



A Framework for Local Action on Climate Change

9 Ways Mayors Can Build Resilient and Just Cities

By Cathleen Kelly, Cecilia Martinez, and Walker Hathaway-Williams September 2017



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Introduction and summary

As the Trump administration cancels or stalls myriad federal policies that protect Americans' health and safety—policies that, for example, ensure clean air and water for all or protect infrastructure and communities from flood and extreme weather risks—many U.S. mayors are leaving the president behind to pursue a radically different course. Across the United States, city leaders recognize the economic, public health, and quality-of-life benefits of rapidly transitioning away from fossil fuels and moving toward renewable energy sources.¹

Mayors' widespread commitments to curb carbon pollution and fight climate change reflect their growing awareness that the effects of a warming world—including more punishing storms, more severe droughts, increases in the number of wildfires, hotter heat waves, and sea level rise—threaten local economies and the health, well-being, and prosperity of city residents. These mayors understand that global warming means worsening air quality, costly flooding and disaster damages, and increases in vector-borne diseases.² Climate change is also fueling shifts in farming that could drive up food prices and reducing indigenous communities' access to traditional foods and water, which could force them to abandon centuries-old cultural practices.³

These mayors understand that no city is an island unto itself, especially in a changing climate.⁴ Creating a just and sustainable economy in one place can improve lives in nearby communities. If the changes and improvements implemented are significant and, eventually, replicated elsewhere, the benefits could extend across the nation and even abroad. Ultimately, all of humanity is draining the same pool of natural resources and relies on the same climate system. Thus, reducing the use of those resources and the pollution from that use could pay far-reaching dividends.

For many mayors, Hurricanes Harvey, Irma, and Maria provided a chilling reminder of the need to prepare for a new normal of more extreme weather events fueled by climate change. Harvey unleashed unprecedented rain—more

than 50 inches in some areas—causing catastrophic flooding that overwhelmed communities in Texas and Louisiana, including the entire Houston area. As of this writing, Harvey and the resulting flooding has killed 75 people, left tens of thousands homeless, and inflicted an economic toll that could rise as high as \$190 billion.⁵ On the heels of the devastation from Harvey, Hurricane Irma amassed into the most powerful storm ever recorded in the Atlantic and left more than 16 million people without power in Florida, Georgia, South Carolina, Puerto Rico, and the U.S. Virgin Islands.⁶ The storm killed at least 85 U.S. residents and caused estimated damages of up to \$100 billion, as of this writing.⁷ Days later, Hurricane Maria plowed into Puerto Rico, sending torrents of floodwater tearing through towns and toppling power lines, cell phone towers, and homes in its path.⁸ As of this writing, the Category 5 storm had killed at least 16 people in Puerto Rico, forced 15,000 people into shelters across the island, knocked out power for what could be for months, and threatened to overwhelm the Guajataca Dam and further inundate low-lying coastal communities.⁹

It will take years for many people in Texas, Louisiana, Florida, Georgia, Puerto Rico, the U.S. Virginia Islands, and South Carolina to recover from these storms—tragically, some never will. As devastated communities work to pick up the pieces, it is crucial that local officials rethink the design of their communities and infrastructure and rebuild in ways that reduce future flood, extreme weather, and pollution risks—particularly in areas where families struggle to make ends meet and in communities of color, both of which are exposed to these threats at disproportionately high rates.

While climate change affects us all, it hits families living paycheck to paycheck the hardest. In a world of growing inequities, it is not mere coincidence that the poorest among us not only live and work in areas most prone to flooding, heat waves, and other climate change effects but are also least resourced to prepare adequately for and withstand those impacts.¹⁰ Fortunately, city officials and community leaders across the country are taking steps to improve climate change resilience, along with addressing associated economic, racial, and social equity issues. Progress is most notable in the following cities, each of which is featured in this report: Ann Arbor, Michigan; Atlanta, Georgia; Baltimore, Maryland; Berkeley, California; Boston, Massachusetts; Charlotte, North Carolina; Chicago, Illinois; Cleveland, Ohio; Grand Rapids, Michigan; Los Angeles, California; Miami, Florida; Nashville, Tennessee; New Bedford, Massachusetts; New York City, New York; Newark, New Jersey; Oakland,

California; Portland, Oregon; San Jose, California; Seattle, Washington; Spartanburg, South Carolina; Minneapolis, Minnesota; Toledo, Ohio; and Washington, D.C.

Along with those examples, this report offers recommendations for mayors on designing and implementing strategies to build just and resilient cities and to create new economic opportunities for many of the people left behind by recent economic booms. The report findings reveal that climate change policies and preparedness strategies are most effective, and draw the most support from residents and community groups, if they are designed through inclusive processes and address the intersecting problems of racial, income, and environmental inequalities.¹¹ In addition, climate solutions are the most successful when city leaders partner with community groups to set priorities and shape those solutions. By embracing strategies that support pathways to a just economy while reducing extreme weather, flooding, and other climate change risks, city officials can expand access to living wages and safe jobs, quality schools and affordable housing, and safe and sustainable neighborhoods.

To achieve the above goals, this report recommends that mayors and other city leaders take the following nine actions, which are explained in greater detail below, to build resilient and just cities:

- 1. Make equity, racial justice, and a just economy core goals of city resilience and climate action plans.** Develop climate action and resilience plans that tackle historic inequities and racial injustice, both of which exacerbate climate change and other environmental risks in communities of color and low-income neighborhoods. Build trusting relationships with communities and create an inclusive environment that supports partnerships with community groups and collaboration across city departments. Emphasize diversity in city hiring and remove biases in city planning that perpetuate inequities.
- 2. Collaborate with community groups and build neighborhood capacity to shape and implement climate change solutions.** Build community support for climate and resilience plans by raising awareness of climate change risks; partner with community groups to design effective climate strategies and public engagement processes that respect cultural protocols; and foster local leadership.

3. Expand economic opportunities and the availability of affordable housing.

Create local hiring and job training programs that provide pathways to living-wage jobs in clean energy and other fields. Support healthy, inclusive development and implement anti-displacement strategies that improve city livability without serially pushing out longtime residents with low socio-economic mobility. Support community land trusts and cooperatives to increase access to community-owned affordable housing and solar power.

4. Increase access to affordable and clean energy. Develop innovative financing options to provide energy services to low- and moderate-income families. Deploy energy conservation strategies that lower pollution and energy bills, improve public health, and foster racial and economic equity. Adopt inclusive and equitable policies and incentives to achieve 100 percent zero carbon energy by 2035 or sooner and to create local jobs.

5. Ensure access to affordable and clean transportation. Expand public transit; increase the use of low- and zero-emission rapid transit and electric buses; adopt regional transit solutions; provide affordable bike-share access, and make neighborhoods more pedestrian-friendly to increase access to economic opportunities and curb pollution.

6. Invest in resilient infrastructure and nature-based solutions. Invest in maintaining and building infrastructure that can withstand more extreme weather and flood risks, curb carbon pollution, and provide economic and other benefits to residents. Prioritize infrastructure investments in communities facing the greatest needs. Update building and infrastructure codes and standards and expand natural areas and green infrastructure to reduce flood and extreme weather risks and create healthy and sustainable communities.

7. Support emergency preparedness and resilient disaster recovery. Work closely with community groups to prepare for more extreme weather emergencies and disasters in a changing climate, including heat waves. Improve land-use planning to reduce sprawling development in flood-prone areas. Invest in communication and planning strategies to share critical information during emergencies and disasters, making vulnerable communities a priority.

8. Support social cohesion and deeply connected communities. Support community ownership of resilience assets to strengthen local economies. Integrate equitable economic development strategies into resilience planning and respect

and support racial and cultural diversity and informal community networks. Provide high-quality public spaces and access to quality education, health care, food, and the arts.

9. Use innovative financing to strengthen community resilience and livability.

Use municipal bonds, public-private partnerships, and other strategies to finance energy efficiency, extreme weather, and climate change preparedness. Leverage federal, state, and county funds to buy out high-risk properties and help residents voluntarily move out of flood-prone areas. Partner with non-profit groups and the private sector to increase residents' access to insurance and loans to lower their risks in the face of extreme weather and flooding.

Through these actions, mayors across the country can strengthen the climate change resilience, public health, and prosperity of all their city residents.

A new reality for cities

Resilience, equity, and a just and low-carbon economy are key for residents to thrive in a changing climate

Just after President Donald Trump announced his plan to pull the United States out of the Paris Agreement, New Orleans Mayor Mitch Landrieu (D), who is the president of the U.S. Conference of Mayors—a bipartisan group of mayors from across the country—said, “on behalf of the Conference, it is our collective opinion that withdrawal from the Paris Climate Accord is a shortsighted decision.” Landrieu denounced Trump’s Paris withdrawal plan as a misguided attempt “pitting environmental protection against economic growth, which is a false choice.”¹² In June, the U.S. Conference of Mayors adopted a set of ambitious resolutions, including a commitment to meet 100 percent of urban electricity needs with renewable energy by 2035. It also called for more federal funds to help cities diversify their energy supplies, strengthen their resilience to extreme weather emergencies and disasters, and accelerate the electrification of the transportation sector.¹³

In response to President Trump’s attempts to roll back bedrock environmental protections to enhance fossil fuel industry profits at the expense of clean air and public health, more than 2,000 U.S. mayors, governors, businesses, investors, and academic institutions had signed the “We Are Still In” declaration as of August 2017.

“[O]n behalf of the Conference, it is our collective opinion that withdrawal from the Paris Climate Accord is a shortsighted decision.”

New Orleans Mayor
Mitch Landrieu

The signatories, which included upward of 220 mayors representing more than 120 million Americans and \$6.2 trillion of the U.S. economy, agree that “fighting climate change brings significant economic and public health benefits.”¹⁴ The signatories further committed to accelerate and expand their actions to curb climate change, “no matter what policies Washington may adopt.”¹⁵

In addition to the “We Are Still In” initiative, 369 U.S. mayors committed to a Mayors National Climate Action Agenda “to cut greenhouse gas emissions, create a clean energy economy, and stand for environmental justice.”¹⁶ Another 133 U.S. cities joined the Global Covenant of Mayors for Climate & Energy—an international alliance of cities committed to cutting carbon pollution and strengthening urban resilience to climate change threats.¹⁷

Mayors pursuing climate resilience strategies recognize that the cost of reducing climate change threats is minuscule relative to the high cost of inaction, often paid in billions of dollars, damage to property, diminished public health, and loss of human life.¹⁸ Moreover, if designed well, city climate plans will cut carbon pollution, prepare communities for the effects of rising temperatures, and support other priorities—from creating new economic opportunities and lowering energy bills to improving air quality and supporting racial justice.¹⁹ Cities are already embracing a host of solutions that curb pollution and strengthen community resilience to a changing climate, including increasing the energy efficiency of buildings, supporting solar installations, improving access to public transit and bike-share programs, upgrading aging energy and water systems, and expanding urban tree canopy and city parks, among many other initiatives.²⁰

Putting equity at the core of climate change solutions

In a nation deeply divided by economic disparities, the problem of social and economic inequality continues to be a significant concern in cities and communities around the country. Lack of access to good jobs and other economic opportunities; disproportionately high air and water pollution and public health risks; limited availability of affordable, safe, and energy-efficient housing; and the absence of affordable and clean energy sources are all issues that stem from historic inequities and racial injustices that still plague U.S. cities.²¹ These challenges—the legacy of systemic racism, social injustice, and discriminatory policies—are compounded by the present-day problem of climate change.

Together, these issues put families struggling to make ends meet, and who are already overburdened by polluted air and water, on the front lines of the harmful impacts of a hotter world.

Climate change and social justice experts have concluded that “climate resilience requires more than technical fixes.”²² To build resilient cities, mayors must also support policies that redirect an off-kilter economy that has historically benefited the few by enabling the accumulation and concentration of resources and power. To accomplish this, mayors must tear down barriers to economic opportunities for working families and those who have borne the disproportionate costs of environmental and racial inequality.

Mayors can use climate resilience planning as a cornerstone for building inclusive, sustainable, and equitable cities across the nation, while also reducing the risks, costs, and harmful effects of climate change.²³ Increasingly, community leaders are advocating that mayors adopt resilience strategies that reduce the threat of climate change and other shocks, while helping communities “bounce forward” to become more sustainable, equitable, and prepared to meet the challenges and economic opportunities of the 21st century.²⁴

Recognizing these challenges and opportunities, the U.S. Conference of Mayors’ June resolution to transition to 100 percent clean, renewable energy commits mayors to ensuring that the benefits of this transition are equally shared with struggling communities. The mayors resolved to do this by “creating quality careers adhering to local source hiring, a just transition for workers displaced by fossil fuel reduction, equitable access through ownership and benefits to create new opportunity for historically marginalized communities, and affordable clean energy options.”²⁵

Designing climate strategies that work for everyone

As the findings in this report reveal, there is no cookie-cutter approach to strengthening urban resilience. For this reason, climate change resilience initiatives look somewhat different across cities. To reduce climate change threats effectively, city leaders must embrace a comprehensive approach that includes strategies to: increase economic opportunities; transition toward renewable

energy sources; and prepare communities for more extreme weather and other climate change effects. At the same time, these strategies must address legacy social, economic, and environmental inequality.²⁶

Like many risk management strategies, investing in climate change resilience pays big dividends. For example, every \$1 invested in disaster risk reduction and community resilience saves \$4 in future disaster costs.²⁷ The insurance company FM Global estimates that businesses that made a \$7,400 investment to reduce extreme weather risk ahead of Hurricane Katrina averted an average of \$1.5 million in losses.²⁸ These cost savings were 200 times higher than the initial investment. In addition to minimizing disaster damages and infrastructure maintenance costs, city investments in community resilience reduce insurance costs, protect public health and safety, drive long-term economic growth, and enhance the value of sustainable urban spaces. (see the third recommendation below)²⁹

Still, the financial burden of reducing climate change risks can be crushing for cash-strapped cities already struggling to modernize crumbling infrastructure and improve the quality of city services. Under the strain of tight budgets, urban sustainability and resilience programs are often underfunded.³⁰ City leaders increasingly need to explore nontraditional approaches to project financing to support resilience initiatives. For example, cities can leverage municipal bonds and public-private partnerships to reduce rising extreme weather, flooding, wildfire, and other climate change risks. Similarly, energy-savings-performance contracting allows cities to pay for energy efficiency improvements with their energy bill savings.³¹ As the resilience and clean energy field matures, cities are looking to adopt other innovative strategies, such as microgrids—small networks of electricity consumers with a local energy supply source that is often connected to a central grid but can operate independently—and community-ownership models that not only supply renewable energy but also provide direct community economic benefits and enable community governance of energy systems.

The findings in this report reveal that city leaders can craft climate change solutions that build just and resilient cities, and that support a fair and low-carbon economy, by embracing the nine recommendations detailed below.

Recommendations

1. Make equity, racial justice, and a just economy core goals of city resilience and climate action plans

Systemic and historic disparities, driven by discriminatory policies and land-use planning, often perpetuate and exacerbate climate change risks and impacts.³² For example, industrial facilities, power plants, toxic-waste sites, and landfills—all with their associated environmental hazards—have historically been concentrated within and alongside communities of color and communities where families also face economic and social challenges. These legacy environmental risks pose daily air and water health hazards for residents, and they multiply threats in communities that are also most susceptible to flooding, heat waves, poor air quality, and displacement.³³

Paradoxically, communities that are most at risk in a changing climate also face the greatest barriers to securing the financing needed to strengthen their infrastructure, including schools, hospitals, and community centers and housing. For these reasons, transitioning to a just economy by creating new economic opportunities that support higher and safer living standards is fundamental to improving urban resilience in a changing climate. To support this transition, city leaders must make equity, racial justice, and a just economy core goals of their climate action and resilience plans.³⁴

Some cities have included equity and justice goals and principles in their climate action and preparedness plans, including Baltimore;³⁵ Berkeley, California;³⁶ Boston;³⁷ Cleveland;³⁸ Newark, New Jersey;³⁹ New York City;⁴⁰ Los Angeles;⁴¹ Oakland, California;⁴² Portland, Oregon;⁴³ and Washington, D.C.⁴⁴ For example, Boston's citywide resilience plan is framed around the goals of expanding economic opportunities for all residents, while tackling systemic racism and developing city policies using a racial equity lens. At an event to announce the plan's release, Mayor Martin J. Walsh (D) said, "True resilience requires us to go beyond treating the symptoms of inequality, to changing the structures that produce it."⁴⁵

Boston's plan includes new initiatives to train and provide tools to city staff to shape more equitable city policies, partner with businesses and nonprofit groups to launch a collective effort to fight racism, hold workshops for Bostonians to unpack the history of racism and inequity and to build relationships, and break down historic barriers to economic opportunities.

In that same vein, when designing Baltimore's disaster preparedness plan, city officials from the Office of Sustainability acknowledged the city's role in redlining—the practice of denying homeownership opportunities and other services based on race and ethnicity—and other discriminatory policies.⁴⁶ This acknowledgment was critical to opening up an honest dialogue with communities about how city housing practices forced people of color into more flood-prone areas of the city with limited access to economic opportunities and quality housing.

Building the trust of communities

While centering city climate plans around social equity and racial justice goals is critical to achieving a just economic transition, this step alone it is not enough to improve the livability of all communities. Historic injustices and discriminatory policies not only have created an imbalanced economy but have also fostered public mistrust of civic institutions.⁴⁷ To work effectively with communities to design and implement inclusive resilience strategies, city leaders must take deliberate and sustained steps to build trust. This begins with developing effective and mutually beneficial partnerships with community organizations and evaluating and removing barriers to community participation in public engagement processes, as discussed in the second recommendation below. This trust-building effort also requires cities to invest time and resources in historically underresourced communities.

In Baltimore, city officials invested substantial time in holding small-group meetings with residents in their neighborhoods to build the relationships needed to have an open and meaningful dialogue about extreme weather risks intensified by climate change and to identify resilience solutions that align with community needs and priorities. Through this process, city staff recognized the need to install urban heat island sensors—which monitor heat risks in already warmer-than-average urban neighborhoods, where concrete and asphalt surfaces absorb and radiate heat—and identified effective flood-proofing strategies. According to Kristin Baja,

“True resilience requires us to go beyond treating the symptoms of inequality, to changing the structures that produce it.”

Boston Mayor
Martin J. Walsh

Baltimore's former climate and resilience planner, this kind of relationship and trust-building "pays off in the form of a better more effective resilience plan that communities support and engage in as implementation partners."⁴⁸

Similarly, Seattle city staff charged with designing the city's climate resilience plan are working to build trust within communities by partnering with trusted community organizations and leaders in low-income neighborhoods and communities of color to involve residents in the planning process.⁴⁹ City resilience staff launched an Environmental Justice Committee to support community trust-building efforts and to advance the Equity and Environmental Agenda developed jointly by city staff and community leaders to develop community-driven solutions to climate change and ensure government accountability.⁵⁰ In addition, the Seattle Department of Neighborhoods' Community Liaisons, a bilingual and multi-cultural team that supports the city's outreach efforts, is building relationships and sharing information with community members, and structuring respectful engagement processes to help city leaders understand and address racial justice challenges during city planning and policymaking.⁵¹

City leaders can help city staff better understand historic barriers to opportunity, and confront their own biases, by requiring regular bias and racial justice training. For example, in Seattle, city staff receive training in institutional racism and climate justice so that they are better equipped to recognize and reduce the disproportionately high climate change risks confronting communities of color and struggling families.⁵² In Baltimore, city officials and community ambassadors working to strengthen the city's disaster resilience and sustainability receive racial and social justice, equity, and inclusion training.⁵³

Some cities are also working to build trust with community groups and members by diversifying their city staff at all levels, so that city government reflects the community it serves.⁵⁴ For example, in Boston's resilience plan, Mayor Walsh committed to changing the city's human resource practices to expand the diversity of city staff by more effectively recruiting new hires from communities of color and by re-establishing a mayor's diversity task force.⁵⁵

In addition, city leaders must break down traditional silos across city planning agencies so that staff members can work collaboratively with each other and community groups to implement climate resilience and pollution reduction strategies. Lastly, city officials must develop and implement accountability measures that ensure progress toward racial and economic equity.

The above steps are critical to ensuring that city climate action and resilience plans are effective, inclusive, and widely supported by city residents. By taking these steps, city leaders can accelerate the transition to a just and low-carbon economy, as well as build solid partnerships with community leaders to strengthen neighborhood capacity to help design and implement climate resilience strategies that work for everyone.

2. Collaborate with community groups and build neighborhood capacity to shape and implement climate solutions

City leaders have traditionally used conventional stakeholder and neighborhood advisory processes to engage communities when designing city plans. As city officials recognize the need for equity-based climate resilience planning, city leaders and community groups are creating innovative ways to ensure that residents' perspectives are integrated into the process. These include placing equity as a primary focus of stakeholder participation and developing processes that can be flexible to meet the needs of community participants. To move a stated focus on equity from words to meaningful action and outcomes, city leaders are increasingly collaborating with community organizations and coalitions, and ideally, they would help facilitate funding and resource development for these groups.

Engaging communities

In Portland, community groups collaborated with city staff to design an effective community engagement process. Acknowledging that community organizations serving overburdened residents are often stretched to capacity, city officials secured funding to support their important role in this work. The result was the establishment of an Equity Working Group comprised of community organizations that represent low-income residents and communities of color.⁵⁶ Through their active engagement in the working group, members were able to build their own organizational capacity. For example, one of the member organizations was able to create a Native American Tribal Council on Climate Change, while others hired new staff to work on climate change and resilience issues.

Working with community coalitions

The city of Minneapolis is advancing its own learning on how to collaborate with existing community coalitions that are already working on health, housing, and community development issues to inform and participate in city resilience planning and processes. Building on these existing coalitions, the Environmental Justice Working Group was established as part of the climate action planning process. In 2013, the group secured the city's commitment to create a Green Zones initiative to improve neighborhoods that face the cumulative impacts of environmental, social, political, and economic vulnerability. The Green Zones will help target investments in energy efficiency, renewable energy, and green infrastructure projects, along with advancing a community-driven vision for improved sustainability and environmental justice. Community organizations continue to participate in the city's ongoing efforts, conducting a health impact assessment in 2015 to measure air quality, energy vulnerability, and other quality-of-life improvements in Green Zone communities.⁵⁷

In Oakland, the Oakland Climate Action Coalition (OCAC) is a community platform for climate change strategy development and action. The OCAC was founded with the goal of advancing policies that address climate change, environmental pollution, health, and social justice. Thirty community organizations with a complementary set of skills and capacities—including research, advocacy, organizing, and job training—formed the coalition to address equity in environmental and community health in the context of climate change. The OCAC effectively catalyzed a more robust and comprehensive community engagement process for Oakland's Energy and Climate Action Plan, and it provided important lessons learned on the opportunities and challenges of community participation and the inclusion in climate resilience plans of strategies to support economic and racial equity.⁵⁸

The OCAC was founded with the goal of advancing policies that address climate change, environmental pollution, health, and social justice.

Fostering community leadership

City leaders and community groups can also foster local leadership by training and educating community members to become so-called climate ambassadors. In Cleveland and Baltimore, climate ambassadors are community residents dedicated to building and sharing their knowledge about the effects of climate change and programs and strategies to build climate resilience in their communities. These ambassadors also assist city officials in developing locally designed and

neighborhood-led climate resilience strategies.⁵⁹ Community advocacy groups can also serve as ambassadors. In Miami, for example, the CLEO Institute conducts community outreach in communities of color and struggling neighborhoods to raise awareness of climate change risks, support leadership within communities, and empower residents to help develop solutions that will make their communities more resilient.⁶⁰

Increasing participation in public engagement processes

Some city leaders are also partnering with community groups to assess the effectiveness of existing public engagement processes and address barriers to meaningfully involving communities of color and neighborhoods struggling to make ends meet. This includes providing resources to encourage participation such as transportation and child care assistance and using appropriate cultural protocols to support respectful dialogue. To develop Baltimore's Disaster Preparedness Project and Plan, city officials met with 42 different stakeholder groups and community members.⁶¹ To increase participation at the town hall meetings on the plan, city officials provided transportation and child care support.⁶²

Lastly, city officials must engage community groups and members at all stages of developing and fully realizing climate change plans and solutions, including during priority setting, design, and implementation. While the above steps require an investment of time and resources on the part of city officials and community groups, taking them will deliver significant long-term benefits for cities and community members. Reflecting on her experience working with the city of Portland, an Equity Working Group member said that the collaboration "actually shifted the group from being constrained by existing silos and processes of government to a broader conversation of 'what kind of outcomes, shifts, [and] changes do we want to see?' and then ... fundamentally change[d] the way [Portland] approaches the solutions to those problems."⁶³

3. Expand economic opportunities and the availability of affordable housing

The current economy is deeply imbalanced: It supports the accumulation and concentration of resources and power among the wealthiest few at the expense of equal access to clean air, water, and economic opportunities and the well-being

of society.⁶⁴ The Trump administration's policies aim to perpetuate this imbalance, including by slowing the ongoing transition away from a fossil fuel-driven economy toward renewable and clean energy sources.

Mayors are well-positioned to help realign the economy to restore depleted ecosystems, strengthen community resilience, and support racial justice and social equity to fulfill the ideals of democracy.⁶⁵ City leaders can help rebalance the economy by designing climate solutions and resilience strategies that tear down barriers to economic opportunities for those who have shouldered the disproportionate costs of environmental and racial inequality.

Creating new economic opportunities through local hiring and job training

Some cities are already designing clean energy and climate change solutions that create pathways to new economic opportunities and jobs. Clean energy and other job training programs can help residents develop needed skills to pursue quality careers, while empowering people to improve the livability of their neighborhoods.

In Cleveland, Ohio, the Evergreen Cooperatives, made up of three businesses—Evergreen Energy Solutions, Green City Growers, and Evergreen Cooperative Laundry—help residents in low-income areas find jobs, build financial stability, and ultimately buy homes. The cooperatives provide fresh produce and energy and laundry services to partner institutions, including local hospitals and universities. In exchange, these partners train and hire local residents seeking jobs.⁶⁶ As described in the fourth recommendation below, Washington, D.C., is creating pathways to renewable energy jobs through a solar photovoltaic installation training program, and is exploring options to provide job training for building and maintaining parks and other green infrastructure to cool neighborhoods and reduce flood risks.⁶⁷

Recognizing the opportunity to expand local hiring to construct a series of large-scale water infrastructure projects during the next 10 years, Washington, D.C., launched its DC Water Works initiative to support local hiring for the Water Authority's contractor workforce. The initiative aims to have local residents make up at least 51 percent of its contractor workforce and to fill 60 percent of new DC Water Works jobs with local hires. DC Water Works also supports job training, monitoring programs, and apprenticeships to develop the skills needed to build urban water infrastructure.⁶⁸

Improving healthy and inclusive development without displacing low-income residents

In some cities—such as Atlanta; Buffalo, New York; Los Angeles; Nashville; Newark; Oakland; and New York City—efforts to make neighborhoods more livable and sustainable have benefited some people but harmed others.⁶⁹ For example, community improvements that drive up housing prices and other living costs, when layered on top of growing economic disparities, can force existing residents out of neighborhoods where they have lived for years. When longtime residents are pushed out of their communities, the neighborhood culture, identity, and history can be lost.⁷⁰

In Miami, community members and advocates have observed a rise in real estate investment in higher-ground neighborhoods—those farther from the beach and safer from sea level rise—that may escalate the risk of displacement in low-income areas and communities of color.⁷¹ Historically, many of Miami’s high-ground communities were established by low-income people of color because they were more affordable than waterfront areas.⁷² Community groups are studying real estate trends in high-ground neighborhoods to better understand the challenge and to identify possible solutions.

In 2010, a rainstorm dropped more than 13 inches of rain in a 36-hour period, causing devastating flooding of the Cumberland River, which cuts through Nashville.⁷³ Despite efforts to repair the homes of the nearly 10,000 people displaced by the flood, many homes were beyond recovery. Quickly rising rents and housing prices driven by both economic recovery and postflood development created few affordable housing options for low-income residents left homeless by the flood, forcing many to move.⁷⁴

Displacement has dire consequences for the health, safety, and well-being of those affected. For example, uprooting residents from their communities pulls children out of schools, interrupting their education; severs closely knit community social networks and support systems; and forces families to pay relocation costs and to move into unhealthy, unsafe, and overcrowded housing.⁷⁵ To better understand and minimize displacement risks, city officials must monitor the effects of community development projects on housing prices and on changes in the makeup and movement of the community’s residents.

City leaders can improve access to well-paying jobs by expanding public transit systems, as discussed in more detail in Recommendation 5. But new public transit projects can also draw higher-income earners, driving up housing costs for existing residents. To support healthy and inclusive development without displacing people from their neighborhoods, some city leaders are working with community groups to develop anti-displacement strategies before new development and resilience projects are planned and announced.⁷⁶ These strategies should be designed with community leaders and groups to help existing residents continue to live in their communities, even as hard-fought neighborhood improvements cause housing prices to climb.

Creating community land trusts to expand and protect affordable housing

A growing number of city leaders are working with community groups to create community land trusts to support long-term housing affordability and to make homeownership more sustainable.⁷⁷ A community land trust (CLT) is a nonprofit, community-based organization that acquires and manages land for affordable homes and other community development projects. The CLT locks in ownership of the land in perpetuity, removing it from the speculative real estate market, and leases it to homeowners or other entities, including cooperative housing corporations.⁷⁸

Cities can donate vacant and abandoned land or other city property to CLTs to support the permanent availability of affordable housing. CLTs can also be used to secure property for collective ownership of solar installations, green infrastructure, food gardens, and local businesses. There are currently about 220 active CLTs in the United States, including in New York, California, Washington, and Massachusetts.⁷⁹ Community ownership, supported by CLTs, together with local advocacy groups and community-led advisory boards, can empower communities to implement their own visions of community livability and resilience, while reducing the risk of pricing out existing residents in the process.

People United for Sustainable Housing (PUSH) Buffalo, a community organization dedicated to rebuilding Buffalo's West Side, is working to establish CLTs to prevent the displacement of people and to preserve community culture.⁸⁰ In the Ironbound section of Newark, New Jersey, where a multiracial and multicultural mix of roughly 50,000 residents lives alongside heavily polluting industrial sites, the Ironbound Community Corporation is working to establish a CLT and help

set priorities for vacant and abandoned land use as part of a broader strategy to create a just, sustainable, and climate resilient community.⁸¹ CLTs can be an important part of the solution to affordable housing shortages. Nonetheless, the often high cost and limited availability of building sites, and the inadequate availability of funds to launch CLTs, challenge the scalability of the CLT model.⁸²

Supporting inclusionary zoning to increase access to high-opportunity neighborhoods

City officials can also make housing more affordable for all residents, desegregate neighborhoods, and help people stay in their own communities as they improve by eliminating exclusionary zoning and land-use policies.⁸³ Many cities are already doing this through inclusionary zoning that requires new development projects to include a specific portion of affordable housing units.

In November 2016, Los Angeles voters passed Measure JJJ with 64 percent of the vote to expand construction of more affordable housing by the local workforce that would be situated near public transit stops. In March, the city released Measure JJJ implementation guidelines, which set different requirements for affordable housing depending on how close the development is to public transit.⁸⁴ According to the guidelines, new housing construction within 750 feet of a public transit stop has the option of building 11 percent of the units for tenants earning less than 30 percent of the median income, 15 percent for those earning less than 50 percent of the median income, or 25 percent for those earning less than 80 percent of the median income.⁸⁵ In exchange, the city offers developers options to make up for lower income earnings from the affordably priced units, which include loosened parking, setback, density, and building height requirements.⁸⁶ By supporting inclusionary zoning policies, city leaders can maintain affordable housing options and help people stay in their own communities, even as new development and neighborhood improvements drive up rents.

Ending unfair rent hikes and illegal evictions

Cities must also pass and enforce policies to put a stop to illegal evictions. Nationwide, including in the Ironbound community of Newark, residents are harassed by the U.S. Immigration and Customs Enforcement (ICE) or illegally evicted by landlords for minor code violations—or no reason at all. The Ironbound

Community Corporation is helping residents understand their basic tenant rights to avoid illegal evictions as part of a broader strategy to create a just, climate change resilient, and sustainable community.⁸⁷

In November 2016, more than 70 percent of Oakland voters passed Measure JJ to protect renters from unreasonable rent hikes and evictions.⁸⁸ The measure—backed by a broad coalition of housing, labor, community, and faith groups—aims to address the ongoing housing supply and affordability crisis, where housing prices are the fourth-highest in the nation and 60 percent of the city’s residents are renters.⁸⁹ Measure JJ requires landlords to file a petition to raise rents beyond the annual consumer price index increase and strengthens a previous “just cause for eviction” measure to protect tenants from eviction.⁹⁰ By maintaining fair rents and stopping illegal evictions, city officials can help prevent longtime residents from being pushed or priced out of their communities as new development and resilience improvement draw new residents and drive up housing costs.

4. Increase access to affordable and clean energy

Globally, cities use approximately 75 percent of the world’s energy and produce roughly three-quarters of global carbon pollution.⁹¹ In the United States, city leaders are exploring the multidimensional and cross-sectoral ways in which communities can transition to cleaner energy. City leaders are also pursuing opportunities to modernize urban infrastructure, including the energy system, and to develop innovative strategies to both improve energy production and consumption efficiencies and develop renewable energy. This includes supporting technological innovation and, just as importantly, developing groundbreaking initiatives that integrate social and economic equity into clean energy pathways.⁹²

Historically, benefits of and access to clean energy sources have not been equally shared. Low-income energy efficiency programs are only about 6 percent of total efficiency program budgets overall,⁹³ and the upfront costs of home or community renewable projects are prohibitive for low-income and many middle-class communities.⁹⁴ The legacy of community disinvestment in some neighborhoods has meant that housing and other community buildings require extensive rehabilitation and upgrading in order to be ready for energy efficiency or renewable energy technology installations.⁹⁵ Poor structural condition of property, low access to financing, and the challenges posed by rental housing—for example, landlords not taking advantage of energy savings programs and renters having little control over their heating and

cooling systems, including not owning roof space necessary for solar installations—create barriers for many community residents to participate in the benefits of a clean energy economy. (see Figure 1a)⁹⁶

FIGURE 1A

Less-efficient housing stock and fewer financial resources drive up the energy burden of low-income households



Note: The percentage of income that households spend on their energy bills is their energy burden.

Source: American Council for an Energy-Efficient Economy, "Report: 'Energy Burden' on Low-Income, African American, & Latino Households up to Three Times as High as Other Homes, More Energy Efficiency Needed," Press release, April 20, 2016, available at <http://aceee.org/press/2016/04/report-energy-burden-low-income>.

To address these challenges, mayors must embrace new standards for urban planning that will build sustainable, just, and equitable cities that are ready for the realities of climate change. Some cities are already redefining standards of urban progress by incorporating human health, job creation, and economic and social well-being criteria into energy-related decision-making and by developing metrics to assess the social and racial equity benefits of energy choices.⁹⁷ City leaders are recognizing that they must not only improve energy systems by using new and innovative technologies but also embrace energy infrastructure development that empowers communities to participate in energy decisions.⁹⁸ Cities are developing strategies to support diverse organizational and financing options for energy services—including community solar farms such as the Spartanburg, South Carolina, solar project described below—third-party leasing, and microgrids. In addition, mayors are codifying their commitments to achieve 100 percent zero carbon energy by 2035 or sooner through resolutions and other measures, and developing plans to achieve their targets.⁹⁹

Superstorm Sandy revealed the climate change resilience benefits of diversifying electricity services in cities. For example, the Co-op City housing complex in the Bronx neighborhood of New York City, which is equipped with a 40-megawatt

steam turbine and microgrid, continued to provide electricity, heat, hot water, and air conditioning to its 14,000 apartment units when the central grid failed and left other neighborhoods in the dark.¹⁰⁰

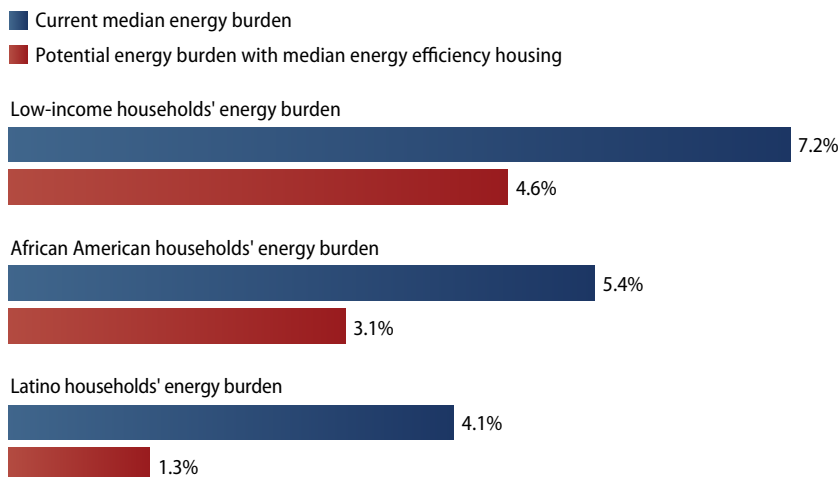
Saving money and cutting pollution with community efficiency programs

Cities can lower energy costs and cut pollution by adopting programs and policies that improve the efficiency of energy use by residents and businesses. (see Figure 1b) Boston supports an ambitious set of citywide initiatives and policies that reduce the energy use in communities and of city operations, buildings, energy and water utilities, and transportation. In recognition of these efforts, Boston was named the number one city in energy efficiency by the American Council for an Energy-Efficient Economy.¹⁰¹ Boston, like many U.S. cities across the country, has passed benchmarking ordinances that require larger nonresidential buildings and multifamily buildings to report their annual energy and water usage and to complete an energy assessment or take action to reduce energy use every five years.¹⁰² The U.S. Department of Energy's State and Local Energy Efficiency Action Network provides energy efficiency technical assistance, informational resources, model policies and programs, and peer connections to state and local leaders looking to launch energy efficiency programs.¹⁰³

FIGURE 1B

A more energy-efficient home creates a lower energy burden for low-income households and communities of color

Improving the efficiency of low-income housing to meet the national median efficiency level could cut communities' energy burden



Note: The percentage of income that households spend on their energy bills is their energy burden.

Source: Ariel Dreihobl and Lauren Ross, "Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low-Income and Underserved Communities" (Washington: American Council for an Energy-Efficient Economy, 2016), available at <http://aceee.org/research-report/u1602>.

Using brownfield redevelopment to support community solar projects

To help achieve the above goals, city leaders can redevelop brownfields—or former industrial sites that are environmentally contaminated—in ways that both remediate legacy pollution and increase investment in sustainable and clean energy. The U.S. Environmental Protection Agency (EPA) has screened more than 11,000 potentially contaminated sites and municipal solid-waste landfills on nearly 15 million acres of land to assess their suitability for renewable energy generation facilities.¹⁰⁴ In Spartanburg, South Carolina, community residents recognized that toxic cleanup is the first phase of redevelopment, followed by economic and technical assistance for small businesses. Leveraging a \$20,000 grant from the EPA Environmental Justice Small Grants Program into more than \$300 million for community redevelopment, the community now plans to build a solar project on a former landfill to deliver clean, renewable energy to Spartanburg residents.¹⁰⁵ The \$7 million solar project will transform the former 35-acre Superfund site into a 3.5-megawatt solar farm, with 1,200 solar panels

that can generate enough electricity to power 500 homes and offset carbon dioxide emissions by a total of approximately 4,000 metric tons, or the pollution emitted from roughly 800 cars.¹⁰⁶

Providing clean energy choices for communities

A growing number of cities are increasing access to clean energy by creating programs that allow community members to choose among various energy supply options. For example, the San Jose City Council has formed what is currently the largest community choice energy program in California. This program, called San Jose Clean Energy, allows the city government to aggregate the electricity-buying power of individual customers and develop alternative energy supply contracts on a communitywide basis. Customers can exercise choice by participating in the program or opting out. San Jose now requires San Jose Clean Energy to provide at least one option with 10 percent more renewable energy than the utility's power mix, as well as a 100 percent greenhouse gas emissions-free option. The initiative will launch in 2018 and is estimated to serve 300,000 customers by 2019.¹⁰⁷

At the same time, the program will provide up to 300 low-income single-family homes with solar power.

Building pathways to renewable energy jobs

Some cities are also expanding access to clean energy while creating new economic opportunities for residents. Washington, D.C., and other cities are creating pathways to renewable energy jobs by investing in renewable energy job training programs. For example, Solar Works DC will train up to 225 residents ages 18 and older to install photovoltaic systems over three years. At the same time, the program will provide up to 300 low-income single-family homes with solar power. The program is funded by a \$950,000 grant to a nonprofit organization, GRID Alternatives Mid-Atlantic, and will help link District of Columbia residents to the growing renewable energy job market.¹⁰⁸

In 2016, the District of Columbia experienced a 19 percent growth rate in solar jobs, creating a total of 1,180 jobs in the solar energy field. These jobs are projected to grow by 26 percent in 2017. By tying job training to solar system installations for low-income households, Solar Works DC is helping DC residents build employment skills and job readiness, while reducing energy costs and expanding access to clean energy for community members.¹⁰⁹

In addition to taking steps similar to the program noted above, cities have effectively leveraged federal programs, such as the HOME Investment Partnerships Program and Community Development Block Grants (CDBGs), to improve energy efficiency in new and existing buildings and to support energy conservation services and projects, including those led by community organizations in low- and moderate-income neighborhoods. These efforts have succeeded in providing economic, environmental, and health benefits to cities and their residents in the form of improved efficiencies and pollution reduction. Nonetheless, the Trump administration has proposed eliminating funding for both HOME and CDBGs. Mayors and community groups will need to continue to make the case to maintain funding for these vital programs that many communities, both rural and urban, rely on to increase access to affordable, energy-efficient, and safe housing.¹¹⁰

Lastly, city leaders can improve access to affordable and clean energy by implementing programs that offer incentives for residents, businesses, and nonprofits to install distributed energy resources, such as solar photovoltaic systems or grid-enabled water heaters, on their properties. For example, New Bedford, Massachusetts, launched services to help homeowners and small businesses purchase rooftop solar systems at a bulk discount rate, which once installed would help supply electricity to other buildings. Participating residents receive a tax rebate for the first two years of service and, on average, cut their energy bills by 25 percent.¹¹¹ As of 2013, this program helped New Bedford achieve the highest installed solar photovoltaic capacity on a per-capita basis in the continental United States. New Bedford aims to extend the benefits of solar power to renters and low-income residents by developing a community solar farm option, which would allow residents to purchase a share of a solar array instead of having to finance an entire photovoltaic system.¹¹²

5. Ensure access to affordable and clean transportation

In 2013, roughly 45 percent of U.S. households lacked access to public transit, and millions more had to make do with inadequate, infrequent, or unaffordable service, according to the most recent data available.¹¹³ Of the 81 percent of Americans who live in urban areas, only 51 percent of them can access grocery stores using public transit.¹¹⁴ A Brookings Institution report found that as of 2011, roughly 700,000 households in the 100-largest U.S. metropolitan areas did not own a vehicle and lacked access to public transit. Many millions more low-income households

with transit access are burdened with extreme commutes that take longer than 90 minutes.¹¹⁵ Many cities, however, are embracing new ways to improve the mobility of their residents, as described below. (see Table 1)

Reducing pollution by expanding public transit

The transportation sector substantially affects carbon pollution and air quality in U.S. cities. As of 2015, transportation accounted for 27 percent of total U.S. greenhouse gas emissions.¹¹⁶ Cars were responsible for more than half of those emissions, producing the most emissions per person per mile of any transit source.¹¹⁷ Public transit is significantly more efficient; on a person-per-mile basis, subways and metrorails produce 76 percent less greenhouse gas emissions than a single-occupancy vehicle, the most common mode of commuting, while light rail produces 62 percent less and buses produce 33 percent less.¹¹⁸

Improving extreme weather resilience by diversifying transit options

Extreme weather events often highlight gaps in mobility access and the need for resilient transit networks. At the time of Hurricane Katrina, one in five New Orleans households did not own a vehicle.¹¹⁹ These zero-vehicle households tended to have lower-than-average household incomes before the hurricane and fared worse leading up to the storm and in its wake because they were unable to evacuate safely and protect their property.¹²⁰ The aftermath of Superstorm Sandy also illustrated the importance of transit system resilience. More than half of total U.S. mass transit commuters were located within Sandy's impact region. Millions of public transit commuters were forced to use personal vehicles after the storm forced closures of subway, commuter rail, and bus systems, causing massive gridlock and higher air pollution.¹²¹

In the wake of Superstorm Sandy, a commission formed by New York Gov. Andrew Cuomo (D) recommended strengthening and expanding existing public transit systems and building a bus rapid-transit network to give people safe and affordable options before extreme weather events.¹²²

An overdependence on personal vehicles and highways can short circuit a city's resilience to extreme weather events other than hurricanes as well. In 2014, metropolitan Atlanta's highway system was shut down by two inches of snow.

Atlanta residents, unaccustomed to driving during winter storms, were caught in gridlocked commutes that lasted up to 20 hours. The next year, to avoid similar challenges in the future, the city launched its Atlanta Beltline plans to link its existing rail and bus system with 22 miles of streetcar lines and 33 miles of multiuse trails. The Atlanta Beltline will open in phases that lead up to its anticipated completion in 2030. The mobility plan also serves as an anchor for an estimated 5,600 affordable housing units, 1,100 acres of brownfields remediation, and 30,000 new jobs.¹²³

Enhancing regional transit and resilience

City leaders should also consider regional approaches to expand public transit access. In Ann Arbor, Michigan, for example, a city well-served by public transit, planners recognized a regional need for improved transit access in the neighboring, lower-income city of Ypsilanti.¹²⁴ The regional transit authority is increasing its public transit service by 44 percent to expand bus service in the region, while also cutting pollution; increasing access to jobs, health care, and fresh food markets; and boosting the region's resilience.¹²⁵

Using low- and zero-emission bus rapid transit and electric buses

Many city leaders are improving mobility for city residents by increasing bus rapid-transit services. For example, Los Angeles recently passed a nearly \$1 billion-per-year transit and traffic improvement investment package over 40 years that includes bus rapid transit as a major component.¹²⁶ The plan will add 465,690 new jobs across the region and stimulate \$79.3 billion in economic output in Southern California. The new bus system aims to take advantage of the city's extensive highway system to improve city connectivity and reduce congestion and pollution.

Some cities are tackling pollution and heavy traffic simultaneously with electric buses. For example, Chicago aims to reduce traffic congestion and air pollution by piloting an electric bus program. Each electric bus reduces pollution equivalent to about 23 cars on city roads, in addition to reducing noise pollution. In coming years, Chicago plans to invest in up to 30 buses, saving up to an estimated \$9 million on fuel costs over the lifetime of the electric bus fleet.¹²⁷ With Chicago's history of top-down decision-making, city leaders must prioritize equity and

The city launched its Atlanta Beltline plans to link its existing rail and bus system with 22 miles of streetcar lines and 33 miles of multiuse trails.

inclusivity in designing resilience and climate change solutions, and collaborate more with community groups, many of which are spearheading innovative sustainability and resilience strategies.¹²⁸

Exploring mobility-boosting alternatives to public transit and personal vehicles

Not all transit solutions involve buses, bikes, or trains. Advancements in mobile connectivity have enabled the rise of carpooling, ride-share programs, and transportation network companies (TNCs) such as Lyft and Uber. While government at the municipal, state, and federal levels is still developing regulations for these nascent transportation options, these alternatives have the potential to shore up mobility gaps for those without the ability to drive or access a personal vehicle or adequate public transit.¹²⁹ While TNCs could help encourage more drivers to rely less on personal vehicle use for mobility, they may also have a negative effect on the taxi industry in urban areas, which offers higher wages than TNCs and is well-regulated for public safety.¹³⁰ According to the National Academies of Sciences, Engineering, and Medicine, “if TNCs weaken or bankrupt many taxi services, then those without credit cards and smartphone access may find themselves with fewer mobility options than before.”¹³¹ Policy leaders at the local, state, and federal levels must carefully evaluate the potential impact of TNCs on employment conditions and wages, accessibility and equity, and public safety as they design TNC regulations.

Some cities are also exploring sharable electric cars to increase residents’ mobility, minimize traffic congestion, and curb air pollution. In 2017, for example, Los Angeles launched a pilot program to bring 100 fully electric sharable cars to the city. The cars are available to residents at a sliding rate based on earnings because, as Los Angeles Mayor Eric Garcetti (D) said, “income should not dictate people’s activism.”¹³² In the same vein, a pilot project sponsored by the California Air Resources Board offers up to \$12,000 to low-income families to upgrade their cars to more efficient models.¹³³

To support electric personal vehicles, sharable cars, and taxis, cities are also expanding electric car charging infrastructure and offering financial incentives to make electric vehicles more affordable. Portland, Denver, and Atlanta are ranked among the top three U.S. cities providing access to charging stations for personal

electric vehicles.¹³⁴ In some cities, taxi drivers have upgraded to electric cars to better compete with TNCs for rides, only to find a scarcity of charging stations within city limits.¹³⁵

Self-driving cars have lately received attention in Congress, and many mayors have been understandably intrigued by their potential. The industry is still too new, however, to speculate on the widespread impact of self-driving cars, either on general mobility or on air quality.¹³⁶

Expanding affordable bike-share access and bicycle safety awareness

City officials are also improving residents' mobility at a relatively low cost through bike-share programs. Currently, 119 U.S. cities have bike-share programs, with the three largest in New York, Chicago, and Washington, D.C.¹³⁷ Some cities are improving access to bike-share programs for residents struggling to make ends meet by offering discounted membership fees. In 2015, for example, Chicago's highly successful Divvy bike-share program began offering a one-time \$5 annual membership fee, down from the standard annual fee of \$75, for low-income residents and allows cash payments for residents who do not have a credit or debit card. Nonetheless, the discounted annual fee expires after two years, forcing low-income residents to drop their Divvy membership if they cannot afford to pay the standard membership rate.¹³⁸






Community-based organizations are also working to encourage biking and bike-share participation in low-income areas. In Chicago, the Urban Juncture Foundation is helping improve the mobility of Bronzeville neighborhood residents—a historic and culturally rich community that was devastated by discriminatory housing practices and an expressway that cuts off residents from economic opportunity—by leading bike safety workshops to encourage biking and bike-share program use.¹³⁹ Lastly, city officials across the country should expand safe bike lane networks beyond central business districts to low-income areas and communities of color.

Creating a pedestrian-friendly city

A strategy to expand public transit and increase mobility options will fall short unless accessing these options is safe and convenient for residents. Many cities are taking steps to make their neighborhoods more walkable to reduce the number of cars on the road, as well as the number of traffic accidents. For example, 27 U.S. cities, including Austin, Texas; Denver; Charlotte, North Carolina; Columbia, Missouri; and Macon, Georgia, have joined Vision Zero—a multinational effort to cut road fatalities and severe injuries to zero.¹⁴⁰ Charlotte is meeting its Vision Zero commitment by implementing a speed and red-light camera plan and improving traffic corridor and intersection safety.¹⁴¹ These steps help reduce traffic accidents and encourage residents to use more environmentally friendly mobility options, including walking and biking. In addition, 82 communities, including Reading, Pennsylvania; West Hartford, Connecticut; South Bend, Indiana; and Omaha, Nebraska, have embraced what are termed Complete Streets strategies, which aim to make streets more accessible to people, not just cars.¹⁴²

TABLE 1
Mayors expand cleaner, safer ways to get around town

Cities are embracing new innovations and proven best practices to improve mobility for more residents

				
Subway	Bus rapid transit	Carpooling	Bike-sharing	The Vision Zero Network
Streetcar	Electric bus	Ride-sharing	Discounted bike-share fees	The Complete Streets program
Light rail	Linked regional bus systems	Electric taxis	Bike safety workshops	Improving sidewalks and intersections
	Providing seats and shade at bus stops	Electric charging infrastructure	Protected bike lanes	Green infrastructure along sidewalks and multiuse paths
		Financial incentives for electric and more-efficient personal vehicles		

Source: Kelsey E. Thomas, "16 U.S. Communities Get Nod for Solid Complete Street Policies," Next City, April 12, 2016, available at <https://nextcity.org/daily/entry/complete-streets-coalition-2015-best-complete-streets-plans>; Vision Zero Network, "Vision Zero Cities Map," available at <http://visionzeronetwork.org/resources/vision-zero-cities/> (last accessed September 2017); Megan Fencil, "Can Vision Zero reverse Charlotte's rapidly rising traffic crash fatality rate?," Sustain Charlotte, May 10, 2017, available at <http://www.sustaincharlotte.org/visionzerocity>; U.S. Environmental Protection Agency, "What is Green Infrastructure?," available at <https://www.epa.gov/green-infrastructure/what-green-infrastructure> (last accessed September 2017); Daisy Simmons, "Chicago Sees Benefits of Electric Buses," Yale Climate Connections, December 22, 2016, available at <https://www.yaleclimateconnections.org/2016/12/chicago-sees-benefits-of-electric-buses/>; Martin Di Caro, "With No Place To Charge, D.C.'s Electric Cab Drivers Ask for Help," WAMU 88.5, August 14, 2017, available at <http://wamu.org/story/17/08/14/no-place-charge-d-c-s-electric-cab-drivers-ask-help/>; Eric Schaal, "Need Juice? Best American Cities for Charging Your Electric Vehicle," CheatSheet, June 21, 2017, available at <https://www.cheatsheet.com/automobiles/10-top-cities-for-driving-electric-vehicles-in-america.html?a=viewall>.

6. Invest in resilient infrastructure and nature-based strategies to reduce climate risks

More frequent climate change-driven extreme weather events will increase the strain on aging roads, bridges, water pipes, and electrical grids—infrastructure that supports city economies and the daily lives of city residents.¹⁴³ Large-scale weather disasters such as Superstorm Sandy have laid bare the vulnerability of existing infrastructure to more severe storms in a changing climate. Sandy caused massive power outages across New York and New Jersey, leaving more than 8.5 million customers without power.¹⁴⁴ Moreover, sea level rise, heavy downpours, and heat waves are already taking a toll on critical urban infrastructure and are expected to cause even more damage as the climate continues to change.¹⁴⁵

Unfortunately, President Trump’s infrastructure proposal does not offer workable solutions to address these pressing challenges. Instead, Trump has proposed tax cuts to enrich investors, rather than provide the direct federal funding that cities need to support critical infrastructure improvements.¹⁴⁶ Just days before Hurricane Harvey hit Texas, President Trump canceled a flood-risk standard that protected new infrastructure from flooding and costly repairs. This move was a gift to developers and big corporations looking for shortcuts in building new infrastructure projects, and it will put communities at risk, while taxpayers will pick up the tab.¹⁴⁷ In the absence of federal leadership, mayors must lead the call for infrastructure systems that both cut carbon pollution and can withstand more frequent heat waves, drought, floods, and extreme weather wrought by climate change.¹⁴⁸

Some cities are already taking steps to redesign their infrastructure to prepare for a warming world. For example, the city of Miami Beach, facing nearly a foot of sea level rise by 2030, is investing an estimated \$500 million to protect vital systems from high tide, or “sunny day,” flooding. The project will modernize the city’s plumbing system, raise sea walls, and elevate roads.¹⁴⁹ Meanwhile, Grand Rapids, Michigan, is spending roughly \$300 million on sewer upgrades to stop sewage overflows into the Grand River—a growing problem as more frequent and severe rainstorms inundate the city.¹⁵⁰

Better infrastructure and building design guidelines and codes

After Superstorm Sandy, New York City officials recognized that relying on building and infrastructure design codes developed based on historic weather data, rather than projections of more intense extreme weather and flooding with climate change, was no longer safe for New Yorkers. In April 2017, the city released preliminary Climate Resiliency Design Guidelines to support stronger and safer infrastructure and building designs in a hotter, more extreme weather- and flood-prone world.¹⁵¹ The preliminary guidelines aim to incorporate forward-looking climate data into the design of all city capital projects to better withstand hotter heat waves, heavier downpours, and sea level rise. The preliminary guidelines require capital projects to avoid exacerbating the heat island effect by using light-colored and reflective pavement and roofs, shade trees, and other landscaping. These requirements build on the city's existing energy efficiency standards for residential buildings and Leadership in Energy and Environmental Design certification requirement for city-capital projects. The preliminary guidelines also include new flood risk standards that take into account sea level rise projections, as well as new storm drainage standards that consider future increases in heavy rain events. Where needed, the standards require permeable pavement or green infrastructure to help increase the amount of storm water absorbed into the ground.¹⁵²

In Florida, 1992's Hurricane Andrew spotlighted how lax building codes in the state that is most at risk of more intense storms put communities in harm's way. Andrew destroyed more than 125,000 homes in Florida and left roughly 250,000 people homeless in southern Miami-Dade County.¹⁵³ The storm prompted the Florida State Legislature to adopt a statewide building code in 2000 requiring sturdier construction of windows, roofs, doors, and supporting pillars to withstand winds of 111 miles per hour (mph) and up. In so-called high velocity hurricane zones such as Broward and Miami-Dade counties, structures must withstand at least 130 mph winds—or 156 mph winds for critical buildings such as hospital and police stations.¹⁵⁴ In the aftermath of Hurricane Matthew in 2016, Martin County Building Department Director Larry Massing said, "Stricter codes that have been enforced since the early 2000's and the lack of damage is a testament that we learned lessons from Hurricane Andrew... it's made a monstrous difference in the level of damage we've experienced."¹⁵⁵

The Florida building standards are updated every three years. The latest codes are expected to take effect in January, with new flood standards added. However, Florida lawmakers ruled this year that the state will no longer automatically adopt

design code updates endorsed by the International Code Council, giving state officials the opportunity to leave important storm-proofing innovations out of future code updates.¹⁵⁶

Putting first the communities that face the greatest challenges

In addition to rethinking infrastructure and building designs to withstand the effects of a changing climate, mayors must prioritize maintaining and building resilient infrastructure in communities facing the greatest challenges. Springfield, Massachusetts, for example, was hit by five disaster-level storms in the span of just three years.¹⁵⁷ The city is now taking steps to improve its aging infrastructure to reduce future disaster risks in struggling communities, such as strengthening its dams and other flood protections and improving housing quality and safety for low-income families, who are among the most vulnerable to extreme weather and climate change risks.¹⁵⁸ With support from the U.S. Department of Housing and Urban Development (HUD), Springfield is also working to restore hydropower and install a combined heat and power plant to help prevent future power losses during storms, including for families living paycheck to paycheck.¹⁵⁹

Building resilient infrastructure with economic and other benefits

City leaders should also design new infrastructure systems to reduce extreme weather risks while providing economic and other benefits to residents. For example, New York City received \$335 million from HUD in 2014 to create an anti-flooding berm along the Manhattan waterfront to counteract the effects of future hurricanes. The berm will border the waterfront and serve as a park and recreation area. One segment of the barrier, the East Side Coastal Resiliency Project, will protect 95,000 to 110,000 low-income residents, elderly residents, and residents with disabilities living in public housing on the city's Lower East Side.¹⁶⁰

Similarly, New York City initiated a \$100 million Raised Shorelines program to address sea level rise, using federal flood protection funds. This program is estimated to deliver more than \$3 in benefits for every \$1 invested by protecting struggling communities and businesses from future flooding damages and improving access to public and green space, among other benefits.¹⁶¹

Investing in green infrastructure and nature-based solutions

Many of the most cost-effective resilience solutions are not constructed from concrete and steel but instead conserve, expand, and better harness natural systems.¹⁶² Cities across the country—from New York to Nashville, Chicago, Cleveland, and Seattle—are protecting and expanding natural or nature-based infrastructure—including the urban tree canopy; parks; green roofs; and coastal wetlands, reefs, and dunes—to reduce the risks of coastal flooding and storm surge.¹⁶³

Toledo, Ohio, for example, has invested \$521 million in the Toledo Waterways Initiative, an effort to purify the city's waterways and reduce sewage overflows. In service of this goal, the initiative has installed sand filters and green roofs to reduce water pollution and flood damage, saving \$90,000 annually. The city government has also invested in green infrastructure in low-income areas to increase the ground's ability to absorb rain during heavy storms, such as permeable pavement and rain gardens designed to filter and slow stormwater and wastewater in an effort to reduce flooding and water pollution while improving home values.¹⁶⁴ Atlanta used permeable pavement to create a riverside walking path and park that also reduces flood risks to homes near the Chattahoochee River when water levels are high.¹⁶⁵

7. Support emergency preparedness and resilient disaster recovery

Cities are on the front lines of more frequent and severe extreme weather disasters driven by climate change. (see Table 2) Since record-keeping began, U.S. disaster damages have climbed steadily upward. According to the National Oceanic and Atmospheric Administration, the United States has been hit by 212 extreme weather and climate disasters since 1980 that each caused at least \$1 billion in damages.¹⁶⁶ Together, these events have cost the nation more than \$1.2 trillion and have caused devastating and costly damage, affecting cities, businesses, and families.¹⁶⁷ In 2016 alone, U.S. extreme weather and climate disasters caused 297 deaths and \$53 billion in economic damage.¹⁶⁸ These events included deadly and devastating floods in Arkansas, California, Louisiana, Maryland, Missouri, Florida, North Carolina, Texas, and West Virginia, as well as a drought-triggered wildfire in Tennessee.¹⁶⁹

TABLE 2
Top 7 most costly disasters to hit U.S. cities since 2000

	Most affected metropolitan area	Total U.S. death toll	U.S. damage estimate, consumer price index-adjusted, in billions of dollars
Hurricane Irma, 2017*	Multiple	85	58
Hurricane Harvey, 2017*	Houston	75	180
Hurricane Katrina, 2005	New Orleans	1,833	160
Superstorm Sandy, 2012	New York	159	70.2
Hurricane Ike, 2008	Houston	112	34.8
U.S drought and heat wave, 2012	Multiple	123	32.4
Hurricane Ivan, 2004	Pensacola, Florida	57	27.1

Note: * Indicates preliminary estimates.

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In August, Tropical Storm Harvey—a so-called 1-in-1,000 year flood event—devastated communities across Southeast Texas and left victims waiting in terror for hours to be rescued as a toxic cocktail of petrochemical and sewage-infused floodwaters seeped through doors and windows before forcing them to roof-tops.¹⁷⁰ On the heels of Harvey, Hurricane Irma devastated communities across the state of Florida, the Caribbean, and parts of South Carolina and Georgia.¹⁷¹ As the Caribbean still struggled to recover from Irma, Hurricane Maria devastated communities across the U.S. Virgin Islands, before pounding Puerto Rico, where it knocked out power, water systems, and cell phone services.¹⁷² The catastrophic impact of Harvey and Irma reaffirmed that more frequent and intense extreme weather disasters pose vast financial risks to federal, tribal, state, and city governments, businesses, and families. Disasters can affect everything from city transportation and services to the safety of buildings, housing, and infrastructure.¹⁷³ Moreover, in low-income areas, which are often located near chemical plants and other industrial sites, flooding and extreme weather disasters can compound existing environmental hazards.¹⁷⁴

In the wake of Superstorm Sandy, roughly 30 percent of the small businesses along the Eastern Seaboard that were negatively affected by the storm permanently closed.¹⁷⁵ Many struggling households face added financial insecurity in the wake of storms as they cope with lost wages, damaged property, or both. And many never fully recover from a disaster. In the worst economic cases, families are pushed deeper into poverty or become homeless in a disaster's aftermath.¹⁷⁶ Even when extreme weather events and other climate change effects do not trigger disaster declarations by government officials, they can create costly, dangerous, and even deadly emergencies in communities struggling to make ends meet.

Working with community groups to build emergency and disaster resilience

To improve emergency and disaster preparedness, city officials must work closely with community groups, particularly in those communities most at risk of flooding, air and water pollution, heat waves, and other threats. By investing time and resources in the wake of an emergency or disaster to redesign and rebuild safer infrastructure and housing that can better withstand more extreme weather, flooding, and other climate change risks, cities can save both money and lives down the road.¹⁷⁷

Better land-use planning

Hurricane Harvey revealed how poor land-use planning can elevate flood risks and devastate communities.¹⁷⁸ A lack of zoning and rapid suburban sprawl in the Harris County Flood Control District, which includes Houston, has led to development in flood-prone areas that has uprooted trees and paved over prairie and other natural areas crucial for soaking up stormwater.¹⁷⁹ The hard surfaces built with these developments, including roads, parking lots, and driveways, accelerated rainwater runoff and overwhelmed stormwater management systems during Hurricane Harvey. Had Harris County pursued a smarter development path, it may have endured less damage during Harvey; 1 acre of prairie grass can absorb enough water to offset the extra storm runoff created by 2 acres of single-family homes.¹⁸⁰ Smarter and more compact community development with higher-density housing can minimize sprawl into floodplains, as well as the paving over of natural spaces that drink up stormwater.¹⁸¹

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Encouraging household emergency planning

Baltimore's Office of Sustainability is taking steps to ensure that families, especially those in underresourced communities, are prepared to respond to emergencies. In 2014, the office held an event it billed as "Make a Plan, Build a Kit, Help Each Other," where residents were encouraged to create an emergency plan for the entire family, prepare a kit stocked with essentials to last several days, and become informed about the proper steps to take when reacting to a developing emergency.¹⁸²

Preparing cities for heat waves

Rising temperatures and more frequent and intense heat waves worsen air quality and increase heat-related illnesses, particularly among low-income people, who experience higher rates of asthma.¹⁸³ During a 1995 heat wave, 739 people died, mainly in the city's lowest-income neighborhoods.¹⁸⁴ Many residents in Miami-Dade County's working-class communities do not have or cannot afford to use air conditioning, increasing their risk of heat-related illness.¹⁸⁵ In addition, those living in low-income areas may keep their windows and doors closed to reduce exposure to disproportionately high levels of air pollution or for safety reasons.¹⁸⁶ This reduces airflow, raises indoor air temperatures, and elevates the risk of heat stroke and other illnesses.¹⁸⁷

A recent summit in Miami, convened by the Center for American Progress, the CLEO Institute, and Catalyst Miami, brought together community leaders and local environmental justice groups to give actionable input for the Southeast Florida Regional Climate Action Plan. Summit participants recommended that city officials work with community groups to conduct inventories of working air conditioning units in communities vulnerable to heat risks and launch a program to provide energy-efficient units to those families and individuals with the greatest need. Attendees also suggested that municipalities assess the availability and accessibility of cooling centers—public buildings with air conditioning where people can go to escape dangerously high outdoor temperatures—including their capacity for overnight stays, and establish more centers if needed in low-income neighborhoods.¹⁸⁸

Many cities have established cooling centers, including Baltimore, New York, Kansas City, and Washington, D.C.¹⁸⁹ Charlotte, North Carolina, is helping cool down families as summer temperatures spike by creating spraygrounds—playgrounds with water amenities. Mecklenburg County built the majority of its spraygrounds close to Charlotte neighborhoods with the deepest pockets of poverty—or so-called crescent communities because they create a crescent on the city map.¹⁹⁰

Invest in water infrastructure and emergency communication strategies

Some U.S. regions are confronting water-quality emergencies caused by pollution and climate change. In 2014, algal blooms in Lake Erie left 400,000 people without clean water in Toledo, Ohio, prompting the city to temporarily establish free water distribution centers to supply residents, particularly the 30 percent of Toledoans living in or skirting the edge of poverty. In combination with the Toledo Waterways Initiative, the city has created an online dashboard to better inform citizens of water-quality issues in real time. The online dashboard reports toxin levels measured at the city water intake point, making public the municipal data that in the past could only be communicated by city employees via traditional media.¹⁹¹

8. Support social cohesion and deeply connected communities

When city leaders launch sustainability and resilience planning initiatives, they must answer two key questions: sustainability and resilience for whom, and sustainability for what purpose?¹⁹² The quality of a city's environment and physical infrastructure is fundamental to a vibrant local economy and community health. Today's city leaders are simultaneously dealing with unequal urban environments that stem from past actions and designing and implementing strategies that will meet the city's future needs in a climate-uncertain world. In doing so, many cities are providing leadership on the issue of social cohesion, recognizing that deeply connected communities are a critically important element in overcoming historical inequalities and contributing to a city's climate resilience.

The Organisation for Economic Co-operation and Development defines a socially cohesive society as one that “works toward the well-being of all its members, fights exclusion and marginalization, creates a sense of belonging, promotes trust, and

offers its members the opportunity of upward social mobility.”¹⁹³ The role of U.S. cities as places of cultural, economic, and social diversity makes them perfect settings for drawing on the creativity of small- and medium-sized businesses, as well as socially responsible corporations and community members, to strengthen social cohesion.

Building capacity and supporting informal networks within communities

City officials and community members across the country are working together to forward visions of climate resilience that prioritize community goals. These visions include collaborative efforts to assess community vulnerabilities and assets and building community voice and power at all stages of planning.¹⁹⁴

In Baltimore, the Office of Sustainability has advanced the concept of “resiliency hubs” as a mechanism for neighborhood building. These hubs can serve essentially as community centers where residents can go for climate change resilience resources, including during times of emergency. By integrating resilience goals into existing community centers and nonprofit social service agencies, the city can leverage the informal social networks and assets that are part of daily life in neighborhoods. Because the hubs are already spaces where residents come together, the city can take advantage of the social and cultural connections that these organizations have developed.¹⁹⁵

Minneapolis is developing an engagement process that brings community representatives and city agency staff together to advise on planning for the city’s Green Zones initiative. By involving communities in planning, the city is able to access the wealth of community knowledge already in place and to support the range of informal networks that are part of city life. By doing so, cities avoid the trap of deficit-based planning, which focuses solely on the community’s vulnerabilities, and instead build on the range of community assets. As with most of the nation’s cities, Minneapolis has to tackle problems of racial and income segregation. Yet as city leaders address this challenge, they can also tap into formal and informal networks within communities of color and areas struggling with financial instability to design effective climate action and resilience plans.¹⁹⁶

Another initiative, developed by Cleveland, is focused on providing resources for community building and access to tools that organizations can use to participate effectively in city planning. The city’s asset-based Neighborhood Climate Action

Toolkit was created in partnership with community development corporations. The toolkit supports residents in identifying and advancing neighborhood priorities and furthering the city's climate action goals.¹⁹⁷

Supporting diversity and access to high-quality services, public spaces, and the arts

In Seattle, city officials intentionally created an agenda to deepen the connection between race, social justice, and the environment by adopting a community-centric approach.¹⁹⁸ Through its Equity & Environment Initiative, community and city leaders created a co-owned agenda to advance environmental equity in Seattle. According to the Equity & Environment Agenda, the Community Partners Steering Committee was established to “ensure that those most-affected by environmental inequities would lead in creating the Agenda.”¹⁹⁹ As a result of community conversations, the city is integrating key social cohesion elements, including recognition that the strong cultural traditions and arts in Seattle are interconnected to climate and environmental issues. By addressing community priorities such as walkability and safety, public transportation, green spaces and public gardens, youth programs, and food access, the city is also supporting community assets that build social cohesiveness.²⁰⁰

9. Use innovative financing to strengthen community resilience and livability and prepare for more extreme weather

The financial burden of reducing climate change threats can be heavy for cash-strapped cities already struggling to upgrade crumbling infrastructure and to improve the quality of city services. Under tight budget constraints, city sustainability and resilience programs are often underfunded.²⁰¹

Since the Great Recession, many large U.S. cities have experienced a slow but steady economic recovery. Cities in Florida, California, and the Carolinas have seen rapid job market growth, and research and technology industries have sparked substantial growth in San Jose, Austin, Houston, Seattle, and Nashville. Nonetheless, this economic progress has not been equally shared, leaving many city residents without steady incomes or economic opportunities.²⁰² Economic growth in postindustrial cities, including those in the Midwest, has been sluggish at best.²⁰³ In these areas, declines in the tax base increasingly squeeze municipal

budgets. High unemployment and growing areas of concentrated poverty reduce the ability of cities to charge higher user fees to consumers to help pay for water, transportation, electrical grid, and other infrastructure upgrades.²⁰⁴

For these reasons, many cities rely on state and federal funds to co-finance critical infrastructure, community improvements, and services. Nonetheless, revenue growth for states' fiscal year 2017 general funds—where most revenues are collected and spent—has been slow, leaving 33 states with revenues shortfalls and forcing 23 states to make net midyear budget cuts totaling \$4.9 billion.²⁰⁵ Increasingly, state governments are slashing funding for cities while restricting city taxation options and, thus, limiting city revenue crucial to financing basic city services, repairs, or upgrades to crumbling infrastructure, among other priorities.²⁰⁶

At the same time, the Trump administration has proposed drastic federal funding cuts to vital city and state programs, including for infrastructure, public housing, and education and job training—while offering unnecessary tax cuts for corporations and the wealthy.²⁰⁷ Looming federal and state funding cuts for cities threaten to further squeeze city budgets at a time when cities urgently need to invest in infrastructure and community improvements to prepare for more extreme weather and other climate changes. Under current economic and political conditions, many cities are working to expand economic opportunities and tax revenues by drawing new businesses, including by making communities more livable, sustainable, and resilient. Cities are also exploring nontraditional funding sources to create low-carbon and resilient communities.²⁰⁸

Establishing municipal bonds and public-private partnerships to reduce climate change risks

City leaders are using municipal bonds to reduce the risks of climate change. For example, the residents of Flagstaff, Arizona, supported a \$10 million bond to reduce wildfire risks to the city's communities and businesses.²⁰⁹ To protect water quality and reduce wildfire risks to communities in New Mexico, including Albuquerque, and Santa Fe Pueblos, local officials in conjunction with tribes, the federal and state governments, water managers, and companies created the Rio Grande Water Fund. The fund pools government and private funding to restore forests to help protect clean water—a scarce resource in the Southwest region. The fund also supports forest thinning to reduce underbrush that can exacerbate the threat of dangerous wildfires.²¹⁰

In 2016, Gov. Cuomo announced “nearly \$100 million in new green bonds” to support the development of green and energy efficient affordable housing in New York.²¹¹ The same year, Washington, D.C., city officials issued the first U.S. Environmental Impact Bond to reduce flood risks and ensure that city residents have access to clean water. The money raised is being invested in green infrastructure to help absorb stormwater and reduce the rising risk of sewage overflowing into the city’s rivers and streams.²¹²

Helping residents voluntarily move out of flood-prone properties

Repeated flooding of a home, apartment building, or community is not only devastating and costly for those who live there but also expensive for the state and federal governments to help pay for repeated flood response and to rebuild over and over again. To break this cycle of disaster and misery, many city and county officials leverage federal and state funding to buy out these repeat-loss properties from voluntary sellers, then remove the building and restore the flood plain land to its natural state.²¹³ Missouri used publicly funded voluntary property buyouts to help families move out of homes repeatedly damaged by floods and saved roughly \$100 million by avoiding losses in 2008—earning a 212 percent return on its buy-out investment.²¹⁴ Mecklenburg County in North Carolina finances voluntary buyouts of at-risk homes and businesses through stormwater fees, helping relocate roughly 700 families out of harm’s way since 1999.²¹⁵

In cases where cities offer voluntary buyouts in low-income areas, officials can avoid exacerbating affordable housing shortages by coupling buyouts with new investments in affordable housing units. Data from around the country show that voluntary buyouts of properties that have flooded repeatedly are highly cost-effective public investments; with careful planning, city leaders could potentially link the savings from averted future flood costs to investments in resilient affordable housing away from coastal and riverine flood plains. Mayors should also develop strategies to give groups of people from the same community participating in a buyout program the option to relocate to the same neighborhood to maintain the social fabric of their previous neighborhoods. For example, mayors could support new investments in high-density, affordable housing units to accommodate multiple families from the same community who are participating in a buyout program and wish to stay together. Cities and states could also provide incentives for buyout program participants to relocate to a nearby area to preserve

social networks and the state or municipal tax base. After Superstorm Sandy, for example, New York state paid a small bonus in addition to the property's market value if the voluntary seller purchased a new home in the same county.²¹⁶

Improving Property Assessed Clean Energy programs and using performance contracts

City leaders increasingly have looked to Property Assessed Clean Energy (PACE) financing to help residents finance home energy efficiency improvements through a special assessment on a property's real estate tax bill.²¹⁷ New Orleans officials are exploring the potential for using PACE to allow homeowners to finance home upgrades to reduce flood risks.²¹⁸

While PACE has successfully supported home efficiency enhancements that have cut energy bills for some, it has created risks for others. Consumer, civil rights, and community advocates have urged the Department of Energy to update its PACE best-practice guidelines to better protect homeowners from fraud and costly and unneeded improvements that can impose high costs on low-income and older homeowners, as well as from other questionable practices that could ultimately lead to foreclosure. Advocates have called on state and local governments to protect homeowners participating in PACE by requiring assessments of the homeowners' ability to repay PACE loans and requiring PACE contracts to preserve consumer rights and defenses against fraud and shoddy work, among other consumer protections.²¹⁹

City governments, residents, and businesses are also using energy savings performance contracting to pay for energy efficiency improvements. Contractors are paid using the funds saved by lowering energy bills.²²⁰

Providing insurance and loans to lower risks

The nonprofit group MyStrongHome offers loans to homeowners in communities along the southern coast, including in Alabama, South Carolina, and Louisiana, to upgrade homes to meet insurance industry standards for minimizing the threat of flooding and high winds during storms. Homeowners can repay the loan using insurance bill savings realized by lowering their risks.²²¹

These and other innovative financing strategies are helping U.S. cities save lives and lower rebuilding costs as the risks of extreme weather, sea level rise, and wildfires rise in a warmer world.

Conclusion

A clear majority of Americans recognize the threats of man-made climate change to the United States and its cities.²²² A number of cities are already applying principles of equity and smart risk management to support equitable economic growth that will save money and lives in the face of more extreme weather and climate change.

By embracing the nine actions recommended in this report, mayors can support pathways to a just economy and expand access to living-wage jobs, quality schools, affordable housing, and safe neighborhoods, while at the same time reducing extreme weather and flood risks that are increasingly part of the new normal in a hotter world.

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