



Mayor Michael A. Nutter
CITY OF PHILADELPHIA

EXECUTIVE SUMMARY

“The greenest city in America.”

That’s the ambitious goal that Mayor Michael A. Nutter has set for Philadelphia.

Reaching it will be an opportunity to reposition and repurpose Philadelphia as a city of the future. For the first time in decades, changes beyond our borders—primarily rising energy prices, but also climate change and an emerging green economy—are increasing the value of our urban assets. Philadelphia’s dense and durable stock of housing, infrastructure and amenities position us to prosper in a carbon-constrained future.

Much of this future derives from our past. William Penn’s “greene countrie towne” enjoyed access to water, farmland and successive energy resources, from abundant forests that were a source of charcoal to the world’s largest anthracite coal deposits that fueled factories. Philadelphia became the “workshop of the world.” And it epitomized the best of American industrial cities, where factory workers became middle-class homeowners, and where stable and rewarding work led to strong and prosperous communities.

But in the late 20th century, our assets lost their competitive edge. When people could easily and inexpensively commute 30 or 40 miles and when goods could travel hundreds or thousands of miles to market, Philadelphia’s walkability and proximity to farmland became irrelevant. Public policies, including mortgage subsidies, and new technologies, such as air-conditioning, only accelerated our obsolescence. We lost our place in a world of cheap and falling energy prices, especially because those prices did not reflect their true environmental costs.



Now, for the first time in generations, escalating energy prices are increasing rather than evaporating the value of Philadelphia's inherited assets—our walkable and bikeable neighborhoods, far-reaching transit system, rich stock of buildings and abundant supply of fresh water. It's been years since anyone walked down our streets and concluded, "Yes, this is the future." But imaginative folks are doing just that these days. Our challenge is to turn imagination into reality. By 2015, people will walk (and bike and trolley) the green streets of Philadelphia on their way to work and school and play, and will feel that this is exactly the kind of city that the future demands.

Greenworks Philadelphia describes a city in which residents and businesses benefit from lower energy costs, cleaner air, greener neighborhoods, better transit and new jobs. But it acknowledges that broad visions are meaningless unless backed by specific, measurable, shorter-term targets that can actually be achieved. Therefore, *Greenworks Philadelphia* also presents the specific steps that all Philadelphians, not just their government, must take over the next seven years to reinvent the city.

Philadelphians understand why this is important. They know that the Mayor's call to make Philadelphia "the greenest city in America" is not just about preventing ice caps from melting thousands of miles away, but about decreasing the cost of cooling a Southwark house in the summer or heating it in the winter. It's about reducing the number of trips a mother in Oak Lane takes to the hospital with her asthmatic son; preventing sewage from backing up into a basement in Northern Liberties; and giving every child in every neighborhood a safe, clean, healthy place to play. *Greenworks Philadelphia* is about putting Philadelphians to work.

With *Greenworks Philadelphia* as its guide, 21st century Philadelphia will face the challenges and opportunities created by recent global shifts and reposition itself as a city of the future.

METHODOLOGY

Greenworks Philadelphia builds upon the 2007 Local Action Plan for Climate Change, which was produced by the Sustainability Working Group, a task force of municipal employees. The Local Action Plan outlined a series of steps that the City of Philadelphia government (City) should take to reduce greenhouse gas emissions by 10 percent by 2010. Many of these efforts are already underway and described in *Greenworks Philadelphia*. Also incorporated are the goals of GreenPlan, the City's open space plan, which will soon be adopted by the newly-created Department of Parks and Recreation.

Greenworks Philadelphia considers sustainability through five lenses—Energy, Environment, Equity, Economy and Engagement. For each, an overarching goal was set, with measurable targets then laid out and specific initiatives designed and described to help Philadelphia reach the targets by 2015. These goals, targets and initiatives were refined over the past ten months by the Sustainability Working Group with input and feedback from additional City employees, local and national nonprofit organizations, and civic and business leaders, including members of the Mayor's Sustainability Advisory Board. The Mayor's Office of Sustainability has discussed *Greenworks Philadelphia* with hundreds of citizens.

Greenworks Philadelphia is a living document. Policies, technologies and external forces will lead us to adapt the framework in the coming months and years. Our initiatives may thus also change while our ultimate goals remain firm. The Mayor's Office of Sustainability is working with two environmental consulting firms, ICF International and Stratus Consulting, to begin the task of determining which of the proposed initiatives will bring it closer to its targets and which might produce too little return for the investment. *Greenworks Philadelphia* contains the beginnings of that effort.



GOAL: PHILADELPHIA REDUCES ITS VULNERABILITY TO RISING ENERGY PRICES

TARGET 1

Lower City Government Energy Consumption by 30 Percent

In fiscal year 2008, the City government consumed 3.6 trillion Btus of energy. *Greenworks Philadelphia's* target is to reduce this consumption by 30 percent from this level by 2015. With energy use projected to otherwise increase during this period, the gap between 2015's projected demand and the target of 2.54 trillion Btus is 1.62 trillion Btus. That's equivalent to the annual energy use of 16,200 households, and meeting this target will save the City an estimated \$36.3 million in 2015. Retrofitting municipal buildings, creating energy budgets for City departments and developing energy conservation education for City employees will help the City reach this target. Additional programs will get it the rest of the way.

TARGET 2

Reduce Citywide Building Energy Consumption by 10 Percent

In 2006, residential and commercial buildings in Philadelphia consumed nearly 100 trillion Btus of energy. As organizations such as the American Council for an Energy-Efficient Economy and McKinsey & Company have reported during the past year, making buildings more energy efficient will yield significant returns on investment. *Greenworks Philadelphia* calls for reducing building energy demand by 10 percent from today's level. The savings will be achieved by weatherizing existing homes and commercial buildings in every neighborhood, providing incentives so that new buildings are more energy efficient and by simply encouraging people to replace their light bulbs and energy-wasting appliances.

TARGET 3

Retrofit 15 Percent of Housing Stock with Insulation, Air Sealing and Cool Roofs

Weatherization is a crucial component of *Greenworks Philadelphia's* building-energy reduction target. While the city has a history of successful weatherization programs, the American Recovery and Reinvestment Act of 2009 provides Philadelphia with a once-in-a-generation opportunity to retrofit Philadelphia's aging housing stock. The funds will support weatherization for households earning less than 200 percent of the poverty line (\$44,000 for a family of four). Using census data from 2000, more than 60 percent of Philadelphia households could qualify. In addition to significantly expanding Philadelphia's low-income weatherization programs, *Greenworks Philadelphia* proposes the creation of financial and other incentive programs to assist homeowners that don't meet the Recovery's income requirements.

TARGET 4

Purchase and Generate 20 Percent of Electricity Used in Philadelphia from Alternative Energy Sources

Greenworks Philadelphia calls for increasing the city's alternative energy mix to 20 percent by 2015, or 2.93 million megawatt hours. A significant portion of the target will be met through PECO's adherence to Pennsylvania's Alternative Energy Portfolio Standard and institutional purchases of Renewable Energy Certificates (RECs). But *Greenworks Philadelphia* commits the city to also produce renewable energy—from solar, biogas, wind and hydroelectric sources. By 2011, Philadelphia will have a solar generation capacity of 2.3 megawatts (2,869 megawatt hours of energy annually), enough to provide electricity to more than 350 households. By 2021, that capacity will increase to 57.7 megawatts.



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“*Greenworks Philadelphia* is a vision for how Philadelphia can and should seize this moment, building upon the assets left to us by earlier Philadelphians and creating a better future for ourselves, our children and generations still to come.”

— MAYOR MICHAEL A. NUTTER

ENVIRONMENT



GOAL: PHILADELPHIA REDUCES ITS ENVIRONMENTAL FOOTPRINT

TARGET 5

Reduce Greenhouse Gas Emissions by 20 Percent

Philadelphia has already reduced its emissions by nearly 10 percent from 1990 levels but must do more to help avert the worst-case scenarios related to climate change. Nearly every initiative described in *Greenworks Philadelphia* will help decrease emissions to the target reduction of 20 percent below 1990 levels by 2015. Proposed federal legislation to create a national cap and trade carbon market will benefit cities like Philadelphia provided they can implement large-scale carbon reduction projects, such as *Greenworks Philadelphia's* proposed building retrofit efforts.

TARGET 6

Improve Air Quality Toward Attainment of Federal Standards

Although Philadelphia's air quality is better than many of our peer cities, *Greenworks Philadelphia* seeks to protect the health of residents by reducing the number of days that the Air Quality Index is “unhealthy,” while decreasing ozone and fine particulate matter so that levels meet new, stricter federal standards. To do this, the City will continue to reduce street congestion, improve the exhaust of its diesel fleet and switch to cleaner fuels, such as biodiesel and compressed natural gas. The Port of Philadelphia and the Philadelphia International Airport will also take steps to decrease their emissions.

TARGET 7

Divert 70 Percent of Solid Waste from Landfills

Each household in Philadelphia throws away an average of 1.25 tons of trash a year, but recycles only 160 pounds. Philadelphia sends 1.56 million tons to landfills each year, costing the City more than \$60 million in tipping fees alone. Through increased recycling, *Greenworks Philadelphia* calls for diverting 70 percent of all waste away from landfills by 2015, saving money and the environment.





GOAL: PHILADELPHIA DELIVERS MORE EQUITABLE ACCESS TO HEALTHY NEIGHBORHOODS



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PENNSYLVANIA HORTICULTURAL SOCIETY

TARGET 8

Manage Stormwater to Meet Federal Standards

Managing stormwater is a basic government function. If not controlled, runoff in urban centers causes flooding, erosion, areas of stagnant water and sewer backups that spill into basements. The 19th and 20th century solution was a network of drainage pipes that moved the rainwater—as well as industrial, household and human waste—away from homes and streets. *Greenworks Philadelphia* recommends that the natural link between land and water be reconnected so that green infrastructure becomes the City's preferred stormwater management system. If the United States Environmental Protection Agency approves this approach, 3,200 acres of new pervious surfaces will be created in Philadelphia by planting thousands of street trees; increasing green-and-open space; and building green roofs. Philadelphia will manage its stormwater while creating healthier neighborhoods.

TARGET 9

Provide Park and Recreation Resources Within 10 Minutes of 75 Percent of Residents

Currently, less than 60 percent of Philadelphia's residents are adequately served by a park or recreation center within a half-mile of their homes. *Greenworks Philadelphia* endorses the recommendation of GreenPlan that 100 percent of residents should live within a 10-minute walk of a green, open space by 2025. To meet that longer-term goal, *Greenworks Philadelphia* seeks the addition of 500 new acres of green public spaces in the city by 2015. Philadelphia will reach this goal by reclaiming and providing public access to its major waterways; creating open space during neighborhood redevelopment work; and maintaining efforts to clean and green vacant lots.

TARGET 10

Bring Local Food Within 10 Minutes of 75 Percent of Residents

The burgeoning local food network in and around Philadelphia has the potential to bring fresh, healthy and affordable food to all residents. Today, unfortunately, local food is not accessible to many, especially low-income households. Mayor Nutter created a Philadelphia Food Charter and a Food Policy Council in 2008 to increase food access by expanding the number of farmers markets, creating working gardens on vacant land, encouraging commercial agriculture, increasing the number of supermarkets and food co-ops, and integrating local food into anti-hunger programs. To help bring local food to within a ten-minute walk of 75 percent of residents, *Greenworks Philadelphia* calls for creating an additional 86 fresh food outlets by 2015.

TARGET 11

Increase Tree Coverage Toward 30 Percent in All Neighborhoods in 2025

Trees support a multitude of benefits—they reduce air pollution, help manage stormwater, moderate urban heat island effects, sequester carbon and increase property values. Yet many of Philadelphia's neighborhoods lack adequate tree cover. To achieve 30 percent tree cover citywide by 2025, which is the goal of GreenPlan, 300,000 trees must be planted by 2015. To accomplish this, the City must increase its own activities while working in partnership with local non-profit organizations and seek new spaces to plant trees, such as vacant lots and school yards. In addition, all Philadelphians will be called upon to plant and care for trees on their streets and in their yards.



GOAL: PHILADELPHIA CREATES A COMPETITIVE ADVANTAGE FROM SUSTAINABILITY

TARGET 12

Reduce Vehicle Miles Traveled by 10 Percent

Although Philadelphia already enjoys a low per capita vehicle-miles traveled rate, our goal of reducing miles driven by 10 percent will lower transportation costs even more and bring quality of life benefits to residents. Philadelphia has the type of transit system that many progressive cities are trying to build and gives the city a competitive advantage. *Greenworks Philadelphia* applauds SEPTA's efforts to increase transit ridership through further service and capital improvements and its movement to a new fare technology system. Transit Oriented Development investments supported by the City will also help induce more people to use public transit. Finally, the appointment of Philadelphia's first Bicycle and Pedestrian Coordinator will help grow the city's thriving bicycle culture as it seeks to create a city-wide trail network.

TARGET 13

Increase the State of Good Repair in Resilient Infrastructure

Even as new buildings and parks are created in Philadelphia, the City must ensure that existing infrastructure is in good repair, namely, that "no backlog of needs exists and no component is beyond its useful life." Currently, 74 percent of City-owned

buildings, streets, bridges, rail and utility infrastructure meet this definition, although there are wide variances among categories ranging from 94 percent of the Philadelphia Water Department's infrastructure in a state of good repair to 40 percent of the Department of Public Property's assets. A few City departments already have asset management systems that are well-used by employees; others do not. *Greenworks Philadelphia* calls for 80 percent of the City's infrastructure to be in good repair by 2015. Steps must also be taken now to adapt our infrastructure to certain climate changes caused by global warming.

TARGET 14

Double the Number of Low- and High-Skill Green Jobs

All of the goals and initiatives in this report will produce demand for workers who have the skills to make the city more sustainable. As our society shifts towards a greener economy, Philadelphia has the potential to be a hub of green jobs. The city already has 14,379 green workers, according to the U.S. Conference of Mayors. By 2015, *Greenworks Philadelphia* projects this number will double as more people are employed in weatherization, green infrastructure and other industries that have the potential for growth and career-track, family-supporting jobs. To achieve this target, the City will take several approaches: creating an economic development strategy built on demand for affordable energy, and linking workforce development to green job opportunities.



GOAL: PHILADELPHIANS UNITE TO BUILD A SUSTAINABLE FUTURE

TARGET 15

Philadelphia is the Greenest City in America

Greenworks Philadelphia will use the power of new technologies and old-fashioned word of mouth to engage every Philadelphian in this important work. From our green infrastructure to our green economy, Philadelphia will earn the mantle of America's Greenest City. The Mayor's Office of Sustainability will track the city's progress over the next seven years. The office will report annually on our efforts and accomplishments, using data to measure how close we are to meeting all of our targets. It will also post data online so that independent analyses can be conducted.



GREENWORKS

PHILADELPHIA

THE CITY OF PHILADELPHIA

MAYOR'S OFFICE OF SUSTAINABILITY

www.greenworksphila.org



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