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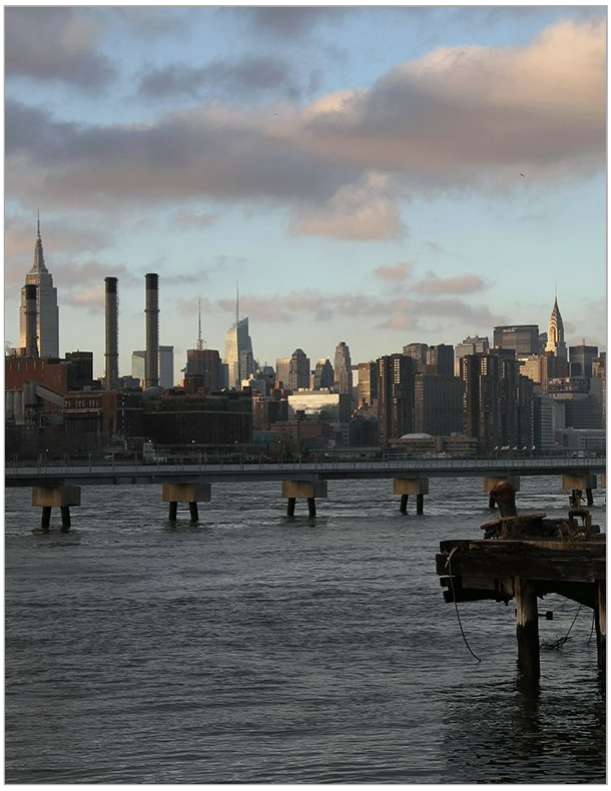

Report - December 2020

A Green Public Works Program for NYC: 40 Ideas from Experts

To understand how New York might take advantage of federal investment to create jobs and help the city mitigate and adapt to the effects of climate change, CUF asked city leaders in coastal resilience, environmental justice, urban agriculture, renewable energy, and more for sustainability and resiliency project ideas.

by Laird Gallagher, Safiyyah Edwards, Cameron Haas, and Jonathan Bowles

The results of last month's election have increased the likelihood of a significant federal public works plan in 2021 focused on boosting climate resilience. During the campaign, President-Elect Biden proposed a $2 trillion infrastructure plan to boost the economy and tackle climate change. He also called for the creation of a Civilian Climate Corps that would work on resilience and restoration projects, modeled after the New Deal-era Civilian Conservation Corps (CCC). The deep economic pain being felt across the country may also create broad political support for a major infrastructure bill to get Americans back to work.

New York City should prepare to seize this opportunity. Few other American cities would benefit more from a public works initiative to create jobs. Through September, New York City had lost roughly 650,000 jobs since the start of the pandemic, with a disproportionate share of the job losses going to New Yorkers without a college credential. New York also faces an urgent need to protect coastal communities from storms and sea level rise, modernize vulnerable infrastructure, and transition away from fossil fuels.

City officials should get ahead of this by identifying—and planning for—ambitious and creative sustainability and resiliency projects that can create much-needed jobs for out-of-work New Yorkers while helping the city mitigate and adapt to the effects of climate change.

This report aims to jumpstart the process. To better understand how New York can best take advantage of possible federal investment, we asked city leaders in urban agriculture, coastal resilience, environmental justice, conservation, renewable energy, urban design, green infrastructure, and the circular economy to give us concrete ideas of sustainability and resiliency projects that the city should run with should federal support materialize.

This report features their insights. It includes inventive and concrete project ideas from more than twenty experts, including resiliency experts Amy Chester of Rebuild by Design, Hildegaard Link of Resilient Red Hook, and Judah Asimov of RISE; clean energy experts including Chris Collins of SolarOne and Pat Sapinsley of NYU Tandon, architects Hana Kassem of Kohn Pedersen Fox, Jeffrey Raven of RAVEN A+U, and Clare Miflin of the Center for Zero Waste Design; urban tech pioneer Micah Kotch of URBAN-X; urban agriculture expert Henry Gordon Smith; and environmental leaders including Emily Nobel Maxwell of the Nature Conservancy and Sarah Charlop-Powers of the Natural Areas Conservancy, Paul Gallay of Riverkeeper, and Cortney Worral of Waterfront Alliance.

Some of the ideas include:

- Construct stormwater storage structures in low-lying neighborhoods
- Deploy a climate corps to install energy retrofits
- Develop “Ecohubs” in every NYCHA development
- Create green jobs through resilience retrofit certifications
- Build energy resilience through community solar
- Convert vacant storefronts into temporary hydroponic food production facilities.
- Boost green roof installation, starting with city property
- Design and distribute curbside organic waste containers
- Protect coastal communities and infrastructure by investing in wetlands restoration
- Build floating farms on barges in NYC waterways

The following are brief descriptions of the ideas we received:

Cortney Worrall
President and CEO
Waterfront Alliance

Create green jobs through resilience retrofit certifications
Investing in the development of worker certificate programs and expansion of home and small business retrofit and technical assistance programs such as FloodHelpNY can help create multiple career paths around resiliency retrofits. At scale, widespread resiliency retrofits programs have the potential to decrease flood damage risk, and reduce insurance premium costs for low-income families living in parts of the city that are increasingly vulnerable due to more frequent and damaging storms and sea level rise caused by climate change, and also create jobs. In particular, retrofit programs could create “green and blue collar” jobs in engineering, construction, science, research, education, masonry, landscaping, planning, utility operation, and more.

Green NYC’s ports and energy infrastructure
The city should invest in resilient waterfront infrastructure by greening our ports and constructing renewable energy infrastructure. Wind and solar installation, operations, and maintenance can be housed at port facilities. Electrification of port vehicles and vessels will reduce air quality impacts to surrounding communities. In addition, every borough should have a working pier that can accommodate last-mile package delivery which will remove trucks from the road as e-commerce increases local delivery traffic.

Jeffrey Raven
Principal
RAVEN A+U

Prioritize construction of “sponge city” projects
Faced with the urgent need to mitigate and adapt to climate change, NYC must prioritize urban design that accomplishes both. Sponge City infrastructure such as green roofs, underground stormwater basins, permeable pavements, and bioretention facilities help urban areas soak up as much stormwater as possible while also reducing carbon emissions, enhancing non-motorized transport networks and cooling the city. Construction of these types of projects should be prioritized in high-density areas such as Midtown Manhattan, Downtown Manhattan, and Downtown Brooklyn. New York can also incentivize private development of sponge city infrastructure through transferable development rights and credits/waivers for POPs (privately owned public park) space in designated areas of need.

Build a network of energy hubs
The city should build neighborhood energy hubs to store energy in large-capacity smart grid batteries, and secondarily act as recharge stations, bike storage, drop-off centers, civic spaces, or last-mile freight hubs. Placing energy hubs throughout New York City’s neighborhoods would not only build energy resiliency within communities but act as colorful and aesthetically important symbols of each neighborhood. These colorful iconographic structures would be designed to reflect New York City's neighborhood identities and needs, instantly becoming 21st century icons on the urban landscape.

Construct stormwater storage structures in low-lying neighborhoods
Building depressed roadways, parking lots, or parks along flood-prone coastline can help to temporarily store stormwater during extreme flood events. In addition, these projects can be multipurpose, with green infrastructure built above to provide win-win resilience and quality of life improvements. Areas that flood often, such as the Hudson River Park, FDR Drive, the BQE, and the Major Deegan Expressway should be prioritized.

Pat Sapinsley
Managing Director of Cleantech Initiatives
Urban Future Lab, NYU Tandon

Deploy a climate corps to install energy retrofits in all buildings over 25,000 square feet
In order to meet the city’s ambitious emissions reductions targets within the next decade, thousands of New York’s older residential, office, and municipal buildings will need major retrofits to reduce building energy usage and carbon emissions. As part of a climate corps, a workforce should be trained in specific building energy efficiency upgrades. To achieve the city’s 40 percent emissions reductions targets by the 2030 deadline, a workforce of nearly 150,000 people is needed. Funds could be made available via the PACE program for all commercial tenants and building owners. Green City Force, which enlists and trains people from low income housing communities in sustainable careers, can act as the workforce training model.

Upgrade energy transmission lines
In order to deliver green power to the city, our transmission lines need a serious upgrade, and doing so will create many new jobs. The renewable energy we currently have in New York is almost entirely outside of the city—large wind and solar farms in upstate New York, and hydropower from Niagara Falls and Canada. In order to bring clean energy into NYC, we must increase our transmission capacity. These new construction projects can be also focused on the locations needed for the large offshore wind energy projects currently planned.

Repurpose public land into renewable power plants, microgrids, and energy storage

Replacing fossil fuel-based power plants with renewable energy plus long duration energy storage facilities has been shown to result in significant cost savings in healthcare as well as job opportunities for the surrounding communities. Rikers Island is especially well-suited for this conversion, and has growing support as evidenced in the Renewable Rikers Act.

Emily Nobel Maxwell
New York Cities Program Director
The Nature Conservancy

Boost green roof installation, starting with city property

There are about a million buildings in New York City, but of those million buildings, in 2016 only an estimated 736 had green roofs—roofs that are partially or completely covered with vegetation, a growing medium such as soil, waterproofing, and a drainage system. Green roofs improve air quality, enhance insulation, and increase building energy efficiency, while also reducing the urban heat island effect and absorbing stormwater. In addition to improving tax incentives to help expand private green roof installation, we should be maximizing green roofs on publicly owned property, prioritizing those facilities that may either be facing higher carbon emissions and/or present opportunities for public engagement, especially of New York City youth. School buildings in particular are well-suited for green roofing, in part because many have large, flat roofs. School buildings also use a significant amount of energy, creating a lot of carbon emissions, and so they are ripe for improvements to their energy efficiency. And if done right, green roofs on schools also create spaces for youth outdoor education and recreation. If green roofing were implemented on a much broader scale, especially on public property where the city exercises control over the building stock, there's also significant potential for job creation.

Restore and expand New York City's urban forest

New York City's urban forest—all the trees across the city—cools the air, offers shady respite from heat, sequesters carbon, increases energy efficiency, and contributes to New Yorkers' health and wellbeing. But trees are not evenly distributed across the city. In fact, the most heat vulnerable neighborhoods tend to be low-income communities or communities of color with less tree cover, and these communities should be prioritized for investments. The city should invest in restoring, maintaining, and expanding its urban forest on city streets, in our parks, and especially on NYCHA campuses—many of which are located in heat-vulnerable neighborhoods. Investments both to manage and protect existing trees and to increase trees in areas with less are crucial to providing more equitable access to the benefits of trees, from shade and cooling to mental health, all even more important in the COVID-19 era. Increased plantings and access upgrades can improve open spaces throughout the city while also making New York more resilient to the effects of climate change and providing great green jobs for New Yorkers.

Adam Freed & Jake Elder
Principal; Manager
Bloomberg Associates

Incentivize building owners to replace gas boilers with electric units, and invest in upgrades to the energy grid so NYC can bring enough clean power to electrify buildings

Natural gas and heating oil account for the majority of greenhouse gas emissions in New York's buildings, making the electrification of buildings across the five boroughs crucial to achieving our climate goals. And although the city's ambitious energy performance standards have been a big help, they are unlikely to spur the kind of large-scale replacement of gas boilers that is critically needed. The federal government can help by instituting a "Bucks for Boilers" program—similar to the old Cash for Clunkers vehicle program—that incentivizes building owners to swap out inefficient gas boilers with cleaner electric or geothermal units. However, a big move to electrify buildings could triple demand on the city's electrical system. New York will need to make major new investments to upgrade the transmission and distribution lines that bring clean

electricity from other parts of the state into the city. Most important will be a dramatic increase in investment in renewable energy; above and beyond the state's already ambitious plans. A federal public works program could provide critical capital to make these happen.

Replace expressways with boulevards

Construction of the Sheridan and Gowanus expressways left surrounding communities isolated and stuck with some of the worst environmental, health, and economic conditions in the city. New York can begin to undo the damage to those communities by tearing down the two barrier expressways and replacing them with tree-lined boulevards, making the neighborhoods greener, safer, healthier, and more resilient. This could also free up land for more affordable housing and other community assets. The federal government could cover the planning grants and—most importantly—construction costs to get these resiliency projects off and running.

Create a sponge city

With more intense storms and more regular flooding expected in New York for years to come, it's time to follow China's lead, which is aiming to capture more than half of the rainwater that falls on its cities, and create a "sponge city". Every inch of rain that falls on New York generates a billion gallons of stormwater. Better managing this risk requires massive new investments to green surfaces across the city combined with more aggressive efforts to upgrade the infrastructure underground to handle more water. This can help save money, reduce flooding, improve the quality of neighborhoods, and prepare us for the increasing impacts of climate change. A federal infrastructure plan that invests more in urban water systems could provide precious resources to make this happen.

Clare Miflin
Founder
Center for Zero Waste Design

Provide space and technology for consolidated waste collection

The city's organic waste system of small bins collected door-to-door was cut because it was inefficient, expensive, and only collected a small fraction of the city's organic waste. By providing space and technologies for consolidated organic waste collection and distributed small-scale composting, the city could reduce costs and increase capacity and local benefits. Regenerating local soils will create green jobs, support urban greening and agriculture, and reduce the inequitable impacts of trucks, air pollution and greenhouse gases.

Design and distribute curbside organic waste containers

Designing containers into streetscapes allows drop-off for residents and small businesses, frees up space on sidewalks, and reduces odors and rats. Digital technology can be used to restrict access, reduce contamination, charge businesses, incentivize resident use, and reduce collection trips. Low impact vehicles can collect waste and take to local compost operations.

Develop neighborhood-scale composting infrastructure

Equipment in large buildings can reduce odors, pests and the volume of organic waste by up to 90 percent, making it easier for understaffed and space-constrained buildings to manage. Investments in local composting infrastructure can increase processing capacities greatly, and excess organic material could be returned to the regional farm system.

Chris Collins
Executive Director
Solar One

Install solar and battery storage on Rikers Island
A large public works plan for New York City should include the Renewable Rikers project. Rikers Island is scheduled for closure in 2026, and it would be the perfect location to install solar and battery storage at scale that would, in effect, eliminate a large portion of the nearby peaker plants—higher-polluting power plants that supply electricity only during periods of peak demand. There are parts of Rikers that could be converted to solar immediately to demonstrate the potential of solar and battery storage. The Renewable Rikers plan is being developed by a number of nonprofits and has been proposed in the City Council by Council Member Costa Constantinides.

Henry Gordon-Smith
Founding Director
Agritecture

Build floating farms on barges in NYC waterways
The city could enlist a climate corps to construct or retrofit barges to house floating farms and greenhouses. Soil-based agriculture is more conducive to retrofitting barges or boats. Aqua Ark, a four-acre large floating farm structure off the coast of Hunts Point, is already being planned. Similar floating structures would be able to provide a sustainable food source while maintaining resilience against storm surges and sea level rise compared to traditional farms. Additionally, the waterfront provides great access to light and scale you wouldn't typically get in urban areas. These projects would be particularly useful along the Bronx waterfront due to food security needs, the large amount of coastline, and the minimal boat traffic.

Construct farms on unused, irregular lots
There are countless underutilized spaces along highways and railways that have the potential to be used for urban agriculture. Vacant, often linear plots of land are often overlooked for agricultural purposes but are just as useful as square lots. High Line-type spaces where the city still maintains the right of way along the corridor (such as the land available for the proposed Queensway project) would be good focal points. Similarly, the city should apply this rationale to any unused community space. Unused classrooms or lab spaces in marginalized communities can be converted into food production centers.

Develop workforce training in soil/water testing and remediation
Training and apprenticeships in soil/water testing and remediation, as part of a climate corps, could provide a pathway into careers in the environmental field while also helping the city identify and activate unused spaces for urban agriculture. The workforce would be trained how to assess plots of land for agricultural viability, and how to take soil and water samples and assess levels of contamination and remediation needs.

Hildegaard Link
Chair, Resilient Red Hook
Director, Sustainability, SEBS Rutgers University

Build energy resilience through community solar
Neighborhoods served by above ground power lines are especially vulnerable to extreme weather. Constructing a microgrid powered by community solar would allow the neighborhood to power residents, businesses, and essential public services

during emergencies that often plague the low-lying, coastal communities like Red Hook. Constructing a community grid of solar energy sources would also work to unify neighborhoods. A community solar grid could help to foster a shared sense of ownership within the neighborhood and also respond to the unique needs of local small businesses.

Amy Chester
Managing Director
Rebuild by Design

Protect Hunts Point from flooding and sea level rise, and make its fresh market accessible to the nearby community
The meat, fish and produce markets of Hunts Point serve as the main food supply hub for New York City, but the low-lying peninsula is cut off from the nearby residential community and vulnerable to flooding. Previous funding has been used to provide backup energy generation, but more is needed to improve flood protections and ensure local residents have better access to fresh food from Hunts Point's wholesale markets.

Extend Manhattan's coastal resiliency projects up the west side
Lower Manhattan is uniquely vulnerable to floodwater, storms, and other climate change impacts. But while there is fundingin place for planning or construction of coastal protection from 25th Street on the East side around to Chambers Street on the West side, the floodplain extends all the way up to 57th Street. The city should develop a project funding plan to use new federal funding to extend coastal resiliency measures up the vulnerable West side of Manhattan.

Judah Asimov
Senior Manager, Planning & Outreach
Rockaway Initiative for Sustainability and Equity (RISE)

Enhance Rockaways' dunes
The Rockaways' dunes are the community's first line of defense against increased storms and sea level rise from climate change, but they are in dire need of strengthening. A grant from the National Fish and Wildlife Foundation allowed for preliminary design and assessment, but now the community needs more funding to implement the design to enhance the dunes and increase biodiversity.

Raise the streets
Streets in low-lying neighborhoods like Arverne, Edgemere, and Far Rockaway need to be raised in anticipation of increased storms and sea-level rise due to climate change. In addition, these neighborhoods are in dire need of storm sewer infrastructure. Currently, many streets experience regular flooding because water has nowhere to go. Surrounding developments have been raised to prevent flooding, but the streets themselves need the same protection.

Hana Kassem
Principal
Kohn Pedersen Fox

Revise East Side Coastal Resiliency Plan to leave park intact
The current East River resiliency proposal calls for raising the majority of the park above the 100-year flood plain, but that requires cutting down many of its trees and the phased decommissioning of large portions of the park. But given how vital the park is to multiple neighborhoods for exercise, social gathering, and informal cultural activities, especially during Covid-19, it

may be worth revisiting the earlier version of the plan, which left most of the park intact by creating a flood barrier wall with flood gates along the east side of FDR. This resiliency strategy could be taken up again for the majority of the park, thus saving the park trees and maintaining its accessibility in some form during construction.

Reconfigure flood protections under FDR Drive to provide new, Covid-safe uses

What if we rethought the underbelly of the elevated sections of the FDR to become a series of raised outdoor covered rooms that allowed for a variety of safe uses? These raised platforms would be combined with barrier walls and flood gates, positioned astutely to provide the necessary flood protection. To extend their use into the colder months, these outdoor rooms could be outfitted with solar-powered outdoor heaters and lighting. This large-scale project would foster social interaction and community spaces, boost the local restaurant and retail industries, reignite the city's cultural life, promote health and wellbeing, all while addressing resiliency, sustainability, wellness and creating jobs.

Laurie Schoeman

Senior Program Director, National Initiatives, Resilience
Enterprise Community Partners

Convert vacant storefronts into temporary hydroponic food production facilities

Given the widespread lack of access to fresh and local food in many communities, the urgent need for employment opportunities, and the extraordinary number of vacant storefronts and commercial spaces across the city, the city should develop a public-private partnership to convert these available spaces into indoor food production facilities. New York City should start with piloting this program in neighborhoods with high vacancy rates, and offer local home-grown agricultural leaders such as Gotham Greens, AeroFarms, or Sky Vegetables the opportunity to train jobseekers and expand urban agriculture.

Reduce the heat island effect by lightening the color of walls and streets

Dark-colored streets and building exteriors absorb 70 percent to 90 percent of radiant energy from the sun, which results in a "heat island effect." In contrast, most light-colored surfaces, including white asphalt and fiberglass shingles absorb far less. Los Angeles is mitigating the heat island effect by painting roads in a white-colored, highly-reflective sealant. New York City needs to follow LA's example of lightening street surfaces, starting with walkways, bikeways, and sidewalks and expanding the program through procurement, engineering, and innovation.

Justin Green

Founder and Executive Director
Big Reuse

Construct reuse centers in every neighborhood

Material reuse can both help the environment and create local economic growth. Instead of buying a dresser that was made in another country from recently cutdown trees and shipped around the world—we can reuse locally. In addition to the initial labor needed to build reuse centers, these facilities can create jobs for workers to manage and operate the facilities. Reuse and repair centers not only keep materials circulating within the community; they also keep the money exchanged for goods, repairs and refurbishment within the local economy, too. In the long term, these centers also encourage sustainable shopping behaviors. Reuse centers can create jobs, keep materials out of the landfill and become close to self-funded with some additional support for transitional workforces.

Repurpose portions of public space & parkland into community composting sites

Constructing composting sites would generate jobs not only from site development but from running the pickup and

composting programs. This will encourage local composting and generate compost to divert materials from waste streams going to landfills.

Maggie Greenfield
Executive Director / Bronx River Administrator
Bronx River Alliance

Clean and green urban rivers
A federal stimulus package could include investments in urban waterways, such as the Bronx River, which are alreadydrivers of economic development. Developing a jobs program to clean and green urban rivers--and the parks and trails that support them--would employ our neighbors who suffer most, and result in direct environmental improvements in communities where they are direly needed.

Launch a Green Infrastructure Stewardship Team
Green infrastructure such as rain gardens are essential to absorb rainwater and reduce the discharge of untreated sewage into our waterways. But without stewardship, rain gardens fill with garbage, inlets get clogged and plants die. The city should train and deploy a Stewardship Team to provide comprehensive management and upkeep of the city's rain gardens. With on-going care, the rain gardens can fulfill their promise of reducing sewer overflows and also add pollinator habitats and natural cooling for our rapidly heating cities.

Micah Kotch
Managing Director
URBAN-X

Develop "Ecohubs" in every NYCHA development
"Ecohubs"—on-site farms designed as closed-loop systems—should be constructed on unused land in NYCHA properties to not only provide fruits and vegetables to communities with limited access to fresh foods but to act as platforms for sustainability and agricultural education. The city, state, and federal government should fund the development of Ecohubs in every NYCHA development, with a NYCHA workforce. NYCHA Ecohubs would anchor organic food production, zero waste systems, rainwater catchment, and solar energy generation. NYCHA properties should be targeted due to the public health and economic development needs of their massive population.

After initial construction, a conservation corps-type workforce comprised of NYCHA residents could be employed to maintain, manage, and educate the public about the Ecohub. Each Ecohub could employ one supervisor, ten to twelve service corps members, and support dozens of resident-led community organization partners. Reaching 100 sites in the first year of a new administration could employ 100 full-time site coordinators, 1,200 annual NYCHA conservation corps members, and hundreds of contractors (with priority for resident entrepreneurs and those employing residents as part of their business models). Additionally, on-the-job training could be provided by specialists in carpentry, hydroponics, and horticulture.

Paul Gallay
President and Hudson Riverkeeper
Riverkeeper

Invest in community-driven, nature-based coastal resilience projects

With sea levels rising, New York City must support community-driven, nature-based solutions for coastal resilience. Rather than focusing on expensive offshore storm surge barriers, the city should construct onshore environmental infrastructure such as berms, living shorelines, salt marshes, and wetlands which provide cheaper, more adaptable, and less ecologically destructive protection against sea level rise. Projects such as stormwater retention gardens and salt marsh restorations have already been successfully completed in other northeastern cities like Boston. Native plants and trees that can survive both dry and flooded conditions should also be prioritized in coastal communities. A workforce tasked with plant stewardship can be responsible for the long term care of these plantings. In designing and executing these climate-smart projects, front-line communities should be central, especially historically disempowered and BIPOC communities.

Invest in habitat restoration at the Hudson River Sanctuary

The 400-acre estuarine sanctuary in the waters off Hudson River Park needs critical investment to ensure the health of the tidal ecosystem and its diverse fish population. This investment could also create jobs for a workforce mobilized to construct oyster castles and textured surfaces arounds piers and bulkheads to develop oyster habitats. Oyster reefs are important for New York City and the lower Hudson estuary because oysters filter excessive nutrients from the water and provide three-dimensional habitat for a wide variety of fish species. Additionally, building salt marshes and cordgrass fields in bays along the Hudson would create additional fish spawning areas while also helping to lower excess nutrient levels in the water.

Fast track construction of sewage and stormwater infrastructure

New York City discharges 21 billion gallons of sewage and stormwater into the harbor every year, and with climate change this number will grow. A public works program and climate corps could help fast-track the construction of large sewage and stormwater infrastructure projects that have already been planned. A sewage capture tunnel proposed for Newtown Creek would help prevent 1.3 billion gallons of discharge from contaminating the waterway per year. Additionally, moving forward with a plan for Rikers Island to convert 400-plus acres of land into a wastewater treatment facility and solar/energy farm would be a sound use of labor, provided we ensure that the project serves environmental justice goals and emphasizes community involvement.

Candace Damon

Vice Chairman

HR&A Advisors

Support maintenance projects

The default progressive response to economic downturn is to invest in capital projects that can be advanced quickly and that address other contemporary policy priorities—today, resilience, climate adaptation, and equity. Virtually by definition, however, shovel-ready capital projects are those which have already been funded; directing stimulus funds to them replaces one source of funds with another. While New York City should certainly welcome any expansion of its investment capabilities, the shovel-ready projects for which there is no other source of funding, indeed for which there is vastly diminished funding, are maintenance projects.

I would prioritize restoration of parks—despite being, as always, the first operating budgets cut, parks have once again demonstrated their value as critical infrastructure—and clean and efficient energy projects, including weatherization of homes and tune-up of building systems. But we should also support repair of major infrastructure, operating subsidies to strengthen regional food distribution and launch local agriculture, and a host of other maintenance projects that can be initiated within weeks of funding. These projects will all renew the aims of the Civilian Conservation Corps, this time ensuring that women and Black men get equitable access to jobs that are both less likely to be automated in the near term and offer career ladders.

Renée Crowley
Deputy Director
LES Ecology Center

Invest in urban carbon farming
The city should invest in building up the health of the city's soil and encourage the development of green space with the goal of carbon sequestration. In partnership with community compost programs, the city can access locally produced compost made from New Yorkers' food scraps. This model of collecting local organic waste and transforming it into a rich resource to be used on local soils represents a highly sustainable closed loop system. Communities across the city could play a role in sequestering carbon from the atmosphere, transforming pockets of green space into local carbon sponges. Furthermore, when carbon is stored in the soils it increases its ability to retain water and combat coastal flooding.

Sarah Charlop-Powers
Executive Director and Co-Founder
Natural Areas Conservancy

Bolster NYC's 7,300 acres of forested parkland
In the time of COVID-19, visitation to New York City's natural areas has increased between 65 and 100 percent. Withmillions of New Yorkers flocking to the city's forested parkland for relief and recreation, protecting these forests and improving access is even more important. However, much of the city's forests is in a state of ecological decline due to threats including invasive species. They require ongoing management to ensure that they continue to mitigate climate change and provide a myriad of environmental benefits to New York City. Many natural areas are also in need of safe, well-marked trails that improve access while protecting the forests in times of increased use. The city should make a major investment in citywide forest management to ensure that the city's forest can achieve its full potential for recreation and conservation, and create opportunities for green jobs and environmental education.

Protect coastal communities and infrastructure by investing in wetlands restoration
New York City is projected to have six feet of sea level rise by 2100. The city's wetlands can play an important role asbuffers from sea level rise and storms like Sandy, but these important wildlife areas require restoration and management to fulfill their resilience and buffering potential. We have located 120 potential wetland restoration opportunities spanning over 275 acres across the city. With large-scale, systematic investment in restoration and management across these sites, the city can ensure that wetlands provide crucial protection for coastal infrastructure and housing, while also ensuring access to the natural world and the social and public health benefits that come with spending time in nature.

Katie Ellman
President
Green Shores NYC

Repair and fortify the Hallets Cove Esplanade
Protecting the NYCHA Astoria Houses on Hallets Point in Astoria, Queens must be a priority for the city, and federal helpcan ensure the necessary infrastructure improvements happen. The campus esplanade's seawall, waterfront railing, and walking path are in a dangerous state of disrepair, and there is concern that water is seeping through the foundation of the seawall underground and potentially damaging the structural integrity of the apartment buildings. The Parks Department is to commence repair of the waterfront railing later this month, but better coordination and collaboration between the Army Corps of Engineers, Department of Environmental Conservation, Parks Department, NYCHA, Astoria Houses residents, elected

officials, and community partners is needed to create a big-picture plan going forward. Climate change will bring continued sea level rise, and conditions here are ill-prepared for this increase.

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