



Big Returns on Climate Investments in NYC: How \$200 Million Invested This Year Will Create Thousands of Career Jobs, Reduce Costs, and Move Us to a Just Recovery



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Climate Works for All

nyclimateworks.org

Introduction

The global COVID-19 pandemic exacerbated the systemic and historic inequities New Yorkers have faced for years, resulting in a crisis that sits at the intersections of economic, health, climate, and racial injustice. Communities of color are bearing the brunt of the COVID-19 pandemic. Not only are Black and Latinx New Yorkers twice as likely to die from the novel coronavirus,^{1 2 3} communities of color are also more likely to lose their jobs as compared to white New Yorkers.⁴ Highly-polluting infrastructure such as power plants, landfills, and highways are often located in or near Black and brown communities, resulting in increased rates of asthma and increased chances of mortality from COVID-19.⁵ Economic injustice, environmental racism, and public health disparities will continue to worsen as the climate crisis progresses in the midst of the COVID-19 pandemic.

New York City can learn from the COVID-19 crisis and take aggressive, bold action to not only tackle these issues, but also address the root causes that allowed them to take hold. **Retrofitting public schools, installing solar on public schools, expanding municipal composting and implementing commercial waste zones, and electrifying school buses, will catalyze the City's economic recovery by creating thousands of local jobs and saving millions in future operational expenses.** We recommend that the city invest \$200 million in these projects this year through the city budget. The \$200 million should be invested as follows:

- **\$80 million to retrofit public schools**
- **\$100 million to install solar on public schools**
- **\$17 million to expand municipal composting and implement commercial waste ones**
- **\$3 million to electrify school buses**

\$200 million invested this year in those areas of climate infrastructure projects noted above will help create thousands of climate jobs in the near term, while putting New York City on a path to becoming a leader in climate policy in the post-pandemic world. The recommended \$200 million would be a significant down payment toward building the green infrastructure of the future.

This analysis will identify the financial and emissions savings for the Climate Works for All coalition's Spring 2021 budget priorities – informed by the coalition's [Equitable Recovery for NYC](#) platform – and their feasibility under pandemic-related restrictions. \$200 million invested this year will help create thousands of climate jobs in the near term, while putting New York City on a path to becoming a leader in climate policy in the post-pandemic world.

Spring 2021 Budget Proposals

The Climate Works for All coalition's [An Equitable Recovery for NYC](#) report outlines needed green infrastructure investments that reduce city carbon emissions and create 100,000 stable, good-paying jobs. The *Equitable Recovery* platform is endorsed by over fifty faith, labor, and community based organizations and builds off the momentum of the Climate Mobilization Act and the 2019 Climate Leadership and Community Protection Act. The following priorities were informed by the platform, and will help move New York City towards an equitable recovery.

Retrofitting Public Schools

In April 2019, New York City passed Local Law 97 (LL 97), a law that puts a cap on greenhouse gas emissions for buildings larger than 25,000 square feet. To ensure the spirit of the law is upheld by the private sector and to reduce greenhouse gas emissions by 40 percent by 2030, New York City government must lead by example and retrofit public buildings with the urgency the issue deserves. While in 2019, the Department of Citywide Administrative Services (DCAS) received \$3 billion for energy efficiency and renewable energy measures,⁶ it will take a larger budget to meet LL 97 goals and it is unclear which public buildings are being prioritized. The Coalitions' budget request will specifically focus on K-12 schools, which make up a large portion of public buildings that are currently emitting at rates above LL 97 emission caps.

Based on public data from 2019 on energy and water usage for large buildings⁷ and the Coalition's analysis, over 2,400 city-owned buildings are currently emitting at levels higher than the emissions cap for the 2030 - 2034 LL 97 compliance period. The buildings are dispersed throughout the city and comprise various building types including K-12 schools, government offices, maintenance and repair for government equipment, police stations, and fire stations, among other uses. However, in centering the social and equity concerns outlined earlier in this report, **the City should immediately invest \$80 million to retrofit K-12 schools, and prioritize schools located in frontline communities of color.**

As of 2019, 1,132 K-12 schools, which add up to a total of 143,869,137 square feet, are emitting at levels beyond LL 97's 2030 - 2034 period of compliance.⁸ At an average cost of \$7.55⁹ per square foot to retrofit buildings, the city would need over \$1.08 billion throughout the next 13 years to meet LL97 emission targets. That is, the City needs about \$80 million every year to retrofit schools. Given the known associations between atmospheric pollution and climate change, and the correlation between air pollution and mortality rates for respiratory diseases like COVID-19, retrofitting buildings, particularly Heating, Ventilation, and Air Conditioning (HVAC) systems, serves as a common solution to two of the most urgent problems New Yorkers have faced in the last few decades—a pandemic and climate change. In addition, **research shows that investing \$80 million this year into building retrofits would create 482 direct and indirect jobs during a time of economic crisis.**¹⁰ Protecting children, teachers, public servants, and the public at large who utilize these buildings, while stimulating jobs for New Yorkers, should be of utmost importance in 2021.

Moreover, a more concerted effort to reduce emission at a neighborhood scale and prioritize retrofits in low-income and environmental justice communities is needed. Currently, the City seems to be conducting retrofits at a suboptimal pace and through a portfolio of construction projects that diffuse emission reduction benefits throughout the city, leaving the public wondering if climate goals will actually be achieved. Multiple and speedy localized efforts in frontline communities to reduce public building emissions at the neighborhood level could send a strong signal to the private sector and public at large that the City is serious about reducing building emissions and protecting vulnerable populations. Reducing the City's contribution to greenhouse gas emissions, while improving indoor and outdoor air quality for frontline communities can have consequential positive health outcomes and save lives. Further focusing on schools and public offices could improve current community health outcomes, reduce asthma rates, and prevent future health disparities.

Solar on Public Schools

In 2014, New York City committed to installing 100 megawatts of solar energy on public buildings by 2025. In order to achieve this goal, solar panels would need to be installed on over 300 public buildings over the following decade, a move that could be replicated on the other 4,000 city-owned and leased properties throughout New York City. It is integral that the Department of Citywide Administrative Services (DCAS), the agency charged with the city's solar implementation, prioritize its solar program. At an average cost range of \$3.30 - \$5 per watt installed,¹¹ the city would need over \$460 million over the next four years to reach 100 megawatts of solar energy on public buildings. **An immediate investment of \$100 million toward DCAS' solar program will provide the capacity and resources the agency needs to get the City closer to its 2025 solar goals.**

The New York City Department of Education's (DOE) building stock presents an opportunity for the City to make significant progress toward its solar goals. Not only do K-12 schools hold a large share of New York City's new solar energy capacity, they also account for one-quarter of all City-owned buildings. In fact, the DOE hosts more than half of the City's completed installations.¹² Following the passage of the [Climate Mobilization Act](#), DCAS and the New York Power Authority (NYPA) announced their plans to install up to 16 additional megawatts of solar energy at 46 New York City public schools.¹³ While this announcement is a good step, DCAS must prioritize an expeditious implementation of its solar program in environmental justice communities to ensure the city meets its 2025 solar goals.

DCAS has installed solar panels on 37 school buildings across the city – 22 of which are in environmental justice communities – amounting to only 7 megawatts of solar energy.¹⁴ There are still 189 other school sites waiting to be completed that have the potential to reduce the City's emissions by another 10,439 metric tons of CO₂. **At completion, the savings from these sites will be equivalent to taking 2,255 cars off the streets for one year.**¹⁵ As DCAS continues to implement its solar program, it is critical that the agency utilizes social equity criteria to determine the order in which solar panels should be installed. Though DCAS' collaboration with NYPA

is a good step forward, the As the largest school district in the country, there is an immense opportunity for New York City to create an implementation standard that can be replicated in other municipalities. Only taking technical considerations into account, such as solar-ready roofs, fails to recognize systemic inequalities in New York City. By prioritizing K-12 schools in environmental justice communities, the City will be building more resilient neighborhoods and ensure the benefits of renewable energy reach its most impacted New Yorkers.

Investments in solar will allow New York City to mitigate deep socio-economic and environmental inequalities in our city. New Yorkers had first-hand experiences of the catastrophic impacts of climate change through Hurricane Sandy. Now, these cumulative environmental risks have further intensified under the COVID-19 pandemic. Building energy generation technology in environmental justice communities is essential, especially as New York looks towards a Just Recovery from the current public health and economic crises.

Investments in green infrastructure will also bring good, well-paying jobs back into communities that need it most. Research shows economic activity on green infrastructure generates both direct and indirect jobs. **Research shows an investment of \$100 million into installing solar on schools will create 508 direct and indirect jobs.**¹⁶ DCAS should use this opportunity to reevaluate its Power Purchasing Agreements (PPAs) and consider alternative financing models that will offer communities a larger share of the economic benefits tied to solar. The City must also ensure all solar projects are implemented with rigorous labor standards and offer prevailing wages that lead to the creation of good quality, career union jobs. It is crucial that all contractors prioritize leading community hiring practices; specifically employing local low-income residents, residents of NYCHA, women, and long-term unemployed New Yorkers in new hiring opportunities. The siting of solar on K-12 schools coupled with building retrofits, a local hiring program, and strong project labor agreements, can expand access to career-track jobs and create an avenue for addressing environmental injustice.

Municipal Waste Management

Investing in high-performing recycling, composting, and waste reduction programs in both the commercial and residential waste systems can create up to four times more jobs per ton of waste as compared to disposal.¹⁷ We estimate a total of **3,000 high quality jobs for New Yorkers and sharply reduce greenhouse gas emissions from landfilling, incinerating, and transporting solid waste.**¹⁸

On the municipal side, New York City must recommit to its zero waste goals and restart its stalled organic waste recycling program, which was subject to a 90 percent budget reduction in FY 2021. A fledgling community food scrap drop-off program has proven to be popular among New Yorkers, but is now threatened by a lack of local compost processing capacity as the Parks Department has refused to renew licenses for community-based composters on public land.

The City can begin to lay the groundwork for a cost-effective, citywide mandatory organic waste recycling system by doubling the capacity of the community food scrap drop-off program¹⁹ while piloting new technology, building and street designs, and community education to begin efficiently collecting food scraps for recycling from large multifamily buildings and public agencies. **DSNY will need \$10.5 million to double the capacity of the current community food scrap drop-off program, which is now collecting and processing more than 180,000 pounds per month after being completely suspended in May, 2020.**

To prepare to implement citywide organics recycling, **DSNY will need at least \$4 million to pilot and study new technologies and public education strategies to successfully collect food scraps from large residential and government buildings, including NYCHA buildings.**

On the commercial waste side, the City must fully implement the Commercial Waste Zones program (Local Law 199 of 2019), which will require commercial haulers to apply and operate within waste zones within New York City. The New York City Department of Sanitation is overseeing the implementation of the program. To begin to implement the Commercial Waste Zones program, **DSNY will need \$4 million dollars in the 2022 Fiscal Budget to cover the cost of new hires, consulting contracts, and building a data management platform, resulting in 26 direct jobs.**

Eventually as carters pay (yet to be established) fees to the city as a part of the operations process, the program will pay for itself, and DSNY will be able to hire more staff to further implement the program.

Once Commercial waste zones are fully implemented, research shows that carters could **save more than \$14 million dollars through reduced tolls and operation costs through a more efficient zone structure.**²⁰

Implementation of the Commercial Waste Program is underway as DSNY has begun to issue RFPs soliciting proposals from interested carters. However, the success of the program relies on the city fully funding DSNY staffing needs. Hiring and training can be done remotely and can be done safely during the COVID-19 crisis. Furthermore, implementing CWZ will increase safety conditions for workers and pedestrians across NYC.

Clean Transportation Expansions

The public transportation sector is an opportunity to promote equity, resilience, and accessibility in New York City, while creating thousands of well-paid jobs. Low-income and communities of color have always struggled with the lack of affordable and reliable public transportation, while hosting the most polluting transit infrastructure such as highways and bus depots- perpetuating historic health disparities. Comprehensive transportation planning requires co-governance and collaborative models to engage other jurisdictions and stakeholders. New York City must invest in mode-shifting strategies, and bolster its pedestrian and street safety to ensure the

City's most transportation-dependent communities are prioritized.

To date, **the largest driver of transportation-related climate pollution in the City has been and remains passenger vehicles, which produce four-fifths of the greenhouse gas emissions associated with the transportation sector.**²¹ A 2019 Synapse analysis of transportation emissions in New York State found that a combination of electric vehicle incentives and mode-shifting (from personal vehicles, to bicycles or mass transit) is needed for the state to meet its emissions targets.²² 21 percent of emissions reductions must come from shifting away from personal vehicles.²³ Electric school buses are a critical piece of this puzzle. **This year, Climate Works for All is asking for an investment of \$3 million to expand the City's electric school bus pilot program.**

Air pollution from New York City's aging fleet of 10,000 diesel and gas school buses creates an unequal burden - especially for students with disabilities, students with respiratory illnesses (who are more likely to ride the bus for long periods), and environmental justice communities where hundreds of diesel buses are housed each day. Electric school buses create zero emissions, can be charged using local renewable energy sources, and can create high-quality manufacturing jobs. These vehicles can be economically charged during hours of off-peak energy demand, especially if supported by variable time-of-use electricity pricing by utilities. Electric school buses can also help feed stored electricity back to the grid at times of peak demand, typically on the hottest summer days when fewer school buses are needed.

In Spring of 2021, New York City's Department of Education will begin to operate its own school bus fleet - a welcome opportunity to bring a new level of service and transparency to a dysfunctional private-contractor bus system. Investing \$3 million into NYCSBUS, the DOE's electric bus program, would allow the agency to expand the current two vehicle pilot to approximately sixteen electric school buses next year, and would support improvements to necessary charging stations and bus depot infrastructure.

As the City looks towards an equitable recovery for all, it must continue the practice of community-led transportation planning to identify local transit issues and priorities such as expanded and dedicated bus lanes, increased bus service, multi-modal transportation infrastructure, and pedestrian safety to provide clean, improved and accessible service for the most mobility-burdened New Yorkers. The Climate Works for All coalition applauds Vision Zero which advances street and pedestrian safety and design, including community planning, climate resilient infrastructure, accessible public transport and community resources, and electrifying school bus fleets. Though the coalition believes the City should remove the New York Police Department from traffic enforcement, the community-led strategies highlighted in Vision Zero initiates the necessary investments in accessible clean transportation that will help set New York City as a national leader in climate policy implementation centered in equity and frontline leadership.

Conclusion

The COVID-19 crisis is New York City's wake-up call to invest in healthier infrastructure that centers low-income frontline communities of color. As the City prepares for its recovery efforts, it must do so cognizant of its unemployment and climate crises.

New York City can take immediate steps to both aggressively meet its climate goals and to create good jobs in Black and brown communities, even in the midst of the pandemic. A new IBO analysis indicates that the city will have a surplus of \$3.6 billion,²⁴ this is in addition to the \$20 billion expected in Federal aid for the state²⁵ and another \$6 billion for the City.²⁶ The four short-term initiatives outlined in this analysis: retrofitting public schools, installing solar on public schools, expanding municipal composting and implementing commercial waste zones, and electrifying school buses, will catalyze the City's economic recovery by creating thousands of local jobs and saving millions in future operational expenses.

Our country is looking for a way out of this crisis and by prioritizing racial, economic, and environmental justice in its recovery efforts, New York has the opportunity to lead the way. The City budget must prioritize investments and job creation strategies for the communities that have been hit the hardest by both climate change and the COVID-19 crisis. We will not return to a healthy economy unless we are investing in frontline communities, addressing racial inequities, creating good union jobs, and fighting climate change in this year's budget. The Climate Workers for All coalition's 2021 budget priorities will enable New York City to invest in its historically underfunded communities of color and will set the City on track to reach its ambitious climate goals.

Endnotes

1. Mays, J.C. & Newman, A. (8 Apr 2020). "Virus Is Twice as Deadly for Black and Latino People Than Whites in N.Y.C." *The New York Times*. <https://www.nytimes.com/2020/04/08/nyregion/coronavirus-race-deaths.html>
2. Hawkins, D. (20 Jun 2020). "Differential Occupational Risk for COVID-19 and Other Infection Exposure According to Race and Ethnicity." *The American Journal for Industrial Medicine*. <https://pubmed.ncbi.nlm.nih.gov/32539166/>
3. Dubay, L. Et al. (2 Dec 2020). "How Risk of Exposure to the Coronavirus at Work Varies by Race and Ethnicity and How to Protect the Health and Well-Being of Workers and Their Families." *The Urban Institute*. <https://www.urban.org/research/publication/how-risk-exposure-coronavirus-work-varies-race-and-ethnicity-and-how-protect-health-and-well-being-workers-and-their-families>
4. Lew, I. (30 Jul 2020). "Race and the Economic Fallout from COVID-19 in New York City." *Community Service Society (CSS)*. <https://www.cssny.org/news/entry/race-and-the-economic-fallout-from-covid-19-in-new-york-city>
5. Wu, X. Et al. (2020). "2020. Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis." *Science Advances*. <https://projects.iq.harvard.edu/covid-pm>
6. "Ten-Year Capital Strategy 2020 - 2029", The City of New York. April 2019.
7. Energy and Water Data Disclosure for Local Law 84 2020 (Data for Calendar Year 2019). Last accessed on January 4, 2021. <https://data.cityofnewyork.us/Environment/Energy-and-Water-Data-Disclosure-for-Local-Law-84-/qb3v-bbre>
8. As calculated by the Climate Works for All Coalition using the Energy and Water Data Disclosure for Local Law 84 2020 (Data for Calendar Year 2019) Last accessed on January 4, 2021. <https://data.cityofnewyork.us/Environment/Energy-and-Water-Data-Disclosure-for-Local-Law-84-/qb3v-bbre>
9. "Retrofit Market Analysis," Urban Green Council. June 18, 2019. https://www.urbangreencouncil.org/sites/default/files/urban_green_retrofit_market_analysis.pdf
10. The [Political Economy Research Institute's](#) (UMass-Amherst) macro-level job estimates for every \$1 million spent on building retrofits, 13.4 jobs will be created. After accounting for a 45 percent adjustment, our analysis estimates a total of 482 direct, indirect, and induced jobs created.
11. EnergySage. (2 Mar 2021). "Solar Panels in New York City, NY." <https://www.energysage.com/local-data/solar-panel-cost/ny/new-york-county/new-york-city/#:~:text=As%20of%20March%202021%2C%20the,NY%20coming%20in%20at%20%2416%2C400>.
12. NYC DCAS. (2016). "Solar 100: New York City's Municipal Solar Strategy." https://www1.nyc.gov/assets/dcas/downloads/pdf/energy/reportsandpublication/Solar100_Local_Law_24_2016.pdf
13. New York Power Authority. (29 Jun 2020). "NYPA and City of New York Seek Developers to Install Rooftop Solar Arrays at Dozens of New York City Schools, Manhattan Water Treatment Plant." <https://www.nypa.gov/news/press-releases/2020/20200629-dcas-solar-arrays>
14. DCAS. (2019). "Clean Energy Generation." <https://www1.nyc.gov/site/dcas/agencies/clean-energy-generation.page>.

15. EPA. (2020). “Greenhouse Gas Equivalency Calculator.” <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references#vehicles>
16. The [Political Economy Research Institute’s](#) (UMass-Amherst) macro-level job estimates for every \$1 million spent on renewable solar projects, 11.3 jobs will be created. After accounting for a 45 percent adjustment, our analysis estimates a total of 508 direct, indirect, and induced jobs created.
17. Platt, B. (8 May 2013). “Composting Makes \$en\$: Jobs through Composting & Compost Use.” *The Institute for Local Self Reliance (ILSR)* <https://ilsr.org/composting-sense-tables/#:~:text=Small%2Dscale%20facilities%2C%20for%20instance,10%2C000%20tons%20per%20year%20composted>.
18. Transform Don’t Trash NYC. (2016). “Clean City, Green Jobs.” <http://transform-dontrashnyc.org/wp-content/uploads/2016/12/TDTGreenJobsReport-final.pdf>
19. Seattle’s municipal [organics recycling program costs are lower than costs associated with their disposal programs](#), showing large-scale composting not only works but is more cost-effective in the long-run.
20. Climate Works for All. (2020). “An Equitable Recovery for NYC.” <https://alignny.org/wp-content/uploads/2020/10/CW4A-Equitable-Recovery-Report-Visuals-v4.pdf>
21. Transform Don’t Trash NYC. (2016). “Clean City, Green Jobs.” <http://transform-dontrashnyc.org/wp-content/uploads/2016/12/TDTGreenJobsReport-final.pdf>
22. Sierra Club. (2019). “Transforming Transportation in New York: Roadmaps to a Transportation Climate Target for 2035.” <https://www.synapse-energy.com/sites/default/files/Transforming-Transportation-in-NewYork-19-017.pdf>
23. New York City Department of Transportation. (10 Sep 2019). “Electric Vehicle Charging Program: Manhattan CB7 DRAFT Briefing.” https://nycdotprojects.info/sites/default/files/Manhattan%20CB7%20Draft%20Briefing_September.pdf
24. Dr. Lowenstein, R. (2 Mar 2021). “Testimony of Ronnie Lowenstein Director, New York City Independent Budget Office To the New York City Council Finance Committee.” *NYC Independent Budget Office*. <https://ibo.nyc.ny.us/iboreports/ibo-prelimianry-budget-testimony-march-2021.pdf>
25. Sommerfeldt, C. & Slattery, D. (12 Feb 2021). “N.Y. to get \$50B from next COVID stimulus, likely averting draconian budget cuts.” <https://www.nydailynews.com/coronavirus/ny-covid-ny-stimulus-cuts-20210212-ag25cmldqfcqxdaoccbtgam-jfm-story.html>
26. Hallum, M. (11 Mar 2021). “De Blasio, Schumer Cut Out Cuomo as Middleman in Deliverance of Stimulus Funds.” *AM NY*. <https://www.amny.com/news/mayor-de-blasio-senator-schumer-cut-out-cuomo-as-middleman-in-deliverance-of-stimulus-funds/>.