

COOL NEIGHBORHOODS NYC:

Protecting NYC from the Impacts of Extreme Heat

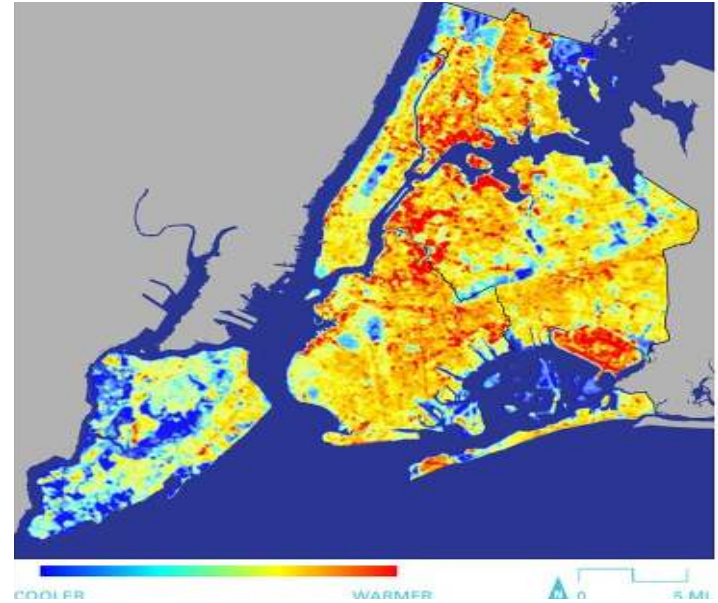
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New York City Mayor's Office of Sustainability

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STORMS ARE NOT THE ONLY CLIMATE HAZARD WE MUST PREPARE FOR



TEMPERATURE

of days
above 90°F
TRIPLE
by 2050s

NYC SUMMERS LIKE
BIRMINGHAM, ALABAMA

HEAT EXPOSURE IS DEADLY, AND PREVENTABLE

- Indoor temperatures can be 20°F higher than outdoor temperatures without AC.
- NYC heat-mortality rates are associated with poverty and poor housing quality.
- Residential AC prevalence in NYC is unequally distributed
- On average, each summer in NYC there are:
 - 110 direct and indirect deaths on heat wave days
 - 350 over the entire warm season (May-Sept)



2015-2016 URBAN HEAT ISLAND WORKING GROUP

Evaluated the best available science and identified best practices for heat mitigation and adaptation

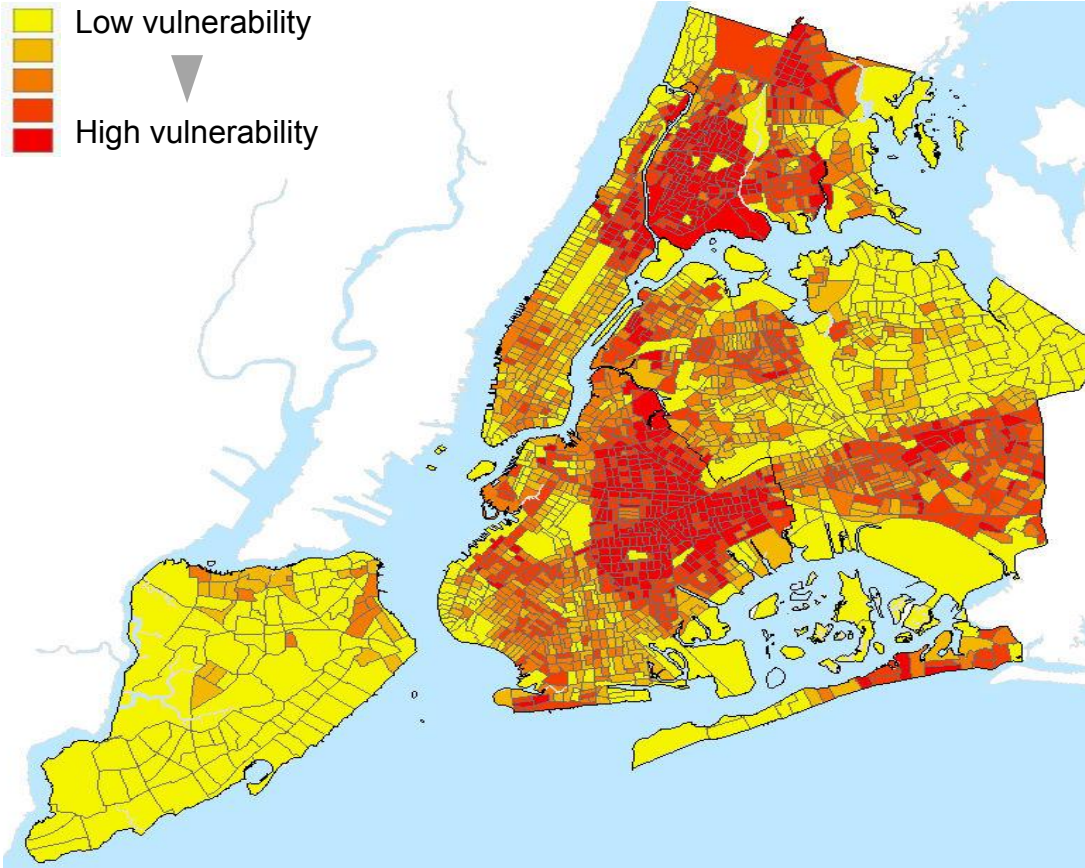
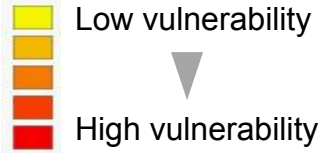
Two committees focused on:

- Evaluating heat impacts in NYC
- Evaluating the best strategies, investments, policies and programs to adapt NYC and benefit its most at-risk residents

Multi-Sector and Interdisciplinary

Government	Academia	NGOs
Health	Columbia University	Urban Green Council
Parks	Princeton University	Global Cool Cities Alliance
Small Business	City College of New York	WEACT for Environmental Justice
Emergency Management	The New School	Natural Resources Defense Council
Environmental Protection		American Institute of Architects
Sustainability		
State DEC		

Heat risk varies by neighborhood. 3.4 million people live in high heat vulnerability census tracts. Many don't have access to air conditioning.



June 2017 Launch of Cool Neighborhoods NYC

Targeted tree planting in high HVI areas

Indoor and outdoor temperature monitoring

Legislation requiring white roofs and green roofs

Climate risk training for trusted messengers

Targeted cool roof implementation in high HVI areas

Advocacy on energy assistance programs

INVESTMENT IN TARGETED TREE PLANTING IN KEY NEIGHBORHOODS

Street Tree Planting



Corner of Post Avenue and Academy in Manhattan, 2008



The same corner post-planting in 2009



The same corner in 2016, five years after planting

Forest Restoration



Willow Lake before restoration contract



Willow Lake after restoration contract

Park Trees



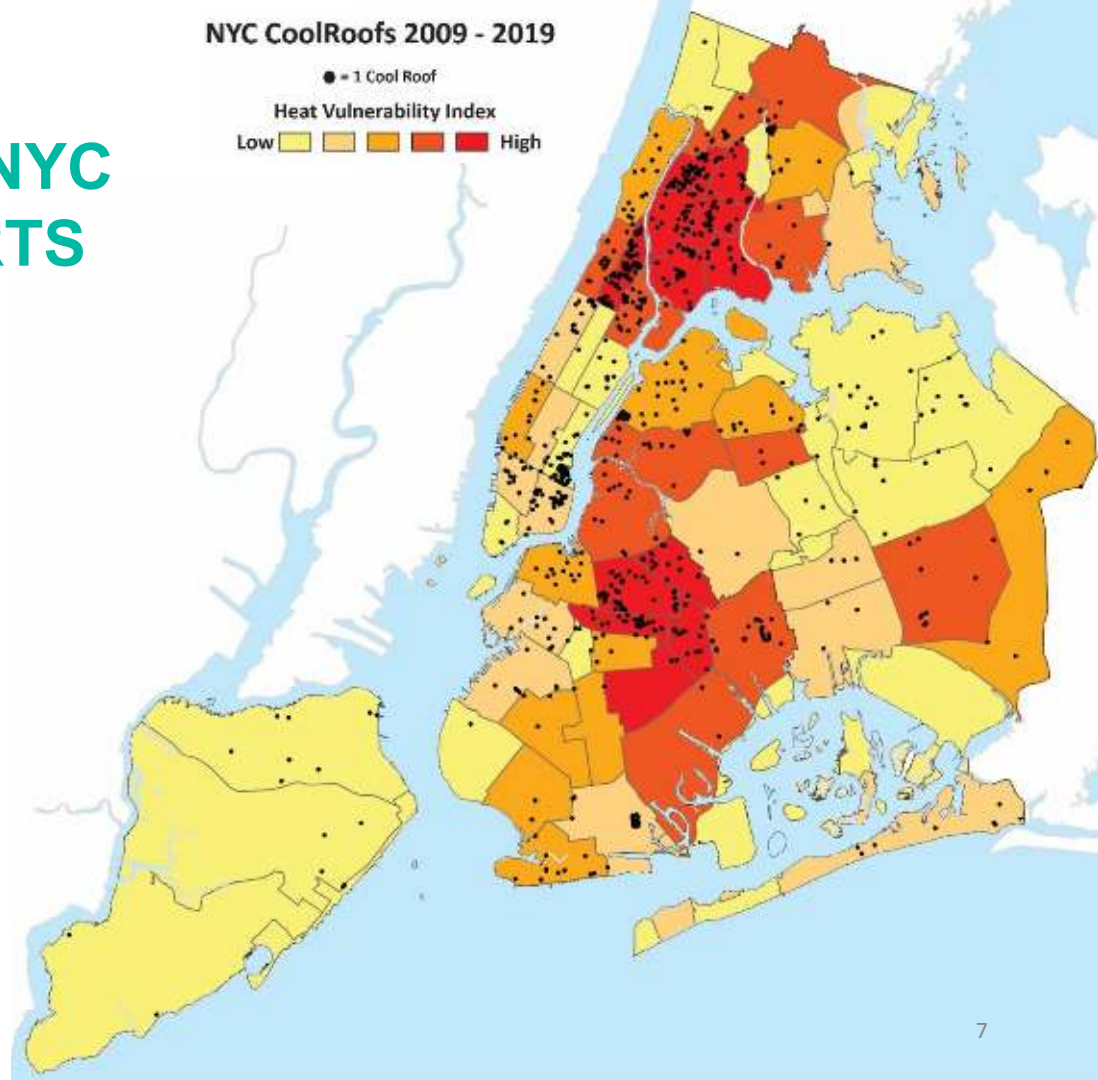
Herbert Von King Park Picnic Area - no shade



Brookville Park picnic area shaded by park trees

STRATEGIC IMPLEMENTATION OF NYC COOL ROOFS SUPPORTS PUBLIC HEALTH

- Over 10 million sq.ft. of white roofs to date
- Reduce building energy use and waste-heat from AC
- Reduce local temperature via clusters of light-colored surfaces



STRATEGIC IMPLEMENTATION OF NYC COOL ROOFS



NYCHA – Albany Houses, Crown Heights, Brooklyn - 2016



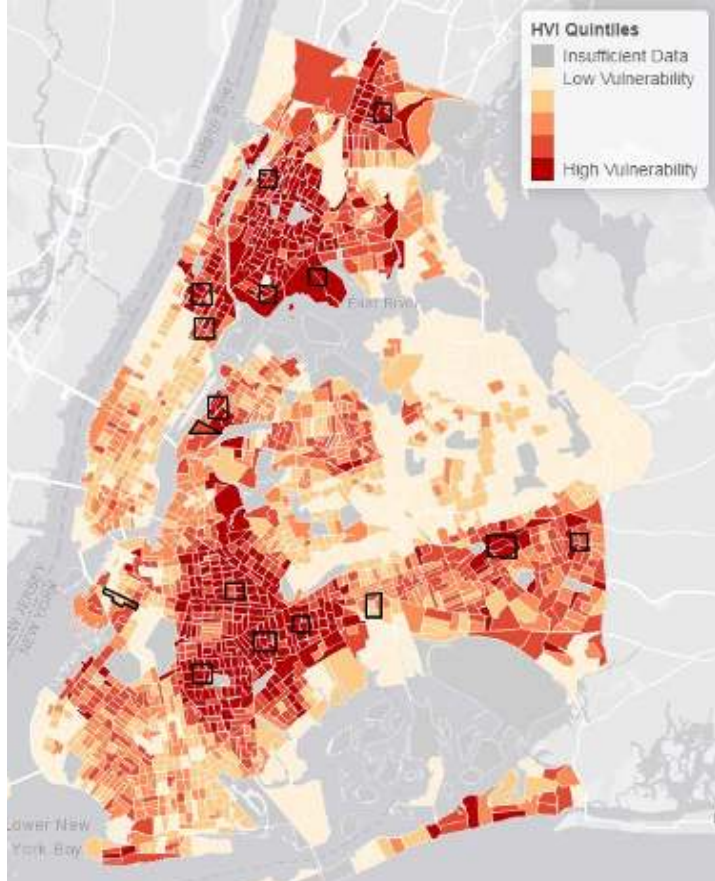
NYCHA – Albany Houses after roof coating in 2018

LOCAL LAWS 92 & 94 REQUIRE BUILDINGS TO ADDRESS HEAT HAZARDS

- Require all new buildings and those undergoing major roof renovations to be covered with solar panels, green roofs, or both
- Expand the cool roof requirement of LL21 to cover sloped roofs as well as flat roofs
- Expect over 1M tons of GHG emissions reductions by 2030 and up to 1M additional gallons of stormwater managed per year



Heat Vulnerability Index (OneNYC) at Census Tract 2010



AIR TEMPERATURE MONITORING



~500 temperature monitors in 14 neighborhoods

Collect baseline data to evaluate policy interventions



Produce block level estimates of temperature variation across the city

Explore temperature differences between and within boroughs.

INDOOR TEMPERATURE MONITORING



- Assess the relationship between outdoor and indoor air temperature
- Measurements at 67 residential apartments and 8 public libraries (cooling centers) in medium and high HVI neighborhoods

HEAT VULNERABILITY AND INEQUITY

In NYC, most victims of heat-related deaths are exposed indoors

- From 2008-2011, none of decedents had a working AC

Cost is a barrier to AC ownership and use

Fans alone may not be safe

- From 2008-2011, 17% of decedents used fans

About 50% of “vulnerable” people prefer to stay home, even when they cannot stay cool there

Health and weather reporters and media images emphasize outdoor risk



CLIMATE RISK TRAINING FOR TRUSTED MESSENGERS

Conducting outreach and training for home health aides, community health workers, “Buddy” volunteers and the clergy

- Enlist and fund partners in building heat resilience.
- Prepare New Yorkers to identify and address early signs of heat illness.
- Populations served:
 - Aging clients (65+ years, 11% of the population, 40% increase expected)
 - The homebound and those with physical and mental health issues



KEY CHALLENGES

- Perception of heat risk as a nuisance and future threat rather than a significant and current public health issue
- Perception of air conditioning access as a “luxury”
- Funding constraints
- Political shifts: priorities and focus
- Lack of support or momentum for regulatory/policy approaches



KEY LESSONS

- Develop data-driven plans, policies & programs that use climate science, environmental and social indicators, & health outcomes data.
- ID opportunities to put budgets to work in service of vulnerable people, first.
- Reassess existing programs to derive more social value from priority investments.

Basic rights (clean environment, quality housing) are NOT the same as “amenities.”

- Engage people in preparedness efforts. An emergency is not the time to train people. Enlisting “Buddies” as we face chronic events, will lead to more resilient communities.



THANK YOU



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