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The BlueGreen Alliance unites America's labor unions and environmental organizations to solve today's environmental challenges in ways that create and maintain quality jobs and build a stronger, fairer economy. Our partnership is firm in its belief that Americans don't have to choose between a good job and a clean environment—we can and must have both.

Investing in infrastructure isn't just about repairing roads and bridges, it should also focus on protecting communities by restoring natural defenses. Nature-based solutions are a key component in building resilient communities that can adapt to the impacts of climate change. Natural and green infrastructure can protect communities from flooding, ameliorate the heat island effect, alleviate pressures on the electrical grid and save energy costs, and create good-paying jobs in the resilience workforce.

Nature-Based Solutions Protect Communities from Flooding and Reduce Runoff

As the risks from climate change intensify, so do the consequences for communities across the country. Heavier precipitation, more-frequent extreme weather events, and rising sea levels all contribute to increased flooding events that are more severe, intense, and damaging to livelihoods, property, and communities. One key approach to ensuring the resilience of America's infrastructure and the communities that depend on it is by investing in nature-based solutions that can adequately absorb and recycle stormwater, protecting communities from flooding and mitigating runoff pollution.

An estimated 10 trillion gallons a year of untreated stormwater runs off roofs, roads, parking lots, and other paved surfaces, often passing through sewage systems before spilling into rivers and streams that serve as drinking water supplies and sites for recreation.[1] As development covers land with impermeable surfaces, the volume of stormwater running off buildings, streets, and parking lots into nearby waterways increases. This infrastructure represents a missed opportunity to reduce pollution, protect communities from flooding, and create good union jobs.

Nature-based solutions (sometimes called green infrastructure) build, restore, and preserve natural defenses to build resilience for communities and the built environment. Cities have utilized nature-based solutions such as green roofs to use vegetation to collect and reuse stormwater, permeable pavements and bioswales to absorb rainwater on the street and reduce runoff. Apart from the benefits these solutions provide for stormwater management, they can also lead to improved public health, lower energy costs, and more jobs.

Because of the health, ecological, and economic benefits of natural infrastructure approaches, cities across the country, including Seattle, Chicago, New York City, Philadelphia, and Nashville have embraced these techniques as part of their stormwater infrastructure programs.[2]

In Nashville, a citywide natural infrastructure plan identified potential runoff reduction of 3.5 billion gallons of water a year—a huge improvement for an area that annually sees 756 million gallons of sewer overflow into surrounding rivers and streams. The city is currently implementing projects that include rainwater harvesting, as well as green roofs and urban tree canopies on a public high school, farmers' market, neighborhood street right-of-way, and high-rise public housing for seniors, parks facility and a public works complex. The estimated runoff reductions range from 340,000 to over 6 million gallons a year.[3] If a full array of natural infrastructure techniques were adopted nationwide for new construction projects over an acre in size, the job creation potential is estimated at 84,000 direct, indirect, and induced jobs created and supported throughout the U.S. economy per year.[4]

Green infrastructure helps stop runoff pollution by capturing rainwater and storing it or letting it filter back into the ground to replenish vegetation and groundwater supplies. For example, municipal water typically must be treated with chemicals before being directed to homes for potable-use, which accounts for 40% of municipal government electrical use.[5] By installing infrastructure that can allow for water recycling, local governments stand to earn significant near-term energy savings while simultaneously insulating communities from the costs of natural disasters in the long-term. This represents a unique opportunity to better and more equitably manage polluted stormwater runoff and protect our communities' clean water supplies. Cost-effective green infrastructure practices—combined with investment in conventional stormwater mitigation efforts (i.e. increasing sewage/ wastewater capacity)—have the potential to provide wide-ranging benefits to communities nationwide.

The Bipartisan Infrastructure Law makes funding opportunities available that can help advance nature-based solutions. Through programs like FEMA's Building Resilience in Communities (BRIC) program and the Safeguarding Tomorrow Revolving Loan Fund,

communities can utilize and stack existing funding sources to finance these projects. To best ensure equitable implementation and benefits, federal agencies must also incorporate technical assistance and capacity building for resource-constrained communities into the design of these programs.

Smart Surfaces Mitigate Heat and Save Energy

Extreme heat does not threaten all communities equally. Urban environments can be on average 5 to 10 degrees fahrenheit hotter than neighboring suburban communities.[6] These heat islands carry an array of additional challenges that are disproportionately borne by disadvantaged communities and communities of color. When temperatures increase, heat-related illnesses—heatstroke as well as illnesses made worse by heat such as asthma, hypertension, and diabetes—lead to an increase in hospitalizations and healthcare costs. Moreover, higher temperatures can lead to an increase in ground-level ozone, also known as smog, which can compound environmental and health issues faced by these communities.[7]

Certain types of green infrastructure, such as green roofs, cool pavements, and street trees provide remarkable benefits against extreme heat. According to the EPA, the installation of green roofs can not only effectively manage stormwater, but can abate enough heat to lower the energy demand of the floors below by 50%. This investment can provide a two-pronged benefit to communities: 1) it alleviates the impacts of extreme heat on those occupying the building and 2) it can relieve stress placed on electrical grids during times of extreme heat. These positive impacts can be compounded by installing green streets, which refer to streets completed with reflective surfaces and paired with surface vegetation, which can reduce heat on the street level.

The reduction in heat would in-turn have an impact in improving air quality and green surfaces can help sequester carbon. One study estimated that if the Detroit metropolitan area greened all of its commercial and industrial rooftops, the carbon reduction over two years would be the equivalent to taking 10,000 midsize SUVs off the road for a whole year.[8] An additional study by the Abell Foundation found that even a more modest smart surface conversion plan in the city of Baltimore would mitigate 17 million tons of carbon and decrease the cities overall unemployment rate by 2%.[9]

Investing in green infrastructure—both in the form of nature-based stormwater solutions and smart surfaces—can have the potential to dramatically expand the impact of the EPA's block grants. These solutions not only mitigate the threat of flooding but have the added benefits of increasing biodiversity; improving outdoor recreation in urban neighborhoods;

reducing urban heat island effects, heat-related illnesses, and asthma; lowering heating and cooling energy costs; stimulating local investment; and supporting American jobs.

Resilience Hubs Protect Communities from Disaster

As the impacts of climate change continue to harm communities and worsen across the country, a greater focus on holistically fortifying communities against the worst effects of the climate crisis is needed. To redouble its efforts at promoting environmental and climate justice, the federal government should look at using all tools in its toolbox to strengthen community resilience and protect against climate-driven extreme weather/impacts. This could include prioritizing investments in building out resilience hubs with the many resilience-related tools and funding opportunities authorized by the Bipartisan Infrastructure Law and Inflation Reduction Act. These facilities, which can be retrofitted to existing community institutions or stand-alone buildings, offer comprehensive resources for communities facing climate-related disasters.

Resilience Hubs offer a community-driven approach by providing physical space for community members to access resilience-building social services, and to coordinate disaster response and recovery efforts in times of emergency.[10] These institutions are a proactive investment in a community's ability to withstand natural disasters while maintaining their physical, economic, and social assets. Successful models of resilience hubs, like the RYSE Center in San Francisco, have the capacity to provide emergency supplies during crisis, provide preparedness training to residents, and integrate with the public sector to coordinate disaster response.[11] Providing these multifaceted resources not only better prepare communities for disaster, but create an opportunity to grow good-paying jobs. Whether through the construction or conversion of the physical space, or in the development of resilience-building social services, resilience hubs can and should be opportunities to create good-paying jobs.

Creating Good Jobs and Strengthening the Resilience Workforce

A skilled workforce is needed to build a resilient future. The task of adapting the nation to the challenges posed by climate change is a massive undertaking, which will require hundreds of thousands of workers across the country. Investing in nature based-solutions can protect communities while creating good union jobs and equitable pathways into careers.

Unionization is a key pathway to quality jobs and family-sustaining wages. Union jobs on the whole pay better, have better benefits, and are safer than non-union jobs. Across all relevant industries and occupations, workers who are members of, or are represented by,

a union earn significantly more than those who are not. This especially benefits lower-paid workers and is most pronounced for workers of color and women. The administration has an opportunity to shape the future of the resilience workforce and ensure the industry creates good-paying union jobs. In implementing funding programs included in the Bipartisan Infrastructure Law and the Inflation Reduction Act, federal agencies should include high-road labor standards and build pathways into the resilience workforce for low-income communities, communities of color, and other underrepresented groups.

President Biden's agenda included a plan to create a Civilian Climate Corps (CCC) that would connect young Americans with opportunities to participate in resilience work. A new and reinvigorated CCC could help build community resilience by retrofitting infrastructure with smart surfaces, building green stormwater systems, and supporting networks of resilience hubs. We have to make sure these are not just good jobs, but accessible jobs. That means that such a program must include strong protections against public and private sector job displacement. It also means supporting and growing pathways into good union jobs—often through apprenticeships and pre-apprenticeships—for workers of color and other segments of the population historically underrepresented in these jobs.

Conclusion

Adapting to the challenges of climate change—if done right—presents a historic opportunity to create good-paying jobs, protect our environment, promote energy efficiency, and build healthier and more livable communities. Given the scale of the problem, bold and immediate investments in nature-based solutions are required to secure community and infrastructure resilience.

ENDNOTES

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