



Resilience Matters

*Opportunities for Action
to Strengthen Communities*



**CLIMATE
JUSTICE
NOW**

Edited by

Laurie Mazur

A publication of the Urban Resilience Project

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Over the last three decades, Island Press has published seminal works on resilience, ecosystems, and sustainable urban design. As our cities confront turbulent times, much depends on how resilience is defined and implemented. Seeing an opportunity to shape that outcome, Island Press launched the Urban Resilience Project in 2013, with the support of The JPB Foundation and The Kresge Foundation.

The project's goal is to advance a holistic, transformative approach to thinking and action on urban resilience in the era of climate change, an approach grounded in a commitment to sustainability and equity. We bring together leading thinkers with a broad range of expertise to generate and cross pollinate ideas. And we share those ideas in a variety of media—books, articles, interviews, webinars, podcasts, educational courses, and our annual compilation journal *Resilience Matters*.

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The environment measurably impacts the health and well-being of all people and the planet we live on. The JPB Foundation is committed to enabling resilient communities by listening, learning, and partnering with people, and communities, to sustain and enrich the environment. We strive to work in ways that are accountable to and benefit low-income communities and disinvested communities of color.

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THE KRESGE FOUNDATION is a private, national foundation that works to expand 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, 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.

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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 JPB Foundation and The Kresge Foundation, without whose partnership this journal would not be possible.



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Laurie Mazur

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Contents

INTRODUCTION

- Progress, With an Asterisk 2
LAURIE MAZUR

SECTION I CLIMATE AND ENVIRONMENTAL JUSTICE

- 30 Years Ago, Leaders Declared the Principles of Environmental Justice.
They're Still Fighting to Make Them Heard 5
TAMARA TOLES O'LAUGHLIN
- Environmental Justice: From Our Ancestors to Our Children 10
RICHARD MOORE
- Climate Manipulation? Not All 'Solutions' Should Be Advanced 13
JENNIE STEPHENS AND KEVIN SURPRISE
- Good Jobs—The Unfinished Work of Environmental Justice 16
BEVERLY WRIGHT
- Memo to the Biden Administration: What Not to Do on Climate 19
JACQUELINE PATTERSON
- Racial Justice, Climate Justice and Capitalism in the U.S.:
A Contradiction in Terms 22
JACQUELINE PATTERSON

SECTION II CLIMATE ADAPTATION

- Flood Survivors Find Common Ground in a Divided Nation 28
LAURIE MAZUR

For Water Users in California, Nature Could Be Key to Battling Drought ABIGAIL HART	33
Climate Paralysis? Try Multisolving ELIZABETH SAWIN	35
Under Water? This Guide Can Help Cities and Towns Navigate the Flood LAURIE MAZUR	38
Imperiled Cities, Mounting Costs: Facing the Big Climate Risk Blindspots ANNE PERRAULT	40

**SECTION III
SUSTAINABLE CITIES FOR ALL**

Can a Park Prevent Gentrification? LAURIE MAZUR	44
Urban Planning in a Time of COVID LAURIE MAZUR	49
An Overlooked Economic Powerhouse for Small Cities ILANA PREUSS	54
Nature in Cities and Cities in Nature LEE EPSTEIN	57
More Than a Mural: How Arts and Culture Advance the Mission of the Seattle Housing Authority LAURIE MAZUR	61
Pre-Existing Conditions: Vital Urbanism and a Prescription for the Post-Pandemic City DAN KAPLAN	69

**SECTION IV
INFRASTRUCTURE**

If You Build It, We Will Thrive HENRY CISNEROS AND WILLIAM FULTON	74
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Water Infrastructure: The Unmet Needs of Low-Income Communities	79
DAVID COURSEN	
Redefine Infrastructure for a Resilient Future	82
ANNA FRIEDMAN AND JEB BRUGMANN	
To Truly Build Back Better, We Need a Justice 100 Solution	85
DENISE FAIRCHILD	
Pneumatic Tube Trains and AVs to the Rescue? Smarter Planning for New Mobility	89
TODD LITMAN	
Go Green on New Housing	92
DANA BOURLAND	
Infrastructure Can Pave the Way to a Greener, Fairer Houston	94
VERONICA DAVIS	

SECTION V
ENERGY

Cities Can Make Energy Efficiency Programs Green and Equitable	98
LAURIE MAZUR	
Outages and Outrages: The Fossil Fuel Industry Exploits Blackout Fears	102
LEWIS MILFORD AND ABBE RAMANAN	
Don't Fall for the Hydrogen Hype	106
EDDIE BAUTISTA AND LEWIS MILFORD	
Tired of High Prices and Pollution? Let's Switch to Clean Energy	109
LINDA WALDEN	
Energy Efficiency Is for Renters, Too	111
LAURIE MAZUR	
Batteries Can Bring Clean Energy to Those Who Need It Most	114
LEWIS MILFORD	
We Don't Have Time for Another Fossil Fuel Bridge	118
SETH MULLENDORE	

SECTION VI
FOOD, HEALTH, AND WATER

- Racism Has Made Water Hazardous to Our Health,
but Climate Leaders Are Hopeful for Change 122
JALONNE L. WHITE-NEWSOME
- Conquering Hunger in the U.S. 129
KATIE S. MARTIN
- Climate Change Calls for a New Hippocratic Oath 131
GARY COHEN
- Resilience for All: Building Health Equity Infrastructure
for Climate-Driven Disasters 134
MELISSA JONES AND MATT VANDER SLUIS
- Climate-Smart Health Care Is Good for Patients and the Planet 139
GARY COHEN
- EPA Must Protect Public Health by Regulating PFAS as a Class 142
LINDA BIRNBAUM, BETSY SOUTHERLAND, AND ROBERT SUSSMAN
- For Healthier Kids and Healthier Earth, Rethink School Lunches 145
BETHANY CARLOS
- Bring Innovation to Farms and Food 147
RICHARD MUNSON
- Let's Keep Teaching Outdoors 150
CLAIRE LATANÉ

SECTION VII
POLICY AND FUNDING

- Restoring the EPA: Lessons From the Past 153
ALBERT STANLEY MEIBURG
- Should Congress Consider a Master Settlement Against Big Oil? 156
JEFFREY PETERSON
- The Bezos Earth Fund Needs to Stop Shortchanging
Environmental-Justice Nonprofits 159
PEGGY SHEPARD

Environmental Funders: The Problem Isn't Just Diversity. It's Access to Money	163
LOIS DEBACKER AND JACQUELINE PATTERSON	
FEMA: Don't Drive the Gullah-Geechee From Their Land	167
ALBERT GEORGE	
The Terrible Environmental Costs of Stagnant EPA Funding	171
DAVID COURSEN	
Communities of Color Lead the Way to a Resilient Future— Congress Should Follow	174
ANGELA CHALK AND LOIS DEBACKER	
Author Biographies	177

INTRODUCTION

Progress, With an Asterisk

LAURIE MAZUR

In 2021, all the good news came with an asterisk.

American democracy survived an unprecedented assault on January 6, but the nation is more bitterly polarized than ever. Lifesaving COVID-19 vaccines were developed in record time, but a substantial swath of the American public refused to get the jab. The Biden administration swept into office on promises to tackle climate change and “build back better,” but progress was thwarted by key lawmakers on both sides of the aisle.

In this hopeful and frustrating year, contributors to the Urban Resilience Project celebrated our collective progress, while highlighting how far we have yet to go.

For example, in “Good jobs: the unfinished work of environmental justice,” (page 16) Dr. Beverly Wright lauded the Biden administration’s landmark Justice40 Initiative, which directs 40 percent of federal investments to disadvantaged communities. To fulfill its promise, Dr. Wright argued, Justice40 must also include job training and workforce development for those who have been left behind.

On environmental justice issues, there is plenty of unfinished work. To gauge our progress, the Urban Resilience Project organized a virtual roundtable on the 30th anniversary of the First National People of Color Environmental Leadership Summit (page 5). Participants included Summit veterans who have shaped the movement for decades, as well as younger leaders on the front lines of current struggles. Participants celebrated the Summit’s extraordinary achievements, while recognizing the enduring racial inequities that are now playing out in the climate crisis.

The new administration brought a welcome shift on environmental issues, with appointments and proposals aimed at addressing climate

and other challenges. But here, too, there are asterisks: the fine print of legislation and implementation can derail the best of intentions. Our contributors stepped into the breach, offering guidance to the administration on a wide range of issues. For example, in “If You Build It, We Will Thrive,” (page 74) Henry Cisneros and William Fulton called for targeted infrastructure investments that advance economic and environmental goals. Albert George urged FEMA to change rules that are driving South Carolina’s Gullah-Geechee people from their land (page 167). And David Coursen tallied the terrible environmental costs of stagnant EPA funding (page 171).

Examining the fine print, our contributors sometimes found a dark side to seemingly positive developments. In “Don’t Fall For the Hydrogen Hype,” (page 106) Eddie Bautista and Lewis Milford observed that hydrogen is not the clean fuel its promoters claim it to be. And Todd Litman took aim at pneumatic tube trains, autonomous vehicles and other forms of “new mobility” (page 89), contending that low-tech options like transit and bicycling are better for people and the environment.

In the wake of 2020’s reckoning with racial injustice, 2021 saw a welcome emphasis on diversity within the environmental movement. But, as Lois DeBacker and Jacqueline Patterson argued, “the problem isn’t just diversity; it’s access to money” (page 163). Because it neglects environmental justice groups, “most environmental philanthropy is not aligned with the greatest need, or opportunity, in our field,” wrote DeBacker and Patterson. Similarly, Peggy Shepard charged the Bezos Earth Fund with shortchanging environmental justice nonprofits (page 159); later in 2021, the Earth Fund announced substantial new support for EJ groups.

In a year of qualified good news, the contributors to this volume made an unambiguous contribution to the public conversation. They read the fine print, highlighted neglected issues, and spoke truth to power. In these pages, they take full measure of the challenges we face. But they also offer visions of a fairer, greener future—with no asterisks.

SECTION I

CLIMATE AND ENVIRONMENTAL
JUSTICE

30 Years Ago, Leaders Declared the Principles of Environmental Justice. They're Still Fighting to Make Them Heard

TAMARA TOLES O'LAUGHLIN

Originally published November 5, 2021 in Grist

As COP26 gets underway, we don't know if it will meet our ambitions for action on climate—that's something we can only determine in retrospect. Organizers have worked hard to make sure that the diversity of our movement is on display, but equity is another matter entirely.

Thirty years ago another meeting had just wrapped up, one that was truly organized for the people by the people: More than 1,100 activists attended the National People of Color Environmental Leadership Summit in Washington, D.C., held over four days in October 1991. The United Church of Christ's Commission for Racial Justice sponsored the gathering. The planners had no idea that what they were doing would catalyze the birth of the only leadership bodies in the climate movement that are led, shaped, and run by people of color.

I've been at this for 20 years, working to get the agendas of Black, Indigenous, people of color, and women into the conversation about climate survival. The leaders who emerged from that meeting in 1991 are my family, my touchstones, and my mentors. As a result of the doors they kicked open, I've been able to go the distance—I'm the first African American to run a climate organization, and the first to head the nation's oldest environmental philanthropic association.

The summit never got its due, but it produced two foundational documents that foreshadowed every challenge we face today: the 17 Principles of Environmental Justice and the Principles of Working Together. Together, these set up a decades-long conversation about who leads, how we fund-raise, and what equity means in practice. Among the principles is explicit

opposition to military occupation, a mandate for ethical land use, and an affirmation of the right to be free from bodily harm and ecological destruction.

I was thrilled to bring these architects of our multigenerational movement together with younger climate organizers via Zoom last month, in a panel discussion hosted by the Island Press Urban Resilience Project. Joining me were Peggy Shepard of WE ACT for Environmental Justice; Beverly Wright of the Deep South Center for Environmental Justice; Bineshi Albert of the Climate Justice Alliance; Zelalem Adefris of Catalyst Miami; Jerome Foster II of OneMillionOfUs; and Iris Gonzalez of the Coalition for Environment, Equity and Resilience. I'm the middle of the generational seesaw—I see it as my job to connect younger folks to the generation that tried it, did it, and is still here. The conversation was inspiring. Below are some of the highlights.

On uncovering environmental racism

Peggy Shepard: I began working on environmental justice issues in Harlem in 1986. In 1988, WE ACT began developing campaigns around diesel buses, because we housed over one-third of New York City's bus fleet in uptown neighborhoods. We also fought a sewage treatment plant that was spewing emissions and making people sick. Vernice Miller-Travis, WE ACT's cofounder, worked on the Toxic Wastes and Race in the United States report with Charles Lee at the United Church of Christ Commission for Racial Justice, and they began developing the concept of a summit.

When I came to the summit as a delegate, it was the first time I really understood that there were hundreds of groups like mine working on similar issues around the country. It was a life-changing event.

Beverly Wright: In 1987 I was a college professor studying teen pregnancy when I met Dr. Robert Bullard at a sociological association meeting in Louisiana. There were just a few of us who were African Americans working at predominantly white schools, fighting racism and trying to get tenure.

Dr. Bullard and his wife had been fighting a landfill in Houston and realized that all the landfills were in Black people's neigh-

borhoods. He said to me, “If this is happening here, it might be happening in other places.” He enlisted me to help him look at Louisiana, and that’s how we discovered Cancer Alley.

When I came to the summit as a delegate, I had already realized that this problem was huge in the South—in Louisiana, Mississippi, Arkansas, Florida. But I didn’t have contact with people like Peggy in New York. I didn’t think it went past the Mason-Dixon Line. So it was amazing, and frustrating, and sad. Wherever you went, wherever the despised minority was, that’s where you found all of the pollution.

On the legacy of defining environmental justice

Zelalem Adefris: I was born in 1992, but the principles that were created in 1991 I use almost every single day. I use them in coalition-building and to guide my own work. These things stand the test of time. We still have our work to do, but that guidance is so helpful. It still echoes through today and shapes newer activists on the scene.

Shepard: We had a committee of people who began to work night and day on developing the 17 principles. And you’ll see that all of them are just totally relevant today. They’re important values that we all hold dear and an important roadmap for the future.

Iris Gonzalez: From where I sit and stand and lead with others, the principles are a dictionary. They’re the language and the framework for things that I have personally lived but didn’t have language for when I was younger. The solutions come from our own people, from our own community, our own tables. I can’t overemphasize how powerful and important those principles have been.

It’s so important to have the language and all of this work that happened 30 years ago as a foundation and asset base. It’s been about putting all of that into practice and building the kind of relationships where we can speak honestly and openly and not have that blow up the room, but have that transform the room—and transform ourselves as we transform these systems.

On moving away from ‘the environment’

Bineshi Albert: I wasn’t at the summit, but my then mentor, Jackie Warledo, attended. I remember long phone calls with Jackie and lots of debate about what should be included in the principles. That very first principle, that says the “sacredness of Mother Earth”—versus “the environment”—was a game-changer for engaging with Indigenous communities. It was a culmination of people coming together the year before, in 1990, at the first Protecting Mother Earth Gathering, which spurred what became the Indigenous Environmental Network. The gathering was co-hosted by Diné C.A.R.E. and Greenpeace; they realized they were up against some of the same polluting corporations and started sharing notes with each other.

There was this momentum that was building, connecting Indigenous people with other communities of color. People saw the value of connecting their work and the intersections of not just the environment, but also of racism, of social injustice—and to really think, What does it mean to take on industry, to take on government policy? To take on everything from redistricting to redlining—all of these systems that were set up to facilitate this kind of pollution.

We took this idea of “the environment” that was held by some of the mainstream environmental organizations and showed that people are part of the environment as well. The movement is about protecting the places where we live, work, play, and pray. From an Indigenous context, we’re part of the land; we’re not dominating it. These principles helped define not only what the environment is and how we’re involved in it, but also what it means to engage with other communities who are fighting racial, social, and environmental injustice.

Wright: For me, the summit was also a cultural experience because it introduced me to Asian Pacific Islanders and Native Americans—groups I hadn’t had contact with in large numbers. We had prayer meetings, and I remember telling Tom Goldtooth that Native Americans were the first group I found that had prayers longer than the Baptists or the Pentecostals. When you get to know peo-

ple of different racial and ethnic backgrounds in an intimate way, you learn to feel their pain. You empathize; you don't sympathize.

On the summit's tangible impacts

Shepard: I went back home, and in 1992 we started the Northeast Environmental Justice Network. We had organizers in Boston, Baltimore, New York, and Washington to bring people together, to go to the EPA, to speak at hearings. We met several times a year, and with the Indigenous Environmental Network as well.

We have a statewide coalition that developed more than a dozen pieces of legislation banning certain toxins. We developed the Environmental Justice Leadership Forum on Climate Change, and we held the first climate justice conference at Fordham law school to bring the green groups and the environmental justice community together. We continue to work now with the White House Environmental Justice Advisory Council, which Jerome and Beverly are also part of, making recommendations at the federal level.

Today, there are environmental justice advisors working for cities and states. You can major in environmental justice at the University of Michigan and other colleges. There are hundreds of books. There is the Office of Environmental Justice at the EPA. That is the work that the movement has made happen.

Jerome Foster: The history and the legacy of this conference is woven into the fabric of the youth climate movement; it is just foundational in how we operate. Even though a lot of young people today may not understand where that legacy comes from, it was the architects right here in this conversation—Peggy Shepard and Dr. Wright—who ushered in the understanding of what climate justice actually means.

Some people say, “Oh, the past is just full of inaction.” No, it's not full of inaction. It's full of unheard people ... We just have to use that legacy and that knowledge and put that into practice.

This interview has been edited for clarity and length. The views expressed here reflect those of the authors.

Environmental Justice: From Our Ancestors to Our Children

RICHARD MOORE

Originally published June 5, 2021 in The Hill

More than ever before, the Biden administration has put environmental justice on the national agenda. In January, President Biden outlined plans for the Justice40 Initiative, which would direct 40 percent of the benefits of a sustainable economy to marginalized communities like mine, in Albuquerque, N.M.

To some, this may sound like a new and radical idea. But in fact, it grew from decades—if not centuries—of struggle. Environmental justice is an idea that connects the wisdom of our ancestors with the dreams of our children. It is central to a future of health, abundance and opportunity for all.

I got involved in environmental issues a half century ago, almost by accident. I was working as a community organizer in a working-class Chicano neighborhood in Albuquerque. When we asked people to name their top three or four major issues, they would say that water doesn't taste very good." Or, "There's a terrible smell from the sewage plant." They couldn't have barbecues outside because the air was thick with dust from nearby particle board factories. So gradually, we turned our focus to environmental issues, though we wouldn't have called it that at the time.

For us, environmental issues were—and are—inseparable from the larger struggle for social justice. That's because marginalized communities like South Valley are targeted for everything that more affluent people don't want in their backyard. Coal-fired power plants and landfills pollute the air, so our people struggle with high rates of asthma and other respiratory problems. And our drinking water supply is contaminated by radon and arsenic, raising our risk of cancer.

The problem is when people rise up to fight the poison in their neighborhood, the polluters find another marginalized community to dump on. Years ago, we won a battle to clean up a hazardous waste site in South Valley. When we asked the cleanup company where they were planning to take the contaminated soil, they wouldn't say. So some of our neighbors followed the truck all the way to Louisiana, where the soil was being dumped in a neighborhood that was predominantly African American. We made contacts with the local community and helped them fight the dumping.

We don't want this poison in our backyard, or in anyone's backyard.

As long as any communities are dumped on, the poisoning will continue. Low-income Black and brown communities get hit first and worst. But ultimately, no one is spared. The coal-fired power plants may be in my community, not yours, but the greenhouse gases (GHG) they spew are changing the climate for everyone.

That has never been clearer than in the last year. The COVID-19 pandemic has shown that the threats we face cross boundaries of race, class and nationality. And the racial reckoning that followed the police brutality that led to deaths of George Floyd, Breonna Taylor and so many others, laid bare the history of injustice that compounds those threats.

The fight for a livable planet and the fight for social justice are one and the same. The struggle for a stable climate, for clean air and water must begin in places like South Valley that have long paid the price for others' wealth and comfort. And its success depends on building the power and prosperity of people in marginalized communities—so that no one's home is a dumping ground.

The Biden administration gets it. The administration has appointed prominent environmental justice activists to key positions, including Cecilia Martinez as senior director for Environmental Justice at the White House Council on Environmental Quality, and Shalanda Baker as senior adviser at the Department of Energy. I am involved with the Equitable and Just National Climate Platform, which works to ensure that our communities are heard in policy spaces and in the highest levels of government. And I am honored to serve on the White House Environmental Justice Advisory Council (WHEJAC), which recently offered recommendations

on how the administration can effectively implement Justice40 and the president's other environmental justice commitments in ways that deliver real benefits to low-income communities and communities of color.

The WHEJAC's recommendations are the product of bringing the expertise and perspectives of environmental justice communities to the table. Communities of color and low-income communities—both urban and rural—have suffered the most from our country's intersecting health, economic, racial and climate crises. We must continue to dismantle the systemic racism that perpetuates these crises, and ensure our communities are being heard at the highest levels of government.

The administration's Justice40 initiative is an important step forward. The initiative would begin to repair decades of harm by investing in renewable energy, pollution-free transportation, health initiatives and clean air and water. It would monitor and clean up legacy pollution in communities like mine. And it has promised that those who have borne the greatest environmental burdens are first in line to reap the benefits—good jobs and sustainable development—from a greener economy.

Now it is time for Congress and the administration to make good on those promises.

Remember, environmental racism is the issue and environmental justice is the goal. This is part of the larger struggle for justice that was fought for by our elders and our ancestors before them. It will continue long after I am gone, led by our children and grandchildren. But in this moment—in a nation that is beginning to understand the compounding brutality of racism, and the invisible ties that bind us all—it is an idea whose time has come.

Climate Manipulation? Not All 'Solutions' Should Be Advanced

JENNIE C. STEPHENS AND KEVIN SURPRISE

Originally published April 18, 2021 in The Hill

As the Biden-Harris administration advances an all-of-government approach to the worsening climate crisis, we need to acknowledge that not all proposed climate solutions should be advanced. Solar geo-engineering, a controversial proposed set of technologies that could potentially cool the planet by reflecting incoming sunlight back to space, used to be on the fringes of climate policy.

But with the recent release of a report by the National Academies of Sciences, Engineering and Medicine (NASEM) that recommends hundreds of millions of dollars be invested to establish a U.S. solar geoengineering research program, this dangerous approach is now being more seriously considered by some decision-makers. The U.S. government should not support solar geoengineering research, because advancing this climate intervention increases, rather than decreases, risks to humanity by distracting from and avoiding necessary systemic changes and enabling control of the climate system to rest in the hands of a few wealthy governments and other global elites.

The most popular solar geoengineering approach, known as Stratospheric Aerosol Injection (SAI), could potentially cool the planet quite quickly via modified, military-style aircraft that continually spray megatons of sulfur dioxide into the lower stratosphere to reflect some incoming sunlight back to space. To reduce the global temperature, this process would have to continue indefinitely at an estimated cost of about \$18 billion per year per degree Celsius of cooling.

The March 25 release of the NASEM report recommends that the United States provide public funding to support research on both the technological details of how to reduce incoming solar radiation and on

improved understanding about the societal and environmental risks of deploying solar geoengineering. Advancing research at the federal level moves this technology closer to deployment, but it remains unclear how further research without large-scale experimentation can reduce uncertainty about the complexity of the earth's climate systems and the unmanageable and unpredictable global risks of this kind of climate manipulation.

One basic problem with advancing solar geoengineering research is that any attempts to manipulate incoming solar radiation will have unequal and unpredictable global impacts on agriculture, the hydrological cycle, weather patterns and the monsoon systems. This means there is no way to deploy solar geoengineering without having disparate and uncertain impacts on food and water availability in communities around the world. Proponents of solar geoengineering research argue that more research is needed to better understand these impacts, and they suggest that it is possible that solar geoengineering could reduce food and water scarcity caused by climate change.

The problem with this argument is that it is already clear that global governance will never be able to equitably “manage” the distribution of weather changes throughout the world. This is often framed as a world with runaway climate change versus a world with solar geoengineering. Given this simplistic choice geoengineering does look more promising, but these are not the only two options: We can still reduce climate change without resorting to extreme technological manipulation of the climate system.

Another set of social justice problems of advancing solar geoengineering technology, relates to governance, who is supporting the technology and who would gain control of the global thermostat. From a social justice perspective, any technology that enables a few powerful people or countries to have control over the rest of the world is dangerous. Influential, wealthy elites—including Bill Gates and other billionaire tech-philanthropists—have been the most influential supporters of geoengineering research. This technological approach seems appealing to billionaires because it does not rely on systemic changes to end fossil fuel reliance so it maintains the business-as-usual economic structures that sustain their concentrated wealth and power. Recognizing these problematic power dynamics and the injustice of a powerful few advancing technologies that

could manipulate the earth’s temperature, advocates around the world are mobilizing against this technocratic approach.

Proponents of solar geoengineering research tend to couch solar geoengineering as a “humanitarian” technology that can “buy time” for market-friendly climate transitions and alleviate near-term climate suffering for the most vulnerable. Yet, this paternalistic form of humanitarianism tends to minimize or ignore what can and should be done to change the root causes of global poverty or climate vulnerability.

Advancing solar geoengineering creates unmanageable risks and provides yet another mechanism for the wealthy and powerful to maintain the status quo. Before this technological climate fix is advanced any further, the dangerous power dynamics of engineering the planet need to be acknowledged to counter the technological optimism of solar geoengineering proponents who are staunch advocates for more research.

Confronting the climate crisis requires deep systemic changes to reduce, rather than reinforce, the power and influence of the polluter elite—those who are profiting from our current exploitative and extractive fossil-fuel-based systems. Confronting the climate crisis requires structural changes to political and economic systems, and just, sustainable investments in people and communities.

By providing a way to manage climate change without the need for rapid structural change, solar geoengineering will likely suppress the kinds of systemic, transformative and socially just solutions proposed by the climate justice movement—those fighting for a just Green New Deal, the Sunrise Movement, those working at the intersection of environmental justice and the Black Lives Matter movement, among others.

Rather than invest in this potentially dangerous technological fix that detracts from other transformative solutions, the U.S. government should expand its investments in reducing fossil fuel reliance and provide direct support to communities most vulnerable to climate disruptions. Climate change is a dire crisis that requires centering social justice, human rights and public health to strive toward a more just, equitable and prosperous future for all. Engineering the world to fit the needs of the polluter elite will never achieve that goal.

Good Jobs—The Unfinished Work of Environmental Justice

BEVERLY WRIGHT

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I'll never forget the words of Emelda West, a small but mighty grandmother and activist from St. James Parish, La. It was in the late 1990s, and we had just worked together to stop the construction of a plastics plant in her hometown. West put her hand on my arm and said, "Dr. Wright, I just love you. I appreciate the work you've done to keep the poisons out of our community. But what we really need now are jobs for our kids."

In the last year, many Americans have awakened to the layered injustices faced by communities of color. There's the routine harassment and violence at the hands of the police. The polluting facilities—from plastics factories to bus depots and coal-fired power plants—that always seem to land in our neighborhoods. The underfunded schools, inadequate health care, and, as West observed, the persistent and devastating lack of opportunity.

In St. James Parish and across the country, our communities are coping with deep-rooted, multifaceted harms. Yes, we need to stop those harms from happening—by stopping the construction of new poison-spewing facilities, for example. But we also need to repair and revitalize the places we call home. It's a complex challenge that calls for a holistic response. It calls for environmental justice.

For years, the mainstream environmental movement focused on a series of separate issues—from saving the whales to reducing greenhouse gas emissions. The remedies were also narrowly targeted, through policy measures like cap-and-trade, for example, or techno-fixes like carbon capture and storage.

But in the low-income communities of color where I have worked for 30 years, we've never had the luxury of focusing on one thing at once. Everything is an emergency. People are dying from rare cancers linked to the toxic soup of chemicals in our water and air. Our health issues—including COVID-19—are compounded by the lack of access to decent medical care. Climate change brings historic floods and deadly heatwaves. And the scarcity of opportunity creates pervasive despair that feeds pathologies like addiction and crime.

These problems are inseparable from racism. Racism, as Heather C. McGhee has observed, is why Americans can't have "nice things" that other affluent nations take for granted—like well-funded schools or reliable infrastructure. As long as they think the benefits will accrue to others who don't look like them, some Americans will oppose programs that would actually help everyone. And as long as toxic wastes can be dumped in places where Black and brown people live, corporations will keep right on dumping.

Environmental justice is about connecting the dots between environmental problems and inequity, and addressing both in a comprehensive, holistic way. Indeed it recognizes that neither can be addressed effectively in isolation.

The good news is that the Biden administration has put an unprecedented focus on environmental justice. In January, President Biden announced the Justice40 Initiative, which would direct 40 percent of the benefits of a sustainable economy to communities that have been dumped on for generations. Just last week, the White House released interim implementation guidelines on Justice40 and identified 21 federal programs that will pilot the initiative.

Environmental justice advocates have the ear of the White House. I am proud to be a co-author of the Equitable and Just National Climate Platform, a groundbreaking plan that is helping to inform the administration's policies. The administration has created the first White House Environmental Justice Advisory Council, on which I am honored to serve. And the American Rescue Plan includes significant investments in environmental justice programs, including \$50 million for the Environmental Protection Agency (EPA) to address disproportionate environmental or public health harms in underserved communities.

But there is so much more to do. We need to repair past harms and bring clean energy and climate-resilient infrastructure to disadvantaged communities. To that end, Congress must pass a spending package that includes transformative investments in legacy pollution cleanup, community improvements, quality affordable housing and pollution-free energy. All levels of government must center communities in Justice40 implementation, by working directly with community and environmental justice advocates to address community needs and priorities.

Perhaps most importantly, we need to make sure that these investments include job training and workforce development to create good jobs for those who have been left behind. It can be done: my organization, the Deep South Center for Environmental Justice, runs training programs that have launched dozens of young people from affected communities into environmental careers. Our students earn certifications in lead abatement, asbestos removal, mold remediation, hazardous waste operations and emergency response—and 85 percent have secured jobs in these lucrative and growing fields. The Biden administration could take this effort to scale, launching similar programs in hard-hit communities across the country.

Emelda West passed away several years ago, but I can still feel her hand on my arm and her voice in my ear. She reminds me that environmental justice is about more than keeping the poisons out of our communities. It's about building a world of good health, good jobs and abundant opportunity for all.

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 wellbeing 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.

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.

Racial Justice, Climate Justice and Capitalism in the U.S.: A Contradiction in Terms

JACQUELINE PATTERSON

Originally published November 1, 2021 in Earth Island Journal

As we gather in Glasgow for two weeks of deliberations for the UN Framework Convention on Climate Change Conference of Parties #26, (COP26) otherwise known as the “Conference of Polluters” or the “Conference of Profiteers,” we must be like Jesus in the temple overturning the tables of the money changers. We can no longer accept business as usual in the vein of moneyed interests suppressing ambition and holding us back from the bold commitments necessary to turn the tide of climate change. Too often, we members of frontline communities convene at these meetings, raise our voices and demands, yet find ourselves unwitting spectators to the parade of dominating capitalists who are more concerned with maintaining the status quo and corporate interests than saving the planet.

For Black, Indigenous and People of Color (BIPOC) in the US, capitalism has never really worked out. By design. Indigenous and Black people were not only unwelcome participants in the “free market” system; through enslavement, we were actually the commodities being traded in the market.

On December 13, 1711, the New York City Common Council made Wall Street the city’s first official slave market for the “sale and rental” of enslaved African people as well as the original inhabitants of this land now called the United States.

Early proponents of capitalism believed that “free markets” and the ability to invest money for profit would make the world a better place. It certainly made money for the slaveholders: By 1840, the South grew 60 percent of the world’s cotton and provided some 70 percent of the cotton consumed by the British textile industry.

To raise the money to start, many future plantation owners turned to capital markets in London—selling debt that was used to purchase boats, goods, and eventually, people. Later in the nineteenth century, US banks and southern states would sell securities that helped fund the expansion of slave-powered plantations. Thus, slavery paid for a substantial share of the capital, iron, and manufactured goods that laid the basis for American economic growth.

Even when African Americans tried to gain some share of the emerging economy post emancipation, such efforts at accumulation of wealth were met with guns, torches, destruction of homes, businesses and slaughter of communities. The deadly 1921 attack on the “Black Wall Street” in Tulsa, Oklahoma, is but one example of this.

Earth hasn’t fared any better against the forces of greed and the pursuit of power. When the “explorers” journeyed across the ocean seeking spices, the original intent for the journey was to take from the land. Then, upon arrival in the West, they stole the land itself by murdering and displacing its original inhabitants, whose culture and heritage was centered in living in respect and harmony with the land. Indigenous values and practices were in resonance with the regenerative bounty offered by the land. But this relationship was replaced by settler colonialism with the modus operandi of reckless extraction and dominion over people and place.

Privatization, Profits, Predators and Prey

As the settlers established dominance, they institutionalized policies, practices and an economy that has evolved into the complex system that prevails today, one that is rooted in exploitation, enclosure of wealth and power, and ruling by force.

So it is that we find ourselves on a collision course with climate change. Energy is produced by extraction and burning of fossil fuels, which sends greenhouse gas emissions into the atmosphere and poisons the communities that host these facilities and practices. Moneyed interests invest in policymakers, trade associations, and political action committees that ensure that the suite of policies include everything from voter suppression to prison, school, and water privatization—all towards concentrating the spoils into the coffers of a handful of profiteers.

Urban heat islands and deadly heatwaves, cancer clusters, fatal asthma, food apartheid, immigrant children in cages, incarcerated Black men, missing and murdered Indigenous women, maternal mortality, homelessness, mountaintop removal, unbreathable air, poisoned waterways, and rampant extinctions—all of these conditions are manifestations of a runaway predator economy.

Climate and Capital: Lost and Damaged

As frontline communities and global South nations are harmed first and worst by climate change, we are intimately acquainted with the catastrophic fallout from the obsession with capital of the uber wealthy class. Communities in floodplains, disproportionately comprised of Black people, are being washed away as 100-year floods happen every other year. Too often, low-income people live in poor quality housing that is most likely to be destroyed by extreme weather. Immigrant families, many leaving their homes due to climate forced migration, are caged and/or herded by reins turned into whips, cruel measures deployed by a country that has only 4 percent of the global population yet produces 25 percent of the emissions that drive climate change.

Deaths in the thousands are due to disasters, coupled with a system that cares less about people than it does about profits. Too many are permanently displaced by a “recovery” system that is biased toward homeowners and long-term rebuilding plans dominated by wealth-seeking developers and abetted by compromised politicians. “Losses and damages” most suffered by BIPOC and low-income communities include, loss of life, livelihoods, and homes. Meanwhile, some industries are actually more profitable after disaster than they were beforehand. Something is very wrong with this picture.

Getting to Zero Emissions—Carbon Markets Will Not Save Us

As civil rights activist Audre Lorde said: “The master’s tools will never dismantle the master’s house.” It is the market-based economy that got us into this mess in the first place. To use the same mechanism that caused the problem to try to solve the problem is illogical at best. When the energy sector is a \$7 trillion industry and fossil fuel companies are making billions of dollars in profit, putting a price on carbon does not come close to achieving the widescale emissions reduction called for by the Intergovernmental Panel on Climate Change. It’s just math.

Unfortunately, it is frontline communities that pay the price as pollution continues and, in some cases, intensifies with hotspots. And it's everyone who pays when catastrophic climate change rages on, unabated by this false "solution."

With a Solidarity Economy, We All Win, Including Mother Earth

As we enter into COP26, we must remind ourselves that sometimes the most effective solutions are the simplest ones. We must also remind ourselves that those closest to the problem are best placed to design effective remedies.

In the case of climate change, frontline communities are already showing us the way:

- In Chicago, the Little Village Environmental Justice Organizations and Perro showed that it's possible—through narrative strategy, community action, and development of a local clean air ordinance—to shut down two of the area's most-polluting coal plants. No carbon pricing was necessary; activists just declared the plants deadly and used a local regulatory strategy to push for accountability through elected municipal officials.
- In Portland, a multi-stakeholder coalition of frontline communities developed a set of principles for environmental and climate justice, which they used as the basis to draft legislation that creates a revenue stream for job creation, access to clean energy and community economic development. The bill received citywide support and its successful model is now being replicated in other cities.
- From Soulfire Farm in upstate New York, to the Earthseed Permaculture farm in Sebastopol, these initiatives are showing how local food systems can provide access to healthy and nutritious foods while shifting away from unsustainable agricultural practices and the shipping and trucking of foods.
- Kristen Brown in Honolulu, HI demonstrates the power of narrative in working with other youth in her school and community to tell the stories of what we have to preserve in our oceans and beautiful lands.

- From the Black Mesa Water Coalition in Flagstaff, AZ, to the Native Movement in Fairbanks, AK, to Solar United Neighbors in Washington DC to Souldarity in Highland Park, MI, communities are leading a transition to a clean-energy economy.
- From Zero Waste Detroit to the Curtis Bay in Maryland, communities are winning campaigns against permitting of incinerators and advancing a shift to recovery, reuse, and recycling.
- In Alabama and Georgia, Black Voters Matter and the leadership of Black women were credited with saving democracy in the face of efforts to suppress inclusive governance.
- From the Atlantic Coast Pipeline to the Dakota Access Pipeline to Line 3, communities are rising up and fighting back against fossil fuel infrastructure.
- From the Regenesys Project in Spartanburg, SC to the Downtown Crenshaw Rising Coalition in Los Angeles, CA, frontline communities are developing whole-community models that incorporate economic justice, sustainability, youth development, and more

With principles, practices, and policies that mimic natural systems—the real nature-based solutions of regenerative design and cooperative systems—we can re-design our societies in a way that celebrates the abundance of what the earth yields. Grounding ourselves in values such as caring for the sacred and preserving ecological wellbeing, we can learn to live in harmony with Earth and with each other. Establishing systems rooted in deep, inclusive democracy, we can govern ourselves in a way that uplifts all rights for all people, ensuring that no one is left behind. Then everyone can truly enjoy the foundational tenet of “liberty and justice for all.”

SECTION II

CLIMATE ADAPTATION

Flood Survivors Find Common Ground in a Divided Nation

LAURIE MAZUR

Originally published April 12, 2021 in Environmental Health News

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 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.”

For Water Users in California, Nature Could Be Key to Battling Drought

ABIGAIL HART

Originally published May 6, 2021 on Medium

It's now clear that we're heading into another year of drought, though we've barely recovered from the last one. But we don't need to repeat the water management mistakes of the past. Today, we can implement a new set of solutions that can help us manage our land and water sustainably into the future.

It's clear that drought will be a recurring theme in that future. And each time a drought arrives, our water system is stretched to the breaking point. Historically, we've relied on aquifers to provide up to 60% of our water during drought years. But now even our aquifers have been overused to the point of collapse, literally: we've pumped so much groundwater that the land has sunk by more than 20 feet in some areas. And, as groundwater stores have declined, we've also lost 92 percent of the animal and plant communities that relied on the aquifer for survival.

Now, we have an opportunity to do things differently. We are in the second year of implementing the state's Sustainable Groundwater Management Act, which will set a trajectory to achieve sustainable groundwater management by 2042. The goal: a future in which we can reliably meet the water needs of people and nature, even during droughts.

The key to that future is what we call "nature-based solutions"—measures that restore our aquifers and natural ecosystems. You can catch a glimpse of that future in the Tule subbasin where farmers have seen their wells go dry in previous droughts, forcing them to idle farmland. In response, a group of landowners, and water managers are tackling groundwater overdraft head on. With support from Pixley Irrigation District, The Nature Conservancy, and Audubon California, local stakeholders formed the Tule Basin Land & Water Conservation Trust. The

Trust is focused on replenishing groundwater in basins designed to create habitat for migratory water birds and restoring habitat for imperiled upland species on formerly irrigated lands. These projects will increase local water supplies, while managing formerly irrigated lands in ways that improve air and water quality.

We can think of these practices as “rewilding” our agricultural landscapes by restoring habitat and ecosystem function where it’s been lost. The latest science suggests that rewilding can reduce the economic impacts of idled farmland by bringing financial resources for projects that benefit water supplies. Importantly, these efforts help guarantee the long-term sustainability of remaining farms and the communities they support.

Some water users may say that we should delay implementing groundwater sustainability plans until after drought has passed, arguing that those hit hardest by water shortages can’t afford to reduce water use any further during drought years. In fact, we can’t afford *not* to act now. During our last drought, the Public Policy Institute of California estimated that 2,300 groundwater wells in the San Joaquin Valley went dry, leaving many homes without drinking water. Without a new plan, our people, farms and wildlife will continue to suffer.

A key component of implementing nature-based solutions is planning and coordination, and we can’t start soon enough. We need to be proactive in developing solutions that work in drought years like this one, as well as in a hotter, drier future. And we need public agencies to support planning and implementation when and where stakeholders are ready to take action. Nature-based solutions like wildlife-friendly recharge and restored habitat on retired farmlands are options that offer hope right now.

They also lead us to a future in which the Central Valley not only produces the food we eat, but an abundance of other values as well—improved public health, recreational space, habitat for wildlife, and creating nature-based solutions now will put us on a path to achieve these benefits and strike a new balance for both people and nature.

Climate Paralysis? Try Multisolving

ELIZABETH SAWIN

Originally published August 5, 2021 in Nation of Change

This could be remembered as the summer when the climate crisis got real. There's the heatwave that killed nearly 800 people in the Pacific Northwest; floods in Germany, China, and elsewhere; and metastasizing wildfires in Oregon and California.

Increasingly, climate change is driving public health disasters, economic losses, ecosystem destruction, and worsening inequality. Under these circumstances, strong reactions are to be expected. *We should* be alarmed.

But add a dose of alarm to minds and hearts already exhausted and grieving the impacts of the pandemic, and there's the potential for something we absolutely cannot afford: paralysis.

Fortunately, there's an approach called "multisolving" that can move us from paralysis to action. Here's the gist: because climate change is connected to so many other crises, climate action can have benefits for health, prosperity, and equity. Understanding this, we can build new alliances for positive action.

This work is urgent. We need investments in flood prevention, fire-fighting, and water conservation. We need to prepare for rising seas and deadly heat. We need bigger budgets for public health systems and emergency management. We need to accelerate the move away from fossil fuels and the heat-trapping pollution they create. All of those steps require new policies, new funding streams, and a lot of hard work.

But preventing the worst of climate change is within our means. In fact, many of the actions we need to take actually pay for themselves.

A 2020 study in the journal *Science* found it would take about \$1.4 trillion per year to get on track to meet the goals of the Paris Agreement.

That annual bill is less than 10 percent of the \$17 trillion governments are spending on economic recovery from COVID-19.

Climate action would save lives—and money. That’s because fossil fuel pollution takes an enormous toll on health and the economy. In the U.S. alone, the health costs of air pollution and climate change already far exceed \$800 billion per year. According to the World Health Organization, the value of the health benefits of meeting the Paris Agreement goals outweighs the costs.

That’s the global picture. In our communities, the actions needed to prevent and prepare for climate change can give us more of things we already want and less of things that are hurting us.

Greening our cities—with tree-lined streets, parks, green roofs, rain gardens, and restored wetlands—tackles many problems at once. Shade trees help keep homes cool in heat waves while lowering energy bills and greenhouse gas emissions. Green space and wetlands prevent flooding by soaking up and slowing down water. Caring for those trees and wetlands provide good jobs that can’t be outsourced.

Cities can also multisolve by creating low-carbon ways for people to get around, like protected cycle lanes that are safe for children and clean buses that don’t produce air pollution. Building and driving those buses creates more jobs.

So too for clean energy, like wind and solar. More jobs, and less air pollution. If that clean energy flows to homes that are highly energy efficient, the people who live in them have lower energy bills and more of their paychecks left for food, medicine, and education. If the power goes out in a heat wave or a storm, those well-insulated houses will stay comfortable for longer.

Done right, multisolving can address injustices, so that the same communities that have borne the burdens of fossil fuel extraction and combustion play a leading role in the new clean energy economy.

How do we turn the potential into reality? We put the pieces together so that the costs and benefits are all in the same accounting. We involve health experts in crafting climate legislation. We make sure that jobs and workforce development are a key part of energy policy.

Some initial seeds of such thinking are apparent. There's the Biden Administration's vision of a 'whole of government' approach to climate change and the European Union's new climate proposals that include a Social Climate Fund. There are countries like Costa Rica, Colombia, Laos, and Senegal, which are incorporating health in their climate action plans.

But, as the floods and fires relentlessly remind us, time is short. The seeds need to grow quickly to their full potential.

Each of us has a role to play. Voters must insist on climate policy that multisolves. Journalists must help people see how the pieces of the puzzle fit together. Activists must demand climate action that is tied to jobs, health, and equity.

We don't need to feel paralyzed or powerless. Today, it is clearer than ever that the costs of climate change are more than we can bear. But, with a multisolving approach to the crisis, a healthier, more prosperous and fairer world is within our grasp.

Under Water? This Guide Can Help Cities and Towns Navigate the Flood

LAURIE MAZUR

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Last month, remnants of Hurricane Ida churned through the eastern U.S., leaving a trail of devastation in its wake. The rain fell fast and hard, breaking records set just 11 days earlier by Tropical Storm Henri. Ultimately, the storm killed 82 people, as waterfalls roared into subway stations and storm stations were overwhelmed, turning roadways into rivers.

Hurricane Ida was a tragedy—and a preview of a wetter, more dangerous future.

According to the latest report by the Intergovernmental Panel on Climate Change, we can expect more intense rainfall and flooding as the planet warms. We are not ready: the American Society of Civil Engineers gives our nation's storm water infrastructure a "D" grade, as legacy systems struggle to cope with urban growth and heavier rains.

These challenges are daunting even for large, well-resourced cities. For smaller cities and towns—especially in historically marginalized communities—they can seem insurmountable. But a new guide, *Navigate the Flood*, can help.

Created by the Water Center at the University of Pennsylvania and the WaterNow Alliance, *Navigate the Flood* offers a curated set of resources for city and utility staff dealing with flood and storm water challenges. For those who don't know where to start, the guide walks users through five process-oriented steps, each with easy-to-understand explanations. And the guide's searchable library includes 97 technical and financial resources—including a list of national, state and regional technical assistance providers.

Navigate the Flood contains plenty of inspiration for decision makers faced with intractable challenges. For example, it offers the case study of Camden, N.J., the poorest city in that state. Camden is one of some 860 municipalities across the U.S. with an outdated “combined sewer system,” in which storm water is funneled into the same pipes that handle raw sewage. On a good day, all that wastewater goes to a sewage treatment plant. But on a bad day—and climate change guarantees more of those—heavy precipitation exceeds the capacity of the pipes and untreated sewage is dumped directly into local rivers.

To address the problem, Camden’s Municipal Utility Authority worked with the EPA and representatives from the community-based Camden SMART Initiative. They came up with a plan to deploy “green infrastructure”—riverfront parks and rain gardens that absorb storm water while providing amenities for residents. The project also created jobs in the community by hiring at-risk youth to maintain the new green infrastructure. This successful project has been emulated by other towns in the region.

In Camden and elsewhere, efforts to reduce flooding work best when community members play an active role. Effective community engagement builds public understanding and support, while harnessing local knowledge and expertise. It is especially important to bring in representatives of marginalized groups, who are most likely to live in areas at risk of flooding. For these reasons, Navigate the Flood offers a Stakeholder Engagement Plan, which details strategies to involve community members at every step.

The Navigate the Flood guide received funding support from The Kresge Foundation’s Environment Program through its Climate Resilient and Equitable Water Systems (CREWS) initiative. CREWS was launched in 2016 to transform urban storm water and wastewater systems to provide reliable, equitable and innovative services to all community residents. The CREWS initiative supports more than 30 organizations working to advance solutions to climate-related storm and flood impacts, with a focus on low-income communities and communities of color.

Hurricane Ida was not an outlier. As the planet heats up, all our cities—large and small, rich and poor—must prepare for a wetter future. While there is no one-size-fits-all solution, Navigate the Flood offers a wealth of resources to help local decisionmakers create a plan that works.

Imperiled Cities, Mounting Costs: Facing the Big Climate Risk Blindspot

ANNE PERRAULT

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As the planet warms, Annapolis, Md., faces rising seas, supercharged storms and costly damage to public and private property. Worried about the city's ability to pay its bills, Annapolis officials recently sued more than 20 oil and gas companies, demanding financial help for the damage. The lawsuit, like those filed by other cities and states, claims the companies knew their fossil fuels would contribute to a changing climate and catastrophic impacts.

While these suits slowly wind through the courts, financial regulators are sounding similar alarms, observing that cities and other public entities face major financial risks from a changing climate. The U.S. Commodity Futures Trading Commission (CFTC) recently joined the growing list of regulators creating committees to ponder a response to this risk. For the moment, however, they continue to prioritize solutions that reduce risks to private sector actors, promoting, for example, increased public disclosure of risks so investors can avoid harm when cities can't make bond payments.

As important as these private sector concerns are, the current challenge demands a bolder rethink of how our financial system approaches risk, responsibility, public entities and the public interest.

Climate change is unlike previous risks to the financial system. Because we have reached limits in our Earth's capacity to assimilate greenhouse gas (GHG) emissions, weather-related disasters have become more frequent, severe and costly. And, unlike the dot-com bubble or the mortgage crisis, these risks are here to stay.

Cities and other public entities are particularly vulnerable because—unlike private companies—they are geographically fixed; they cannot

simply move to avoid exposure to climate impacts. They have multiple assets that are affected simultaneously when disaster strikes. At the same time, they have special responsibilities—they're mandated to build infrastructure, supply water, provide public services and ensure the protection of natural resources. Compounding this double-whammy is a third challenge: they face severe limits in their ability to raise funds to take on these risks and responsibilities.

Today, the physical impacts of climate change are colliding with the particular vulnerabilities of public entities. The financial risks to these entities—as both capital market participants and as guardians of our common good—are significant. And when the assets of many cities in a region are simultaneously impacted, the risks might imperil the broader financial system itself—regionally, if not nationally.

Of course, these climate risks have largely been created over time by private sector entities: major GHG emitters, such as the fossil fuel industry, and the banks, investors and insurers that invest in and underwrite them. Yet, existing measures mostly let these entities off the hook.

The U.S. fossil fuel industry pays few direct costs for their contribution to climate impacts; only a handful of states have carbon pricing initiatives, for example. The U.S. banking sector has provided more than \$1 trillion in financing for fossil fuel infrastructure since the Paris climate summit in 2015. Yet, the sector's measures to address climate risks are largely limited to promises by some banks to curb future lending to certain high-impact GHG activities and to require clients to consider low impact alternatives. Several U.S. banks have pledged to become “net-zero by 2050,” yet with few details. Some investors are divesting from fossil fuels, but investors aren't otherwise assuming responsibilities for enabled risks. The same is true for insurers, only some of whom are avoiding underwriting and investing in GHG activities.

While public entities are forced to pick up the tab for climate disaster, they face a cruel irony: the more they need money, the harder it is to get. As regulators push to increase disclosure of climate risks, cities in climate change hotspots face credit-rating downgrades, increased insurance costs and fewer investors. Ratings agencies are warning low-lying cities such as New Orleans, for example, that climate risks could force new downgrades. Worse, many of these high-risk “blue-lined” areas are home to

the same communities of color that have long been excluded from access to financing by discriminatory redlining practices.

As policymakers and others seek to rebuild the battered economy and strengthen the financial system, they will inevitably be forced to confront and deal with this public sector climate risk.

The first step is to provide the public with a more complete picture of what these risks are and who is responsible. This picture would describe not only how cities and states will be financially stressed by climate events, but how historical and current social inequities underlie this stress. It would also detail how financiers and companies are contributing to GHG emissions.

With this information, we can make sure entities are contributing their fair financial share to building the financial resilience of cities and states. Funds can repair damaged public infrastructure, such as utilities, and make public assets less vulnerable to climate impacts. And new takes on more traditional approaches should also be part of the financial resilience mix, including building financial buffers for cities to ensure payments to bondholders when extreme weather impacts their assets. These buffers would be similar to capital buffers that banks must establish to ensure payments to depositors when banks assume significant risks.

This sharing of financial responsibilities will help realign the financial system to the imperatives of climate change. Still, as the health of our financial system is tied to a climate that is nearing a critical tipping point, greater alignment also depends on major GHG emitters taking rapid and ambitious measures to reduce their emissions.

Lawsuits filed by Annapolis and other cities may yet prevail, but public entities—and taxpayers—need protection from climate risk now. As lawmakers and regulators gear into action, they have an opportunity to respond boldly to this need. For the sake of our families, our economy and our shared future, let's hope they seize that opportunity.

The views expressed herein are those of the author and do not necessarily reflect the views of the United Nations Development Programme (UNDP) or the Georgetown Climate Center (GCC).

SECTION III

SUSTAINABLE CITIES FOR ALL

Can a Park Prevent Gentrification?

LAURIE MAZUR

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The upheavals of the past year—the pandemic, recession, protests over racial injustice and a violent insurrection at the Capitol—have laid bare the great fissures in American society. Today we are a nation deeply divided by income, race, and class. Amid calls for healing and justice, President Biden promises to “build back better,” with development that promotes racial and economic equity.

But what does that mean, exactly?

One answer comes from a soon-to-be-built park in Washington, D.C. Constructed on an abandoned bridge across the Anacostia River, the 11th Street Bridge Park will link upscale Capitol Hill with Anacostia—a historically African-American, predominantly low-income neighborhood east of the river. When it is completed in 2023, the park will offer playgrounds, gardens, performance spaces, an environmental education center, public art and a boat launch.

And Building Bridges across the River, the nonprofit behind the bridge plan, is channeling the resources raised for the park to promote truly equitable development, especially in long-neglected Anacostia and its surrounding neighborhoods. The strategies used by Building Bridges and its partners—engaging the community, building trust, backstopping existing residents and businesses—offer a model for the Biden administration and others working to rebuild from the wreckage of the last year.

Overcoming skepticism

East of the river, plans for the park were initially met with skepticism. Brenda Richardson, a longtime Anacostia activist who formerly served as Councilman Marion Barry’s deputy chief of staff, recalls the first time she heard about the park, in 2013. Harriet Tregoning, then D.C.’s director of planning, and Scott Kratz, a then-volunteer who now directs

the Bridge Park, had come to Anacostia with a plan to raise \$30 million for the park.

The reaction was underwhelming. Richardson remembers local leaders saying, “Do you know what Ward 8 could do with \$30 million? We need education, housing, employment—and you want to build a bridge park?” But Richardson remembers something else from that day: Scott Kratz saying, “I’m willing to listen.”

Kratz made good on that promise. “He visited people in their homes; he went to civic association meetings; he went to wherever the people were,” says Richardson. And he got an earful.

Some residents were wary of outsiders coming in to “help,” and delivering nothing. Vaughn Perry, now Building Bridges Across the River’s equitable development manager, remembers thinking that “This mythical bridge park, this is never going to happen. We’ve seen so many promises made to our community that have been broken.”

Others braced for a gentrifying juggernaut. “There was great fear around building the park,” says Richardson. “It symbolized, ‘the white people are coming and we’re going to get displaced.’”

Indeed, similar developments—notably the High Line in New York City—have sparked waves of gentrification and displacement. In fact, the link between urban parks and displacement is so strong that it has spawned a backlash against lavish green spaces. The “just green enough” movement calls for smaller parks with fewer amenities as a hedge against gentrification.

“Under-resourced neighborhoods need investment,” says Kratz, “but the community needs to be at the table from the very beginning with a careful eye to intended and unintended consequences. Our goal is to ensure that the thousands of residents who helped shape the park can be the ones who actually benefit from it.”

The challenge for Building Bridges Across the River was to create a first-class park that serves existing residents and preserves the neighborhoods they call home. To that end, the organization is working to protect affordable housing, create local jobs, and strengthen the bonds of culture that hold neighborhoods together. To date, these efforts have plowed

over \$60 million into the community, nearly matching the capital costs of building the Bridge Park.

At the heart of this effort is an equitable development plan, which is shepherded by Perry, who has lived east of the river for decades. The plan took shape after year-long intensive engagement with residents, which was essential to overcome skepticism and cultivate trust. “Building trust takes time,” says Perry. “You’re talking about generations of distrust, and you’re not going to do away with it overnight. It’s really been about us continuing to show up, continuing to listen, and continuing to be at meetings and events, even if we are not on the agenda. It’s really important for us to be a part of the community.”

Equally important: making sure the community can see tangible outcomes from their engagement. “We’ve seen a hundred plans. We’ve given our feedback and our input and have not been able to see things come out of it,” Perry says. “So it was really important for us to have some early wins, to say, ‘This is what we did with the feedback you gave us.’”

Affordability in perpetuity

Those early wins are impressive. Notably, Building Bridges Across the River helped launch the Douglass Community Land Trust, which maintains over 200 units of housing that will remain affordable in perpetuity. Named after the 19th-century abolitionist (and Anacostia resident) Frederick Douglass, the Trust keeps housing prices down by separating the value of the building from the land beneath it.

The Trust buys and holds title to the land, lowering costs for the building owner. In the case of apartment buildings, those savings keep rents down. In return, the building owner agrees to a limit on profits from eventually selling the property. That covenant allows owners to reap some equity from their investment while keeping the property affordable for current and future occupants.

Currently, the Douglass Community Land Trust includes several apartment buildings (rentals and co-ops), a few single-family homes, and commercial space for small businesses and nonprofits.

Here, too, the community drives the agenda. Two thirds of the Trust’s board are community residents, small business owners and other

stakeholders. “As a nonprofit member organization, [the Trust] really depends on our membership and the community to drive, inform and guide decisions,” says Sheldon Clark, who serves as a community representative and board chair for the Trust.

Clark says the Trust plans to scale up its efforts, to keep pace with rapidly growing need. “We’re looking to partner with developers that have projects on the books that they’re looking to execute,” he says, “so we can step in and make them more affordable.”

The Trust is just one strategy Building Bridges Across the River employs to tackle D.C.’s affordable housing crisis. Another focuses on renters, who comprise the majority of Anacostia’s residents. The nonprofit organized a tenants’ association that holds “know your rights” workshops and mediates between landlords and tenants.

At the same time, Building Bridges Across the River worked with another nonprofit, MANNA, to start a home-buyers’ club that helps prospective buyers navigate the complexity of purchasing a home. The club “gives people the tools they need so they can move from generations of renting to being a homeowner in the community where they grew up,” says Perry. To date, 87 Ward 8 renters have become homeowners because of this program.

Don’t stop the train, switch the tracks

Inevitably, the bridge park will bring new visitors and resources to the neighborhoods east of the river. Building Bridges Across the River and its partners are working to position existing residents and businesses to benefit from that influx of investment—and avoid getting pushed out. “The train is coming towards us,” says Kristina Noell, executive director of the Anacostia Business Improvement District. “We don’t want to stop it, but we do want to switch the tracks.”

Anacostia’s small businesses—like Mahogany Books, Nubian Huelman, and the Open Crumb restaurant—“are the lifeblood of this community,” Noell says. “We need to make sure they survive, and remain sustainable, so they can create wealth for themselves and their families.”

In partnership with Building Bridges, Noell’s group is giving local businesses the support they need to thrive. For example, they hired a firm to provide pro bono assistance with back-office functions like taxes and

accounting. “It was so impactful, because many of these businesses couldn’t afford to pay a CPA \$150 an hour,” says Noell. Another effort helps businesses up their e-commerce game—essential to survival during the pandemic.

Building Bridges Across the River and the Anacostia Business Improvement District also help local businesses apply for loans and grants. “So many of the small businesses actually didn’t think they would ever get these grants because they never did before,” Noell says, “They felt like, ‘we never get anything, so I’m not even going to apply.’” So, Noell went into “mama mode,” urging reluctant businesses owners to seek help. The resulting loans and grants have been a lifeline through the pandemic and recession.

And Building Bridges has partnered with Skyland Workforce Center to launch training programs in construction, so local residents will be first in line for new jobs created by the park. Even before the park is built, “We are reaching out to developers and contractors in the area, and letting them know that we have a database of qualified and skilled people who come from the community,” says Perry. “We’re not just looking at a job; we’re looking at a career path for the residents.”

There’s more—much more. In the midst of Anacostia’s vast food desert—the communities east of the river have one supermarket for 80,000 residents—Building Bridges Across the River helped build seven community gardens and launched a community-supported agriculture network that provides fresh produce to hundreds of low-income residents each year. And as the pandemic and recession gathered momentum last year, the non-profit and its partners pivoted to emergency mode—coordinating efforts to provide food and \$2 million in direct cash assistance to families in need.

Building Bridges Across the River’s strategies are diverse—almost scattershot, it might seem. But there are themes that unite them. Each strategy is driven by needs and priorities articulated by the community. And each represents an effort to repair the deep, persistent inequities that separate communities on either side of the Anacostia River.

On the eve of his inauguration, President Biden said, “To heal, we must remember.” This is also true: For the healing to start, the hurting must stop. As the 11th Street Bridge Park shows, to “build back better” we must first bridge the racial and economic disparities that have long divided our cities, and our nation.

Urban Planning in a Time of COVID

LAURIE MAZUR

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Dr. Eric Anthony Johnson was up for a challenge when he stepped into his new job as chief of economic development and neighborhood services for Dallas, Texas. It was early March 2020 and—fresh from a stint as community development director in Bloomington, Minnesota—Johnson was eager to apply his skills in the nation's ninth-largest city.

Needless to say, Johnson's challenges soon multiplied. In the past year, Dallas—like other American cities—has reeled from multiple crises. First came the pandemic and, on its heels, a recession that cost the city 300,000 jobs over the course of a year. Then came civic and social unrest after George Floyd's murder. Most recently, Dallas faced a historic cold snap followed by power outages and massive infrastructure failures.

It's been a year that calls for new approaches, and Johnson is responding to the challenge. Here, he talks with Laurie Mazur of the Island Press Urban Resilience Project about the challenges he has faced, and his vision for surmounting them.

LM: So, it's been quite a year. How are you coping?

EAJ: I'm coping really well, quite honestly. Because as strange as that may sound, the events of the last year have allowed for greater strategic thinking—really connecting the dots so that we come out on the other side in a stronger position.

LM: Tell me about the dots you are connecting. What's in your portfolio?

EAJ: My portfolio consists of economic development, housing, urban planning, historic preservation, and sustainable development and construction. Those are big entities in the city of

Dallas. So it was already going to require me to hit the ground running. And as soon as I got here, the pandemic hit.

On day one, I had to create an immediate recovery strategy to help small businesses and families who could not pay the rent because of COVID-19. So I helped create a small business continuity fund and a rental and mortgage assistance program. That was the first thing out of the gate.

Then we started connecting the dots through something called the Community Transformation Action Roadmap, which came out of discussions with stakeholders in the community. In the context of the pandemic, social unrest, limited resources, and growing housing problems, we asked: *What are we going to do?* We stepped back, and looked at the components we did not have, and used this opportunity to put some new building blocks in place.

LM: What are those building blocks?

EAJ: One thing we realized during the pandemic was that we cannot rely on the city's traditional resources to do our work. We need more money for affordable housing in Dallas, which is at an epidemic level in terms of need, but that's not going to work when the tax base is down. So how do we create resources beyond the general fund?

So we are leveraging our limited dollars to draw in corporate and philanthropic support. Soon we'll be asking the council to approve an Affordable Housing Revolving Loan Program. We're putting in \$6 million in public funds to create the fund, which will be managed by a public-private partnership. The partnership will raise funds to support the fund's growth and underwrite affordable housing projects. The public dollars are a credit enhancement that signals to the private financial community that it's okay to invest, because we have reserves to cover any losses.

It's about disruptive thinking—thinking outside the box versus the traditional approaches. We don't have a lot of money, so what's the best way to leverage what we have to draw in other

support? Because it's just not the city's responsibility to provide housing, it's everyone's responsibility. You can't have strong economic growth without stable housing. Instead of saying, 'We don't have any money. We need the federal government to come help, or we need to raise taxes to do it.' I just don't see that being possible in reality.

LM: You say that stable housing is key to economic growth. Most cities try to grow their local economies by luring corporate employers. But you've taken a different tack, by focusing on economic and racial inequality. Tell me about your approach.

EAJ: For most cities, economic development is like fishing: you throw your line out and try to catch something and reel it in. But then you get into this battle over who has the most they can throw at companies.

We want to focus on our brand. We want to create a powerful brand for Dallas as a city that values and invests in all of its residents. Right now, there is a lot of inequality in this city. About 85% of the city's tax base is in the north side of the city; just 15% is in the south, in the neighborhoods where people of color live. Carrying that level of inequality is going to restrict Dallas from maximizing its potential.

But these approaches don't have to be mutually exclusive. You can have your traditional economic development, which focuses on business recruitment, retention, and things of that nature. At the same time, you can build communities from the ground up by focusing on things like enhanced workforce development; targeting resources to underserved areas to create incubators and innovation centers; and working with people in the community to build their skill sets and start businesses. Doing all of that together gives you a concrete, comprehensive approach.

LM: So how do you implement that approach?

EAJ: The Roadmap includes a new economic development policy that combines both the traditional and the community aspect

into one approach. In April, we are bringing a draft of that policy to the council. The policy is a ten-year document with high-level goals and objectives designed to both increase the tax base and reduce inequality in Dallas. It's going to talk about hitting certain metrics around housing, living wages, corporate recruitment, entrepreneurship, and infrastructure.

We're also launching a new economic development entity to give us greater flexibility to do comprehensive economic development. The new entity will be able to go into southern Dallas, where the inequality exists, and assemble land, package it, put in infrastructure, and shop it around to companies that can create jobs.

So that's an important building block. It makes us more competitive by allowing us to move at the speed of business. It also helps us make a strong business case for underserved areas in south Dallas, where most of the city's future growth will be. The new development entity will remove some obstacles to developing those areas, and it also gives us the ability to establish really good public-private and community partnerships to move toward meeting the metrics in the policy.

LM: Dallas is certainly not the only city that's reeling from the events of the last year. All over the country, city officials are dealing with growing needs and shrinking resources. What have you learned from your work in Dallas and also elsewhere that can apply to other cities?

EAJ: In light of the pandemic, and the growing social and economic inequalities, what I've learned over the last year or so is that we need disruptive leaders in the public sector. I'm not talking about revolution; I'm talking about disruption in the sense of thinking differently. You have to respond at the speed of the issues that are coming at you. You have to respond in the context of not having much to work with. You have to respond in the context of having multiple stakeholders. And it's not enough to say, 'Let's wait for the storm to pass and let's see what happens after that.'

This moment provides a great opportunity to really test your skill set and do some creative work. You have a choice. You can sit and say, well, we've always been doing it this way; it is what it is. Or you can use this window of opportunity to think differently about the challenges we face, because the challenges are going to always be here. And I think these challenges are going to come even more rapidly. That's why we need to put the pieces in place that can help us be more responsive.

LM: Well, I hate to quote Milton Friedman, but he was on to something when he said, 'never let a good crisis go to waste.' Sounds like you're not wasting this crisis.

EAJ: No, I'm not wasting the crisis. And I think he's absolutely right. But you have to be willing to take some risks. You can't just keep your head down, protecting your job. You have to be willing to put something on the table, put something on the line. People respect the fact that you're willing to do something different. You may not get it all right, but you are trying something. Policy makers appreciate that. And people in the community will come to the table. Because the work is so much greater than just the city. It's the community that brings the work to life.

This interview was conducted in March 2021 and was lightly edited for clarity.

An Overlooked Economic Powerhouse for Small Cities

ILANA PREUSS

Originally published May 19, 2021 in Next City

When community leaders in Columbia, Missouri, first set out to revitalize The Loop, the prospects felt daunting. This stretch of Highway 40 serves as the entrance to Columbia but has been neglected for decades. Local small businesses were few, and struggling.

Leaders organized conversations with neighbors to understand what types of businesses were currently in the region, what the community wanted, and how this effort could contribute to broader city priorities. They soon learned that one particular type of business held an uncommonly powerful potential to support transformation.

Small-scale manufacturers like Claysville Creations and Heartland Soapworks were selling products online as well as in retail spaces, creating jobs, and—most crucially—attracting visitors who want to buy products right where they're made. The project team realized these would be perfect businesses to be among the first to build a destination in The Loop. Because they sell online, they don't depend on foot traffic, but still create a reason for people to visit and stay awhile.

Small-scale manufacturers produce anything from textiles to hardware to beer or coffee and more. Unlike large manufacturers, they fit into relatively small square footage and are clean, quiet neighbors. They are well-positioned to compete in the digital economy, but also fill storefronts and contribute to a thriving downtown or business district. They create jobs at a variety of skill levels, and it's often women, immigrants, and Black, Latino or other business owners of color at their helm. Many owners operate these businesses out of their homes or garages at first, so your neighborhood might be home to small-scale manufacturers already.

More small cities are making small-scale manufacturing a priority in their economic development plans—to not only create these businesses but also encourage them to scale. For example, South Bend, Indiana, created Scaling Up! South Bend, a city-sponsored program to help existing businesses grow and build the pipeline of new businesses in the community. And leaders in Bellflower, CA are actively working to nurture their local small-scale manufacturers, including a fashion designer, fabricator, and a brewery/BBQ restaurant that also produces sauce for sale.

Over the last several years I've talked with mayors, economic development professionals, planning directors, and city managers across the country about how to grow a strong local economy and vibrant downtown.

Even today, it still surprises me how often I hear people in these positions talk about attracting a major employer or tech companies as if those are the only industries that deserve our attention and investment. They are not—and cities hurt themselves when this is their only approach.

Every city has a history and community members that make them unique. Whether it's a history of textile mills or corn production, of immigration or Native tribal heritage, understanding and celebrating what has contributed to your community's sense of identity is the secret of building an economy no one can take away. Entrepreneurs have always been part of this.

Right now is a particularly important moment for small cities to understand this lesson. Funding from the American Rescue Plan is just now reaching cities, and in the coming weeks and months, local leaders will have to decide how to invest it. How can leaders make sure these funds power long-term local economic growth? Here are a few specific ideas:

- **Support entrepreneurs**—Starting a business is challenging, but cities can make it easier by helping people who are just getting started. The Maker City program in Knoxville, Tennessee, for example, trains residents about how to start and scale a business. With over 900 businesses participating in their programs, and over 50% of participants in the startup training program from low- and moderate-income households, this is all about connecting people and helping them grow their revenues. Some find wild success like Pretentious Beer Glass and change the

market. It's important to invest in these programs and host them specifically in neighborhoods that have been left behind in the past.

- **Provide incentives to be on Main Street**—Build momentum for your local economy by encouraging businesses to locate downtown or inside the business improvement district. Incentives can include buying a building and leasing it at affordable prices, working with commercial landlords to rent to local businesses, or changing zoning to accommodate small-scale manufacturing (which is often unintentionally, or intentionally, prohibited).
- **Encourage flexible, inclusive ecosystems**—In addition to supporting existing and growing businesses, encourage new businesses to start. Create makerspaces and training programs for advanced manufacturing, or commercial shared kitchens to give more entrepreneurs a cost-efficient place to grow. Make capital investments and low-cost loans to help product businesses build their domestic supply chains and distribution networks. And do it in a way that invites participation from business owners who reflect the full diversity of the community.

For their part, city leaders in Columbia, MO, launched a shared commercial kitchen in the Loop—in the middle of the pandemic, no less—to intentionally provide resources for Black and Latino entrepreneurs whose businesses had not been supported in the past. This is just one of the ways we can build a new economic future together. The possibilities are endless.

Nature in Cities and Cities in Nature

LEE EPSTEIN

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Cities are crucial to nature, and vice versa. But the reasons for this are somewhat counterintuitive.

As social animals, humans have gathered in groups, tribes, clans and multi-ethnic communities for millennia. The earliest small settlements by hunter-gatherers were created to provide for the common defense, as well as the sharing of resources and family group obligations.

As these places became bigger and human societies and institutions matured, settlements became more complex. Several thousand years ago, Asian, African, Meso- and Pan-American, Middle Eastern, and Southern European societies created real cities with functioning infrastructure, civic and religious structures, and government systems. Some of these civilizations and settlements failed to grasp the necessity of living within their natural means, dissolving or perishing as the natural resources upon which they depended (game, fertile soils, clean water) were fouled or exhausted. A few thrived for hundreds or even thousands of years.

Cities large and small survived and often grew in the last several hundred years by virtue of propitious location. Access to clean water and fertile soils was crucial, although modern large cities now obtain food and even drinking water from thousands of miles away, at great expense and no small environmental cost.

What is the current relationship of modern cities to nature? Cities are important to nature in a backhanded kind of way: without these relatively compact human settlements we would require a lot of more of what now comprises important open, resource lands on which to live.

Today, urban land takes up nearly four percent (almost 80 million acres) of the U.S. land mass, the latter of which is close to 2 billion acres. But

on that very small slice of the land-use pie resides about 83 percent of the total U.S. population of 333 million. If that urban population were instead sprawled out at much lower average densities, we'd require many hundreds of millions of acres for houses, stores and offices, industrial and institutional land uses, and the roads, rail, and utilities to connect them. While some of that land would come from our farmland base (cropland currently makes up about 20 percent of U.S. land, while livestock pasture and rangeland make up about 40 percent), some would also come from private forestland, which currently makes up about a third of the nation's land.

And losing a significant proportion of those lands' ecological, food and fiber-production functions would be disastrous for nature—and for us.

The lost forests would no longer produce hundreds of millions of tons of oxygen and—crucially—they would not absorb and sequester hundreds of millions of tons of carbon. Their spongy soils would cease to filter more than 50 percent of the nation's water supply. They wouldn't provide habitat for thousands of species of terrestrial mammals, birds, and amphibians, and supply natural apiaries for bees and other pollinators, as well as habitat for species such as insects and soil-dwellers near the bottom of the food chain.

The lost farms would no longer serve as local, regional, national, and international food sources, and tens or hundreds of millions of acres of these significant American cultural and economic touchpoints would vanish. Streams, wetlands, ponds and lakes that would necessarily be piped, culverted or drained would vastly alter natural hydrology, and the lost ecosystems would no longer provide habitat for fish or places for human recreation, nor would they serve as sources of clean groundwater to replenish other streams and rivers, and drinking water for people.

While we're not facing that full-scale disaster yet—at least from urbanization—these are all problems that are today ongoing at a smaller but still significant scale. Very low-density sprawl development patterns, which extend urban development well beyond city and near-city limits, have been prevalent since the 1960's. According to a 2018 *Bloomberg* report, land is being urbanized nationwide at a rate of about a million acres each year (that's a Phoenix, Houston, and Los Angeles combined). This form of development eats up forest, open range, and agricultural land,

necessitates more roads and highways, and increases driving and traffic congestion, all of which result in more air and water pollution, flooding, and increases in climate-changing carbon dioxide.

In the six-state-plus Washington D.C. Chesapeake Bay watershed, for example, forestland losses from 2014 to 2018 averaged 67,264 acres per year, according to recent satellite-based analyses, and new development consumed almost 24,000 acres per year of resource land. Such losses bear significant environmental costs, which new development within already developed cities and towns helps avoid. Of all the major pollution sectors affecting the Chesapeake Bay (agriculture, wastewater, etc.) only urban/suburban polluted stormwater runoff is increasing—because suburban and ex-urban development is increasing and our techniques for managing polluted runoff only go so far.

Cities and towns accommodating new development may still face challenges, of course, such as entrenched poverty, unemployment, crime, and housing needs. (Though of course these problems are also found in many rural small towns.) Some of these problems can be attacked with the energy and economic stimulation that in-town new development brings—if there’s a fresh focus on equity and regeneration rather than “gentrification” (pushing existing residents out) and the usual municipal attitude of “anything goes as long as it’s new.”

Urban redevelopment offers an opportunity to fix what’s broken in our cities today. For example, we can replace lead water supply pipes, and bring clean water and sanitary sewerage into some urbanized places or neighborhoods that, incredibly, still don’t have them. We can also address air pollution from motor vehicles and industrial corridors; inadequate wastewater treatment; “heat island” effects due to unrelieved pavement and rooftops; regular urban flooding; and combined sewer pollution problems (where stormwater mixes with sanitary sewerage in older cities’ waterways).

These problems affect disadvantaged communities and communities of color more than others by way of higher rates of respiratory and cardiac disease and other health risks. At the same time, immigrant communities may face distinct health threats through subsistence fishing in polluted urban waters. The impacts of climate change, from drought in the Western U.S. to too much water and more intense storms in the East, also need

to be addressed head-on, with a focus on increasing urban resilience so towns can handle the new normal; as well as reducing greenhouse gases by increasing electrification with renewable energy sources.

The good news is that there are solutions, many of which involve bringing nature (and food) resources back into the city: more parks, more trees, natural systems (“green infrastructure”) to reduce stormwater pollution, “green” roofs, and even urban farms, such as concentrated urban farming in Boston, Chicago, Washington, DC, Baltimore, and Richmond, Virginia.

Humans are part of nature, and our cities have an important place in it. Indeed cities and towns, as the predominant habitat for humans, are vital to ex-urban nature’s continuing to function as the planet’s “lungs” and “kidneys,” purifying air and water, providing habitat for all creatures, and affording humans respite and relief. The other side of the coin, of course, is that nature in cities is also a crucial component to life on this planet—to making these essential places for human habitation livable and sustainable in the long term, while reducing their own impact on the environment.

More Than a Mural: How Arts and Culture Advance the Mission of the Seattle Housing Authority

LAURIE MAZUR

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For many in the public housing realm, the arts and culture are nice-to-have amenities—a mural painted on a newly constructed building, perhaps, or a concert in a courtyard.

But at Yesler Terrace, a 30-acre public housing development near downtown Seattle, arts and culture play a more central role. Since 2015, the Seattle Housing Authority has worked to integrate arts and culture into Yesler’s ambitious redevelopment plan. Five years in, this approach has produced tangible benefits for the people served by the housing authority.

Yesler Terrace boasts a rich history, as well as a vibrant, diverse community. Completed in 1942 on a choice site with views of Mt. Rainier and Puget Sound, Yesler was Washington State’s first public housing and the nation’s first racially integrated public housing development. Jimi Hendrix is one of Yesler’s notable former residents.

But by 2006, it became clear that Yesler’s outdated infrastructure and 561 garden-style townhomes were beyond repair. So the housing authority began a conversation about Yesler’s future, engaging residents, city officials, key partners, and the citizens of Seattle. After intensive consultation and planning, the revitalization of Yesler Terrace got under way in 2013.

It’s a much-needed evolution. The new Yesler buildings—some already completed and occupied, others still under construction—will include 1,500 restricted-income units, tripling its stock of affordable housing in a city where such housing is disastrously scarce. Private developers are contributing a share of affordable units and will also add up to 3,000

market-rate units and 900,000 square feet of office space. The redeveloped Yesler will include new parks and open spaces, as well as a streetcar line that connects the development to the regional transportation system.

The desired result: a thriving, mixed-income community that honors Yesler's history and culture while creating attractive, affordable new housing at a range of price points.

However necessary, the redevelopment is also disruptive and difficult for many. While all of Yesler's original residents were given the option to live in the "new" Yesler, about half chose instead to move elsewhere. The community always had a core group of longtime residents for whom Yesler was "the destination," and another group that was more in flux, for whom Yesler was more of a stop on the way to somewhere else. The redevelopment created a situation in which people had to decide which group they belonged to. At the same time, the influx of new residents and construction posed challenges for Yesler's deep-rooted neighborhood spirit.

Enter Jennifer Song, administrator for arts and culture programs at Yesler. Hired in 2015 through a \$678,000 grant from The Kresge Foundation, Song works with artists and residents to weave the threads of community and culture that make Yesler more than simply a place to live. Arts programs at Yesler have eased the challenges of redevelopment—including the decision to stay or go—by helping residents define what the community means to them.

A Common Space, A Shared Story

At Yesler, the arts are a kind of commons, a way to bring back what Song calls "the social overlay." To maximize the community-building potential of the arts, Song hires artists-in-residence to develop community engagement programs. The artists become participating members of the community—attending neighborhood meetings and celebrations, partnering with staff and service providers on programs, and developing their own unique relationships with individuals and groups in the community over time.

Importantly, "[Song] brings in artists-in-residence who are not creating *things* but *experiences*," says Stephanie Van Dyke, the housing authority's former director of development. Rather than a prescribed set of activities

and outcomes, artists-in-residence develop programs that respond to residents' needs, concerns, and experiences in the redevelopment.

“Focusing on experiences allows us to prioritize process over product, which, at a very basic level, allows us to fail at things,” says Song. “We are constantly tuning our programs to resident feedback and community needs, which can mean that sometimes programs just don't work out, or we need to make fast changes.”

Song engaged Rachel Kessler as an artist-in-residence to establish weekly and bi-weekly art clubs that meet in the buildings' lobbies. Art clubs are drop-in programs, so anyone can join. The resources needed to support them are fairly minimal—the artist's time and art materials. Projects and materials are kept modest for practical purposes, including ease of set up and cleanup in a building lobbies. Art clubs do, however, require an artist who is welcoming and flexible, and the full support and trust of property management staff who are responsible for the maintenance and management of building common areas.

The clubs serve a social as well as a cultural function: “Even if people come by for a minute, there is a little neighborly exchange,” says Kessler. Kessler's art clubs have attracted repeat visitors, including seniors and youth, and have given her an opportunity to become a trusted presence in the community. In this way, the clubs are proving to be an effective strategy for defining how public or semi-public spaces can be owned and used by residents.

The art clubs have also had an impact beyond the Yesler community. Artworks created in the clubs were exhibited at the Seattle Art Museum in 2018. Exhibits like this may help shift broader perceptions and narratives around who lives in public housing.

Kessler also helped transform an unoccupied housing unit into a temporary community art gallery, meeting space, and art studio for residents. In addition to hosting cookouts and karaoke parties, the “art house” featured a resident-curated exhibit of memories from Yesler's past, and visions for its future.

The exhibit helped residents celebrate and move on from Yesler's past, says Sven Koehler, the housing authority's relocation coordinator. “There

was a sense of loss, of losing the yards, the personal space and the way the townhouses were,” Koehler says. The art house “gave people an outlet to express misgivings and the stress of moving...and helped people be more certain about where they were going,” he adds.

The arts help the Yesler community define itself—its history and values. For example, longtime resident Charles Parrish was commissioned to create public art for the development; he elected to create a series of bronze medallions to celebrate people important to Yesler’s history. Self-taught artist Thanh Tran, who picked up painting to help cope with physical and mental health issues following a bad accident, was mentored by Yesler artist-in-residence DK Pan to create a building lobby installation focused on the *hoa mai*, a Vietnamese flower. Another artist, George Lee, created a sculpture modeled on the seed pods of the local Monterey cypress tree. Lee collected personal and historic keepsakes from Yesler staff and residents, which serve as a time capsule of this particular place in time.

Song also works to bring the arts into residents’ day-to-day lives. Before the pandemic, artist-in-residence Sumayya Diop led regular classes at Yesler: a dance-exercise class for elders, a movement and wellness class for young women, and a line-dancing workshop with Vietnamese seniors. Others led classes and programs such as a youth media program that trained Yesler teens to create mini-documentaries about their lives and community; and an art- and story-sharing program for mothers taking second-language English classes at the local elementary school. A popular sewing class—with childcare services—taught residents a craft that has practical and economic applications.

Arts and Culture for All

The benefits of these programs are easy to discern. For residents, they include greater access to the arts; strengthened networks in a community under transition; and an ownership stake in the place they call home.

At the most basic level, the programs democratize access to arts and culture by inviting participation from everyone. “Most people say, ‘I am not an artist,’” says Diop, “but everyone *is* an artist. They sing, they do spoken word, they play an instrument. We need to expand that whole idea about what art is. People look at the arts as a spectator; they come to watch. I want them to see that art lives in community, not just on the screen.”

And participating in the arts amplifies residents' voices. "Low-income people and people of color are often asked and expected to be quiet, but the arts give you a platform for being seen and for being heard," says Rachael Steward, the housing authority's community services administrator. "The programming that's happening [at Yesler] helps to affirm for existing residents that 'yes, I have a place here. Yes, I am a contributor and my contribution can be in a creative space. And it can be something that I can belt out. I don't have to be quiet about it.'"

At Yesler, arts programming helps celebrate and sustain culture. Before the pandemic, a group of Ethiopian and Eritrean women met biweekly for a traditional coffee ceremony, preserving a beloved ritual from their East African homeland. Kessler helped the women in this group create personal family history albums, working with community leaders to manage the collection and sorting of photos, translations, and stories.

"Resident-led cultural activities like the coffee ceremony are critical to producing culture at Yesler," says Song, adding: "In a period of community transition, these activities are even more essential, and it is the job of the arts programs to recognize and amplify their benefits. Resident voice and agency, cultural preservation, and celebration of people's authentic traditions and narratives are all in play here."

While helping to sustain residents' cultures of origin, arts programs also unite residents across cultural divides and language barriers. "The arts bring people together," says Van Dyke. "Dance is democratic; you don't have to say much. Same with sewing and painting." While ethnic groups tend to congregate together, partly because of their shared language, Diop saw those divides fall away at Yesler's sewing classes. "Women from all different ethnic groups were interested in mending those clothes," she says.

Benefits for Housing Staff Too

Arts and culture programs produce benefits for the housing authority's staff, as well. For one, those programs create new channels of communication between residents and staff—a welcoming space to talk and relate. "Just by stepping in, and listening and hearing, they pick up on things that they can address today, before it becomes a passionate conversation," says Ben Wheeler, the housing authority's community builder. "The arts program provides gracious space for staff and residents to lay the groundwork for trust-building to flourish. Thanks to better communication,

property management and residents actively partner together to address both concerns and interests. That builds a stronger sense of community,” Wheeler says.

Fitsum Abraha, Yesler’s senior property manager, sees the arts as a way to build a sense of belonging, so that neighbors answer to one another. “People participate in these clubs, and I think you create social accountability. They become accountable to each other without us doing anything,” he says. Abraha encourages team members to participate in cultural events, to improve relationships with residents: “Be among the residents,” he tells his staff. “That allows people to see you in a different light.” Recently, Abraha asked Song to provide arts-based training for his team, to enable them to get to know residents better.

The COVID Test

The value of Yesler’s arts and culture programming—for both residents and staff—has been put to the test during the COVID-19 pandemic. As elsewhere, the pandemic disrupted Yesler’s typical ways of planning, communicating, and gathering as a community. But Song found new ways to maintain a consistent presence at Yesler and respond to residents’ needs. “We had to rethink what’s useful in hard times,” she says. “And we didn’t want to put anyone at risk.”

Fortunately, Song’s programming was adaptable by design. Flexible contracts with artists dictated expectations, but not prescribed activities, allowing them to shift gears quickly. For example, when in-person, pre-pandemic means of communication were no longer possible, one artist produced a newsletter and activity guide that featured resident stories, artwork, and poetry. The newsletter included an insert with information and contact numbers for essential services relating to food and supplies, property maintenance, and COVID safety.

Arts programming aligned with emergency response efforts in other ways, as well. One artist collaborated with a Vietnamese community leader to create “cultural care packages” that included traditional food ingredients—such as fish sauce—that weren’t available in typical relief packages. And machines from canceled sewing classes were lent to Yesler residents, who were hired to make face masks for community members and staff.

Because the Yesler arts and culture program had built a solid base of trust within the community and among department staff, it was able to successfully pivot during the pandemic—making a positive contribution rather than draining resources. “We couldn’t have done that if we weren’t already deeply embedded in the community,” says Song.

Creative Placemaking Is Mission Critical

Song’s work at Yesler embodies “creative placemaking”—an approach that, according to The Kresge Foundation, “elevates arts, culture, and community-engaged design as central elements of community development and planning.”

“The need for creativity in community development, like the kind that the Seattle Housing Authority has been leading, is extremely important in places where there’s considerable income inequality and where fast-rising rents are causing increasing housing burden,” said Seth Beattie, senior program officer with Kresge’s Arts & Culture Program.

Kresge’s approach to Creative Placemaking combats the longtime pattern of low-income residents and residents of color frequently being left out of community planning and decision-making processes that affect their lives and neighborhoods, Beattie added.

“Not only did the Seattle Housing Authority take on one of the largest public housing redevelopments in the country, but the organization also simultaneously dedicated resources to fostering stability among residents living with low income through the Yesler Terrace Arts Initiative. SHA connected arts to greater economic and social inclusion for its tenants.”

For the Seattle Housing Authority, this approach has upended attitudes about the arts. “Watching the program has fundamentally changed my idea about what art can be in a community,” says Van Dyke. “I thought we’d get some nice art out of it, but this has been entirely different than I expected.” Song concurs: “We’ve seen incredible gains in [Seattle Housing Authority’s] understanding of why and how resident voice is essential to development practices,” she says.

At the same time, Song observes that creative placemaking efforts are about more than just engaging residents. “They’re about challenging the negative narratives that society puts on public housing authorities and

their residents. They're about helping people cope with past trauma and present anxieties and providing new opportunities for residents to actively determine what their community becomes. And they're about breaking down the invisible lines between people who speak different languages, between the poor and the wealthy and between those who have called this home for decades and those who just arrived."

Five years in, those efforts are firmly embedded in the housing authority's work. Indeed, when the Kresge grant expired, the housing authority pooled internal funding with proceeds from land sales to continue funding Song's position and the arts program. "Now it's hard to imagine doing this kind of development work without the arts front and center," says Van Dyke. "We've evolved in our understanding of how we can support this critically important work well into the future."

Pre-Existing Conditions: Vital Urbanism and a Prescription for the Post-Pandemic City

DAN KAPLAN

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As the vaccine rolls out and we emerge from social distancing and suspended animation to survey the wreckage, it would be a mistake to return to “normal.” The pandemic has brought into sharp relief social inequalities and environmental vulnerabilities in our cities; both are in deep need of repair and reimagination. Rebecca Traister, writing about another (and related) calamity—the storming of the Capitol—wrote “we must steer straight toward the kinds of mechanisms that are this calamity’s direct and robust inverse: toward strengthening and empowering a populace, toward a governance that prioritizes dignity and care and safety and security for everyone, not just the already powerful.”

To create more just, vibrant, resilient, and sustainable cities—that deliver on “dignity and care and safety and security for everyone”—we must advance five key urban systems.

1. Housing for Community

In our most prosperous cities, housing supply is infamously constrained, resulting in overwhelming housing insecurity, overcrowding, and homelessness. An excellent place to start curing these ills is by repairing, renewing, and reinventing public housing campuses to make them safe and dignified places to live and raise families. Most of the nation’s public housing stock is over 50 years old and ripe for imaginative transformation. There are exciting possibilities to make these “complexes” radically more sustainable, enriched with community resources, welcoming to more residents, and more deeply integrated into their larger contexts.

Seattle's Yesler Terrace is a compelling example. Completed in 1942, Yesler was America's first racially integrated public housing project. Originally built as two-story garden-type apartments, the centrally located site could support many more residents in the now built-up context. A thoughtfully crafted mid-rise, mixed-use, mixed-income master plan is being built out that will eventually yield 5,000 residential units, about nine times the original plan, including triple the original number of subsidized residences.

In New York City, the city's oldest non-profit housing developer, Phipps Houses, is engaged in reimagining and densifying Forest Hills Houses in Queens. Completed in 1975, this three-building, tower-in-the-park development houses 430 families. Phipps is redeveloping the site by adding three more multi-family residential buildings, consolidating parking, and creating more focused outdoor space. The result is 442 affordable units in modern, energy-efficient buildings, on-site medical offices, an expanded community center, and a spacious, well-developed central green space. The existing buildings will be refurbished after this project is complete. Critically, no residents will be displaced.

2. Transportation for Economic Justice

There is an inverse relationship between income level and commute times: the lower, the longer. Federal intervention to support transit systems straining from the pandemic is a baseline. Now is the time to increase subway, bus, and light rail service to underserved neighborhoods. It is a lesson that needs relearning: robust and extensive mass transit systems promote access to housing, education, employment, healthcare, and the richness of a city's culture for all.

Many North American cities have existing rail rights-of-way that can cost-effectively and quickly be imaginatively restored. In New York, the Regional Plan Association has proposed the Triboro Line, which utilizes 24 miles of abandoned railway tracks stretching from Sunset Park in Brooklyn to Co-op City in the Bronx. Planned for both passengers and freight, it has the potential to become a vital part of the urban transit system for 100,000 daily riders, a catalyst for economic growth, and a string of new recreational spaces. All of this in swaths of diverse neighborhoods beyond Manhattan that have seen persistent underinvestment.

3. The Workplace Reinvented

Some of us will return to our offices enthusiastically, eager for interaction and face-to-face collaboration. Others will do so reluctantly, mourning the convenience of being more available to family and friends. Most will be in some in-between condition. As workplaces reopen, they will need to embody a greater emphasis on community, wellness, and flexibility. Further, measures that promote resilience to future public health emergencies will be a prerequisite.

1 Willoughby Square (1WSQ), Downtown Brooklyn's first office building in a generation, epitomizes this new ethos. From its unique side core arrangement to the integration of outdoor spaces and its textured design, 1WSQ is designed to promote a sense of place, health, and togetherness, as it welcomes creative workers back to the office.

4. Civic Infrastructure

Much has been made of Paris mayor Anne Hidalgo's 15-minute city, where everything residents need can be reached within a quarter of an hour by foot or bike. A proven idea that also has compelling branding, it points to a key ingredient of vital cities: robust, distributed networks of small, localized spaces for education, entertainment, community, and health. In medical facilities, for instance, we see a trend away from centralized hospitals to systems of pharmacies, clinics, and outpatient facilities. Housing smaller, distributed facilities in dense urban contexts (that promotes 15-minute living) signals new types of neighborhood building blocks: hybrid buildings.

At the La Central development in the South Bronx, residents of the nearly 1,000 affordable housing units can enjoy an array of amenities within steps of their front doors. These include a new YMCA with pool and gymnasium, rooftop vegetable gardens, a skate park, street-facing retail, and community spaces. A block away is the vibrant Hub of the South Bronx, with access to stores, healthcare, movie theaters, and transportation. The opposite of a gated community, La Central is seamlessly integrated into the surrounding neighborhood's geometry, scale, and materials.

5. Nature in the City

Our urban parks, streets, and various semi-public and private spaces—from balconies to backyards and roof tops—are critical to maintaining

mental, physical, and civic health during quarantine. After the pandemic subsides, I doubt we will readily part from them. Beyond our rekindled love of parks, there is a thirst for a radically expanded and verdant public realm, from living streets to sky gardens. Exciting possibilities are emerging in the overlap of urban design, architecture, landscape architecture, and horticulture.

The New York City Department of Transportation's Open Streets program is fostering experimentation and reinvention of the city's sidewalks, street beds, and intersections that have not been seen in decades. As the ad-hoc installations mature to more permanent conditions, issues of safety, sustainability, and longevity will need to be better addressed. As they evolve, these transformations will be one of the lasting positive—and popular—consequences of the pandemic.

Each one of these five points is vitally important. However, greater transformation comes with interventions that exploit the intersectionality and synergy between them. A roof-top training center for urban agriculture at a mixed-income residential building near transit has more consequential impact than a passive green roof on an affordable housing project.

We can meet this pivotal moment by training our collective attention, creativity, and investment on these five fundamental ingredients, and their amplifying synergies. The result will be more sustainable, safe and inclusive communities, infrastructure, and cities.

SECTION IV

INFRASTRUCTURE

If You Build It, We Will Thrive

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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 have 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 U.S. Congress. In fact, infrastructure should be important to the U.S. 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, U.S. 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.

Water Infrastructure—The Unmet Needs of Low-Income Communities

DAVID COURSEN

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To meet the promise of its day one executive order on Racial Equity and Support for Underserved Communities, the Biden administration needs to provide low-income communities, communities of color and Indigenous people the same access to clean and safe water that the rest of our nation takes for granted.

Biden's COVID-19 relief plan makes a down payment on that promise by funding improved access to clean water for the overburdened communities of Indian Country. The new administration's climate executive order acknowledged a history of underinvestment in water and wastewater infrastructure in disadvantaged communities.

The needs are immense. A recent survey estimated that over the next 20 years, it will take nearly \$473 billion to ensure the safety of our drinking water supply. The need is greatest in poor communities and communities of color, which have long been shortchanged. In a pattern that is all too familiar, \$120 billion in federal spending for wastewater and drinking water infrastructure over the last half a century has left communities of color, low-income communities and Indigenous people with large unmet needs for reliable and affordable water infrastructure.

The most obvious example is evidence that 2 million Americans lack access to adequate plumbing or sanitation—the running water and flushing toilets that most of us consider essential. An astonishing 6 percent of Native American households lack full plumbing, making those households 19 times as likely as white households to suffer such a lack. Latinx and African American households are “only” twice as likely. Lack of plumbing and sanitation means that children play in yards flooded with raw sewage and families drive for hours to get

household water from public taps, or draw water from contaminated streams or springs.

But the problems go beyond the households that lack indoor plumbing. Over 9 million homes, many of them in our poorest cities, get water through lead pipes and more than 44 million people are served by water systems with water quality problems. There are also widespread problems with well water, with nearly a quarter of private well tests by one agency finding unhealthy bacteria and other contaminants like arsenic, uranium and nitrates.

But even those fortunate enough to be served by systems with safe water may not be able to afford it. A 2020 report found water bills skyrocketing by as much as 80 percent, with as many as two-fifths of residents in some cities living in neighborhoods where bills exceed 4 percent of household income and are therefore considered unaffordable.

The evidence of unaffordability is growing. Currently, California residents owe more than \$1 billion on their water bills and one in every eight households is currently behind on payments. In Virginia, more than half a million households are behind, the vast majority of them by two months or more. In 2019, at least half a million California residents had their water cut off for non-payment and gaps in the data mean the actual number was almost certainly much higher.

When residents can't pay their water bills they may lose their homes. In Cuyahoga County, where Cleveland is located, more than 11,000 water liens—sometimes for unpaid bills as low as \$300—were issued between 2014 and 2018. Such liens and other punishment for non-payment can boost the risk of eviction and foreclosure. Not surprisingly, they are more common in communities of color.

Federal funding for water system infrastructure projects is available to communities through a federal and state loan fund, but the level of funding has declined substantially since 1977. This has forced local utilities to hike their rates to raise money to upgrade aging infrastructure, comply with safety standards for contaminants like PFAS, lead and nitrates and adapt to extreme weather conditions linked to the climate crisis.

Stimulus funding will undoubtedly include hefty increases for the existing revolving loan program, but money for that program may not help poor communities. These, after all, are the very communities that the program has underserved in the past and they may lack the resources to qualify for loans or to repay them on terms that are not crippling for the communities.

A pair of Environmental Protection Agency (EPA) programs may suggest a way forward. Last year, Congress provided EPA \$54 million to provide grants—not loans—for basic drinking water and sanitation in Alaskan Native Villages and desperately poor U.S. communities along the Mexican border. Since 1996, the Alaska program has raised the share of rural Alaska homes with sustainable and affordable in-home water and sanitation services from 50 percent to nearly 95 percent, reducing human exposure to raw sewage and drinking water contaminants, improving public health and reducing health care costs.

If our nation is serious about environmental justice, it must find ways to help overburdened and underserved communities build new infrastructure and replace lead pipes and other aging infrastructure on terms that will truly meet their needs.

Redefine Infrastructure for a Resilient Future

ANNA FRIEDMAN AND JEB BRUGMANN

Originally published July 9, 2021 in The Hill

In February of this year, Texans faced a triple threat. There was the ongoing pandemic, with its devastating toll on lives and jobs. Then came the winter storms that crippled the state's poorly prepared electrical grid. When the grid went down, families across the state were left without water, food or heat.

We live in a time of cascading crises. Millions of American families lack the underlying physical and economic support systems that could help them contend with the economic, environmental, health and social strains presented by these increasingly common challenges. That is why we must invest in infrastructure to enhance our resilience to the threats of today, and the uncertainty of tomorrow.

President Biden's approach to infrastructure investment reflects these new realities. About half of the administration's initially proposed infrastructure investments were directed towards buttressing traditional infrastructure such as roads, bridges, water systems, shipping ports and power grids. Federal investments in these forms of traditional infrastructure have also been incorporated into the recently negotiated bipartisan infrastructure framework.

But stopping here would be shortsighted. We've all witnessed firsthand over the past year that the hazards, vulnerabilities and productivity requirements of this century are dramatically different from those of the decades—let alone centuries—before. Historically, infrastructure investments have addressed each era's unique challenges, which can, broadly speaking, be broken down into two categories: protective and economic.

Early protective infrastructure such as levees and seawalls enabled the establishment of our coastal port cities, facilitating trade and undergirding our manufacturing economy. Each generation of protective infrastructure reflected the very different hazards of the time. Beginning in the late 19th century we built sewer and wastewater treatment systems to eliminate the risk of a mass health crisis. Military infrastructure, such as the shoreline bunkers of World War II, provided defense from Nazi invasion. Economic infrastructure includes investments in road, rail and water networks that increase the efficiency of markets and drive the nation's potential to support a high quality of life.

While these two kinds of infrastructure have continuously evolved to take on new forms, their functions have remained largely the same. The past year has demonstrated vividly the need for additional investments in both protective and economic infrastructure that addresses the unique conditions of our time.

For instance, the intersecting health impacts of the pandemic and the ensuing economic crisis, coupled with increasingly severe and frequent climate events, clearly threaten the United States' ability to maintain its historic economic productivity—while pushing the American dream further out of reach for millions. Addressing these challenges requires significant investment in modernizing the country's electrical grid, expanding broadband networks, building our public health system, and mitigating crisis-level business and household economic losses in the face of catastrophic events.

The most catalytic investments in infrastructure accomplish both protective and economic goals simultaneously, and that approach is at the heart of the original Biden plan.

For instance, Biden's proposed investment of \$400 billion in-home care services for older and disabled Americans is the kind of forward-looking infrastructure designed for this increasingly complex era. With an aging population, more and more Americans will require these services, and families overwhelmingly prefer to care for their loved ones at home and in their communities, as opposed to in a long-term care facility. More and more families face an agonizing choice between expensive care services and leaving the workforce to care for a loved one.

Biden's approach transforms this systemic challenge into an opportunity. The proposal would make home-based care more affordable for the growing number of Americans who will need these services, keeping them out of distant facilities and closer to their families. At the same time, it would lay the groundwork for economic growth, enabling more family members to stay in the workforce while also catalyzing the growth of an automation-resistant home health care sector of our economy.

The bipartisan infrastructure framework is encouraging after years of gridlock. But it is only a promising start: Additional investments beyond traditional infrastructure will be needed to grapple comprehensively with the unique physical, economic, technological and social challenges that we have been witnessing daily.

Much of the attention on the Biden plan has been on the climate crisis—and justifiably so. But the genius in this approach is the expanded viewpoint on how infrastructure investments can reach individual lives.

This is a hopeful moment for our country. With the end of the pandemic in sight, we are poised to enter a new era with new possibilities. However, we cannot forget about the underlying fragility that the intersecting crises of the past year exposed—the fragility not only of our roads and systems but of families pushed to the brink both economically and socially, after decades of underinvestment.

Now, more than ever is the time to redefine—and fortify—the critical systems we call “infrastructure.” By making smart investments in both protective and economic infrastructure designed for our current challenges, we will be better prepared to weather future crises—whatever they might be.

To Truly Build Back Better, We Need a Justice 100 Solution

DENISE FAIRCHILD

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The Biden administration has ushered in a new progressive era. Its “build back better” playbook of policies and initiatives address the serious challenges of our generation: climate change, economic recovery, racial justice and a safety net for struggling families. The American Rescue Plan Act (ARPA) represented a historic \$1.9 trillion down payment on the administration’s promise to the American people, and an American Jobs Act (AJA) of equal or larger size may follow.

This is historic. The administration’s agenda has been likened to former President Franklin D. Roosevelt’s New Deal in its sweeping investment in rebuilding the American economy, with one notable distinction. Unlike Roosevelt, President Biden has made racial and environmental justice a priority. The Justice40 initiative carves out 40 percent of federal appropriations specifically supporting communities most impacted by environmental and climate racism.

While naturally fraught with issues of definitions, measurements and implementation, Justice40 is unprecedented. Still, it raises a crucial question: What about the other 60 percent?

Clearly, residents of low-income communities of color are excited about a potentially large influx of capital. Those funds could address legacies of toxic chemical contamination, harmful buildings and lead-contaminated water infrastructure, while improving access to healthy food, decent housing, transportation and internet services. The prospect of community jobs in the pursuit of greener, healthier communities heightens the enthusiasm.

But can Justice40 deliver on its promises?

First, there are practical concerns around the perceived capacity of long-neglected and under-resourced communities to compete for and manage these investments. This lack of trust opens the door for large national nonprofits or consulting firms to move in and act as intermediaries—program managers, fiscal sponsors and equity experts—at the expense of local groups with roots in the community.

There is also a growing debate regarding whether the commitment is for 40 percent of “investments” to go into low-income communities or merely that communities will receive 40 percent of the “benefits.” These are substantially different. Regional shopping malls, aquariums and convention centers have all been considered “benefits” worthy of public investment, though their impact on the wellbeing of marginalized communities is negligible—especially when compared to investments in affordable housing, community-serving retail and local business development. But local governments are skilled at stretching the definition of “public benefits.”

The stakes are high, so these are important and worthy challenges to sort out. The hope is that there is authentic community engagement to deliver the solutions, that investments meet community needs, that the predators stay away and that new, frontline and Black, Indigenous and people of color (BIPOC) institutions are formed to support this work and build capacity to carry out the long-term agenda of rebuilding community resilience for on-going and escalating climate challenges. The good news is that the White House Environmental Justice Advisory Council (WHEJAC) and staff are hard at work driving accountability for these outcomes.

The bigger challenge, however, is the lack of attention to the other 60 percent of federal investments. The fact is, 40 percent is not enough to fix the bad, much less build the new, tenets of a Just Transition. And focusing on Justice40 could take our eyes off the prize: addressing the core challenge of structural and institutional racism. We cannot meet that challenge if low-income and BIPOC communities are scrambling over a small slice of the pie while 60 percent of federal investments prop up and sustain business as usual.

Large-scale contractors, business enterprises, labor unions and research and development firms will remain primary beneficiaries of the new climate federalism and infrastructure investments. Investment tax credits for renewable energy, for example, will serve large investors with no commitment to growing community-initiated and owned renewables. But this is the moment to disrupt those energy hegemonies and build community wealth.

Energy Democracy Project, which my organization is affiliated with, and its advocates propose to do that by scaling community-owned renewable energy. We could start by converting the Investment Tax Credit and Production Tax Credit to a cash grant for projects under three megawatts and for projects owned by nonprofit, cooperative, public, tribal, or publicly accountable entities (e.g., community development corporations). We could allow virtual net metering of community-shared renewables and implement additive feed-in-tariffs for community-shared renewable projects that reach low-income households. These are system-level game changers.

Prioritizing unionized labor on infrastructure investments is important for rebuilding the middle class. But, without serious attention to labor's real and perceived legacy of racial exclusion, we will only exacerbate Black income and wealth gaps. Now is the time to rebuild unionized labor by growing its ranks with BIPOC and women. But that requires proactive and authentic labor-community dialogues and agreements at the local levels to fix historic communication barriers and to build win-win solutions to strengthen careers and business opportunities in the construction sector, particularly for the most underrepresented groups (Blacks and women).

Federal investments in infrastructure projects may include a requirement to utilize small, minority, women, veteran and disadvantaged businesses, but it is meaningless without serious attention to project delivery methods—like Public-Private Partnerships (P3s)—which make it near impossible for them to compete. We must untangle the barriers to inclusive public procurement and contracting, including legacy challenges of capital, bonding and insurance, as well as 21st century barriers to advanced technologies, equipment, materials and project delivery methods.

These are just some of the structural barriers hidden in the infrastructure agenda. Under every rock can be found layer upon layer of toxic soil—public and private policies and practices that reinforce the inequitable status quo. So, while Justice40 may repair the harms of past inequities, we will perpetuate the same institutional structures that created those inequities without careful attention to the other 60 percent of federal spending. To truly build back better, we need a Justice 100 solution.

Pneumatic Tube Trains and AVs to the Rescue? Smarter Planning for New Mobility

TODD LITMAN

Originally published August 23, 2021 in The City Fix

When shopping for a car, you'll find numerous websites and guides that provide detailed information on their costs and performance, plus ratings and reviews. However, there is much less data about emerging transportation technologies and services that are poised to affect our lives and communities, like e-bikes, ride-hailing, and even futuristic but not far off technologies like pneumatic tube trains, autonomous cars and drones. Information about those technologies is often incomplete, speculative and biased.

These new mobility modes and services, or "new mobilities," have tantalizing potential. They may allow people to scoot, ride and even fly like never before. However, they can also impose significant costs and risks. We need objective and comprehensive analysis to determine whether they should they be mandated, encouraged, regulated, restricted or forbidden.

A little skepticism is appropriate. Advocates offer images of happy passengers traveling in sleek, fast vehicles, but the reality may be very different. New travel modes and services are often less comfortable and more costly than proponents claim. Ridership, revenues and benefits may be much smaller than optimists predict, and they may make many people worse off overall. For example, autonomous taxi passengers may find garbage and odors left by previous occupants; flying cars can create significant noise, safety and privacy problems; and you may want to shoot down the drones delivering pizza and beer to your neighbor's late-night party.

This is a timely issue. In the future, households and communities will face countless decisions concerning how to incorporate emerging mobility technologies and services. It is important to make those decisions

based on comprehensive analysis. We can't evaluate each new mobility in the confines of this column, but in a new book, *New Mobilities: Smart Planning for Emerging Transportation Technologies*, I offer a framework for undertaking a thoughtful analysis.

Who Supplies the Infrastructure? Who Sets the Rules?

Transportation systems are a partnership between users, governments and businesses. Every time someone purchases a car they expect governments to supply roads and businesses to provide parking facilities for their use. We also expect governments to establish traffic rules and liability requirements that protect users and regulations that protect communities from danger and pollution. New mobilities will require similar partnerships.

For example, many of the projected benefits of autonomous vehicles, such as reduced congestion, crash risk and pollution, depend on dedicated lanes that allow *platooning*—several vehicles driving close together at relatively high speeds. At what point should governments dedicate scarce street and highway lanes to these expensive vehicles? How much should users pay? Who should be liable if a platoon has a multi-vehicle crash?

Consider another issue. If urban road space remains unpriced, as is the norm today, it will often be cheaper for autonomous vehicles to drive in circles, sometimes for hours, rather than pay for parking, although that will increase traffic congestion, crash risks and pollution. How should we regulate or price city streets to prevent these problems?

Similarly, city officials will need to decide whether to build neighborhood terminals for flying cars, whether to allow fast-food drone deliveries, and if so, what rules and taxes should apply.

Recommendations for Better Mobility

With smart planning we can minimize problems and maximize benefits. Here are some questions that communities should ask when evaluating new mobilities:

- Is it affordable? Can disadvantaged groups use it?
- How will it affect non-users, particularly disadvantaged groups?
- What infrastructure will it require and who should pay?

- How will it affect public health and safety? What risks does it impose on others?
- How will it affect community livability, natural environments and resource consumption?
- Will it increase or reduce total vehicle travel? Will it increase or reduce sprawl?

Based on existing literature, when applying these questions to various new mobilities, I found that active modes (walking and bicycling), micro-modes (e-bikes and -scooters), and public transport improvements provide the greatest variety of benefits because they are affordable, healthy and resource efficient.

Vehicle sharing, ride-hailing, MaaS (mobility as a service), and telework are somewhat more costly and resource intensive but still provide numerous benefits, particularly if they help reduce total vehicle traffic and sprawl. As a result, their benefits increase if they are implemented in conjunction with vehicle travel reduction incentives and smart growth policies.

Higher-speed modes, including private electric and autonomous vehicles, tunnel roads, pneumatic tube transport, and aviation innovations provide fewer benefits because they are expensive, resource intensive, and impose significant external costs. This is not to suggest that higher-speed, higher-cost modes should be forbidden. Flying cars, tunnel roads and delivery drones may be appropriate for some trips. However, because of their limited benefits and large external costs, their use should be regulated and priced for efficiency and fairness.

To prepare for the future we must frighten, reassure and plan. We need to scare decision-makers about the potential risks of new mobilities. We also need to reassure them that excellent solutions are available. We must identify the specific policies and programs needed to maximize their benefits and minimize their costs.

New mobility is no panacea. No magical thinking please! Communities must be discerning; we must be willing to say “no,” when necessary, to ensure that emerging transportation technologies and services truly benefit everyone.

Go Green on New Housing

DANA BOURLAND

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Two of the biggest problems we face today—a shortage of decent, affordable housing and climate change—are connected. Fortunately, the solutions are connected as well. That’s why we must not only “build back better” in the wake of pandemic and recession, but build back greener.

Most housing in the United States is inefficient and expensive to heat and cool. That means high utility bills and higher carbon emissions: residential energy use accounts for a fifth of climate-changing greenhouse gases emitted in the United States.

At the same time, the facilities that produce the power to build and operate our homes—like coal-fired power plants—contribute to a changing climate. Because they are often located in communities of color, these facilities also exacerbate environmental injustice. And producing the petrochemicals used in adhesives, cabinets, carpets, insulation and other building materials not only contributes to climate change, but pollutes the air outside and inside our homes.

The good news is that we can address our housing crisis and our climate crisis with green affordable housing at no additional cost.

President Biden’s infrastructure plan includes a large allocation for housing—an important first step. And the much-needed recent expansion of the Weatherization Assistance Program will make homes more comfortable and efficient.

But these investments can accomplish so much more, by “greening” the entire building supply chain. That means going beyond energy consumption in our homes to address energy usage and petrochemicals in the manufacturing and transportation of building materials.

In other words, how we build is as important as what we build. We can't make one home green while polluting other communities in the process.

President Biden's "American Jobs Plan" calls for investing \$213 billion in the nation's housing infrastructure. This includes \$40 billion to repair public housing, \$45 billion for the national Housing Trust Fund, an expansion of the Housing Choice Voucher program and more.

The administration can "green" this investment by requiring these programs to use holistic green affordable housing criteria. These should go beyond energy efficiency to include the use of sustainably produced, non-toxic building materials. In this way, the infrastructure bill could help stabilize the climate and improve public health while expanding access to affordable housing.

Similarly, the Weatherization Assistance Program could be expanded to include health and safety improvements as well as energy-efficiency upgrades, creating well-paying jobs for contractors while reducing triggers for asthma and other health impacts.

To solve our housing and climate crises, we must integrate how we think about both. We do not have the time or the resources to meet our housing crisis without considering how to meet our climate crisis. And if new investments in infrastructure deploy green building practices, we can score a triple win for housing, health and the climate.

By building back better and greener, we can ensure that everyone—regardless of race or income—has a home in a thriving community on a flourishing planet.

Infrastructure Can Pave the Way to a Greener, Fairer Houston

VERONICA DAVIS

Originally published October 1, 2021 in Houston Chronicle

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 U.S.

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 1 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.

SECTION V

ENERGY

Cities Can Make Energy Efficiency Programs Green and Equitable

LAURIE MAZUR

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In recent years, cities have taken the lead in the fight against climate change. Many have passed benchmarking and transparency ordinances as a foundational step to measure—and reduce—the amount of energy buildings use. Now, with renewed federal action on climate, cities will have more resources to invest in efficiency programs. And in this time of increased attention to racial justice, there is renewed urgency for cities to address long-standing inequities.

A new guide from the City Energy Project—*Incorporating Equity into Energy Benchmarking Requirements: Guidance for Policy and Program Practitioners*—can help cities meet this moment by leveraging benchmarking and transparency policies to help advance racial and social equity.

Benchmarking, in this context, means tracking energy use in buildings—giving owners the information they need to set and achieve efficiency goals. Transparency—making energy-use data public—helps tenants choose more efficient buildings, providing a market-based incentive for building owners to do better.

Benchmarking and transparency policies are an essential part of a city's efforts to reduce carbon emissions and slow the pace of climate change. That's because buildings are the single-largest user of energy in the United States, accounting for about 40 percent of total energy consumption. Indeed, if U.S. buildings were their own country, they would rank third in the world in energy use. And cities that have implemented benchmarking policies have seen 3 percent to 8 percent reductions in energy use across participating buildings.

“It’s a pretty foundational climate policy with a lot of benefits,” says Caroline Keicher of the City Energy project: “Building owners and tenants can save money on utilities, businesses can reduce operating costs, tenants can have information to make more informed choices, and everyone benefits from cleaner air and healthier buildings.”

However, without including equity into policy design and implementation, these policies can have consequences that exacerbate harm and further burden struggling families. For example, if cities neglect to identify the most energy-burdened communities when developing their benchmarking ordinances, policies may not include the support structures needed to ensure that those bearing the greatest burden actually benefit from newly efficient buildings. And the voluntary building improvements that these policies are intended to encourage can boost property values and potentially increase rents, leading to displacement and gentrification, especially for communities of color and other marginalized families.

So, how can cities leverage the benefits of benchmarking, while reducing—rather than exacerbating or maintaining—inequities? That was the question the City Energy Project hoped to answer. The now-concluded Project was a joint initiative of NRDC (Natural Resources Defense Council) and the Institute for Market Transformation, with funding from Bloomberg Philanthropies, Doris Duke Charitable Foundation and The Kresge Foundation.

Over nine years, the Project helped launch benchmarking and other energy efficiency programs for buildings in nearly two dozen cities and counties across the U.S. Many “alumni” cities have gone on to pursue even more ambitious climate policies for buildings and continue to provide models for other cities to emulate. Nearly half of the cities currently participating in the American Cities Climate Challenge—a current initiative supported by Bloomberg Philanthropies—were previously in the City Energy Project.

To answer the equity question, the City Energy Project and Upright Consulting Services brought together a cohort of practitioners, including cities from both the City Energy Project and the Climate Challenge, to generate ideas and learn from one another. “There’s not some easy answer that can be dropped down in any context,” says Jeremy Hays of

Upright Consulting Services. “You have to get in and wrestle with the tough questions.”

Those conversations informed the new guide, which spotlights cities that are leading the way on incorporating equity into benchmarking policies. The guide also summarizes key concepts and issues at the intersection of equity and building policies and contains guiding questions for practitioners to work through.

And the guide shows how cities are using benchmarking data to better understand policy impacts, energy burden and health metrics, to better target outreach and resources to buildings and people most burdened, who stand to benefit most from health improvements and lower energy bills.

Several cities are already making progress in this area, providing helpful examples for other cities. In Minneapolis, for example, buildings in communities doubly burdened by pollution and poverty now receive priority support through the city’s Green Cost Sharing Program. The program helps building owners improve living conditions and efficiency while maintaining affordability, even as they comply with benchmarking requirements. Almost \$5 million has been spent through the program as of February 2021.

In Denver, the city’s Climate Action, Sustainability and Resiliency department is creating a tool to identify under-resourced buildings to target for efficiency investments and support. The tool will layer data from the Greenlink Equity Map (GEM) platform, existing energy burden maps, and current work with Denver’s Office of Social Equity and Innovation (SEI), as well as data generated by the benchmarking and transparency ordinance. The Energize Denver Task Force, a diverse group of stakeholders from across the city, will help select the indicators to identify which buildings should be included and/or prioritized for targeted support on policy compliance and other energy efficiency initiatives.

And in Seattle, city staff use the City’s Race and Social Equity index to prevent disproportionate fining of people of color and community-based organizations, as well as struggling businesses and building owners. Staff identify buildings that are not complying with the benchmarking ordinance and use the equity index to locate them, in order to better provide necessary support or exemptions for those who need to comply. Seattle

is also working to broaden the economic benefits of energy efficiency, by partnering with a local community college to pilot workforce development programs in building energy auditing and efficiency tune-ups.

The need—and opportunity—to leverage climate action to address past inequities and to protect and benefit struggling communities has never been clearer. By applying an equity lens to benchmarking policies and the impactful building policies for which it lays the foundation, cities can fulfill their duty to serve the public by designing energy policies that are sustainable and equitable.

Outages and Outrages: The Fossil Fuel Industry Exploits Blackout Fears

LEWIS MILFORD AND ABBE RAMANAN

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In a hotter world, we can expect more power outages—both from surging demand and from climate-driven disasters. The question is, how can we protect vulnerable people when the power goes out? Getting it right will be a key energy equity test for the Biden administration’s infrastructure plan.

The gas utilities want to burn more fossil fuels or hydrogen in power plants to do the job. Environmental justice groups and other advocates want new, cleaner options like community-based solar and battery storage solutions.

This contest between new and old, fossil fuels and renewables, clean and polluting, will come to shape the country’s future climate policy—and President Biden’s infrastructure plan.

New reports highlight what’s at stake. Last week, research confirmed what the environmental justice community has known for years: The combination of increasing power outages and higher levels of extreme heat “may be the deadliest climate-related event we can imagine.”

The study, conducted by researchers at several universities, found that major grid outages have increased by more than 60 percent since 2015. At the same time, periods of extreme heat have become increasingly common in urban areas. The researchers looked at three cities—Atlanta, Detroit and Phoenix—and found that at least two-thirds of their residents would be at risk from heat exhaustion or heat stroke under those dangerous conditions.

Exposure to extreme temperatures is already responsible for more deaths than any other type of severe weather. Another recent study estimated that

high temperatures result in the premature death of 12,000 people in the United States each year. The threat is even greater to low-income families who don't have air conditioners and who can't afford higher energy bills when outside temperatures spike.

Cities are not prepared to handle this emerging climate threat. The university study found that cooling centers in the cities evaluated can only handle 1 to 2 percent of residents, and none are required to have backup power. Some have diesel generators, which often fail or run out of fuel during a serious outage; they can also be deadly to operate.

To most, this represents a major public health threat. But to the gas industry, this crisis is an opportunity to pitch more fossil fuels, according to explosive leaked documents discovered this past week.

The Boston Globe and *E&E News* published a confidential gas industry presentation on the industry's plans to combat climate decarbonization strategies that depend on electrification technologies like solar and battery storage.

Industry representatives admit that natural gas is in the "fight of its life." And what is their strategy to convince the public to keep burning gas? One slide revealed their plan: take advantage of power outage fears.

Many gas developers already have proposed continued investment in fossil fuel-based resources—and to blend and burn hydrogen with gas—because, they say, renewables will lead to more frequent power outages.

Most environmental justice advocates have figured out this gambit—and now they have the industry's private game plan to prove their point. Right now, power plant developers have proposed rather sketchy plans to keep natural gas power plants running with some "blending" of hydrogen or the future promise of switching to 100 percent hydrogen combustion.

The problem is, burning hydrogen in power plants results in uncontrolled release of nitrogen oxide emissions, a dangerous public health threat. So these proposals could lead to decades more harmful nitrogen oxide emissions in communities of color, when we should be rapidly eliminating all combustion-related emissions. We've run into this problem before.

The real goal of hydrogen combustion is not to improve reliability or prevent outages, but to preserve the fossil industry's stranded assets. In a 2020 report, Goldman Sachs said the quiet part out loud. The global bank said that hydrogen burning in the power sector would give the gas industry "a second life" to keep its plants running indefinitely. As a European hydrogen executive bluntly put it, "It's a way to avoid having stranded assets from the current fossil-fuel based system."

This hydrogen push is especially unfortunate because clean energy is even more reliable than any fossil or hydrogen alternatives. A recent analysis of New York City peaker power plants found that, in addition to meeting all of the region's energy needs during critical times of high energy demand, replacing gas plants with renewables and energy storage would save ratepayers billions in energy costs, while avoiding the environmental and public health impacts of power plant emissions.

When outages do occur, solar and battery storage systems at residences and community-serving facilities can power essential services like cooling during extreme heat. For example, the California Indian Museum and Cultural Center in Santa Rosa, Calif., is installing solar and batteries to serve its community members as a county-designated clean air filtration and cooling center.

But the argument about the right technology path is far from settled. The new Biden infrastructure plan, and Biden's statement in favor of hydrogen combustion in power plants, raises concerns about how it will also protect communities of color from more fossil pollution.

The cleaner, more equitable path is clear. First, the Biden infrastructure plan should not support hydrogen combustion in power plants unless key public health and equity concerns are addressed. There must be a moratorium on large-scale hydrogen combustion in the power sector until there are independently verified studies on the level of nitrogen oxide pollution coming from such plants, the availability of nitrogen oxide air pollution control technology that can work with hydrogen, and the cumulative public health impacts of this new source of nitrogen oxide emissions.

Second, the administration should commit significant funding to help install clean, reliable sources of distributed power—such as solar

and battery storage systems—in underserved communities across the country, in cooling centers and other facilities providing essential services.

These actions could help protect the most vulnerable from dual emerging threats: the power outages and heat waves of a changing climate; and the fossil fuel industry’s plan to exploit those disasters to advance their own interests.

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 NO_x levels six times higher than burning methane.

Long-term exposure to NO_x increases the risk of respiratory conditions and heightens sensitivity to allergens. NO_x 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 NO_x 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 NO_x 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 NO_x 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 NO_x-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 NO_x 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 NO_x. Unfortunately, NO_x was not factored into the E.U. climate policy trade-off.

In the last few years, European and U.S. government agencies discovered that European car manufacturers secretly manipulated emissions data to disguise the levels of NO_x produced by their diesel vehicles. The "Diesel-gate" scandal was the unfortunate but predictable result of ignoring NO_x 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 U.S. 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.

Tired of High Prices and Pollution? Let's Switch to Clean Energy

LINDA WALDEN

Originally published December 15, 2021 in Mississippi Free Press

If you are afraid to look at your gas bill, you are not alone. Energy prices are sky-high right now with the economy rebounding as the demand for oil and gas outstrips supply. That means more families are struggling to pay heat and electric bills. This problem is especially severe in Mississippi, where nearly 40% of households are “energy burdened”—spending more than 6% of their yearly income on energy bills.

There are other costs, too: Our energy system also harms our health. In Mississippi, and across the U.S., we rely mostly on fossil fuels like natural gas to power our homes and businesses. But air pollution from burning fossil fuels is among the leading causes of illness and premature death worldwide.

As a physician, I see the toll of air pollution every day, both in young children with asthma gasping for breath and in older patients with serious lung and heart disease. We have seen higher death rates from COVID-19 in areas with the dirtiest air.

A Switch to Clean Energy Equals A Healthier Us

At the same time, fossil-fuel combustion spews carbon dioxide and other greenhouse gases into the atmosphere, warming the planet. The results are ever-more deadly heat waves, floods, crop failures and wildfires. This, too, affects my patients, particularly vulnerable communities and people of color, the disabled and pregnant women. Climate change also worsens the health of those with pre-existing conditions such as asthma, COPD, diabetes, cardiovascular disease and obesity. Children are missing days in school, and adults are missing days of work. Both are suffering.

It doesn't have to be this way. By switching to clean, renewable energy—including wind and solar—we can help our pocketbooks, our health and our planet.

Instead of sending billions of dollars out of the region each year to import fossil fuels, we can generate power right here with our most abundant resource: sunshine. Today, solar power is more affordable than ever before. The average cost of solar panels has dropped nearly 70% since 2014, and is now economically competitive with fossil fuels. And when you consider the health benefits of cleaner air—fewer sick days and hospitalizations; longer, healthier lives—the savings are incalculable.

Solar energy is on the rise in southeastern states, but Mississippi is lagging behind; less than 1 percent of the state's electricity comes from solar power. Our region and nation remain heavily dependent on dirty, expensive fossil fuels.

Fortunately, Mississippi has a secret weapon in the fight for affordable, clean energy: rural electric cooperatives. These co-ops were founded during the Great Depression to electrify the countryside, and they still supply a hefty share of the region's power. Here in Mississippi, electric co-ops serve about 1.8 million (60%) of the state's 2.9 million residents.

Members are part owners of the co-ops and have a voice, theoretically, in the decisions they make. We can use this voice to encourage co-ops to adopt more clean energy solutions. That's the goal of a growing "energy democracy" movement, led by groups like Jackson-based OneVoice. These groups are organizing members, training them to serve on co-op boards and fight for better, cleaner power.

It is a fight we must join. Today, we see the high cost of power on our gas and electric bills. But our reliance on burning fossil fuels exacts even greater, though less visible, costs to our health and our future. It's time to make the transition to clean, affordable renewable energy. We can start by speaking up and urging our rural electric cooperatives to make the switch.

Energy Efficiency Is for Renters, Too

LAURIE MAZUR

Originally published August 20, 2021 in American City & County

The summer of 2021 has brought a new reckoning with climate change, amid deadly heat waves, wildfires, floods—and now, an urgent warning from the United Nations. The message is clear: we need to dramatically reduce greenhouse gas emissions—and fast.

Of all the strategies to reduce emissions, energy efficiency may be the least painful and most rewarding. Retrofitting homes with insulation and efficient appliances saves money while improving residents' health and comfort. And, since home energy use accounts for about a fifth of U.S. greenhouse gas emissions, efficiency can substantially cut our carbon footprint. Energy efficiency upgrades also create jobs at many skill levels. It's a win-win-win.

But in the United States today, the benefits of energy efficiency are mostly enjoyed by homeowners who can afford the upfront costs of upgrading their property. Our nation's large population of renters misses out on living in efficient homes. And we all miss out on a relatively easy way to bend the curve of greenhouse gas emissions and stave off disastrous climate change.

A new report by the American Council for an Energy Efficient Economy (ACEEE) shows how local governments can help renters access the many benefits of energy efficiency. The report grew from a learning group of local government employees, organized by ACEEE and the Urban Sustainability Directors Network, which met virtually in 2020 and 2021.

The report shows that the benefits of energy efficiency are not going to those who need them most. Renters represent a large share of the American population: more than 44 million U.S. households (36 percent) rented their homes in 2019—an increase of nearly 8 million from 2004. And nearly one-third of renter households have high energy burdens, meaning

they spend more than 6 percent of their income on energy bills. In part, that's because rentals consume 15 percent more energy on a per-square-foot basis and have 30 percent higher energy costs than other homes.

There are several reasons for this. First, renters typically have little control over housing conditions; property owners must approve any upgrades. And even where tenants are allowed to make improvements, many are unable to afford the upfront cost on their own. Moreover, if renters pay their own utility bills, landlords have little reason to invest in efficiency upgrades.

These challenges were made worse by the pandemic. Some landlords who lost rental revenue during the shutdown have delayed maintenance and upgrades that would have lowered energy bills and greenhouse gas emissions. And, as the federal eviction ban remains in limbo, energy burdens weigh more heavily than ever. The nation's most vulnerable tenants may be forced to choose between keeping the lights on and keeping a roof over their head.

While documenting the problem, the ACEEE report also shows how local governments can improve energy efficiency in rental properties. Importantly, the report offers strategies to improve efficiency while increasing housing affordability.

A good first step is to pore through housing and demographic data, to identify neighborhoods with large shares of renters. And community engagement is key to crafting policies that respond to the concerns and lived experiences of those in need.

There is an extensive menu of policy options. For example, local governments can grant renters the right to make efficiency improvements, and make funds available for that purpose. To help tenants choose more efficient buildings, governments can require landlords to disclose rental units' energy use. More broadly, governments can set standards for energy efficiency and help affordable housing providers comply. And they can boost job creation by combining public housing efficiency upgrades with inclusive workforce development.

The report offers inspiring case studies, as well. For example, in Minneapolis, the 4d Affordable Housing Incentive program helps preserve the

city's stock of low-cost rentals. Through the program, property owners can reduce their taxes by keeping at least 20 percent of units affordable to low-income residents. Participating properties can also join the city's 4d Energy Efficiency program, which provides up to \$50,000 in retrofit incentives per building.

More inspiration comes from Boulder, Colo., which adopted the SmartRegs policy in 2010 as part of its climate action plan. The policy requires all rental properties to meet an energy efficiency standard, while the city's EnergySmart program offers landlords technical and financial assistance to make efficiency improvements. By the end of 2019, 99 percent of Boulder's rental units met the SmartRegs standard.

There's more: In Fort Collins, Colo., the Epic Homes program has taken steps in recent years to provide more owners of rental properties with energy efficiency assessments, no-cost upgrades, rebates and on-bill financing. And Milwaukee offers two rental rehabilitation loan programs that landlords can use to cover the cost of energy efficiency and other property improvements.

As climate change accelerates, governments must use every strategy available to reduce greenhouse gas emissions. Energy efficiency is the ultimate no-regrets approach: it reduces emissions while saving money and creating jobs. And, by extending the benefits of energy efficiency to renters, we can lighten their heavy energy burdens and keep vulnerable families in their homes. The ACEEE report illuminates the path to that important goal.

Batteries Can Bring Clean Energy to Those Who Need It Most

LEWIS MILFORD

Originally published February 1, 2021 in Energy Central

With its recent executive orders on environmental justice, the Biden administration has put energy equity at the front and center of its domestic policy agenda. The challenge now is to put these principles into practice.

One place to start is with a new federal plan for battery storage—an emerging technology that can be put to multiple uses across several agency programs. The Biden administration has an historic opportunity to accelerate deployment of this clean energy technology, especially in low-income areas and communities of color.

Battery storage is used to bank excess energy generated by renewable sources, such as solar and wind, so the lights stay on when the sun doesn't shine and the wind doesn't blow. By defeating the problem of “intermittency,” battery storage is key to the market expansion of renewable energy technologies. Solar plus battery storage systems provide resiliency during power outages, which have become more frequent in the era of climate change. They can also reduce electric bills and even generate revenue.

Typically, new energy technologies first go to those who can easily afford them. Then, years later, when costs have come down, they sometimes reach those who need them the most. This is true of battery storage: the systems now in place in the U.S. are mostly in corporate settings or high-end residences; too few are in low-income and frontline communities.

But those neglected communities have the most to gain from this new technology, given the negative effects of COVID-19 and climate change. With COVID, homes now serve triple duty as offices, schools, and housing—losing power can be disastrous to all three. Batteries provide a safety

net for people with electricity-dependent home health care equipment, and make entire communities more resilient in the face of extreme weather, wildfires, and accompanying power outages.

This is where the problem becomes an opportunity. In partnership with environmental justice groups, my organization drafted a plan to overcome years of historic underinvestment in clean energy in low-and-moderate income communities. Based on that work, we have identified several strategies the Biden administration can implement now:

- **Advance battery storage in underserved markets:** The Department of Energy (DOE) can create a “Resilient Power” program that would provide federal grants, technical assistance, and other measures to advance battery storage in underserved energy markets. Dedicated funding could provide low-income communities, rural communities, and communities of color with access to “Technical Assistance Funds.” This support could be used to conduct feasibility assessments, analyze costs and benefits, and encourage community ownership of battery storage systems.
- **Provide resilience at multifamily affordable housing:** DOE can work with the Department of Housing and Urban Development (HUD) to provide grants and other support to housing developers and owners, encouraging the installation of solar and battery storage in affordable housing. Affordable housing represents a critical place of refuge for those unable to relocate during climate disasters and extended power outages. Superstorm Sandy, for example, left tens of thousands of low-income apartment dwellers stranded for days without any access to power and basic services, a travesty we can avoid in the future.
- **Support emergency preparedness and response:** DOE can partner with the Federal Emergency Management Agency (FEMA) to develop an “Energy Resilience Funding Program” that would provide community development, disaster preparedness and disaster recovery funds to install solar and storage at critical locations around the country—including shelters, community support services, and other facilities. These systems would provide electricity to power essential community services in the event of storms and power outages, protecting the

poor and the medically vulnerable who are disproportionately impacted by natural disasters.

- **Bring resilient power to Federal Qualified Health Centers:** DOE can work with the Department of Health and Human Services (HHS) and other relevant federal agencies to ensure that the more than 14,000 Federally Qualified Health Centers (FQHCs) have 24/7 reliable electricity with solar and battery storage technologies. This is especially important as the Biden administration has tapped FQHCs to spearhead distribution of the COVID-19 vaccine. Already, power outages have caused losses of vaccines at centers that had no backup power, a typical problem that could get worse.
- **Improve health outcomes in the event of power outages:** DOE and HHS can also provide coverage through Medicare or Medicaid for battery storage as an eligible technology to protect medically vulnerable populations with electricity-dependent home health care equipment and other critical devices, such as refrigeration for medicines and heating and cooling during extreme temperatures. The agencies should offer incentives to private companies to encourage technological innovations in this market.
- **Replace peaker plants to enhance public health.** DOE should create a new “Peaker Replacement Program” to phase out the more than 1,000 polluting peaker power plants that are located predominately in low-income communities and communities of color. While peaker plants typically operate no more than a small fraction of the year, they are major contributors to local air pollution, particularly nitrogen oxides (NO_x), which could result in severe health impacts in surrounding communities. Over time, clean renewable energy paired with battery storage and efficiency measures could replace these outdated, fossil-fueled units.
- **Support the development and replication of innovative incentives and financing for battery storage.** New utility programs in New England provide incentives for battery storage in homes and businesses as part of state energy efficiency programs.

These programs offer a creative way to finance battery access and improve resiliency. Replicating these programs nationwide could bring battery storage to currently under-represented sectors, such as affordable housing, nonprofits, and other community-serving facilities. There are also emerging financing tools to overcome financial risk in low-and-moderate income markets. These include loan guarantees as a match for foundation investments and grants.

- **Bring clean energy to modular homes.** Poorly designed, energy-inefficient systems plague modular homes, which are common in many rural areas in the country. DOE and HUD should look to emerging models (as in Vermont) where modular homes are designed with solar and battery storage systems. These systems provide residents with backup power and zero energy costs, while enabling the local utility to manage peak energy demand and reduce cost for all customers.

With practical innovations like these, President Biden can make good on the sweeping promise of his executive orders. By accelerating the deployment of battery storage—especially in neglected communities—the administration can bring the benefits of clean energy to those who need it most.

We Don't Have Time for Another Fossil Fuel Bridge

SETH MULLENDORE

Originally published September 30, 2020 in U.S. News & World Report

In his 2014 State of the Union address, President Obama praised natural gas as “the bridge fuel that can power our economy with less of the carbon pollution that causes climate change.”

Switching from coal to gas was a key pillar of Obama’s Clean Power Plan to reduce climate emissions, which big environmental groups lined up to praise and fight for. We now know that methane, the primary component of natural gas, is a much more potent greenhouse gas than carbon dioxide. We know that gas plants are, at best, no more than a marginal improvement over coal. Today, wind and solar are the cheapest sources of new energy generation. The fight has largely shifted from coal to gas.

Some energy companies and utilities still hold up gas as a bridge to enable more renewables, filling in the gaps when the wind doesn’t blow and the sun doesn’t shine. Others—including the oil and gas industry, the Biden Administration, and, inexplicably, many big green groups—are laying the foundation for a new bridge, touting the climate benefits of two dubious strategies: carbon capture utilization and storage (CCUS) and hydrogen.

Many of the voices holding up carbon capture and hydrogen as new climate solutions are the same voices that fought for the natural gas bridge a decade ago. And, once again, they’re leading us down the wrong path, building a bridge to decades of additional emissions when we’re rapidly running out of time to avoid the most dire impacts of climate change.

As the latest report from the Intergovernmental Panel on Climate Change (IPCC) made abundantly clear, we don’t have time for another fossil fuel bridge.

The carbon capture boondoggle

Carbon capture utilization and storage involves removing carbon dioxide (CO₂) from the air, either at the source of production like a power plant or pulled directly from the air around us, and either using it for some other purpose or storing it underground, ideally forever. More than one watchdog group has described carbon capture as a boondoggle, and for good reason. The federal government has pumped billions into failed carbon capture projects, and the new infrastructure plan and reconciliation process is poised to inject tens of billions more.

One after another, these projects have experienced delays and cost overruns, missed emission-reduction targets, and ultimately failed. The few successful carbon capture projects still operating largely use captured carbon for enhanced oil recovery processes and get paid for the alleged climate benefit of burying CO₂.

Carbon capture is an expensive and energy intensive process. Even when successful, carbon capture at power plants and industrial facilities will never eliminate all CO₂ emissions released at the sites. Additionally, carbon capture does nothing to address the emission of harmful co-pollutants like nitrogen oxides (NO_x) or upstream emissions due to methane leakage in the extraction and transportation of natural gas. In fact, because carbon capture requires more fossil fuels to generate the same amount of energy, it exacerbates both of these issues. Researchers at Cornell University and Stanford University found that producing hydrogen through carbon capture, generating so called “blue” hydrogen, would result in more greenhouse emissions than directly burning gas or coal for heat.

The utilization and storage components of carbon capture are also problematic. A recent study from the University of Michigan found that most uses of captured CO₂ would result in a net climate burden, resulting in higher emissions than they would avoid. Permanent storage of CO₂ has yet to be proven, with concerns that leakage could negate many of the purported climate benefits of the process.

Delaying climate change action via hydrogen

Hydrogen presents another emissions-laden path forward. Today, around 99 percent of hydrogen is produced through fossil fuel-intensive processes, resulting in grey hydrogen or, when paired with carbon capture, blue

hydrogen. The only emissions-free way to generate hydrogen is through electrolysis of water powered directly by renewable energy.

The fossil fuel industry has been successful in its lobbying and marketing campaign to get blue hydrogen and green hydrogen bundled together under the moniker of “clean” hydrogen. The industry and its supporters advertise the benefits of green hydrogen, while planning to ramp up production of blue hydrogen as a cheaper near-term solution—using more gas and emitting more greenhouse gases along the way.

Concerns over blue hydrogen led Chris Jackson to step down as chair of the UK’s leading hydrogen industry association, stating, “I believe passionately that I would be betraying future generations by remaining silent on that fact that blue hydrogen is at best an expensive distraction, and at worst a lock-in for continued fossil fuel use that guarantees we will fail to meet our decarbonization goals.”

Hydrogen is being sold to policymakers and the public as a solution to reduce the carbon footprint of hard-to-reach sectors, such as high-temperature industrial processes and marine transportation. But this is not what is happening in practice. Instead, utilities are rushing to blend low levels of hydrogen into natural gas pipelines, claiming a nominal reduction in carbon emissions as an excuse to keep building new pipelines and power plants and delay the electrification of areas we already know how to decarbonize, like heating and light transportation.

It’s a classic bait and switch, delaying climate action and locking in decades of additional greenhouse gas emissions and continued air pollution.

Deep decarbonization will come from renewables

The best climate strategy we have is to fully commit to the rapid scale-up of solutions that we already know will work—solar, wind, hydro, geothermal, battery storage, energy efficiency, demand management. We already have the tools to realize deep decarbonization. It is not the time to dump billions of dollars into another fossil fuel bridge to nowhere.

Carbon capture utilization and storage and hydrogen are not the technologies we need today or tomorrow. If anything, they should be end-of-the-line solutions when all other options have been exhausted. They should only be a bridge of last resort.

SECTION VI

FOOD, HEALTH, AND WATER

Racism Has Made Water Hazardous to Our Health, but Climate Leaders Are Hopeful for Change

JALONNE L. WHITE-NEWSOME

Originally published January 21, 2021 on Medium

This week, many of my fellow environmental warriors are celebrating the peaceful transfer of power as President Joe Biden and Vice President Kamala Harris were sworn into office.

As a Black woman, I am rejoicing at the glass ceilings being broken by Madame Vice President Harris as the first Black, first Indian American and first female vice president!

As a researcher on climate change, health and equity, I am especially hopeful for the future of our planet as the Biden Administration will bring in the largest team of climate change experts ever assembled in the White House, rolling back some of the Trump administration's most harmful environmental decisions and laying the groundwork to protect our air and water.

While we celebrate this moment, we continue to face multiple crises in our country—two in the form of racism and the COVID-19 pandemic. However, we have been facing pandemics for centuries, and some are specifically due to a lack of water quality and water infrastructure.

In addition to my role as a senior program officer with The Kresge Foundation's Environment Program, I teach a Masters of Public Health Course at The George Washington University in Washington, D.C. Several of the lessons I often discuss with my students and peers are related to the proliferation of waterborne disease and the impacts of climate-driven flooding in communities across the U.S.

A history of water discrimination

In the 1830s, New York City was hit hard by cholera, a bacterial disease usually spread through contaminated water causing an infection of the intestines. The poorest neighborhoods, including the slum known as Five Points where African Americans and immigrant Irish Catholics were the majority, were hit hardest. While modern sewage and water treatment have helped eradicate cholera in some countries, the problem was not just the lack of infrastructure: it was the presence of racism.

Historical documents and commentary from civic leaders stated, the epidemic “is almost exclusively confined to the lower classes of intemperate dissolute & filthy people huddled together like swine in their polluted habitations” and “those sickened must be cured or die off, & being chiefly of the very scum of the city, the quicker [their] dispatch the sooner the malady will cease.”

These racist, dehumanizing words from almost 200 years ago still ring true today, resonating with the narratives in our society that we often hear regarding the coronavirus and the discrimination that plagues every system in our country. This same deeply rooted racism can still be seen today in our water systems in predominantly Black and Brown communities.

While the majority of our water infrastructure in the United States was installed over three major timeframes, starting in the early 1900s, the early 1970s is when landmark policies like the Clean Water Act and the Safe Drinking Water Act were enacted to provide access to clean, safe drinking water, as well as managing storm water and the treatment of wastewater.

Protecting those most vulnerable

These regulations and the enforcement thereof that started almost 50 years ago have definitely had a positive impact on water quality. However, they have not been able to fully counter the sociopolitical environment, girded in institutional and structural racism, that fails to protect climate vulnerable, low income and communities of color, including those living on Native Lands.

During this same period, homeownership became a reality for many White middle-class families, and redlining increased patterns of residential segregation for Black people, enabling municipalities to deprive

majority-Black neighborhoods of access more easily to essential services, including water and sewer.

This racism over time has made water hazardous to our health, destructive to our homes, and disruptive to our lives. This is a far cry from what our Indigenous brothers and sisters—the original stewards of this earth—spoke as truth: that water is life, and more importantly, a human right we all deserve.

The tangled, interconnected history of water access, water infrastructure and water policy in this country has been complicated, and the fractures and brokenness of the system have been amplified by racism.

And yet, we remain resilient

Despite the challenges many inner-city neighborhoods face—from lead and polybutylene in pipes, to flooded homes, environmental injustice, sea-level rise and legacy pollution—the waves Kresge grantee partners are making to fight for environmental justice and water equity through the Climate Resilient and Equitable Water Systems (CREWS) initiative can serve as a model for the country.

The CREWS participants have:

- Come together in the same room through convenings and committees, including the White Allies Action Group, CREWS Metrics Workgroup, FEMA Response Workgroup and others, to create a shared vision, co-developed with diverse stakeholders, many pieces led by community leaders of color.
- Developed multiple toolkits to evaluate and sustain GSI and the benefits of public health to help municipal leaders plan, implement and sustain green stormwater infrastructure (GSI).
- Helped to advocate for stormwater management rules that include a requirement that green infrastructure must be used to meet standards for water quality, groundwater recharge and quantity control.
- Created learning opportunities to support Community-Led Research and Leadership Development as essential tools for addressing the diverse risks posed by climate change.

A mixed “CREW,” fighting for basic human rights

The amazing group of leaders that make up the CREWS initiative include water utility leaders, municipal practitioners, economists, environmental justice researchers and community-based, environmental conservationists. I'd like to highlight just a few, although there are too many great feats to recognize.

Foundational collaborations have been ignited by the US Water Alliance's Water Equity Tables and Climate Resilience Bootcamp, which have brought water utility leaders, social justice leaders, local foundations, and municipalities together to create and operationalize roadmaps to achieve water equity.

We've witnessed collaborations between scientists of the American Geophysical Union, lawyers and the over 90 community leaders involved in a powerful network of flood survivors through a network called Higher Ground.

The collaboration between the Chesapeake Bay Foundation, Quantified Ventures (an investment broker) and the city of Hampton, VA recently finalized an Environmental Impact Bond that will support \$12M of investment in GSI to address urban flooding.

The Southeast Michigan Resilience Fund, a funding opportunity supported by private industry, agencies of the federal government and multiple foundations, is working to increase biodiversity and the creation of GSI to manage flooding in Detroit and other cities across several counties in Southeast Michigan.

Eco Action, a community-based organization working throughout the state of Georgia, supports a diverse set of partners to create the Atlanta Watershed Learning Network, which has trained leaders on the effects of the different forms of racism, white supremacy and how certain communities are disproportionately impacted.

The Water Equity and Climate Resilience Caucus, led by Policy Link and the Gulf Coast Center for Law and Policy has been influential in strengthening federal policy, educating water leaders and other key decisionmakers at all levels of government on climate resilience, workforce needs and response and recovery. Each policy platform being pushed was created and championed by people of color led organizations.

Healthy Schools Coalition's Space to Grow program, creating green school-yards in low-income communities which are less likely to have parks, playgrounds or green space, and mitigate the effects of climate change in neighborhoods that repeatedly flood.

Beyond our community organizations, we have so much exciting leadership by municipal leaders that are integrating racial equity and justice in their operations, particularly the leadership of the Green Infrastructure Leadership Exchange, Southeast Sustainability Directors Network, and progressive utilities like Seattle, San Francisco, Atlanta and New Jersey.

Collaboration with 'unusual partners' is always more powerful, more protective and extends the possibilities, particularly as we all work to address critical water issues.

“My crush on water”

As a little girl growing up in Detroit, I took a lot of things for granted: having access to the Great Lakes, turning on my tap to get clean water, no flooding in the streets after a hard rain. My crush on water started with an elementary school science fair project.

It shifted as I pursued chemical engineering with a minor in environmental journalism, working in the industry and becoming responsible for managing wastewater and stormwater at various facilities across the US. It was then that I realized the impact wastewater and stormwater could have on communities and the importance of a good Storm Water Pollution Prevention Plan, as well as engaging surrounding communities on the vital importance of water equity.

Even though I understood the importance of clean water and had earned a master's degree in environmental engineering, the water crisis didn't really hit home until it impacted my family.

In early 2019, there was major flooding across metro-Detroit. During three rainstorms, over five feet of water came into my parents' home, through the basement drains and basement windows, which led to severe loss of irreplaceable items, appliances, furniture and more importantly the use of their home, forcing temporary displacement. And more recently, five days before Christmas in 2020, their home flooded again due to a major water main break.

The combination of no infrastructure and barriers, lack of accountability by our municipal leaders, and an unmaintained CSO system has not only resulted in the loss of major personal possessions, but it also impacted my parents' respiratory and mental health. My hope is that 2021 will bring justice, restoration and proper adaptation for my parents' neighborhood and others across the city of Detroit and this country that continue to suffer from repeated disasters as a result of a broken physical and institutional infrastructure.

As you can see, water equity is very personal for me. It is no longer tolerable to be 'bystanders' to injustice and the unfortunate reality that Black and Brown families have been experiencing for decades. Instead, we must continue to maintain a strong, unwavering focus on racial equity and justice.

Continuing the fight for water equity

After five years with the Foundation, I will take my Kresge hat off and transition from the Foundation for the next journey in my career effective January 29. I will remain steadfast in the race for not only clean water, but justice, equity and fair treatment for the Black, Brown and low-income families across the country who have suffered just as much as my parents have.

Between COVID-19, our economy, a lack of leadership at many levels and climate change, we are all sometimes ready to throw in the towel.

But we can't. I think about some of our partners working in New Orleans, particularly in the Gulf Coast, who have been hit by hurricanes, COVID-19 and flooding at the same time. I think about our partners at Milwaukee Water Commons, that while fighting for water and equitable COVID-19 testing, they also responded and provided support to NGOs that were trying to navigate the tense, racial environment following the murder of George Floyd.

As a public health person, I think about the resilience of our health care workers and utility partners that have been forced to be super-human, providing critical services to save lives. I also think of the moratoriums on water-shutoffs so people could wash their hands, disinfect their homes and hopefully, save even more lives.

I often say that Black, Brown and Indigenous people in this country have always been resilient...because they had to be. But just because they are resilient, it doesn't mean that we cannot begin to create systems, institutions and structures that are more resilient to ensure all people can live the quality and quantity of life they deserve.

As we enter 2021, we can't forget what 2020 has taught us. We must use those lessons to fortify a vision that is grounded in collaboration, racial equity and resilience to achieve healthier, more prosperous and just communities. And we must remember that collaboration, racial equity and resilience are essential to transforming our country's water infrastructure system.

Conquering Hunger in the U.S.

KATIE S. MARTIN

Originally published February 18, 2021 in The Progressive

As the pandemic throws millions of Americans out of work, cars line up for miles outside food banks across the country. COVID-19 did not create the crisis of hunger in the United States, but it has exposed its root cause. Hint: it's not a shortage of food.

Even before the pandemic, 35 million Americans were food insecure, meaning they were not able to access and afford enough nutritious food for their families. And many more people were one or two paychecks away from needing help.

In a 2018 survey, the Federal Reserve found that 40% of Americans could not afford to pay an unexpected \$400 bill. When businesses were forced to shut down, this lack of financial cushion created an economic shock and a dramatic increase in food insecurity. Feeding America estimates that in 2020, some 50 million Americans—one in seven—suffered from food insecurity.

Let's be clear: the reason we have massive lines at food bank distributions is not because we have a shortage of food supplies. Yes, in the early days of the pandemic we faced short-term shortages when people stockpiled non-perishables and toilet paper. But we have a robust food supply that rebounded quickly to respond to the need.

Millions of Americans are hungry because they lack the means to pay for food.

During COVID-19, we have awakened to racial injustices and systemic inequalities that put certain groups of people at greater risk for losing their jobs, contracting the virus, and becoming food insecure. Black and Latinx Americans are more likely than whites to work in low-wage service industries, and are more likely to lose their jobs due to COVID-19.

People of color, particularly women, were already the most at risk for food insecurity, financial instability and health disparities prior to COVID-19.

Despite decades of providing charitable food from regional food banks and local food pantries, food insecurity remains a persistent public health problem that the pandemic has only exacerbated.

Food banks have risen to the occasion and are addressing the immediate need for food. To tackle the root causes of food insecurity, however, we need both public and private responses.

We need a stronger government safety net that includes not just federal food assistance, but a minimum wage that enables workers to afford food, housing and other basic needs. We need the business sector to step up, not only with charitable donations, but by paying living wages with benefits so their employees don't need to rely on charitable food.

There is light at the end of this dark tunnel. Vaccines are rolling out, businesses are beginning to reopen, spring is around the corner and President Biden has signed executive orders to reduce food insecurity during COVID-19.

Importantly, the Biden administration has demonstrated its willingness to tackle the root causes of hunger by proposing a \$15 minimum wage. The federal rate of \$7.25 has not budged since 2009, which helps explain the financial devastation experienced by millions of low-wage workers during the pandemic, including many essential workers.

Let's use this extraordinary moment in history to reduce systemic inequalities and ensure that all Americans can afford enough food. Americans are hungry for change.

Climate Change Calls for a New Hippocratic Oath

GARY COHEN

Originally published July 14, 2021 in Health Affairs

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.

Resilience for All: Building Health Equity Infrastructure for Climate-Driven Disasters

MELISSA JONES AND MATT VANDER SLUIS

Originally published August 16, 2021 on Medium

In the San Francisco Bay Area, we've experienced a wave of climate-driven disasters in recent years. This includes the most destructive wildfire season in California history, which arrived during an unprecedented heatwave that led utilities to conduct rolling power shut-offs in communities vulnerable to fire. That was on top of the COVID-19 pandemic and a decade-long housing affordability crisis.

These co-occurring disasters magnify and extend the displacement and dislocation of communities and sap the ability of government and other institutions to respond effectively. Any one of these disasters would have been a public health emergency on its own; combined, they threaten the ability to protect entire populations.

These impacts are particularly severe for communities that experience health inequities—the systemic and unjust disparities in health outcomes that exist by race, income, neighborhood, language, immigration status, and other factors. These communities are at greater risk of exposure to climate-related health threats, are more vulnerable to those threats, and have less access to the resources necessary to respond effectively.

It's worth noting that health disparities in climate-driven disasters are similar to those experienced during COVID-19. This is driven by today's inequitable policies and practices and a legacy of historic discrimination. For example, when the Bay Area was cloaked in eerie orange skies and thick smoke, farmworkers and bus drivers were among those without adequate governmental protections for toxic air and unhealthy heat. During COVID, “essential workers”—a population that is disproportionately

Black, Latinx, and Pacific Islander—were again left exposed to elevated risks, fostering a racial divide between those who could “shelter in place” and those who could not.

Building Health Equity Infrastructure for Our Changing World

Increasing our climate resilience requires addressing the physical effects of a warming world—from wildfire smoke to rising seas to new infectious diseases. It also calls for reversing the long-standing inequities that undermine the ability of our communities to withstand and recover from climate-driven disasters. This includes addressing chronic stressors such as housing unaffordability, income inequality, and structural racism as well as acute crises such as pandemics and economic fluctuations.

To achieve this transition, we need to build a new type of health equity infrastructure, designed for our new era of climate-related emergencies.

The Bay Area Regional Health Inequities Initiative (BARHII)—the coalition of our local public health departments focused on advancing equity for the eight million people who call our region home—has been catalyzing this new infrastructure with the generous support of the Kresge Foundation. We’re particularly excited about two promising approaches—equity leadership for disasters and community-driven resilience planning structures.

In the Room Where It Happens: Equity Officers for Disaster Response

Climate-driven disasters, like wildfires and extreme heat events, often require specialized government response structures, including establishment of Emergency Operations Centers (EOCs) that serve as hubs for decision making and resource deployment, and Incident Command Systems (ICS) that delineate clear, hierarchical decision-making roles.

Unfortunately, health equity has not historically been built into California’s emergency response apparatus. Too often, disasters are treated as singular events rather than overlapping and recurrent crises that affect populations unequally—the result of long-standing patterns of differential treatment of our diverse communities.

To address these challenges, BARHII is helping local governments across our region embed equity-focused leadership roles into their emergency management structures. These leaders—frequently referred to as “Equity

Officers”—are an essential part of disaster response and management. They are literally and figuratively “in the room where it happens,” part of the inner circle of decisionmakers, infusing equity considerations into all phases of a local government’s emergency actions. They also bring resources, including a staff unit to support them, to implement equity solutions and serve as a bridge between local BIPOC communities and fast-moving government processes.

For example, early in the COVID-19 pandemic, the City of San Francisco appointed an Equity Officer who guided the city’s effort to determine which groups were most in harm’s way and deploy resources accordingly. The Equity Officer partnered closely with the city’s Department of Public Health. When data showed troubling signs of racial disparities, the Department stepped up outreach and testing in Black and Latinx communities, partnering with community-based organizations and faith groups to reach across cultural barriers. The Equity Officer drove complementary strategies across the city’s emergency response structures.

We’ve been catalyzing the creation of similar success stories across the Bay Area, launching a detailed guidebook, hosting local and national trainings, drafting op-eds, and convening a regional network of government equity leaders. Today, more than half of the Bay Area’s counties have an Equity Officer engaged in emergency response.

We believe these roles need to be articulated in local government emergency response protocols so that as we experience more frequent and severe climate-driven disasters in the years ahead, equity considerations come as quickly as the first fire truck. That will take policy changes at the federal, state, and local levels.

These roles also need to be baked into our budgets. Fortunately, the California Department of Public Health has just secured a \$32 million grant from the U.S. Centers for Disease Control and Prevention, which will fund local Equity Officers and other equity infrastructure. This could be an important down payment toward the robust, sustained funding needed for this essential element of health equity infrastructure.

Farther Together: Community-Driven Resilience Planning

As the saying goes, “If you want to go fast, go alone. If you want to go far, go together.” Today, communities with entrenched health inequities are too

often shut out of planning for climate-driven disasters due to long-standing systemic barriers in our public engagement systems. As a result, disaster plans don't benefit from local knowledge and can be inconsistent with local conditions, concerns, and capacities of frontline communities.

Fortunately, interest in resilience planning is growing rapidly. And many public agencies are eager to bring the voices of those most impacted by injustice into the conversation about solutions. This transition is supported by new laws and policies that establish baseline standards for community engagement and dedicate resources to support participation by historically excluded groups.

Yet while a growing number of planners and decision-makers recognize the importance of engaging communities in resilience planning, they struggle to do so effectively. Agency staff is undertrained and overburdened. Project timelines leave little room for new activities. Budgets are tight and funding sources inflexible. The prospect of change feels daunting, cumbersome, and uncomfortable.

BARHII is addressing these challenges head-on.

Earlier this year, we released *Farther Together*, a guidebook that lays out a path for transforming how public agencies engage communities impacted by inequities in climate resilience planning to foster a healthy, resilient future for all.

This new tool provides practical suggestions for planners on centering communities in their resilience planning efforts—from project budgeting tips to methods for leveraging public health department assets. It offers recommendations for agency leaders and policymakers on structural changes needed to position our public institutions and community-based organizations for success—including transforming public funding pipelines, agency structures, and equitable engagement mandates. And it includes case studies of promising practices and perspectives of frontline leaders from across the Bay Area.

Now it's time for all of us to turn these ideas into action.

Here in the Bay Area, we're serving on the leadership team of a multi-sector regional planning process to address rising sea levels, called

Bay Adapt, helping public agencies pilot equitable engagement approaches and craft a shared vision for needed investments and policy changes. We're also training resilience practitioners, transportation planners, health leaders, and others.

This is also a moment for transformative investments. Federal COVID-19 recovery funds and a historic state budget surplus have created a once-in-generation opportunity to direct government resources into equitable resilience planning. Fortunately, California is poised to make a historic investment in equitable resilience planning in this year's state budget—just in time for what might be our worst fire season ever.

Please Borrow Freely

“As California goes, so goes the nation.” Yes, with our parched fields, unprecedented wildfires, and rising seas, in many ways California is a bellwether for the co-occurring climate-driven crises many states will experience in the years ahead.

We hope California can also be a model for responding to those coming disasters in ways that build resiliency, health, and community power for those populations most impacted by injustice—particularly BIPOC populations. We're excited to share these promising practices to help build a national network of innovation for climate, health, and equity and look forward to more opportunities to learn from our partners across the country.

Climate-Smart Health Care Is Good for Patients and the Planet

GARY COHEN

Originally published November 8, 2021 in Morning Consult

The Lancet, a leading medical journal, recently warned that climate change is the greatest threat to global public health, with a toll that could far exceed the COVID-19 pandemic. Without dramatic reductions in greenhouse gas emissions, we can expect a rising tide of illness and death from extreme weather, food shortages and infectious disease.

The U.S. health care sector is a major source of these problems, producing 8.5 percent of U.S. greenhouse gas emissions, contributing to the very diseases it's trying to treat. If the global health sector were a country, it would be the fifth-largest emitter of greenhouse gases.

But now, with support from a new White House commitment, the sector can be part of the solution. At the 2021 Global Conference on Health and Climate Change in Glasgow on Nov. 6, Department of Health and Human Services Assistant Secretary Rachel Levine announced that the Biden administration is joining the COP26 Health Programme, which commits national governments to building low-carbon, climate-resilient health care systems. In doing so, the United States joins a growing list of countries—a group that represents one-third of all greenhouse gases emitted worldwide by the health care sector.

A new Office of Climate Change and Health Equity at HHS is charged with making good on this commitment. In addition to developing incentives, training and possibly regulations to support the sector's decarbonization, the office will focus on communities that have been disproportionately impacted by climate hazards and address health disparities to enhance community health resilience.

This is good news on many fronts. Decarbonizing the health sector will immediately improve air quality and reduce suffering from asthma and other respiratory diseases. Air pollution from burning fossil fuels is among the leading causes of illness and premature death. A recent Harvard School of Public Health report found that 8 million people worldwide die prematurely each year as a result of fossil fuel pollution—more than AIDS, malaria and tuberculosis combined.

Reducing air pollution will also reduce health care costs and relieve pressure on overburdened systems. A sustainable health care sector will stimulate innovations in low-carbon technologies and alternatives to petro-plastics, while boosting demand for renewable energy, green buildings, reusable supplies and climate-smart food production.

A number of pioneering health care providers have already proven that the sector can dramatically reduce emissions while saving money. The 19 members of Health Care Without Harm's U.S. Health Care Climate Council, representing more than 6,800 hospitals and health centers in 41 states, are leading the way.

Ascension, one of the leading nonprofit Catholic health systems in the United States, cut its energy use by 29 percent from 2008 to 2018, saving nearly \$62 million and reducing 1.5 million tons of carbon dioxide emissions across 141 health care facilities.

Kaiser Permanente is installing 70 megawatts of solar energy, and purchases the output from 330 MW of offsite wind and solar projects in California. The health system also implemented the first hospital-based, solar-powered microgrid with battery storage.

By removing unnecessary products from the facility's surgical kits, Providence St. Vincent Medical Center is saving an estimated \$1.5 million in supply purchases and \$270,000 on expired items annually.

Hospitals and health systems are also leveraging their purchasing power and community investment to build climate resilience. Seattle Children's Hospital, recognized as a Tree Campus Healthcare facility in 2020, plants native conifer trees in under-resourced areas that lack tree canopy, reducing the deadly urban heat island effect. In low-income neighborhoods, temperatures are sometimes 10 degrees hotter than

more affluent neighborhoods with more tree cover. Cleveland Clinic, as a founding member of the Cleveland Climate Action Fund, has invested in stormwater management, clean energy, local food production and active transportation.

The momentum for climate-resilient health care is not only in industrialized countries. USAID recently announced an initiative called Power Africa, which aims to solarize 20,000 health clinics across the continent. International funding agencies are realizing that a core component of universal health care access is reliable off-grid, clean energy to power facilities, refrigerators for vaccines and other essential medicines and autoclaves to responsibly manage medical waste.

With the Biden administration's commitment and the leadership of some of the nation's largest health systems, we have taken a giant step forward. Health care must continue to expand its healing mission to include communities and the planet, as well as demonstrate how a critical part of our global economy can embed health equity and sustainability into its mission—now and into our turbulent future.

EPA Must Protect Public Health by Regulating PFAS as a Class

LINDA BIRNBAUM, BETSY SOUTHERLAND, AND ROBERT SUSSMAN

Originally published July 30, 2021 in The Hill

A high-stakes debate is raging over a broad class of toxic chemicals that contaminate drinking water consumed by tens of millions of people. These chemicals—called per- and polyfluoroalkyl substances (or PFAS)—can be found in the blood of nearly all Americans.

PFAS are ubiquitous and persistent. They are found in non-stick cookware, water-resistant clothing, fast-food containers, firefighting foams and numerous industrial applications. And PFAS chemicals pose significant risks to people's immune, reproductive and hormonal systems, affect liver enzymes, raise cholesterol levels and increase risks of kidney and testicular cancer, among other health effects.

Today, there is rising alarm across the U.S. as cleanup costs skyrocket and more people in exposed communities worry about long-term threats to their health. Piecemeal efforts to manage PFAS are failing to address the growing crisis. Bolder solutions are called for, and the Environmental Protection Agency (EPA) is on the frontlines. Its new leadership is promising far-reaching action. What should the EPA do?

What the agency should not do is address the PFAS chemicals one at a time. There are 9,252 PFAS chemicals on EPA's Master List of PFAS; regulating them individually would take forever. Thus, we and others propose that EPA approach PFAS regulation with a class-based approach. The goal should be to eliminate all except essential or critical PFAS uses in order to prevent their continuing buildup in people and the environment. If we continue to produce and use PFAS for which we have replacements, the result will be more unnecessary contamination and avoidable harm to health. This will add hundreds of millions—if not billions—of dollars to the costs we are now incurring for PFAS-related cleanup and medical care.

The federal Toxic Substances Control Act (TSCA) gives EPA the tools for a class-based approach. TSCA authorizes EPA to treat chemicals as a “category” if they are “similar in molecular structure, in physical, chemical or biological properties, or in mode of entrance into the human body or into the environment.” Using this authority, EPA can define all existing PFAS chemicals, including byproducts and transformation products, as a “category” and restrict or ban their uses if the category is determined to pose an unreasonable risk of injury to health or the environment.

PFAS chemicals meet these criteria because of their similarities in persistence, mobility, and toxicity and the potential for all PFAS to cause the same adverse effects as well-characterized compounds such as PFOA and PFOS. The determination of unreasonable risk can be based on available data for representative PFAS, which can then be applied to other chemicals in the category that have common characteristics and similar conditions of use, exposure and environmental release.

Because it takes at least seven years under TSCA for EPA to impose use restrictions on chemicals, the most efficient approach would be for EPA to define all existing PFAS as a single category. That’s what Maine did in adopting a state law to ban all intentionally added PFAS in products unless the use is deemed unavoidable.

Some have proposed subdividing existing PFAS into four separate categories: long-chain perfluoroalkyl acids (PFAAs); short-chain replacements for phased-out PFAAs; polyfluoroalkyl substances that are precursors of PFAAs; and polymers, which have been found to degrade to PFAAs. If EPA adopts this approach and waits to obtain more test data on individual category members, it will take decades to protect public health and the environment.

The inherent delays of defining multiple categories have serious health consequences. For example, if EPA first regulates a category limited to long-chain PFAS before addressing other categories, short-chain PFAS may not be regulated for at least 14 years. Yet these substances can be equally persistent and even more mobile in the environment than long-chain PFAS. They are very water-soluble, can travel long distances in water and air, are more effectively taken up by plants, and are even more difficult to remove from drinking water than the long-chain PFAS.

Experimental animal, in vitro, and computational models have shown that the short-chain PFAS have similar health effects to the long-chain substances. People are also exposed to higher levels of the short-chain because they are exposed to so many of them in so many products for long periods of time. Delays in regulating fluoropolymers are also problematic because these polymers have been found to release both intentionally added long-chain PFAS processing aids as well as unintentional PFAS byproducts. A recent study estimated that 80 percent of long-chain perfluoroalkyl carboxylic acids in the environment today come from their release during fluoropolymer manufacture and use.

Industry representatives are pressuring Congress and EPA to move slowly in regulating PFAS, but delay is not what the public needs in the face of the large and growing risks of these chemicals to the American people. The federal government will be a laggard if it falls further behind in protecting public health. Domestically, a number of states are taking their own actions to ban PFAS in a variety of products. Internationally, the European Union and Canada are on a fast track to restrict or ban PFAS in products as well.

EPA must act quickly to provide national leadership for this public health crisis.

For Healthier Kids and Healthier Earth, Rethink School Lunches

BETHANY CARLOS

Originally published October 6, 2021 in The State

As a pediatrician in Charleston, South Carolina, I know that the last year has been hard on our kids' health. During the pandemic, most of my patients gained too much weight, increasing their overall risk for poor health outcomes such as diabetes, cardiovascular disease and depression.

At the same time, climate change is impacting our kids' physical and mental health. Already, kids are suffering and dying from heat stroke, asthma and other problems made worse by the changing climate. And, according to the recent Intergovernmental Panel on Climate Change report, those impacts could become more frequent and deadly over the course of our kids' lifetimes.

We can change that. The climate report shows that the choices we make today will determine the severity of future climate change. By eating more plant-based foods, we can reduce our contribution to climate change over the long term and improve the health of our children today.

That's because producing meat and dairy generates large amounts of methane and other climate-changing greenhouse gases. And diets heavy in animal products have been linked to obesity, cardiovascular disease—and even severe cases of COVID-19.

As kids return to in-school learning, we have an opportunity to serve them healthier, more nutritious meals. Most days, many children eat most of their meals at school. Over 400,000 students in South Carolina's public schools are served lunch every day.

A report from the Friends of the Earth shows that serving less meat in school lunches can have a big impact on the climate. For example,

replacing hot dogs—a lunchroom staple—with fish sticks or veggie bean tostadas would cut the meal’s greenhouse gas emissions by two thirds.

The Physicians Committee on Responsible Medicine encourages plant-based school meals, given the benefits of increased vitamins and nutrients, weight management and fewer gastrointestinal problems.

Across the nation, hundreds of communities, school districts and workplaces have adopted Meatless Mondays—even our capital, Columbia, is on board.

Why not offer these healthy alternatives to South Carolina’s school-children? Some argue that it would be more expensive to adopt a more plant-based menu in our schools. While there might be upfront costs to transition schools to healthier foods, it is likely to cost less over the long term. In Oakland, California, the school food service saved \$42,000 over two years by serving fewer animal products and more fresh vegetables and fruit. At the same time, Oakland cut their meals’ carbon footprint by 14 percent and reduced water use by 6 percent.

Others may believe that children wouldn’t enjoy plant-based meals, but many initiatives have refuted that argument. One study by the School Nutrition Association found no difference in food waste between standard and vegan lunches.

Our South Carolina schools have made amazing progress with local farm-to-school efforts and providing meals to students even while in virtual school. Now there is an opportunity to take another step further. Serving more plant-based meals won’t just improve the health of our children, it will help address climate change, which is a long-term threat to our health and security.

Parents, you have the power to change the policies made in your local school districts. Urge your school board to provide more plant-based, climate-friendly school meals. Making a choice for healthier children is a choice for a healthier earth.

Bring Innovation to Farms and Food

RICHARD MUNSON

Originally published September 21, 2021 in The Hill

President Biden wants to return competition and innovation to the American economy. He should start with agriculture, largely by curtailing taxpayer subsidies that protect oligopolies.

Our farms and food are controlled by stodgy corporate giants. From 1988 to 2015, four biotech companies increased their combined share of the corn seed market from 50 percent to 85 percent. The four largest meatpackers raised their stakes in cattle slaughtering to 85 percent; just four giants control 70 percent of pork production and the four biggest pesticide manufacturers control 57 percent of their industry. This trend also goes for grocery retailers and the makers of livestock pharmaceuticals and farm machinery, which have increased their consolidation significantly in the last 25 years.

These corporate concentrations squeeze farmers with higher charges for seeds, machinery and fertilizers and then squeeze them again when growers try to sell their crops. By destroying a true marketplace, they hurt consumers, causing 30 percent overcharges for chicken meat. The monoculture focus of Big Ag even accelerates greenhouse gas emissions and reduces the diversity of food options. Our current farm and food systems also allow 815 million people go hungry and 2 billion to be overweight or obese. Fully 20 percent of worldwide deaths—as well as debilitating diseases such as diabetes, cancer and osteoporosis—result from bad nutrition.

With little competition, agriculture remains the least digitalized of all businesses. Even though GPS mapping has been available for decades, only about half of the large corn and soybean farmers in the United States deploy such systems and fewer than 20 percent utilize variable rate technology to target their fertilizer and herbicide spraying. While the technology industry spends 31 percent of its budget on research and

development, and pharmaceuticals spend 19 percent, food companies allocate less than 1 percent.

Yet, we live in an era of rapid technological advances across numerous economic sectors. Sophisticated sensors collect enormous quantities of high-resolution data, which high-performance computers decipher to deliver real-time insights and predictions. Autonomous machines perform complex tasks with speed and precision, while gene editors enable organisms to retard chronic diseases. Eric Schmidt, former CEO of Google and Novell, calls this radical convergence of data, leading-edge computation and advanced engineering a “super evolution” that will “fundamentally, irrevocably transform” wide-ranging industries. Reflecting what we’re seeing in agriculture, he adds that innovations allow start-ups “to advance faster than incumbents,” resulting in “extremely agile, powerful companies.”

Competitive entrepreneurs, seeing opportunities to profit through innovation, are finally bringing “super evolution” to the agricultural sector. Ag-tech innovators in 2020 raised more than \$30 billion in direct venture investment, up 35 percent from the previous year. The Switzerland-based bank UBS predicts ag-tech sales will climb to \$700 billion by 2030.

Those innovators display breadth and depth. Entrepreneurs grow produce vertically inside large urban warehouses located closer to consumers. Biochemists create meats from stem cells and plants, providing proteins without slaughtering animals. Engineers deploy drone- and ground-based sensors to evaluate and apply the water and nutrients needed by individual plants, slashing the need for irrigation and fertilizer. Roboticists send autonomous machines to pick fruit and pluck weeds, reducing drudgery and curtailing the need for poisonous herbicides. Chefs use 3D printers to create nutritious and creative meals.

Although Biden thinks competition will emerge from government payments to small meat and poultry processors, today’s ag-tech entrepreneurs favor private-sector investments to politically determined subsidies. If anything, innovators hope politicians will simply stop underwriting the least-healthy foods and the most polluting farm practices, protect intellectual property and reform federal insurance and crop-support programs that subsidize the status quo and retard competition. They know that breaking up giant corporations is hard and, at best, time-consuming—but

antitrust provisions can block anti-competitive practices and concentrating mergers. Put simply, innovators want the chance to compete without government programs tilting the playing field to advantage oligopolies.

One useful government investment would be in rural infrastructure so farmers and ranchers, not just city dwellers, can take advantage of mobile networks. About one-third of rural Americans lack access to broadband, compared to only 2 percent for urbanites. Yet, much of the innovation now coming to farms depends upon sophisticated sensors, computers and controls that rely on broadband communication.

Agricultural entrepreneurs are attracting investments and capturing markets largely because the food and farm sectors have been technological laggards. Today's confluence of advances—including computers, sensors, robots and machine learning—allow fast-moving agricultural disruptors to thrive. These visionaries and their financiers increasingly believe they can outcompete Big Ag's slow-moving oligopolies. They also recognize that the sheer size of our challenges—to double food availability and slash pollution—demands creative thinkers and actors. To advance innovation, Biden needs to stop the government from discouraging entrepreneurs and embrace the disruptors now bringing competition to farms and food.

Let's Keep Teaching Outdoors

CLAIRE LATANÉ

Originally published April 29, 2021 in The Progressive

During the pandemic, schools across the country turned themselves inside out, holding classes outdoors to reduce the spread of the coronavirus. And now that vaccination is driving down transmission rates, school administrators are eager to get students back in the classroom.

But disease prevention is just one of many reasons to educate kids outdoors. As we invest in pandemic recovery and infrastructure, we should make sure all students have access to nature-filled outdoor spaces.

Consider the experience of Portland, Maine, one of the country's first public school districts to develop a district-wide outdoor learning program in response to COVID-19. By last fall, half of the district's teachers were using one of 156 new outdoor classroom spaces provided on every school campus.

Portland students enjoyed hands-on learning outdoors. They studied pollination in a community garden. And at first snowfall, they were outside learning how snowflakes are formed. The experience of students and teachers in Portland affirmed what research has shown: When students play in nature they are kinder to each other, more physically active and more creative.

There are clear educational benefits, as well. Many students who struggle in a classroom setting thrive in an active, outdoor environment. Learning outside helps teachers see those students as capable, while the students themselves feel successful in school.

The benefits of outdoor learning can even be measured on test scores. Three years after Los Angeles's Leo Politi Elementary School added a small wildlife garden, fifth-grade standardized science scores rose from just 9% proficient to 53% proficient or advanced.

By opening our schoolyards and adding access to nature, we can create schools that heal as well as teach. A majority of today's public school students deal with layered crises of poverty and trauma, a fear of school shootings and neighborhood violence, and a genuine concern for the future of their planet. In response, schools are adopting trauma-informed teaching and hiring more counselors in schools.

These ongoing approaches are vital, and nature-filled outdoor spaces can help. Access to nature can help us heal faster, lessen stress and anxiety, reduce student crime and disorderly conduct, help struggling students and improve environmental and physical health.

There are 53,669 low-income Title 1 schools in the United States, 55% of our public schools. The American Rescue Plan, signed into law in March, includes \$126 billion for these schools. Some 20% of those funds are expected to go towards school facilities, according to the 21st Century School Fund.

This means that districts could invest around half a million dollars into improving the buildings and grounds of every Title 1 school in the United States. That is enough to completely transform a campus into an outdoor space for learning, or open a school building to nature.

The pandemic may be winding down, but the challenges facing students and schools are as daunting as ever. Outdoor learning was a lifeline during the worst days of COVID-19, and its benefits extend well beyond preventing disease.

So, as we return to school, let's not go back to keeping students inside all day. Instead, let's invest in welcoming, nature-filled schools to support students and teachers' mental and physical health. We can design schools that heal.

SECTION VII

POLICY AND FUNDING

Restoring the EPA: Lessons From the Past

ALBERT STANLEY MEIBURG

Originally published January 26, 2021 in The Hill

No agency of the federal government needs to “build back better” more than the U.S. Environmental Protection Agency (EPA). It faces a particularly unhappy legacy from the last four years, but it will need to rebuild itself looking forward—not back.

There is much damage to repair, including dismaying and insidious acts by the Trump administration on its way out the door. Previous Republican and Democratic EPA administrators have described their role as a relay race, where you took the baton from the previous runner, ran as hard as you could and then handed off the baton to the next person to make their own progress. More than any previous administration, the Trump EPA team ran backwards, creating the double burden of making up lost ground while also meeting new challenges.

Some have compared this situation to the restoration of the EPA following the tenure of then-EPA Administrator Anne Gorsuch Burford in the first term of the Reagan administration. In that case, following two years of repeated scandal and adverse publicity, Burford resigned and was replaced by Bill Ruckelshaus, the EPA’s first administrator who earned an unquestioned reputation for integrity during the Watergate scandal.

The Reagan administration, like the Trump administration, came into office intending to undo environmental regulation. But they also had to implement a vast new Superfund law that passed in the last days of the Carter administration. These two competing forces collided over the Reagan administration’s hostility to the EPA’s career civil servants, severe budget cuts at EPA and White House pressure on Burford to hire an incompetent political leader of the new program. The end came when the Department of Justice (DOJ) ordered Burford to withhold documents

from the Democratic House of Representatives, which pounced on the administration's bumbling efforts to cut sweetheart deals with polluters.

The restoration of the EPA this time will be different and not just because a new president will be at the helm. Some of the worst aspects of the Burford EPA received an early public airing in Congress, which did not occur in the first two years of the Trump administration. In addition, with the notable exception of former Administrator Scott Pruitt, senior political officials understood the EPA's complex regulatory structure and used their knowledge to make far-reaching changes in rules and procedures. While some of these efforts have been slowed or halted by litigation, others remain as unfinished business.

The Trump administration's hostility to the environment guaranteed that there would be no new laws facing the Biden administration. But the new administration faces even more monumental challenges than in 1981: climate change, communities subject to disproportionate environmental harm, clean water for both drinking and healthy ecosystems and long-lived chemicals throughout the environment.

Also different now are the EPA's partnerships with states. State capabilities have increased greatly since 1981 and the Trump administration professed a commitment to states. But that commitment was conditioned on states agreeing with the policy goals of the administration. Consumed with climate denial, the Trump administration opposed California's initiative for cleaner cars and pursued (though unsuccessful) efforts to charge automotive companies with antitrust violations if they cooperated with California. The Trump EPA proposed to cut operating grants to states by 30 to 40 percent, limited states' flexibility to use the Clean Water Act to protect against adverse effects from oil and gas pipelines, refused to allow projects as part of federal enforcement settlements that could assist states and promoted the false narrative that to have strong states you have to have a weak the EPA.

Building a renewed EPA is more than just reviving the past. Forward-looking businesses recognize the threats posed by both climate change and environmental injustice and the opportunity for market systems to contribute to efficient environmental protection.

Happily, the incoming team at the EPA combines new ideas with experience. They will have the strong support of a president who understands the existential crisis that the world now faces, businesses who see that climate risks are their risks and a younger generation who recognizes that we are experimenting with their future.

The EPA's core institutional values, set by Ruckelshaus, were to follow science, follow the law and be transparent. The Trump administration flaunted all of these. Rebuilding confidence both inside and outside EPA that the agency is once again following these values will be an essential task for the new administration.

Should Congress Consider a Master Settlement Against Big Oil?

JEFFREY PETERSON

Originally published January 28, 2021 in The Hill

President Biden's much anticipated and widely reported day one action to rejoin the Paris Climate Accord puts the United States on track to dramatically reduce the greenhouse gases that are warming the planet.

Less noticed or reported was the oral argument before the Supreme Court on the day before Biden's inauguration. It was another chapter in the city of Baltimore's fight for "equitable relief" from over 20 major oil companies for the many climate-related impacts on the city. Baltimore alleges that the production and marketing of fossil fuel products, along with the concealment of the products' known hazards, is a direct cause of climate change impacts.

Even as the court battles rage, it is time to give some serious thought to what equitable relief might look like for Baltimore, the other communities suing oil companies and the country more generally.

To date, federal courts have been unpersuaded by arguments that oil companies should contribute to managing the impacts of a changing climate. Several federal courts have dismissed such cases. Judge John Keenan wrote, "Climate change is a fact of life...but the serious problems caused thereby are not for the judiciary to ameliorate."

Undaunted, Baltimore and some 23 other state and local governments continue to press their cases, shifting their attention to state courts thought to be more open to recognizing climate impacts and punishing misleading conduct by oil companies. Among the governments bringing these cases is Rhode Island, whose Democratic Gov. Gina Raimondo has supported the climate case and is now nominated to be the U.S. secretary of Commerce.

Baltimore won a decision from the Fourth U.S. Circuit Court of Appeals that it could proceed in state court and the appeal of that decision by the oil companies led to Tuesday's hearing at the Supreme Court. The Supreme Court might point Baltimore to federal court where similar cases have died. Or, the court might agree to send the case back to state court, which might support Baltimore's claims or dismiss them.

If communities begin to win cases in state courts, oil companies might seek to settle cases individually or collectively. Communities not party to the litigation, but also coping with climate change impacts, might seek to frame a national settlement that would balance national needs against the oil companies' ability to pay.

Big oil companies have a plausible claim to being the original "deep pockets," with reported combined profits of \$55 billion in 2019 from just the six largest companies. Since 1990, these same companies recorded profits of over \$2.4 trillion.

As impressive as these profits are, they are dwarfed by the magnitude of the projected costs of adapting to a changing climate. Researchers say adaptation costs in the United States could reach tens or hundreds of billions of dollars per year by the middle of this century. The costs of adapting to rising sea levels alone is estimated to be as high as \$3 trillion by 2100.

It seems clear that successful claims for equitable relief would quickly empty even the deepest oil company pockets, creating a scenario with some big winners and many losers. Is there a way to hold big oil companies accountable for their role in the climate crisis while making the best possible use of the resources these companies can contribute?

One possible model is the Master Settlement Agreement (MSA) established among 46 state attorneys general and four big tobacco companies in 1998. The agreement released companies from past and future legal claims for costs incurred by the states for smoking-related illnesses and death and for equitable relief. It provides for continuing payments to states to support smoking-related costs, estimated to be \$27 billion in 2021 and totaling \$246 billion over the past 25 years. It also restricts company actions, including limiting marketing to youth.

It is important to remember that in the year before the MSA was signed, the tobacco companies facing a growing number of successful suits petitioned Congress for a comprehensive resolution. Congress considered but failed to pass a Global Settlement Agreement sponsored by the late-Sen. John McCain (R-Ariz.).

Applying the example of the tobacco settlement to climate change would require considerable advancement of pending suits to bring the companies to the negotiating table. Should that come to pass, some key questions arise: How much companies should pay and for how long? What liability should be addressed? Whether funds should be used for addressing impacts or limiting greenhouse gas releases or both? How funds should be allocated? Whether funds should be restricted to climate purposes? Whether an agreement should also restrict company actions, including greenhouse gas releases.

These are difficult questions. A master settlement needs full and wide consideration in an open forum. Doing this right will take time and bipartisan cooperation. Congress should start now by framing key issues, gathering public input, and documenting needed information.

The Bezos Earth Fund Needs to Stop Shortchanging Environmental-Justice Nonprofits

PEGGY SHEPARD

Originally published March 23, 2021 in The Chronicle of Philanthropy

Amazon founder and CEO Jeff Bezos built his empire on the shrewd use of data and a knack for seizing the moment. We hope he and the newly appointed president of his Earth Fund, Andrew Steer, adhere to that strategy when considering how to invest the balance of the foundation's \$10 billion to tackle the climate crisis.

Steer has promised to “emphasize social justice,” noting that “climate change disproportionately hurts poor and marginalized communities.” Such thinking, however, did not seem to guide the Earth Fund when it announced its first round of grantees last November. The fund offered generous support for many well-resourced environmental organizations working on climate-change policy but shortchanged environmental-justice groups focused on the low-income communities hit first and worst by the climate crisis.

Today, these communities face extraordinary threats. Their predominantly Black and brown residents often live next door to the worst polluters—diesel-spewing bus depots, urban highways, industrial facilities, and coal-fired power plants.

People of color, especially those in low-income communities, have a higher risk of premature death from particle pollution than white people, according to a study published in the *New England Journal of Medicine*. Their disproportionate exposure to environmental hazards contributes to glaring health disparities, including a greater incidence of asthma and, most recently, higher death rates from COVID-19. These communities also typically face elevated risks from climate-change disasters such as floods and deadly heat waves.

Hundreds of organizations, operating on shoestring budgets with underpaid staffs, are working to equitably mitigate and adapt to climate change in the most neglected areas of the country. They engage with and reflect the voices and perspectives of community residents, ensuring that those most affected are included in decision making.

Yet they struggle to receive philanthropic support. Just 1 percent of the \$2.5 billion granted annually by philanthropy to environmental groups trickles down to these community-based nonprofits, according to Building Equity and Alignment for Impact. And that sliver of funding is usually doled out in \$25,000 to \$50,000 project grants—not enough to cover a salary and benefits for one staffer, let alone the range of operating expenses required of any healthy nonprofit, including administrative support, evaluation, communications, and development.

Jeff Bezos's Earth Fund is continuing this trend. The majority of the fund's initial \$791 million in grants was awarded to mainstream environmental organizations such as the World Wildlife Fund, the Nature Conservancy, Environmental Defense Fund, Natural Resources Defense Council, and World Resources Institute, which each got \$100 million.

This is hardly the type of winning investment strategy we've come to expect from Bezos. Helping those most affected by pollution and climate change isn't only the right thing to do—it's the surest way to win on climate. The National Committee for Responsive Philanthropy explains it this way: "By acknowledging the coming demographic shift in the United States and investing in lower-income and other underserved communities, environment and climate funders can increase their impact and build a movement that is more aligned with the future of our country."

How Bezos Can Lead the Way

It's time to realign environmental philanthropy so that the perspectives and expertise of the most affected are heard, respected, and valued. The Bezos Earth Fund could lead the way.

The challenge, philanthropists say, is in assessing the effectiveness of so many small environmental-justice organizations and determining where to put their money. So foundations such as the Earth Fund take a shortcut by funding organizations that distribute the money to small nonprofits. In fact, of the 1 percent in overall grant dollars given to

environmental-justice groups, more than a third goes first to big groups to support small nonprofits. As a result, this already thin slice of resources is divided even further, leaving these organizations with barely enough to survive, let alone thrive.

But there is a better option. The Earth Fund could copy the funding strategy that helped the nation's largest environmental groups grow. In the 1960s and 1970s, the Ford Foundation provided some \$5 million a year (the equivalent of \$34 million today) in long-term funding to help three major organizations get off the ground and professionalize: The Nature Conservancy, the Environmental Defense Fund, and the Natural Resources Defense Council. In addition to money, Ford offered expertise and guidance that transformed key environmental groups from grassroots, volunteer efforts to large, stable organizations with professional staffs and sizable budgets. That strategy helped expand the U.S. environmental movement.

The Earth Fund could take a similar approach but on an even larger scale. It should start by identifying environmental-justice groups that foundations and donors could support directly. This isn't rocket science.

Organizations such as the Environmental Grantmakers Association, community foundations, and state environmental agencies have already identified these nonprofits and often have long-standing relationships with them. Networks such as the National Black Environmental Justice Network work with these groups to strengthen their management and know who needs help. Media coverage is also a good place to spot up-and-coming climate-action nonprofits since local news outlets regularly feature their inspiring work.

They include groups such as the Little Village Environmental Justice Organization, which successfully lobbied for the closure of two coal-fired power plants in Chicago, and the Asian Pacific Environmental Network in Oakland, Calif., which is working to protect residents from the proliferation of oil refineries. And they include organizations like mine—WE ACT for Environmental Justice, based in Harlem. Following Hurricane Sandy, we worked with residents to develop a Northern Manhattan Climate Action Plan, which is bringing more solar energy to affordable housing units and helping to lead a statewide campaign to reduce fossil fuels by electrifying transportation and other infrastructure.

Decades of Victories

During the past 30 years, environmental-justice advocates have won passage of important climate legislation in 35 of 50 states, according to the American Bar Association. They have launched environmental-justice programs at universities, published dozens of books and case studies, and created environmental-justice advisory groups in city, state, and federal government agencies. Yet the environmental-justice nonprofits themselves have received minimal philanthropic support for their successful advocacy in the face of powerful interests.

Today we are at an inflection point. During this moment of racial reckoning, the Biden administration and many congressional leaders have committed to making environmental justice a central component of policies and programs. They recognize the imperative to rally people of color to address the climate crisis and ensure the representation and support of those most affected.

Jeff Bezos knows how to read the data and size up an opportunity. And the data are clear: To fight the climate crisis, we must invest in the environmental-justice groups that have been underfunded or ignored for too long. The Earth Fund and other philanthropic organizations should seize this moment to build a diverse, equitable, and powerful movement for climate and environmental justice.

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 U.S., 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.

FEMA: Don't Drive the Gullah-Geechee From Their Land

ALBERT GEORGE

Originally published April 17, 2021 on The Hill

For more than a century, Gullah-Geechee people have held fast to their land at the water's edge on the Sea Islands of South Carolina, Georgia and Florida. Descendants of chattel slaves from West Africa, generations of Gullah-Geechee have not only survived, but thrived here—nurturing a distinctive culture with deep ties to the African homeland.

Today, the Gullah-Geechee's hold on the land is loosening. Some threats have been brewing for decades, including the juggernaut of development and a system of property law that is cruelly stacked against them. Now, the rising seas and powerful storms of a warming planet pose an unprecedented threat. Unless the Federal Emergency Management Agency (FEMA) changes its policies for providing disaster assistance, climate change may be what finally drives the Gullah-Geechee from their home.

That would be a disastrous outcome—for the land and people of the Lowcountry and for the nation as a whole. The Gullah-Geechee are bound up with the history of this land and they must help build its future.

The ancestors of today's Gullah-Geechee were brought to this country from the Windward Coast of Africa, from Senegal to modern-day Liberia, for their expertise in growing rice. Rice is a notoriously difficult crop, requiring skill in managing the interplay of water and land. Those skills enriched the antebellum plantation owners, who largely fled the swampy, mosquito-infested Sea Islands after the Civil War. Then, in 1865, Union Gen. William Tecumseh Sherman issued Special Field Order 15, ceding most of the islands off the coast of Georgia and South Carolina to the freed slaves.

Separated from the mainland by marshes and waterways, the Gullah-Geechee lived in peaceful isolation for many decades—farming, hunting and fishing the islands’ bountiful waters. Living in tight-knit communities, they helped one another and managed resources in common. But the mid-20th century brought bridges and electricity, making the islands’ pristine beaches and moss-draped forests a prime vacation spot. Hilton Head Island alone now draws 2.5 million visitors in a (non-pandemic) year. And much of the Gullah-Geechee’s land has gradually been overtaken by gated communities, luxury hotels and golf courses.

This land grab was made possible by arcane property laws that gravely disadvantage the Gullah-Geechee (and other disenfranchised communities throughout the U.S.). Most Gullah-Geechee land was passed down over the generations without lawyers and legal documentation. Such land is called “heirs’ property,” because it is held in common by all living heirs of the original owners.

People living on heirs’ property lack clear title to the land, and they must secure the approval of every single person who could lay claim to the property—sometimes hundreds of far-flung family members—in order to obtain a mortgage, loan or government assistance. Yet, in some states, any one of those heirs may force the partition and sale of the land. Developers have eagerly exploited this, offering cash to some heirs in order to evict others. In one especially heartbreaking case, two brothers went to prison for eight years because they refused to leave the land they had lived on all their lives.

For the Gullah-Geechee who have managed to hold onto their land, another problem looms. Heirs’ property holders are often denied FEMA disaster assistance. And disasters—hurricanes, storm surges—are now more frequent and severe. When Hurricane Matthew hit in 2016, more than 18,000 disaster assistance claims were denied in South Carolina counties with a high concentration of heirs’ property. According to data analysis by Janiece Glover of South Carolina Policy, Engagement, Advocacy and Research, the counties with the highest prevalence of heirs’ property saw half of FEMA aid applications denied.

Disaster assistance will not solve all of the Gullah-Geechee’s problems, but in the wake of a hurricane or storm surge it is an essential lifeline that can keep people in their homes and on their land.

Fortunately, there are remedies at hand. For example, FEMA could create a presumption that Gullah-Geechee and similarly-situated individuals who can prove occupancy of heirs' property are eligible for FEMA assistance. And FEMA could allow those who were living on the land before a disaster to serve as the legal agent for all owners, so that heirs' property holders don't need the permission of hundreds of family members to accept aid.

It's time for FEMA to change its rules so that heirs' property holders can receive needed disaster assistance. Changing FEMA's eligibility requirements could prevent Gullah-Geechee people from losing their homes after the next disaster. The changes would also help other groups with similar property challenges—including Native Americans and many in Appalachia and other parts of the rural south.

Indeed, by acknowledging eligibility for heirs' property holders and other non-formal title relationships, FEMA would help preserve long-established vulnerable communities and comply with the agency's statutory obligation to "accomplish[its mission] in an equitable and impartial manner, without discrimination on the grounds of race, color, religion, nationality, sex, age, disability, English proficiency, or economic status."

More broadly, the Gullah-Geechee need legal assistance to untangle the legal thicket of heirs' property ownership. The Center for Heirs Property Preservation does excellent work in this area, offering education and direct legal services to help people keep their family land; the organization deserves more support. Federally supported legal services offices also need more resources for this time-consuming but important work.

Time is short. The Gullah-Geechee have already lost much of their ancestral land; rising seas threaten to overtake still more. And hurricane season is coming.

This is where we stand, in South Carolina and as a nation. We face an uncertain future on a warming planet, while carrying the legacy of a brutal past. Meeting the challenge of this moment requires many kinds of knowledge. It requires the expertise of geographers and hydrologists armed with tide gauges and geographic information system mapping software. And it also requires the deep, irreplaceable knowledge of people who have lived on this land for generations. People whose ancestors were

brought here in chains to coax a difficult crop from the water's edge, who are now navigating a shifting boundary of land and sea.

The Senegalese environmentalist Baba Dioum once said, "In the end, we will only conserve what we love. We will love only what we understand." The Gullah-Geechee, descendants of rice farmers from Senegal and neighboring countries, know and love this land. FEMA must change its rules so they can continue to conserve it.

The Terrible Environmental Costs of Stagnant EPA Funding

DAVID COURSEN

Originally published May 24, 2021 in The Hill

Two decades of stagnant funding have left the Environmental Protection Agency (EPA) without the resources to take vital actions to protect human health and the environment.

The lack of adequate funding has hamstrung the agency's ability to clean up hazardous waste sites, enforce its own regulations, ensure indoor plumbing to people in rural areas, protect children from lead in drinking water and advance environmental justice for disadvantaged communities and reduce air pollution. The Biden administration has laid out an ambitious environmental agenda, but it can only be fully achieved if Congress is willing to foot the bill.

EPA's shrinking capacity was not caused by draconian budget cuts, but by a long history of "level" funding, with each annual budget much like the previous year's. The value of the dollars in those budgets has continually eroded, and over two decades the cumulative effects have been devastating. In 1980, federal EPA spending, adjusted for inflation, was twice its current level, and in 2004 the EPA budget was 45 percent higher than it is today.

Inadequate resources have forced EPA to cut back on enforcement activities, despite evidence of widespread non-compliance with environmental requirements at many types of regulated facilities, and higher compliance rates at facilities with the biggest health impacts. Worse, a handful of egregious polluters causes an enormous share of pollution, often from facilities near marginalized communities of color and low-income and indigenous communities. Reduced enforcement often leaves those communities unprotected, effectively reducing them to sacrifice zones.

A recent EPA Inspector General (IG) report found declining EPA enforcement activities over more than a decade, increasing the risks from unaddressed violations and undetected pollutants. Not surprisingly, the report concluded that a lack of enforcement resources was the “primary” reason for the declines.

Limited enforcement resources also bear a share of responsibility for deficiencies in the unreliable national air quality monitoring system. With barely one monitor per thousand square miles, the system cannot even measure nationwide air pollution, much less detect the local variations that create hotspots that particularly harm disadvantaged communities. More than a third of our people, 120 million of them, live in counties with no monitors at all to measure the small particle pollution that creates the greatest risk to people’s health.

Disadvantaged communities cry out for environmental justice but EPA’s environmental justice program has long suffered from limited resources. In 2019, the environmental justice office had a staff of 22, far too small to provide meaningful help to thousands of environmental justice communities and received less than half the funding the Clinton administration had requested for it 20 years earlier. Just \$1 for every \$1,500 in the agency budget went to environmental justice; its grants program was 1/2000th the size of the total EPA grants budget.

The lack of safe and affordable drinking water and wastewater infrastructure for low income and indigenous communities and communities of color is another national problem—or disgrace—that has festered because of inadequate resources. More than 9 million households receive drinking water through lead pipes and service lines and, even in the 21st century, many people in rural areas lack full indoor plumbing, including a shocking 6 percent of tribal reservation households. Water quality problems plague systems serving more than 44 million people; contamination was recently found in a quarter of those that were privately tested. Even those fortunate enough to be served by systems with safe water may not be able to afford it, with up to two-fifths of residents in some cities living in neighborhoods where water bills exceed 4 percent of household income and are, therefore, considered unaffordable.

Declining resources also prevented the agency from increasing assistance to states, which depend on EPA funding for more than 25 percent of

their operating budgets. States faced a decade of harsh cuts to their own environmental programs, with 40 states eliminating 5,700 environmental jobs. But EPA was unable to boost its funding for state programs to mitigate the effects of the cuts.

Inadequate and diminishing funding make it impossible to establish priorities for protecting our people and environment. Even where EPA has spending flexibility, it can generally only find money to address one problem by diverting it from, and possibly neglecting, another. This makes it vital for Congress to provide EPA with sustained, adequate funding to do its job—now and in the future.

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

ANGELA CHALK AND LOIS DEBACKER

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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 U.S. \$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 U.S. 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.

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