Green Schools for a Healthier NYC

ZOHRAN FOR NEW YORK CITY

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Children deserve to inherit a safe, healthy world. The Mamdani administration will fight to protect New Yorkers from the present and future impacts of the climate crisis while investing in our children, creating thousands of union jobs, and cleaning the city's air. We will do this by revitalizing our public schools with healthy, green infrastructure.

Serving more than 900,000 students every day, NYC public schools offer a key opportunity for comprehensive climate action. Public school buildings are riddled with maintenance issues and energy inefficiency. K-12 school buildings account for roughly one third of the energy used by city buildings, making them a major source of carbon pollution. Asphalt schoolyards radiate dangerous levels of heat during the summer and flood the city with runoff during heavy storms. Our students deserve better. They deserve safe, pollution-free schools built for a clean energy future.

Partnering with the school system and community leaders, the Mamdani administration will:

- **Renovate 500 public schools** with renewable energy infrastructure and HVAC upgrades to accelerate NYC's energy transition and improve learning conditions.
- **Build 500 green schoolyards**, turning heat-absorbing asphalt into vibrant green spaces for students and community members.
- **Create at least 15,000 union jobs** for the people who build, maintain, and run our schools
- **Transform 50 schools into resilience hubs**, year-round community facilities that provide resources and a safe space during emergencies.
- **Prioritize** out-of-date facilities and combat environmental racism in NYC.

Within its first term, the Mamdani administration will complete installation of solar panels and HVAC systems across 500 NYC public schools, and will set NYC on a course to complete schoolyard conversion and resilience hub creation by 2035.

Schools as a Critical Place of Intervention – and Opportunity

NYC public schools badly need upgrades. Many public school buildings have unsafe toxins that threaten the health of our students. Some schools do not have effective heating or air conditioning, which makes it harder for students to concentrate on classwork. In recent years, hundreds of schools have experienced flooding from heavy storms. By targeting schools for green renovations, we will upgrade unhealthy facilities, reduce air pollution, expand access to greenspace, and improve learning conditions— while also addressing climate change.

Schools have great potential for addressing climate change. In 2021, the city calculated that K-12 public schools accounted for 32 percent of all the energy used by city buildings. This means that

public school buildings consume significantly more energy than any other type of city building. Researchers estimate that transitioning NYC public schools to renewable energy could reduce city emissions by more than 713,382 metric tons of carbon dioxide equivalent (MTCO2e) each year, eliminating nearly 1.5 percent of all emissions citywide. For comparison, this would be the equivalent of taking more than 160,000 cars off the road each year or running roughly 200 wind turbines a year. Transitioning our schools to renewable energy would also save the city around $275 million in energy costs for public school buildings each year. Rooftop solar would further reduce carbon emissions and energy costs for the city by supplying clean energy into the grid. Spread out across the city, schools also offer valuable land for renewable energy infrastructure and greenspace, particularly in communities that are the most burdened by heat and pollution.

Children and future generations are at the greatest risk from climate change as global temperatures continue to rise over the coming decades. Already, children are being hospitalized by extreme heat, as wildfire smoke poisons their lungs and stunts their development. Investing in schools also gives us an opportunity to reduce the harms of climate change to our children, both today and in the future, while addressing inequalities that leave low-income communities and communities of color to bear the brunt of climate change.

Renovate 500 schools to be healthy, comfortable, and efficient

- **Improve indoor air quality, cooling, and heating.** Heat and polluted air negatively impacts children's development and learning. The Mamdani administration will remove mold, lead paint and pipes, and asbestos, and will repair windows and roofs. Schools will also get updates to their heating, ventilation, and air conditioning (HVAC) systems, which will improve energy efficiency. This will decrease the overall emissions of schools, improve indoor air quality, and reduce headaches, asthma, and the spread of air-borne diseases among students and school workers.
- **Build rooftop solar.** Currently, only 119 of the city's 1,800 public schools have rooftop solar. Solar panels emit 91 percent less greenhouse gases than natural gas.
- **Expand car-free Open Streets.** School dropoff and pickup hours are associated with dangerous air pollution and higher rates of vehicle crashes. At 8 am, there are 57 percent more crashes and 25 percent more injuries per mile on streets near schools as children arrive at school. This is especially pronounced near schools where most students are students of color or come from low-income families. Open Streets improve safety and air quality for students, reduce climate pollution, and provide children with additional outdoor play space. The Mamdani administration will expand the existing Open Streets for schools program through NYC DOT by automatically enrolling every public school in the program instead of requiring schools to apply. NYC DOT currently spends around $4 million per year on our Open Streets program without providing any funding to schools. The Mamdani administration will allocate $20 million per year to ensure that every school can have an Open Street. This money will support additional programming,

operational support, and maintenance to ensure each child has access to clean, safe, and fun space—every day.

Build 500 green schoolyards, replacing asphalt with vibrant and eco-friendly spaces

The Mamdani administration will **replace thousands of acres of asphalt with greenspace** across 500 schools in the city. Schoolyards will be renovated with natural elements such as trees, grass, and gardens. It will also build green roofs on schools that lack greenspace. This will add to the successes of the Community Schoolyards project, which has built green schoolyards at 226 schools across NYC.

The Mamdani administration will **make green schoolyards available to the public after school hours and during school breaks.** This means that community members will be able to enjoy the many benefits provided by green schoolyards. Groundskeepers will help ensure that this public access does not compromise children's safety.

Natural schoolyards benefit both the environment and children's cognitive and physical development. Such benefits include:

- **Reducing heat in NYC.** Extreme heat is the most deadly, and well-established, climate change impact. Large, dense cities like New York are particularly vulnerable to extreme heat because they experience higher temperatures as compared with rural and suburban areas. Urban areas replace naturally cooling surfaces, like trees and water, with heat-absorbing materials like asphalt, which turns the temperature up. This means that building thousands of acres of greenspace will save lives; a 20 percent increase in green space is correlated with a 9 percent decrease in heat deaths. Low-income communities of color generally face the highest temperatures and the highest rates of heat mortality, so green schoolyards will play a critical role in addressing heat-based inequities in the city. Students' health (and academic performance) also suffers when extreme heat prevents them from playing outside.
- **Improving air quality and reducing emissions**. Increasing greenspace in NYC will significantly reduce air pollution levels and improve respiratory health. Trees and plants filter pollutants out of the air, saving the city in medical costs associated with respiratory health. Greenspace will also help to offset carbon emissions by absorbing carbon from the air.
- **Preventing floods.** Green schoolyards will protect against flooding by providing porous surfaces that absorb and drain water, thereby diverting millions of gallons of stormwater. Indeed, greenspace offers an affordable alternative to traditional stormwater management systems.
- **Reducing noise pollution by creating sound buffers,** which boosts student concentration.
- **Improving mental health and well-being.** Greenspace provides numerous physical and mental health benefits for children. Green schoolyards will reduce stress, improve concentration, enhance social cohesion, and encourage physical activity.

- **Creating opportunities for outdoor learning.** Green schoolyards also provide opportunities for outdoor learning, which can provide numerous benefits. Greenspace improves student engagement and provides students with a space for hands-on learning about natural systems. School gardens will provide students an opportunity to collaborate, learn valuable skills, and produce nutritious food.
- **Addressing inequities in access to green space.** Low-income communities and communities of color have the least green space and the highest temperatures in the city. Students of color also experience higher rates of respiratory illnesses, such as asthma. Public schools can play a key role in addressing this injustice by providing the grounds for greenspace in dense neighborhoods. The Mamdani administration will prioritize building green schoolyards at schools located in the neighborhoods that have the highest levels of heat and pollution. This will bring all of the above-mentioned benefits to those who need them the most.

Proven Success: Green Schoolyards in Denver

Over a 12-year period, Denver Public Schools (DPS) converted 99 elementary schoolyards into green "Learning Landscapes" across the district. The school district built vegetable gardens on more than half of these schoolyards and established school-farms on three sites. DPS established a salad bar at every school in the district, with 13 schools serving fruits and vegetables that were harvested by students in accordance with food safety protocols. Denver also opened these schoolyards to the public after school hours, including the weekends and summers.

Researchers found that these green schoolyards provided significant benefits for students, the city, and the environment. Over time, just 99 green schoolyards saw:

- Improved student performance by 8.5 percent on math tests and 5.4 percent on writing tests;
- Reduced unexcused student absences by 700 days a year;
- Reduced the rate of students leaving their school or district by 7 percent;
- Reduced air temperatures by an average of 15°F during the hottest months of the year;
- Sequestered 1,284 tons of carbon each year;
- Removed 404 pounds of air pollutants each year.

A separate analysis of nine Denver schoolyards found that green schoolyards significantly increased students' physical activity, which is critical to children's health and development.

We estimate that renovating 500 schoolyards will cost approximately $315 million over 10 years, or $630,000 per schoolyard. Renovation costs can vary; some cities have spent as little as $75,000 per schoolyard. However, a growing body of research shows that **green schoolyards can offset these costs by reducing city costs and generating new revenue**. One study estimated that Denver could make over $3 for every dollar it invested in green schoolyards through environmental benefits, such as reducing heat and diverting stormwater, increases in local property tax revenue, and "modest gains in high school graduation rates and community health." Similarly, a study of green schoolyards in

California found that over a twenty year period, **green schoolyards actually cost 381 percent less than asphalt schoolyards.**

Create at least 15,000 union jobs for the people who build, maintain, and run our schools

Retrofitting public schools will create thousands of union jobs for New Yorkers, with an emphasis on building long-term careers. The publicly funded renovations will be covered by a Project Labor Agreement between NYC and the Building and Construction Trades Council of Greater New York, ensuring fair wages and working conditions for workers. The Mamdani administration will also work to ensure that these agreements are updated to reflect workplace safety guidelines for heat-exposed workers, in view of the growing heat-related risks for outdoor workers. **This plan will create at least 15,000 direct, union jobs per year.**

In doing so, the Mamdani administration will **hire within the community.** It will partner with the New York Power Authority (NYPA) to bring apprenticeships and workforce development for renewable energy to communities. This project will work with unions to develop direct-entry apprenticeships and school-to-career pipelines within neighborhoods across NYC. This will involve targeted outreach in different languages and classes that will prepare community members to meet apprenticeship requirements. The project will prepare the city's young people for a warming world, while ensuring they have good pay, stable work, and the choice to stay in their neighborhoods for the duration of their careers.

Transform 50 schools into resilience hubs, which are familiar and trusted community spaces

As climate-related emergencies like flooding and heat waves increase in frequency and intensity, New Yorkers need community spaces where they can find support in times of need. Resilience hubs have emerged as an important climate resilience strategy in cities across the country and globally. Establishing resilience hubs throughout the five boroughs will connect communities with important resources to help them weather the changing climate. **The Mamdani administration will create 50 resilience hubs in NYC Public Schools.**

These hubs will strengthen social cohesion and social networks, which research consistently shows are important protective factors during and after disasters. Maintaining these hubs as community centers throughout the year will strengthen relationships with community members, which can prove critical during emergencies and recovery efforts.

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What is a Resilience Hub?

Resilience hubs are community facilities that are equipped to support residents and provide resources before, during, and after disasters and emergencies. Resilience hubs also support communities year-round by providing a space for activities, training, and social connection.

Resilience hubs are a proven and growing climate resilience strategy for US cities. Resilience hubs were first launched in Baltimore and have proven effective at supporting residents in the face of heat waves, flooding, and more. More than 250 hubs now support communities across the country. Major cities like Seattle and states like Colorado have also recently launched plans to expand resilience hubs as a key part of their climate adaptation efforts.

Why at schools? Locating these hubs within public school facilities will reach New Yorkers in familiar, trusted community spaces and meet families where they are. These hubs will serve as a model for what a fully green and climate resilient community building can look like. While NYC is developing plans to include resilience hubs at some NYCHA campuses, the city has had limited investment in this strategy. The Mamdani administration will prioritize community resilience by investing in resilience hubs, bringing resources directly to communities, and working with communities to develop and leverage the hubs.

These 50 new Resilience Hubs will:

- **Support communities with the highest exposure to climate-related hazards.** Resilience hubs will be built first in low-income communities of color that are disproportionately impacted by extreme heat and flooding.
- **Respond to the unique needs of communities.** This program will leverage documented best practices for resilience hubs by working with schools, community-based organizations, and community members to map the community's hazards and risks, as well as assets.
- **Host community services and strengthen social connections during "blue sky" times.** Resilience hubs located in public schools will act as community spaces outside of emergencies, providing a place to provide services and training to the community, including specific training on disaster preparedness and response. Tailored to the needs of each specific community, the hubs could host programs for children and older adults, workforce training, and climate education events for the community, which will strengthen social ties that will benefit the community in times of crisis.
- **Provide cooling and heating for residents in need.** Resilience hubs will serve as cooling centers to help residents safely weather extreme heat with consistent air conditioning. Resilience hubs can also provide a warm space for community members during winter storms or extreme cold. Currently, 181 libraries, 295 older adult centers (serving only older adults), and 17 private facilities in the city serve as cooling centers during heat waves. Establishing 50 resilience hubs in schools would increase the overall number of cooling centers by 10 percent, and the number

of cooling centers open to New Yorkers of all ages by 25 percent. This will provide critical protections to New Yorkers—disproportionately low-income people of color—who are at risk from climate change.

- **Provide resilient backup power.** Resilience hubs will be equipped with solar storage. Battery storage will allow critical loads to be powered throughout blackouts, with the facilities able to operate in "island mode", independent of the power grid, in the case of a prolonged outage. Community members will be able to charge cell phones and other devices with this backup power. Solar storage will provide schools with the added benefit of potential income generation during the summer months when schools are out of session and the solar power system can generate more energy than the building is consuming.
- **Safeguard New Yorkers' health with medical supplies and refrigeration.** Power outages and emergencies can be dangerous and disruptive to community members' health, especially for those who rely on electricity to keep essential medicines safe to use. Resilience hubs will be equipped with basic first aid supplies, as well as refrigeration capacity for temperature-sensitive medicines like insulin and other essentials like breast milk.
- **Keep communities connected with resilient internet and trusted information.** Access to reliable information and communications is critical during emergencies. The hubs will be equipped with WiFi infrastructure adequate to support large groups of people and maintain the community's access to the internet. The hub will also serve as a source of credible information from official agencies.
- **Coordinate with disaster management agencies and community groups.** In order to support effective disaster response and strengthen connections between communities and city agencies, the resilience hubs will coordinate with relevant city agencies, such as NYC Emergency Management and the Mayor's Office of Climate & Environmental Justice, when developing their plans for disaster response. During emergencies, the hubs can serve as a coordinating point for city, state, or national emergency management agencies for functions such as emergency supply distribution, and more. The hubs could also host training and community engagement activities for the city's existing emergency volunteer programs like CERT (FEMA/NYCEM) or the Be a Buddy program.
- **Leverage green infrastructure.** Where appropriate, resilience hubs will leverage sustainable stormwater management (also known as green infrastructure) methods to provide a safeguard against flooding on the premises. This could include green roofs, permeable pavements, rain gardens, or other strategies designed to collect and store rain and reduce and filter runoff.

Prioritize outdated facilities and combat environmental racism

Schools will be assessed on the current state of the facilities and community factors, including risks of extreme weather, community health outcomes, and economic indicators. This will ensure students and workers have safe environments, while planning for long-term climate resilience and delivering for communities facing economic hardship.

The Mamdani administration will consider these factors, among others, when prioritizing green investments in NYC Public Schools:

- **The current state of facilities.** The School Construction Authority will assess the current state of school facilities. It will evaluate the age and expected lifetime of the facilities, whether it meets the capacity of enrollment demands, its energy efficiency, indoor air and water quality, and ADA accessibility. It will also assess the exterior grounds when prioritizing green schoolyard conversions.
- **Communities facing environmental and economic hardship**. The state Climate Leadership and Community Protection Act (CLCPA) has identified disadvantaged communities (DACs) using 45 indicators. This includes climate risks like extreme heat and flooding as well as pollution and proximity to polluting sources, such as landfills, remediation sites, and power generation facilities. It also considers economic and health factors like income, poverty level, unemployment rate, asthma rate, and more. In New York City, 44 percent of census tracts and 49 percent of the population have been mapped and designated as DACs. These are disproportionately working class communities of color.
- **Proximity to fossil fuel peaker plants**. Several dozen peaker power plants dot the city, many of which are owned and operated by the state. These fossil fuel plants cause asthma and other health problems in our communities. The peaker plants have been directed to be shut down by 2030. If new clean power is not built, however, we will be forced to decide between continuing to pollute our communities or face blackouts. By prioritizing resilience hubs with battery storage near the most polluting peaker plants, we can help move forward plant closures with a reliable energy grid and health benefits to communities. Starting with schools near peaker plants offers an opportunity to partner with the State and for Zohran to continue his fight for public power and shutting down fossil fuel plants.

What is Environmental Racism?

Racism not only blocks communities of color from economic opportunities, it also puts them at greater risk of short- and long-term environmental impacts. Racist housing policies like redlining have forced people of color to live near polluting sources like large highways, fossil fuel plants, and landfills. That leads to higher rates of chronic health problems like asthma. These communities often have under-maintained infrastructure and minimal greenspace, which puts residents at greater risk from air pollution, floods, and heatwaves.

Pay for these plans by directing existing money and raising new funding

The Mamdani administration estimates these plans to cost a total of nearly $3.3 billion over a total of ten years. That breaks down as follows:

- $726 million a year for HVAC and solar panel installation in 500 schools over four years; $2.87 billion total
- $315 million over 10 years to build 500 green schoolyards
- $62.5 million to build 50 resilience hubs
- $20 million a year to implement Open Streets for every NYC public school; $80 million first term
- **Total cost: $3.27 billion over 10 years**

The Mamdani administration will fund this investment in our schools through:

1. **Starting with the money waiting to be spent.** The Department of Citywide Administrative Services (DCAS) is in charge of energy management and was allocated $3.8 billion in 2019 for improving public buildings' energy efficiency. DCAS' remaining allocation will be directed to prioritize schools for HVAC upgrades and solar rooftops.
2. **Lifting state spending limits for decarbonizing schools.** Currently, New York State calculates aid to NYC schools for its buildings based on a maximum cost allowance policy (MCA). This policy heavily impacts the amount the city gets in aid for construction projects. According to a recent IBO report, "[d]epending on the difference between the MCA and the actual cost, the share of actual costs covered by building aid could be any percentage up to 56.9 percent. For new school construction projects in particular, which have high costs, the MCA is likely to be significantly less than the actual cost." MCA policy therefore prevents districts from decarbonizing their buildings, given that the costs of green tech can be higher. **The Mamdani administration will work with state legislators to create a green waiver for this MCA percentage threshold to incentivize decarbonization of city school buildings, akin to Pennsylvania's Guaranteed Energy Savings Act (GESA).**
3. **Green school bonds.** The Mayor and Comptroller can work together to incentivize the Teachers' Retirement System (one of the country's largest pension systems) to invest in green school bonds for NYC, drawing from state financing authorities like the NY Green Bank to de-risk this investment by backstopping potential losses, setting lower interest rates, and charging fewer fees by working with green non-profit legal and financial advisors. **The NY Green Bank—an institution with a mission to finance the transition to clean energy and address the climate crisis—is especially qualified to build capacities for project development and can provide low to no cost loans for school districts.** Green banks often have larger capacities to borrow, as their portfolios are likely more creditworthy than any school district's; lenders trust that a green bank can manage energy projects.
4. **Public power for public schools.** Schools will not lease the solar power from a third-party provider through purchase power agreements (PPAs). Instead, the Mamdani administration will **partner with the New York Power Authority (NYPA) as part of the Build Public Renewables Act (BPRA) to build these projects.** By eliminating the corporate incentive to maximize profit, we can lower energy bills and return those savings back to workers. Currently, NYPA has planned only one renewable energy project in the city. Building NYPA renewables in the city will also lower our

energy bills through the Renewable Energy Access and Community Help (REACH) program, which provides bill credits to low and middle income households. **A direct partnership will reduce the administrative costs that hold NYPA back from building more renewables in the city and provide economic relief to working families.**

Who Will Get This Done?

This is an ambitious plan for schools that will require coordination with multiple city and state agencies. The Mamdani administration will coordinate with the following agencies to oversee on-time and successful implementation:

- **Mayor's Office of Climate & Environmental Justice** to oversee the project.
- **NYC Department of Citywide Administrative Services** to direct city funds towards HVAC and solar.
- **NYC School Construction Authority** to provide reports of school facilities, install HVAC and solar, build green schoolyards, and remove any mold, asbestos, lead, or other toxins from schools.
- **New York Power Authority** to fund solar and batteries installation, workforce training, lower energy bills, and plan the shutdown of polluting peaker fossil fuel plants.
- **NYC Department of Environmental Protection** to design green schoolyards and resilience hubs.
- **NYC Department of Parks and Recreation** and **Trust for Public Land** to make schools' green space available to the public.
- **NYC Emergency Management** and **NYC Department of Health & Mental Hygiene** to coordinate with schools and communities on equipping and developing emergency response plans for the resilience hubs.
- **NYC Department of Transportation** and the **Horticultural Society of New York** to expand Open Streets for schools.

Conclusion

Our public school system urgently needs investment as the climate crisis exposes its weakest points. Water fountains are undrinkable through heat waves. Teachers are conducting classes in asbestos-filled rooms through pandemics and heatwaves. Streets and schools are flooding as ever more powerful storms thrash the city.

It's time we invest in a healthy future for our children. The Mamdani administration will install solar panels to build a world that our children can safely inhabit. It will build green schoolyards to nurture our students and protect against storms and heatwaves. It will upgrade HVAC systems to ensure comfortable classrooms every day of the year. It will renovate school buildings to increase their energy efficiency and remove mold, lead paint and pipes, asbestos, and other toxins. And it will transform our

schools into community resilience hubs where residents can access services and seek relief from extreme weather. Doing this will create thousands of stable, well-paid union jobs and save the City money. The initiative will bring green community infrastructure to every NYC neighborhood and serve as a model for transitioning the rest of our public buildings.