation allowing localities to remove, relocate, or contextualize Confederate statues and monuments within their communities starting July 1st.

As this date approaches, the time is now to think of how action-based empathy can create the inclusive and democratic designs we want to see in our public spaces. How do we take this new empathy I experienced from a fellow citizen into public spaces—keeping this moment alive? Action-based empathy must successfully integrate identity, culture, history, memory, and place. I propose three themes for action-based empathic design—using Charlottesville's Court Square (home to the now-infamous Stonewall Jackson statue) as an example:

1. Increase connection to and empathy for the natural landscape.

To set the context of our human settlement, orient visitors to Court Square to appreciate our natural world. Designs need to create empathy for the flora, fauna, and natural resources that have enabled our existence in this place—allowing for our human occupation. During the pandemic, our connection to the earth and the natural world dramatically increased. Walks and observations of the natural world became a cure for too much screen time and worries of the invisibility of the virus. Imagine if Court Square became a place that reminds us all of our position on this earth—soil below, nature around, the sky above—that we are all connected to for our survival.

2. Strengthen empathy through designs that include an inclusive account of human settlement, specific to this place.

Court Square needs to tell the full story of human settlement at this place for action-based empathy to grow. Start with the First Peoples who inhabited this region for 10,000 years, and the Monacan village of Monasukapanough on the Rivanna River. This forces a rethinking of the English colonists' version of history, which begins in Jamestown in 1607. Recognize the narrative of Thomas Jefferson and the Mon-ticello plantation in the distance, and the educational plantation of the University of Virginia—both made possible by the enslavement of African labor.

Create designs that combine themes one and two—with historical mapping that shows the vast number of plantations now hidden by single-family homes. Show how Charlottesville provided the Confederate war effort with swords, uniforms, and artificial limbs during the Civil War, and cared for the Confederacy's sick and wounded in a 500-bed military hospital that employed hundreds of the town's residents.

Then, ensure the African American narrative is entirely told here. Show how Emancipation in 1865 brought the development of African American communities—including one here called McKee Row, which was actively removed by the rigid anti-Black laws of the Jim Crow period (1877–1965). After the statue of Stonewall Jackson is removed, tell how Paul Goodloe McIntire funded it and placed it right where McKee Row once stood.

As visitors look upon the Court House, a design element could raise their awareness of Massive Resistance, adopted in 1956 by Virginia's state government to block the desegregation of public schools mandated by the US Supreme Court in 1954. This element would also note the location of the Jefferson School, built to serve the city's Black students during this period. And the design could mark Vinegar Hill, a thriving Black neighborhood that suffered the fate of "urban renewal" in the 1960s, displacing the City's Black population to the public housing we see today.

3. Continue the energy of the moment to create design competitions—visualizing action-based empathy.

Action-based empathy thrives in design competitions, such as General Devotion/General Demotion, which asked participants to reimagine the Confederate statue-strewn Monument Avenue in Richmond. Resulting designs were empathic models, with thoughtful programming that responded to a difficult and complicated historical context, proposing temporary and permanent interventions.

A design competition for Court Square should take points 1 and 2 as a starting place. Ideas produced under these guidelines would produce the inclusive design features we are looking for.

The time is now to keep the newfound understanding of empathy into our post-statue public spaces—where interactions such as mine become commonplace, the products of this moment of change.

Why "Middle Neighborhoods" Are the Sweet Spot Between the City and the Suburbs

DANIEL PAROLEK

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The COVID-19 pandemic has reignited a debate about where Americans want to live: in dense, lively urban neighborhoods, or in quiet, sprawling suburbs and small towns. After decades of urban growth, the pandemic has some people questioning the wisdom of living in close proximity with millions of others. But is the alternative a flight to suburbia—with its dependence on climate-changing automobiles and soulless shopping malls?

No. There is a sweet spot between the heart of a city and suburb. "Middle neighborhoods" offer the right balance of urban amenities and elbow room. The problem is that current zoning laws and other standards make it extremely challenging to build these neighborhoods. That needs to change.

Middle neighborhoods exist in every city. Primarily built before the 1940s, they include a mix of small-lot single-family homes, house-scale buildings with multiple units (which I call missing middle housing), high-quality private and public spaces that are not overly crowded, great walk- and bike-ability, and enough population density to support commercial amenities and services like high-quality health care. Typically, they have population densities of 8,000 to 11,000 people per square mile, which my colleague Brent Toderian calls "gentle density" and Lloyd Alter at *Treehugger* calls "goldilocks density." These middle neighborhoods just may be the sweet spot for much-desired livability.

The Westbrae neighborhood in Berkeley, California, where I live, is an excellent example of a middle neighborhood. It has a mix of small-lot bungalows and all of the missing middle housing choices—duplexes, multiplexes, and other dwellings that occupy the space between single family homes and apartment buildings. Our neighborhood Main Street includes a much-loved bagel shop, grocery store, and other commercial services and amenities. Recently, news that the local bagel shop was struggling spread quickly via social media channels, and the community came out to support the business.

It's easy to get around in Westbrae. Slow-speed, narrow, tree-lined streets make it comfortable for walking and biking; there's also easy access to regional trains and many bus lines that run fairly frequently. Westbrae residents who choose not to own a car—or who cannot afford one—can walk a couple blocks and jump on a bus or take Bay Area Rapid Transit to access health care facilities. You don't get this type of car-free access or proximity to services in a suburban environment.

We don't have the rolling expanses of lawn that are common in suburbia. The yards in my neighborhood are small by American standards: mine is about 10 feet deep and 15 feet wide. But that was just enough space to enable me and my neighbors to get outside while we were sheltering in place, a luxury unavailable to some in denser, high-rise housing.

While some of us are lucky enough to live in older middle neighborhoods, newer ones are hard to find. There are many barriers to building them, starting with off-street parking requirements, misguided zoning/ development standards, and street specifications, all of which default to creating auto-oriented suburban places.

City planners and engineers, community members and decision-makers need to get over their perception that a neighborhood cannot function without a lot of off-street parking. In some of the nation's most highly desirable neighborhoods, many examples of multi-unit missing middle housing types exist without designated parking.

Zoning also needs an overhaul. Too often, zoning requires lot sizes that are too big and densities that are too low. Fully 75% of the land in US cities zoned for residential use only allows single family homes or one unit per lot. In addition, the narrow, tree-lined streets we love in Westbrae are illegal to build today in a majority of cities: street standards are driven by the goal to move cars efficiently from one place to another, requiring wide, high-speed, multi-lane thoroughfares. The resulting streetscapes keep cars moving, but they make walking and biking unpleasant and dangerous.

Westbrae and other middle neighborhoods have proven their livability both before and during the pandemic. Demand for missing middle housing types and medium-density, walkable neighborhoods has grown over the past decade; these neighborhoods are popular with renters and buyers from diverse market segments, including baby boomers and millennials. As a prolonged recession looms, the range of housing prices in these neighborhoods, and the quality of life they deliver, will only broaden their appeal.

This is a call to action for current and future planners, urban designers and city decision-makers to remove barriers and enable more middle neighborhoods to be built. It is time to rethink the illogical institutional barriers that are currently in place and help our cities meet the growing demand for a more sustainable, equitable, and livable future.

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If You Build It, We Will Thrive

HENRY CISNEROS AND WILLIAM FULTON

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Gray and boring. Stolid and unexciting. These words are sometimes used to refer to infrastructure. The prefix "infra" derives from the Latin word for "under" or "beneath," suggesting why it is easy to understate its significance.

Infrastructure is the invisible substrata of our physical environment, composed of steel, wiring, concrete, asphalt, electric pulses, metals, masonry, and other materials. But it is also, at this moment, connected to the most important progressive goals in the United States today.

The pandemic uncovered a deep inequality in access to basic public services, from poorly located and equipped health facilities to transportation systems that put essential workers at risk of exposure. We saw this clearly in current public services as well as in the pernicious long-term effects of disparities in jobs, incomes, and wealth.

Years of underinvestment in poor neighborhoods and left-behind rural areas contributed to the divide, as has the lack of adequate communications and transportation systems.

The reality of the nation's digital divide became obvious when online education was not available to students in poor neighborhoods. The benefits of telemedicine have been denied to those who needed it most. And over the course of the last year or so, we have seen clear evidence of climate change and its increasingly harmful effects, including more violent storms, property damage, and the loss of lives.

Addressing these challenges will require a range of policy actions and behavioral changes, which progressives have championed. To be sure, infrastructure by itself is not the solution to all of these significant concerns, but it is a part of the solution to every one of them.

Therefore, at a time when the Biden Administration is pushing a long-overdue infrastructure initiative on a massive scale, it is important

to harness the potential of governmental and private-sector infrastructure investments to advance progressive ideas.

We should not miss this opportunity.

Infrastructure is not just the purview of engineers, builders, mechanics, transit companies, architects, plumbers, construction materials firms, electricians, and their supporters in state legislatures and the US Congress. In fact, infrastructure should be important to the US public, especially those who advocate for equitable solutions to pressing social problems.

Part of this expanded interest in infrastructure is emerging from an expanded definition of infrastructure. Some are proposing adopting an extremely expansive definition, including such items as workforce development, child care, and housing, all of which are critically important to the nation's future. But even if we stick with a more traditional definition, it's clear that the pandemic highlighted new areas of infrastructure need. Broadband is now rightly considered a core infrastructure item, and the COVID-19 crisis also revealed the need for updated and expanded medical facilities.

Here, drawn from research by the Kinder Institute for Urban Research at Rice University, are some of the ways that infrastructure can address some of our most pressing national problems:

The Pandemic: Specific infrastructure policies can curb the inequalities glaringly uncovered by the pandemic. In Chicago, Illinois, COVID-19 patients were being treated in hallways because of a lack of hospital space. In Austin, Texas, school administrators equipped school buses with Wi-Fi and positioned them in parking lots so students in marginalized neighborhoods could access their lessons. In San Antonio, Texas, the transit system struggled to transport essential workers who were required to work in-person, many of whom work for low wages and do not have access to cars for their commute.

Infrastructure investments can include decentralized medical facilities in areas of high need, telemedicine to diagnose and treat more patients, and modernized educational facilities in under-resourced neighborhoods. Cities and states understand the connection between infrastructure and post-pandemic solutions. St. Louis, Missouri, is seeking \$300 million to modernize citywide broadband and expand it to under-connected areas. And Akron, Ohio, has launched a \$250 million project to provide transit access to underserved neighborhoods.

Assembling a national infrastructure plan should include listening to and involving local leaders who have seen the inequities of the pandemic up close.

Racial Equity and Economic Mobility: Infrastructure can create good-paying jobs and support training programs to make those roles available to marginalized populations. Beyond the traditional ways to deploy infrastructure funds, projects can be designed and located in new ways to advance social justice. Infrastructure plans should include providing access to free 5G Internet in communities whose residents have disproportionately suffered the consequences of disparate opportunities.

Infrastructure projects can improve access to public services in ways that enhance economic mobility, as the city of Boise, Idaho, is seeking to do by routing transit lines to connect workers to jobs with living wages.

During the pandemic, voters in San Antonio, Texas, passed a \$154 million commitment to expand community college training programs into the most underserved neighborhoods. A true economic mobility strategy would also include employing minority- and women-owned businesses at every stage of infrastructure development.

Geographic Dispersal of Opportunity: Infrastructure can create opportunity in places that have been denied opportunities for investment and growth. Areas left behind include rural communities, cities in declining regions, and disadvantaged neighborhoods. Infrastructure can be used to extend critical services, to renew communities, and to provide modern facilities.

Infrastructure projects that have extended opportunities geographically include: communications improvements, educational investments in K-12 and higher education, and public facilities such as libraries, community centers, and recreation hubs.

Digital Divide: Transforming digital technologies can become part of the solution to larger societal challenges. Digital systems make possible interactive electrical grids that integrate renewable power sources, accelerate transportation solutions such as mobility on demand, and allow for smart city solutions in public safety, waste management, and congestion relief.

The absence of accessible digital communications actually exacerbates

other gaps. For example, children who cannot access digital learning fall further behind their peers who do have digital access. That's why cities including Fort Worth, Texas; Long Beach, California; Raleigh, North Carolina; and Buffalo, New York, have prioritized communications infrastructure. Entire states, including Pennsylvania and Georgia, have embarked on building public broadband networks.

Climate Change: The Risky Business Project, an initiative funded by former New York City Mayor Michael Bloomberg to study the economic risks of climate change, concluded that, by 2050, US residents will likely experience double—and possibly triple—the number of days per year in which the temperature exceeds 95 degrees Fahrenheit. This will result in declines in the yields of critical crops, require massive amounts of additional electric power for air conditioning, and increase the danger of wildfires due to drought and heat-related effects in forests.

Climate change of this magnitude presents two overarching policy challenges: first, to slow the rate of the temperature increase; and second, to put in place the physical systems needed to reduce climate-induced damage. Infrastructure is essential to both policy goals.

Slowing the rate of temperature increase must include infrastructure innovations in the transportation sector, for example, by deploying electric vehicles and the attendant infrastructure of charging stations and "smart roadways." Renewable sources can replace power now being generated by coal- and gas-fired power plants. The Risky Business Project asserts that "modest global emission reductions can avoid up to 80 percent of projected economic costs resulting from increased heat-related mortality and energy demand."

Infrastructure can also provide protection against more severe floods, hurricanes, heat, drought, and fires. This includes building environmentally responsible structures to protect low-lying areas from sea level rise; building systems and materials to survive more violent storms; and adding sufficient renewable power generation to provide the cooling needed to withstand long periods of extreme heat.

Major commitments to protective infrastructure will be required to mitigate the damage and deadly effects of climate change.

The infrastructure responses needed to address these critical national challenges are not the usual instruments of progressive public policies.

But we can draw important lessons from the Great Depression, when New Deal infrastructure programs created jobs, provided incomes for families from diverse populations, supported social safety nets, and protected public resources.

Similarly, modern versions of public infrastructure can meet the challenges of the present day. The origins and root causes of our challenges vary, but one aspect of the contemporary responses is necessarily the same: Because social solutions occur amid physical systems, it follows that gearing those systems to support larger societal objectives creates the necessary framework for change.

Infrastructure is not an end in and of itself; however, infrastructure can be a means toward a society of broadened opportunities and environmental responsibility. We must be creative in how we use our economic and physical resources—such as our infrastructure investments—to support the progressive social change that a just future requires.

Infrastructure Can Pave the Way to a Greener, Fairer Houston

VERONICA O. DAVIS

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When I moved to Houston this year to manage the city's transportation and drainage network, I was aware of some of the challenges facing the city—rapid growth, extreme congestion, frequent hurricanes. What I didn't expect was to be tested in my second month by one of the worst natural disasters in Texas history as a severe winter storm crippled infrastructure across the state, including our transportation network.

The city of Houston—and America—finds itself at a critical point. We face multiple, interconnected challenges. Climate change brings increased flooding and more severe storms, in many cases putting our transportation networks literally under ice or under water.

We're living today with historic underinvestment in communities of color, paired with transportation systems designed to divide those same communities. And these issues interconnect with unfortunate results: the Houston region is ranked as one of the nation's most unsafe for pedestrians neighborhoods' access to resources.

For decades, federal transportation policy has added to these challenges by disproportionately encouraging and subsidizing the growth of one type of transportation infrastructure: highways, which receive 80 percent of federal transportation funding in the US.

But there is good news: we can fix many of these problems. By offering many ways to get around, we can help reconnect divided neighborhoods, provide more access to opportunity for all Houstonians, lessen racial inequities, and, with less concrete, have our neighborhoods flood less often.

While highways are—and always will be—critical infrastructure here in Houston, we're increasingly focusing on the rest of our transportation
system. We're making many of these investments ourselves: building high-comfort bicycle lanes, designing safer intersections, and speeding up bus trips. With the Resilient Houston plan, we are investing in drainage and green infrastructure to manage stormwater from major and minor storms. And under Mayor Turner's Complete Communities initiative, we are investing in Houston's under-resourced neighborhoods—right-sizing roads to make them safer for people walking and biking, and working to reduce flooding.

But our efforts won't be enough without outside help. The federal infrastructure bill would dedicate some funding to climate resilience, safety and equity. Much less noticed is a small, inspired proposal from the House of Representatives, tucked into the separate reconciliation package. That proposal takes a fundamentally new approach, which will help our city—and country—create a sustainable, inclusive transportation system.

The House's reconciliation proposal includes \$10 billion in funding for buses in low-income neighborhoods that have been underserved by their local transit systems. It would mark the first time in decades, outside of pandemic relief, that the federal government has dedicated funds specifically to support this essential service in metropolitan areas.

The House proposal also includes \$4 billion to repair the historic damage to Black and low-income neighborhoods caused by highways that intentionally destroyed thriving places and widened segregation.

And it includes \$4 billion for cities to reimagine transportation projects to address the global climate crisis. Those funds could help Houston creatively build new sidewalk networks in neighborhoods with open ditches. It also could provide additional investment to ensure that the infrastructure we build continues to do the double-duty of moving people and increasing our flood protections.

The House's proposed transportation measures comprise just over I percent of the reconciliation package's full cost. But these targeted measures could be transformative, tying funding directly to goals and giving local governments a greater say in what will most benefit their neighborhoods. For us to move forward on climate, on equity, on safety, and on providing access to jobs and uplifting all the residents in our communities—we must focus on transportation. We must take new approaches. The House's proposed measures could have the greatest impact per dollar of any federal transportation policy in decades.

Congress must keep them in the final reconciliation bill. The future of Houston—and America—depends on it.

Reckoning and Repair in America's Cities

Liz Ogbu

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We have always been set aside like a(n) island. A no man's island." That's how Derrald, a longtime resident and activist living in San Francisco's Bayview-Hunters Point, describes his neighborhood. His historically working-class Black community, which has hosted much of the city's industrial base—from a power station to a sewage treatment plant—has experienced decades of isolation and disinvestment. Residents of Bayview-Hunters Point had a pre-pandemic median household income of just over \$65,000, in a city where the median home price is about \$1.5 million.

The history of racism and exclusion is etched into the maps of our cities—determining which neighborhoods get power plants and which get parks, and creating no man's lands in places like Bayview-Hunters Point. But today, some communities are working to repair those deep-seated wounds. Block by block, neighborhood by neighborhood, they are assessing the impact of the past while undertaking much-needed reckoning and repair.

I find myself thinking of reckoning and repair as we partake in the annual ritual of Black History Month. For days, we will hear tributes to the creative brilliance of Maya Angelou and the innovative genius of Madam C.J. Walker. Meanwhile, concepts like critical race theory are being used as political boogeymen and debates rage over teaching children about slavery.

The bitter irony of this juxtaposition is that we're asked to selectively remember this country's past, to choose only the good bits and discard the rest. Forgetting that which is uncomfortable can feel enticing in these times, when so much about who we are and how we live feels broken. But as activist and writer Charlene Carruthers has said, incomplete stories lead to incomplete solutions. When we don't share the entirety of who we are and where we have been, we will never fully heal. And the truth is, there are a lot of communities around the country that pay the cost of that incompleteness.

Neighborhoods like Derrald's are the often-overlooked monuments to our unresolved racial reckoning. In many cases, these are low-income communities of color with less access to resources like good transportation, schools, housing and financial capital. Imagine what it might feel like to think of your neighborhood—the place you call home—as physically, socially and financially cut off from resources key to your well-being and quality of life. Now imagine that separation is due to the color of your skin, the wealth of your parents, the place of your birth or any identity that might make you and your neighbors "different." There are some that would like to see Derrald's story as a product of individual—rather than societal—failure. But his story is an example of a system that is working exactly as designed.

Space has often been used in this country as a system of control and exclusion. The American landscape is physically shaped by historical injustices dating back to its earliest days as a country, when land was stolen from and used to warehouse Indigenous people and plantations were platforms for the enslavement and dehumanization of Black people. In the 1950s, 60s and 70s, space (and the policies shaping it) became a tool to physically enforce racist ideology in the face of legal decisions and laws intended to protect civil rights. Central to this was "urban renewal," a large-scale process in which neighborhoods were cleared of people and buildings for the purpose of allegedly beneficial development. Frequently justified as "slum clearance," urban renewal often conveniently targeted communities of color, particularly vibrant Black communities.

Those displaced had few places to go: Nearly 90% of the low-income housing destroyed by urban renewal reportedly was not replaced. Inadequate compensation was often a problem. Those who sought to buy a home elsewhere had to deal with redlining, in which predominantly Black neighborhoods were marked as high-risk, making it almost impossible to get a federally backed mortgage for homes in those areas. And renters of color faced widespread discrimination. More recently, we have seen cycles of displacement and place-based harm tied to the 2008 mortgage crisis, the current climate emergency, the COVID-19 pandemic and ongoing gentrification—all of which have disproportionately impacted communities of color and the poor.

Space has been intimately connected to racialized harm, so it must be part of the conversation on how we heal. For as long as we continue to be selectively harmed and separated by race, the promissory note of justice and equality that Martin Luther King Jr. so eloquently described will remain unfulfilled.

Some communities are working to fulfill that promise by leaning into the question, "What could repair look like?" Often driven by community members who have experienced harm, these efforts are assessing the impact of the past while undertaking reckoning and repair at a collective and place-based level. For example, in Charlottesville, Virginia, I've been working with the residents of Friendship Court—an affordable housing complex that's home to 150 families and their nonprofit partner, Piedmont Housing Alliance, to create a vision for a new model of housing.

While Charlottesville gained notoriety during the 2017 White supremacist incursion, the wounds of racial harm began long before. Decades earlier, urban renewal destroyed Vinegar Hill, the city's most vibrant Black neighborhood. This led to the displacement of many people and stories, and created concentrated zones of racial poverty like Friendship Court. Located on sunken land and fenced on three sides, Friendship Court evokes feelings of isolation. For residents, social and economic isolation mirrors the physical: Charlottesville has some of the worst income mobility and educational gaps in the country. As one resident told me, "If you're born poor in Charlottesville, you die poor in Charlottesville."

With all this in mind, those working to redevelop Friendship Court are seeking to break the link between race, geography and life outcomes. An advisory committee made up primarily of residents has driven the vision: a zero-displacement plan for a mixed-income neighborhood with amenities like a city park and an early childhood learning center. More importantly, they are looking beyond housing to create systems and programs that share power, foster cultural belonging and well-being, and leverage the land and development to seed generational wealth. It is a slow and emotional process, but the residents of Friendship Court are accounting for and reckoning with the past and the present. They are investing hope that this project not only brings healing, but an opportunity for their families to thrive. Though sometimes overlooked, thriving is also essential to repair.

In Tulsa, Oklahoma, it's not a housing complex but an entire district that is in need of repair. Many became aware of Greenwood, the iconic "Black Wall Street," and the horrors of the Tulsa Race Massacre through the popular HBO series *Watchmen* and coverage of the massacre's 100th anniversary last May.

What's less discussed is that in the aftermath of the massacre, Greenwood residents rebuilt many of their homes and businesses. They did so with little or no assistance from the local government or insurance companies and despite active attempts to prevent the district's rehabilitation. The community was resilient, and "Black Wall Street" as we have come to know it really came into being with the rebuilt Greenwood. But the neighborhood ultimately became a victim of urban renewal with freeway construction that was completed in the 1970s. As one writer has astutely noted, "What the city could not steal in 1921, it systemically paved over 50 years later." And as in many other communities, racial segregation and discriminatory policies contributed to a legacy of lower quality of life and fewer opportunities for those displaced or impacted by this destruction.

Tulsa has made progress toward reckoning and repair. The 11-member Tulsa Race Riot Commission, created by lawmakers and tasked with developing a historical record of the 1921 massacre, declared in its 2001 report that reparations to the historic Greenwood community would greatly aid in addressing past harms. And in 2015, the 1921 Tulsa Race Massacre Centennial Commission was established to build on the work of the previous group and develop platforms for sharing the stories of past harm and creating opportunities for physical and economic repair. After the original commission's report, state lawmakers passed legislation that, among other things, acknowledged the "conspiracy of silence" surrounding the horrific event; the massacre is also required to be taught in schools, and recent efforts are aimed at ensuring it's actually part of classroom learning. (Though as a sign of a reckoning that's incomplete, Oklahoma Gov. Kevin Stitt signed a law designed to ban the teaching of critical race theory in public schools just a few weeks before the massacre's 100th anniversary.)

Meanwhile, Tulsa's Black community and others continue efforts to memorialize the massacre, obtain justice and catalyze repair. Several initiatives aim to revitalize Greenwood and neighboring North Tulsa, including the city's Kirkpatrick Heights/Greenwood Master Plan process, which has an explicit mission to incorporate ideas of repair into its work, and Greenwood Rising, a museum and center dedicated to telling the history of Greenwood. Some efforts have generated mixed reactions amid fears that investment will trigger gentrification and another cycle of displacement. This is proof, perhaps, that repair is not just about investment, but about healing the emotional wounds of the past and creating safeguards to prevent cultural erasure and economic displacement from being inevitable outcomes of "revitalization."

In Minneapolis, Minnesota, conversations about healing and repair followed the murder of George Floyd and its aftermath. That conversation is also happening in interesting ways in the other twin city, St. Paul. There, the interstate was built right through the heart of Rondo, yet another vibrant neighborhood that was once home to a majority of the city's Black population. Indeed, the freeway project displaced one-seventh of the city's Black residents. By erasing the commercial center and splitting the neighborhood in two, the impact wasn't just on those who were forced to leave. Those who remained lost access to businesses, community and cultural institutions, and social connections.

For years, a number of former and current Rondo residents have come together to advocate for repair. (I served as a consultant to the residents and the Minnesota Department of Transportation in an early stage of their conversation around repair.) In 2015, the neighborhood's residents received a formal apology from the state commissioner of transportation, Charlie Zelle, and former St. Paul Mayor Chris Coleman. Now, the group has formalized into ReConnect Rondo and is spearheading an effort to create a land bridge over the freeway. The land bridge plan is still under discussion and could be accompanied by amenities like housing, a park and businesses. It is intended to hark back to the central commercial corridor that the freeway erased, reconnecting the community and stimulating the local economy. However, as in Tulsa, some fear the project could spur gentrification and displacement—illustrating once more the complicated work of repair.

We're at a moment when the need for repair has never felt greater. Yet in spite of raging debates on race and justice, we're also at a moment of great opportunity. Many communities are ready to look at the foundation of hurt, and federal policy is also starting to change. The recent infrastructure bill signed into law earmarks \$1 billion in grants to help reconnect neighborhoods torn apart by highways. And notably, some of Biden's first acts as president were to sign executive orders that targeted racial equity and underserved communities. How these policies and laws will work in practice remains to be seen.

There is no simple answer to the question of how to heal the places we call home. But it is clear that we must account for the past, reckon with the arc of harm and benefit, and create a pathway to repair. Perhaps most importantly, repair requires us to hear—and honor—all of the stories held by our neighborhoods and cities.

If we don't, it doesn't matter how much goodwill we show up with we are building on a foundation of broken promises and squelched dreams.

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Ditch Cars for Open and Equal—Streets

Alison Sant

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In my neighborhood in San Francisco's Mission District, you can walk down Valencia Street—literally, the middle of the street—on the weekend. People pour into former car lanes to eat dinner and sip cocktails at freshly laid tables. Shops selling vintage clothes, records, flowers and coffee burst out of their storefronts while street performances draw crowds no longer confined to the narrow sidewalk. Pedestrians meander along the entire roadway, runners bounce through the crowds, and bikes and scooters snake their way down the street.

On a recent Saturday evening, I paused and watched a 14-person Balkan brass band march out a beat that kept me, and a pack of my neighbors, bobbing as the sky turned dark to their wailing horns. Valencia Street used to be made car-free several times a year. Now, it is closed every weekend.

When the COVID-19 pandemic hit and shelter-in-place orders were issued, the trickling pace of cars quieted city streets and left room for people. Experiments were launched to close and slow streets, repurpose parking spaces and remove cars, allowing spaces for people to walk, bike, gather, shop and eat more safely outdoors. The changes to urban streets in San Francisco were matched by many other cities across the country, including Denver; Minneapolis; New York City; Oakland, California; and Washington, D.C.

This rapid conversion set a new bar for how streets can be used in cities across the country. People everywhere were reminded how much they love their city streets when they aren't run off the roadways by cars. In San Francisco, the public space solutions developed in response to the emergency built upon the city's history of tactical experiments and programs to reclaim the public right of way through parklets, plazas, Sunday Streets and Shared Spaces. During the pandemic, they have been cheap and relatively simple to design and approve—and they are everywhere.

That is, almost everywhere. Although slow streets and shared spaces were enjoyed by many, these public spaces were not equally distributed. In many cases, their design was not informed by a thorough community-led process that recognizes that safety on streets is determined by race just as much as it is determined by infrastructure. While these pedestrian-oriented interventions have been wildly successful in many ways, there is evidence they have exacerbated growing spatial inequalities already widespread in cities across the country.

About a 10-minute bike ride from the Mission District, the Tenderloin neighborhood is a small section of downtown San Francisco with one of the city's most diverse populations and its densest housing. It is home to plenty of families with young children and seniors, making it an ideal beneficiary of pedestrian-centric street design. But it differs from the Mission in one critical way: Many of its residents are poor. These inequities were made obvious by an explosion of homeless encampments on the sidewalks and intensifying open-air drug dealing and use during the pandemic. Despite intense need, there were few shared street experiments offering remedies.

While miles of streets were closed to cars in the early days of the pandemic, just one block (and several blocks of parking lanes) were closed in the Tenderloin. The entire neighborhood was highlighted yellow on the city's Slow Streets plan, underscoring its status as an exception to that program. According to the San Francisco Municipal Transportation Agency, the Tenderloin's number of one-way streets was one reason the neighborhood was "not a good fit" for the Slow Streets initiative.

This disparity was not new to the people of the Tenderloin, who have been neglected for years. Although most households do not own cars, the neighborhood's streets are designed for speed. Cars rush through the Tenderloin's one-way roads to and from the freeways and downtown San Francisco, transforming neighborhood streets into high-injury corridors. While neighborhood activists have long carried signs demanding slower speeds, the severe effects of the pandemic have brought renewed attention to the Tenderloin that shows promise of change: In April 2021, it became the first neighborhood in the city with a widespread speed limit reduction to 20 miles per hour.

Still, it is undeniable that safer streets have been delayed far too long. And unfortunately, the Tenderloin is not an exception. For close to a century, we have made a consistent choice that the best use of our public rights of way should be to move and store cars. An estimated 46,000 motor vehicle deaths occurred nationally in 2021. And while other countries have seen such numbers substantially decline during the pandemic, numbers in the US actually went up in 2020. Most often, the pedestrians injured or killed on America's city streets are low-income, people of color, older adults and people with disabilities—many of whom exclusively rely on walking and public transit.

Cars not only kill; they also systematically disadvantage communities. The traffic they cause slows buses, and the space they take up limits room for pedestrians and cyclists. When we deny people mobility, we make it harder for them to do most anything. Lengthy travel times limit access to education, jobs, health care and other vital resources of the city. And unbearable commutes come at the expense of time—time with family, time for one's well-being, time that is free. Dedicating streets to moving and storing cars is not just terrible land-use policy, it is a tool of inequity. Our streets must be used to the greatest benefit of people—all people.

Reclaiming city streets from cars also presents one of the greatest opportunities to mitigate global climate change. With transportation responsible for 29% of greenhouse gas emissions in the US (mostly from passenger vehicles), much attention, policy and planning has emphasized electric vehicles as a solution to carbon emissions. There is no doubt that limiting emissions from cars must be part of climate action. However, cars—electric or not—still can kill people on city streets and deny a truly equitable transportation system. The only way to make sure that cars do not waste lives is to get out of them.

Streets were not always this way. Over a century ago, boulevards were shared spaces, used mainly by people walking, biking or riding transit, and occasionally by those driving cars. Bicycles were nearly as ubiquitous in cities across the United States as they are today in the best cycling cities in the world. New York City's Park Avenue was once home to a park, while San Francisco's Market Street acted as a gateway to the city with a multimodal mingling of streetcars, bikes, horse-drawn carriages, pedestrians and automobiles.

Today, we have a choice to make about how we use our public spaces in the future. And as we have seen during the COVID pandemic, we can do a lot with our streets when they are absent of cars.

The events of the last two years will certainly shape the design of cities in years to come. Many hope that the experiments that have remade our streets as public spaces will help to reduce carbon emissions, expand our transportation options and make spaces for people. They also have the potential to do more.

As the conversations about power, equity and climate reverberate around the country, the solution to these systemic problems must include streets. We have an opportunity to bend our future to a new set of priorities that demonstrates care for the most vulnerable, honors our connection to one another, cultivates equality, and ensures a healthy democracy and just society. Before the streets fully fill again with a tangle of traffic, the pollution of hours burned behind a wheel and the noise of inhumane choices, we have an opportunity. The decisions we make today can make our cities healthier and more humane.

The choice is right outside your front door.

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Is It Time to Reimagine the American Schoolyard?

Rochelle Davis and Gerald W. Adelmann

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Harold Washington Elementary School in the Burnside neighborhood on the south side of Chicago got a new schoolyard in 2020. It features a running track, sports fields and playground equipment but what Washington's Principal Sherri Walker likes best are the little conversational groupings of rocks. "It's so special for the older girls," Walker says. "They don't always want to play on the equipment or play sports—but they sit on those rocks and talk. It becomes a quiet space where they can sit and decompress." In a year with so much stress and loss, especially in Chicago's most underinvested neighborhoods, these spaces are invaluable.

Principal Walker's schoolyard is part of a program called Space to Grow, which turns Chicago schoolyards into beautiful green spaces for play and learning using green stormwater infrastructure that also helps build climate resilience. The schoolyards include playground structures and sports fields, outdoor classrooms for nature-based learning, edible gardens and the conversation rocks or other quiet spaces the students at Washington like so much. Studies show that access to green space and outdoor play during the school day are associated with improved focus and academic performance. Daily connection with nature supports mental health. And, since Space to Grow schoolyards are also open to the community outside of school hours, the program's benefits aren't just limited to students.

It seems obvious that every student should have access to such a positive space, but there just isn't enough money—or the will to prioritize spending—to replace the acres of asphalt that cover school grounds in many cities across the country. A 2021 report on the state of US schools found that the country is underinvesting in school buildings and grounds to the tune of \$85 billion per year. "Underinvestment in capital renewals of existing public schools as well as chronic underfunding of maintenance and repairs sadly remains the rule rather than the exception," the report notes. And, as the report also points out, "inequity is hard-wired into public education infrastructure." For example, in Chicago, the same Black and Latinx neighborhoods are subjected to the same type of disinvestment over and over again.

Green schoolyard programs like Space to Grow can be an innovative solution. The program was developed in response to a need raised by school staff and partners after parent leaders successfully advocated for the return of daily recess and stronger PE programs in Chicago Public Schools in 2011. Many of the school district's 400 elementary schools had unsafe asphalt lots, inadequate for supporting vibrant recess and PE programs, and the district was in financial crisis.

At the same time, the city's water agencies—Metropolitan Water Reclamation District of Greater Chicago (MWRD) and the Chicago Department of Water Management (DWM)—were initiating major investments in green stormwater infrastructure to combat Chicago's persistent flooding issues and build climate resilience. Space to Grow's nonprofit managing partners, Healthy Schools Campaign and Openlands, came together with these public water agencies and the school district to develop a vision for green schoolyards across Chicago that would not only manage significant amounts of stormwater, but also provide outdoor learning, play, gardening and community recreation opportunities. The three public agency partners made an initial investment of \$51 million to transform 34 schoolyards.

Space to Grow schoolyards are prioritized in Chicago's historically underinvested communities that tend to lack safe, shared green space and whose schools primarily serve Black and Latinx students. The Space to Grow partners use an equity lens to select school sites, considering factors such as income, race/ethnicity, community hardship index, historical capital investments and community life expectancy.

The innovative partnership is built on the idea that capital improvement is just the first step in creating a lasting community asset. The nonprofit managing partners oversee an inclusive planning process that engages the entire community at every Space to Grow school. Space to Grow outreach staff work with each selected school to form a committee that supports the schoolyard planning and outreach efforts and helps the partners develop deep community relationships. The committee includes representatives for students, staff, parents, neighbors and the broader community, and leverages relationships with local community-based organizations, strengthening their relationship with the local school. In multilingual communities, the outreach and meeting materials are translated, and meetings are interpreted for all primary languages of each community. The process gives a meaningful voice to community members who traditionally have had little voice in this type of decision-making process.

The process is empowering. As Sharon Mason, a teacher at Mays Academy, puts it, "Many of our students in the Englewood area are exposed daily to trauma that stems not only from violence, but poverty, drug addiction, experiencing racism and a sense of loss of self. The process of involving students in the design gives them a sense of their own agency."

Even after the schoolyard is complete, Space to Grow partners continue to engage and support the school community through workshops, trainings, partnerships with community-based organizations, events and technical assistance, all of which are designed to ensure community members feel welcomed at the schoolyards and feel ownership to use the space. The partners train school staff to leverage the schoolyard for physical activity, nutrition education, nature-based education and outdoor learning. The partners also educate neighbors and school stakeholders about gardening, tree planting and stormwater management practices.

The outcome is that each Space to Grow schoolyard is a powerful school and community resource. As Dr. Rashid Shabazz, principal of Wadsworth STEM in Chicago's Woodlawn community, explains, the schoolyard is used not only during the day for PE classes, recess, learning about gardening and "brain breaks" during the school day, but also by the community around the clock. "People see it as a safe space in the neighborhood," he says.

Space to Grow shows how cities and communities across the country can engage in unique partnerships to generate multiple positive impacts, providing a return on investment that supports schools and communities in a holistic way. The next step is to make green schoolyards a national priority through a major federal investment in school infrastructure. The benefits are many: safe green spaces to gather and exercise, greater community and climate resilience, community empowerment and agency. And—for the girls at Harold Washington Elementary School—a much-needed space to sit and decompress.

We Need to Stop Traffic Deaths. But Is Policing Really the Answer?

Olantunji Oboi Reed

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To some, it may sound like a beautiful vision: zero traffic fatalities on our nation's highways and streets. For Black people, however, Vision Zero has an ugly underside.

First implemented in Sweden and now embraced by dozens of American cities and states, Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries. The strategy varies from place to place, but it typically emphasizes the "Es": engineering, education and stepped-up enforcement of traffic laws. That last "E," enforcement, is where it gets ugly for people who look like me.

It's no secret that racism and racial bias permeate American law enforcement. There are, of course, the high-profile, unjust murders of Black men and women—George Floyd, Breonna Taylor, Philando Castile and so many more—at the hands of police. Black people are killed by police at more than twice the rate of White people. And then there are the daily indignities, and worse—the suspicion and scrutiny that so often characterize our encounters with police.

I have stories; we all do. Like the summer night in 1992, when I was hanging out with friends outside my mother's home in the Chatham neighborhood on the Southside of Chicago. Yes, we were loud and clowning around—talking, laughing, chanting, stepping and engaging in social activities befitting a boisterous group of male teenagers. No, we were not drinking, smoking, carrying guns or engaging in any other illegal activities.

First, we heard the faint sounds of police sirens, which soon became louder and closer. Suddenly, four police cars, with sirens blaring and lights flashing, came racing toward us from both directions on the one-way street. Before the cars even came to a full stop, the doors opened and a half-dozen police officers jumped out with their guns drawn on me and my friends.

We stood there, confused, shocked and scared. A couple of seconds ticked by, then an officer yelled out at the top of his voice, "Same ol' N—— shit." The officers searched us and quickly realized their level of aggression and tactical readiness was completely unwarranted. With little conversation and no acknowledgment of their mistake, the officers were back in their squad cars, rolling away.

Now, read the previous paragraph again with your eyes closed and imagine a different ending. Imagine my hotheaded self jumping into the face of the officer who had just used the N-word. Or imagine my friend Nate instinctively reaching into his car to grab his wallet. One of us may have been arrested and convicted. One of us may have been shot. And, yes, one of us was the twitch of a finger on the gun's trigger away from being killed unjustly by the Chicago Police Department.

The (mostly White) architects of Vision Zero do not see what I see: For Black people, increased enforcement of traffic laws will lead to more deadly encounters with the police.

We know, for example, that Black cyclists are disproportionately targeted for enforcement. Research conducted by my organization, Equiticity, found that in Chicago, about eight times as many tickets were issued, per capita, in majority-Black neighborhoods as in majority-White neighborhoods.

This "biking where Black" problem speaks to racially biased enforcement, but it also reveals stark inequities in infrastructure. About 90% of bike citations in Chicago are given for riding on the sidewalk. But riding on the sidewalk is a rational choice for Black cyclists since our neighborhoods have far fewer designated bike lanes than White neighborhoods. So Black cyclists experience two compounding inequities: first, through neglect and disinvestment which robs us of safe places to ride; and second, with traffic citations when we seek the relative safety of the sidewalk.

And often, there isn't even a sidewalk. Across the US, low-income neighborhoods, which are disproportionately home to Black and Brown people, are much less likely than affluent White neighborhoods to have continuous sidewalks. That's one reason why Black and Brown people are twice as likely as White people to be killed while walking. These inequities in infrastructure illuminate a better path to reducing traffic deaths. We know that sidewalks can reduce car/pedestrian crashes by up to 89%. And we know that the best way to make streets safer for cyclists and pedestrians is to build separated, protected bike lanes. Portland, Oregon, did that and saw its road fatality rate drop by 75%, even as more cyclists took to the streets.

We need to focus primarily on the nationally accepted strategies of engineering (redesign streets to make them safer) and education (implement a compelling, comprehensive educational campaign to teach and inspire people to drive more safely). We should not include a police traffic enforcement strategy as part of Vision Zero. Further, we should create a new traffic safety framework with racial equity and mobility justice operationalized from the beginning and created by Black and Brown people in neighborhoods disproportionately impacted by traffic violence.

Some transportation advocates are waking up to the dangers of stepped-up enforcement. Two national organizations—Safe Routes Partnership and the League of American Bicyclists—have completely removed police enforcement from their frameworks. Local advocacy groups in Minneapolis, Philadelphia, Atlanta and elsewhere have come out against enforcement in Vision Zero.

It's time for governments and advocacy groups that care about traffic safety to expand their field of vision and make an operational commitment to racial equity and mobility justice. It is time for the leadership on traffic safety to come from the communities most impacted by traffic violence: Black and Brown people.

We must remove "enforcement" from Vision Zero implementation and concentrate instead on effective engineering and education strategies. If we fail to do so, what others consider a beautiful vision will continue to collide with the ugly reality of racism in America—with tragic results.

Why Green Banks Should Be Able to Finance Upgrades to Old Buildings

PATRICE FREY AND CALVIN GLADNEY

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The Inflation Reduction Act is rightly praised for its transformative climate investment targets. But one potential impact has received little attention: a multibillion-dollar infusion of capital into lending institutions that could help transform urban landscapes to combat climate change.

The act will invest \$27 billion in green banks, which will bring climate-friendly development to communities across the US. With this injection of cash, green banks could expand their investments to include the adaptive reuse of existing buildings in walkable, bikeable and transit-accessible locations. It's a move that would reduce emissions, revitalize cities and benefit communities that have long been cut off from opportunity.

Green banks provide low-cost capital to finance clean energy and related projects. The mission of these nontraditional banks is twofold: to provide loans to jump-start clean energy projects and, in the longer term, to demonstrate that lending to these projects can generate competitive returns, thereby enticing conventional lenders to provide much-needed capital.

The substantial new federal investment in green banks will significantly increase the volume of deals these lenders can support. And it brings with it the possibility to expand the *types* of projects financed by these banks, including adaptive reuse of existing buildings in compact, connected, walkable and mixed-use neighborhoods. Green banks have not traditionally funded these types of projects in the past, but the Biden administration could ensure that such projects are eligible for the new funding. These kinds of investments are essential to meeting carbon-reduction targets and achieving them in a way that supports climate-justice goals.

Here's why. Each year in the United States, we construct about 6 billion square feet of new buildings. At the same time, we tear down 1 billion square feet of built space. The carbon impacts of this build-and-abandon cycle are substantial, as are the emissions from our seemingly boundless appetite for sprawl-inducing greenfield construction. Worldwide, the manufacture of new building materials such as steel, cement and glass is responsible for an estimated 11% of energy-related carbon emissions.

Meanwhile, millions of buildings sit vacant or substantially underutilized in the US, with many in disinvested urban corridors or distressed rural downtowns. These buildings represent an enormous opportunity. Rehabilitating existing buildings typically produces 50% to 75% less carbon emissions than new construction.

These existing structures are often located in places developed before 1950 and are much more likely to be in neighborhoods that are walkable, bikeable and accessible by transit. Rehabilitation of such location-efficient buildings has a double bottom-line benefit for the environment: First, it reduces construction-related greenhouse gas emissions, and second, it reduces the need for driving and the emissions that come along with it. And increased development in these areas would allow people better access to housing, workplaces and services no matter their age, ability, income or race because denser development makes it easier to live without cars and avoid their associated financial and environmental burdens.

Allowing green banks to fund adaptive reuse and location-efficient buildings also has an added financial benefit for municipalities: It will save them money. Building walkable, connected communities saves an average of 38% on upfront costs for infrastructure and 10% on ongoing delivery of services; it also generates 10 times more tax revenue per acre than conventional suburban development.

Skeptics may suggest that there is a mismatch between the location of these underutilized buildings and the demand for space. But in our experience leading our respective organizations, Smart Growth America and Main Street America, we find precisely the opposite. Many buildings in high-value locations are demolished or remain vacant not for want of use but because of the difficulty of financing adaptive-reuse projects in all kinds of geographies, from disinvested urban corridors to distressed rural downtowns and many places in between.

The struggles to access capital among communities of color are well documented, as are the difficulties of obtaining financing in rural areas. Many factors contribute to these challenges. In the case of communities of color—whether in urban or rural contexts—a legacy of racism led to systemic barriers to lending that persist today. And the loss of community lenders across the country exacerbates these problems, as many national banks have little interest in projects of less than \$5 million in total value.

Failure to finance the reuse of our existing assets has wide-ranging effects. Communities of color and people in rural areas continue to be excluded, with fewer chances to build individual wealth and limited ability to open or expand small businesses, thereby suppressing job creation and economic development. And the inability to finance adaptive reuse exacerbates our national housing shortage, keeping many thousands of housing units off the market, often in places that offer enhanced affordability because car ownership is optional. Our failure to make better use of what we already have unnecessarily drives *up* our carbon emissions when we urgently need to drive them *down*.

With a significant infusion of funding from the federal government, green banks have a powerful opportunity to drive capital to carbon-smart projects starved for resources. The Environmental Protection Agency and Department of Energy, which jointly oversee the new green banks program, will soon develop regulations that govern the use of federal funds. These regulators should take swift action to ensure that green banks are permitted to invest in location-efficient adaptive-reuse projects, particularly those that include aggressive efficiency upgrades and the integration of renewables onsite. Doing so could transform communities—particularly those harmed by decades of disinvestment and negative climate impacts—by putting existing assets back into productive use and demonstrating to conventional lenders the soundness of these green investments.

We Can't Build Our Way to Net Zero

PATRICE FREY AND VINCENT MARTINEZ

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Renovations recently outpaced new building construction in the US for the first time—great news for those concerned about climate change. The building construction industry is responsible for a hefty 13% of energy-related emissions.

Reusing our existing building stock can help us avoid significant environmentally costly new emissions, while also providing opportunities to reduce building operating emissions through energy upgrades. It's estimated that reusing and retrofitting existing buildings can save between 50 and 75% of the carbon that would be expended by constructing a similar building.

This new trend in building and infrastructure reuse, driven primarily by dramatic increases in the cost of building materials, contrasts significantly with America's longstanding love affair with chucking out old buildings in favor of new ones. In total, we typically demolish more than a billion square feet of built space in the United States every year, the equivalent of 20% of the built area in New York City. This means that in the next 10 years, we'll demolish (and rebuild) the equivalent of New York City ... twice. In addition to those teardowns, we abandon many buildings. Though estimates are imprecise, it's believed that, across the US, as many as 19 million buildings sit vacant.

Yet our appetite for space is enormous. It's estimated that we build between four and six billion square feet of space, between residential and commercial development, in the US each year. But the climate impacts of all that building—including emissions from materials manufacturing and new infrastructure—receives far less attention than it should.

It's true that the lion's share of energy-related emissions from the building sector (27%) come from the operation of buildings, so the 13% of emissions from construction seem less significant in comparison. While we unequivocally cannot meet our carbon reduction targets absent efficiency upgrades to and electrification of existing buildings, we also cannot build our way to net zero. The carbon impacts of new construction present a significant and underrecognized barrier to meeting our carbon-reduction targets, specifically because of our failure to think about the timing of those emissions.

When assessing the best way to cut emissions in the building sector, we must think not just about how much carbon we reduce—but when those reductions happen. Since greenhouse gasses accumulate in the atmosphere and we have limited time to reduce these emissions to stave off the worst impacts of climate change, immediate carbon reductions have more value than reducing carbon at some later date in the future.

Herein lies the challenge for new buildings. The carbon released into the atmosphere from producing and transporting building materials and from the construction process is immediate.

The architectural firm Goody Clancy recently led rehabilitation work at the Alan and Sherry Leventhal Center at Boston University, converting the former Hillel House into a new admissions center. Using the new Carbon Avoided Retrofit Estimator (CARE) Tool developed by Architecture 2030 and colleagues, the architects found significant emissions reductions associated with the renovation of the building compared to demolition and new construction.

The firm assessed three scenarios over a 15-year period: do nothing, reuse the existing building with key modernizations and efficiency improvements, or demolish the old building and replace it with a new building.

The first scenario—maintaining the status quo—is the clear climate loser, as the building continues to emit carbon through operations at a higher rate than either the rehabilitation or new construction scenarios. But perhaps counterintuitively, reusing the existing building (even if not as energy-efficient as a new build) would emit far less carbon over 15 years than a new, considerably more energy-efficient building. That 15-year assessment period represents roughly the time period in which we have to achieve to meet Paris Agreement targets.

When emissions from the Boston University project are graphed over 15 years, we can clearly see the higher short-term carbon emissions under the new-construction scenario. As climate scientists are quick to remind us, in this near-term period we must do everything we can to bring down emissions.

The analysis performed with the new CARE Tool is consistent with many other studies conducted over the years, with typical findings that it will take 10-80 years for replacement buildings to achieve a lower carbon impact than the rehabilitation of existing buildings.

The science is solid, and the data are clear: Reusing and retrofitting existing buildings is vital to achieving significant emissions reduction targets. The question is no longer whether to reuse what we can, it's how to do it.

Many barriers to building rehabilitation remain, not the least of which is the difficulty of financing these critical projects. This is particularly true in communities of color, where systemic barriers to lending remain, and in disinvested rural areas, where underlying market conditions make the economics of adaptive reuse difficult and there are relatively few lenders.

We must develop creative financing strategies to make building reuse happen more efficiently and at scale. Allowing new federal Greenhouse Gas Reduction Funds to support building reuse and retrofits, the improvement and expansion of historic tax credits, and making permanent the New Markets Tax Credit program are among the many policy advancements needed to help better leverage our existing built assets in the climate fight. We don't have a moment to waste.

Alabama Should Get on the (Electric) School Bus

George Crawford

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Remember the school bus you rode as a kid? As soon as it took off, a large cloud of black smoke would billow from the tailpipe. The noxious fumes leaked in through the windows, filling the bus with diesel exhaust.

There is a mountain of data that show the harmful long-term health effects of that exhaust. And yet, in Alabama our children are still riding the same kind of dirty, diesel-powered buses we rode as kids. We have the ability to do better, because we know more about the health effects of diesel than our parents did.

We've known for 20 years that diesel exhaust contains pollutants that are linked to asthma and other respiratory problems as well as cancer. Newer research suggests that exhaust can harm the brain and affect learning. Schoolkids get a concentrated dose of these toxic chemicals: a child riding inside a diesel school bus may be exposed to four times the level of diesel exhaust as someone riding in a car ahead of it.

Low-income kids and children of color are hurt the most, because they often live in communities with lots of air pollution—so school buses add to their burden of toxic exposures. And kids from low-income families are disproportionately exposed to diesel exhaust: 60% ride a bus to school, as opposed to 45% of students from wealthier families.

In addition to knowing more about the health effects of diesel buses, we now have better technology. Electric buses offer a cleaner, healthier alternative to diesel. They don't produce tailpipe emissions, and the amount of greenhouse gas they produce is minimal.

So, why haven't we replaced our dirty diesel buses with clean electric ones?

The first hurdle is always the same. Some will ask: "Is the technology proven?" Well, it's been 15 years since Tesla released one of the first commercially available electric cars. Tesla is now one of the most highly valued companies in the world. Electric vehicles are increasingly used by businesses and the federal government, which is considering an all-electric fleet. Right here in Anniston, New Flyer is producing state-of-the-art electric buses on its high-tech assembly line. It's safe to say that this technology has come of age.

The second hurdle is a big one: money. In Alabama and across the US, it will be expensive to replace our diesel buses with electric models. Moreover, school districts have established infrastructure around diesel vehicles, including mechanics and service contracts. Retooling that infrastructure for electric buses will be no small feat.

But here's a secret: electric buses are cheaper to maintain than their diesel counterparts (\$.19 vs \$.82 per mile), so they could save money in the long run. And there is federal money available to make the switch. The 2021 infrastructure bill directed the Environmental Protection Agency to award \$5 billion through 2026 for zero- or low-emission school bus purchases. Rural, low-income, and tribal school districts are prioritized for funding through the EPA's Clean School Bus Program. And the EPA is partnering with the US Department of Energy and Department of Transportation to provide technical assistance to districts that want to go electric.

Last year, nearly 400 school districts were awarded a total of nearly \$1 billion through the Clean School Bus Program to add more than 2,400 electric-powered buses to their fleets. But a glance at the map of awards shows that Alabama is lagging behind in applying for—and receiving—those federal grants (though a handful of Alabama school districts are on the waiting list).

Why?

Short-sighted school boards, for one. School board members are typically elected every 3 to 5 years. Some avoid the optics of voting to make education more expensive because they won't be around to see the long-term benefits of that change.

Second, the State of Alabama doesn't really want electric school buses. Well, technically, they want just 10% of the state's school buses to

be powered by alternative fuel. Whatever their reasons for discouraging the widespread adoption of electric buses, it will harm our children's health in the long run.

Third, remember that those most impacted by toxic diesel fumes are low-income kids and children of color. The powers that be in Montgomery are less likely to have kids who ride the bus and less likely to have kids with asthma. Until the people making the rules are affected, real change won't occur.

It's time for all Alabamans to acknowledge that there's a problem with the way we transport our kids. Parents, local school boards, state education departments, and the federal government should all become invested partners in solving this problem.

If our kids' health is a priority, if climate change is a priority, and if equity is a priority, we need to make the switch to clean, electric school buses. A school bus initiative that requires the switch and sets a deadline—with financial support from local, state, and federal governments—would be a great place to start.

Cheap, Easy, Good: We Need to Think Like Amazon to Decarbonize Transportation

Ella Rasp

Originally published June 17, 2024 in Next City

A mazon grew by 5,000% between 2005 and 2021. In the same period, we have cut just 6% of our greenhouse gas emissions from transportation. The clear and present impacts of climate change demand dramatic cuts in our greenhouse gas emissions to avoid the catastrophic biological collapse associated with more than 1.5 degrees of warming. The US transportation sector needs to reduce its emissions by 39% by 2030 to meet its Paris Climate Agreement commitments. To meet the moment, we need low-carbon modes like transit, walking, and biking to grow at an Amazon-like pace.

We don't need a focus group or 18 months of studies to find a strategy to shift these trends. We can take a page from behavioral economics and follow what works. While Amazon employs many anti-competitive and unethical business practices to dominate the marketplace, we can still glean some critical lessons from how it wielded powerful incentives to become an essential service to hundreds of millions of people.

Most people's transportation choices are malleable and not core to their identity. Most people aren't angry, anti-bike drivers; they are curious about biking but don't really see it as practical. They aren't passionate about their car; their car may be a source of stress in their life between surprise repair costs and risk of theft. Some ride the bus every day but would prefer an option they had more control over.

Most people just want to be able to get places quickly, without a lot of hassle and uncertainty. And if a better option to achieve those ends was available, they might use it.

Transportation That's Cheap, Easy and Good

Amazon says they're the "most customer-centric company on the planet," which boils down to ruthlessly capitalizing on the consumer's wants and driving more consumption. Its value proposition for the customer is simple:

- **Cheap:** Amazon has pursued growth by undercutting all its biggest competition on price (see the used book market circa 2001). Amazon Prime leverages a subscription model to provide "free" shipping.
- **Easy:** The company offers a one-stop shop for all your needs, without requiring you to leave home. The friction of a purchase is reduced to a single click.
- **Good:** Amazon seems to have all your favorite products with one- or two-day delivery. Service is also good for the most part: If you don't like it, the company takes it back and refunds you.

These factors parallel the features that have fueled the rise of car dominance in the United States.

- **Cheap:** After you buy your vehicle, every trip you take feels free, almost like "free shipping" for Prime subscribers. Auto infrastructure is heavily subsidized and abundant free parking is available almost anywhere you want to go. When time is money, driving also proves the best time value for the majority of trips.
- Easy: Decades of engineering have gone toward saving you minutes on every trip. When you arrive at your destination, it's likely required by zoning law to provide parking. Going door-to-door in a private car is relatively frictionless, which is especially important in an era of decreasing tolerance for multi-step processes.
- **Good:** Private cars are personalized to your lifestyle. They are climate-controlled, are high status, and offer on-demand access to virtually every useful place. You have reasonable certainty

that you will get where you're going reasonably close to when you plan to arrive, especially given the rise of navigation software with robust, real-time traffic data.

A Vision for Making Public Transit Ubiquitous

We can adapt these building blocks to build a rapid growth strategy for any transportation mode. So let's play out the idea on transit.

Cheap: Free transit would be ideal, but with all the political barriers to securing reliable funding, shifting fare collection to a low-cost, subscription-based model would present a new value proposition to the user. On a monthly or yearly pass that grants holders unlimited trips, there is a set number of trips after which the pass is a better value than buying individual tickets. Beyond that threshold, additional trips feel cheaper or free, incentivizing more transit use.

Already, many bus systems offer monthly unlimited transit cards at deeply discounted rates through employers. These programs can be made universally available and can even consider a yearly pass model, which would help the consumer forget they even paid for it after they keep getting more value for "free."

Easy: Many revolutionary improvements—like apps for navigation and payment system improvements—have made transit riding easier than ever. But transit still struggles to facilitate multi-purpose household trips, especially for families with children. Transit needs to be easier for people going somewhere besides work—wrangling children, grocery bags and a lengthy to-do list.

Transit transfer locations with more than 100 transfers per day should have other services available right at the transit station or stop. Key transit locations could leverage leasable assets, incentivize localized private leasing activity, and pursue co-development opportunities for small grocery, convenience retail, and services to create more convenient access to neighborhood features. Staff for a service or retailer at the stop or in the station also act as eyes on the space, providing safety benefits.

Good: At the core of a good service is one that is better than the alternative. Fellow bus riders know the frustration of opening up Google Maps to see your destination is 12 minutes away by driving but 55 minutes away by bus. As revolutionary as Bus Rapid Transit and targeted Speed and Reliability improvements have been (and we absolutely must heavily invest in these initiatives), they still shave off only about 20% of trip time end-to-end. Transit must be at least 200% faster than current service to beat the car.

In a less commute-centric transit system, creating new local express routes would make only select stops at key neighborhood centers and cut total trip time significantly. Our modern data collection can identify key origin-destination pairs and run frequent trips back and forth, using highways and other auto infrastructure that speed up travel in many cities.

Good service means being able to get from one major transit station to another across town in 20 or 30 minutes. That's a service that convinces people not to drive.

We need to shift away from trying to get people to believe in low-carbon transportation to making it undeniably the best option to get around. Solutions that make low-carbon transportation cheap, easy, and good help planners and advocates alike demonstrate that electric vehicles aren't the only path to decarbonization—while also avoiding accusations of waging a "war on cars."

While Amazon is unquestionably easy to hate as a company, the behavioral economic principles underpinning its success can be instructive. By shifting incentives to make low-carbon transportation cheap, easy, and good, we can make the crucial shift to lower emissions while there is still time to head off the worst impacts of climate change.

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