



planNYC

PlaNYC lays out 10 ambitious goals, culminating in 30% Carbon Emissions by 2030

Land	1	Create sustainable homes for a million more New Yorkers
	2	Ensure all New Yorkers live within a 10-minute walk of a park
	3	Clean up all contaminated land in New York City
Water	4	Improve our waterway quality for recreation and ecosystems
	5	Ensure the high quality and reliability of our water supply
Transportation	6	Expand our sustainable public transportation network
Energy	7	Reduce energy consumption, clean supply, and improve reliability
Air	8	Achieve the cleanest air of any big city in America
Solid Waste	9	Divert 75% of our waste from landfills
Climate Change	10	Reduce greenhouse gas emissions by more than 30%
		Increase New York's resilience to climate change

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Cool city strategies contribute to many of our goals 

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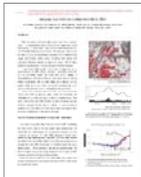
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We began with a several studies 



2004 to 2007 Cool and Green Roof Manual

- Analysis of direct energy impact and cost effectiveness of cool and green roofs on individual buildings
- Manual for installation of cool and green roofs



2004 Analysis of Urban Cooling Strategies

- Analyzed the cost, temperature impact, and energy savings of four urban cooling strategies: cool roofs, green roofs, tree planting, and cooler asphalt streets
- Considered both direct impact on buildings and citywide cooling
- Found that a relatively modest cool roof/ cool street/ tree planting citywide strategy could reduce the urban heat island effect by more than 1° F with a six-year simple payback
- Only considered energy savings, not health savings

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Since then, we have instituted numerous urban cooling policies



Public Open Space	<ul style="list-style-type: none">▪ Sustainable Infrastructure Guidelines▪ Million Trees▪ Expansion of Parks and Urban Plazas▪ High Performance Parks Design Manual
Landscaped portion of building sites	<ul style="list-style-type: none">▪ Requirement for tree planting in parking lots▪ Sustainable Urban Site Manual
Roofs	<ul style="list-style-type: none">▪ Building code requirement for cool or green roofs▪ NYC Cool Roof program▪ Green Roof Tax Credit

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We have concentrated on roofs for many reasons.



Scale	<ul style="list-style-type: none">▪ Roughly 1.6 million square feet of roof in NYC, much of which is flat roof▪ Over 18% of total area of the city
Cost effectiveness	<ul style="list-style-type: none">▪ Cool roof coatings are a low cost item -- \$.40 / sf for coating only.▪ They extend the life of the roof▪ As a citywide measure, they have a payback of roughly six years – including only the energy savings
Speed	<ul style="list-style-type: none">▪ Roofs are replaced every 20 to 25 years▪ By approx. 2035, all flat roofs in NYC will be cool roofs

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We have used several policy levers to further cool/green roofs 



New building code requirement – signed by Bloomberg on April 29, 2011

- Requires all flat roofs to be either cool roof or green roof
- Requirements align with California Title 24
- Only targets flat roofs
- For new roofs and reroofing
- Will impact over a billion square feet of roof



NYC CoolRoofs[®] Program*

- NYC Service volunteers coat the roof/ owner only pays for the material
- Over 1.5 million square feet of roof coated
- Creates enthusiasm and helps generate awareness



Green Roof Property Tax Abatement

- \$4.50 / sf. tax abatement for installation of green roofs
- Maximum abatement of \$100,000

*Sponsored by Con Ed and Google

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These policies will benefit all New Yorkers 

Health & Livability

- Cooler city is more comfortable and more active
- Less heat stroke and heat related illness
- Reduced smog from heat
- Reduced pollution from “peaker” plants

Cost Savings

- Will save an estimated \$135 million* per year in electrical bills, once most flat roofs are cool or green
- Roofs will last an additional 5 to 10 years, lowering costs and decreasing solid waste

*Recalculated from 2004 analysis to reflect current rates

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And increase reliability and resilience. **planNYC**

- Reliability of Electrical System**
 - Will lower peak loads, which puts less stress on the city's electrical system
- Reduced Impacts from Climate Change**
 - NYC Panel on Climate Change estimates a 3° to 5° F increase in NYC air temperatures by 2050
 - Current cool/green roof policies should reduce temps by 1° to 1.5° F
 - Million trees should reduce temps by another 1° to 1.5° F
 - Other greening strategies will reduce temperatures further
- Reduced Carbon Emissions**
 - Reducing temperatures will reduce energy used for cooling

A bit of a "virtuous" cycle here...

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Snapshot of NYC CoolRoofs^o Progress **planNYC**

2010 Coating Season by Borough
 Focusing coating efforts in designated neighborhoods - Long Island City, Crown Heights, Bedford-Stuyvesant, and the South Bronx - NYC's CoolRoofs helps to reduce the Urban Heat Island Effect in New York City.

One million square feet of cool roofs should reduce New York City's carbon emissions by 500,000 lbs or 222 metric tons. This reduction is equal to removing 50 cars from the road or having 300 New Yorkers not drive for an entire year.

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