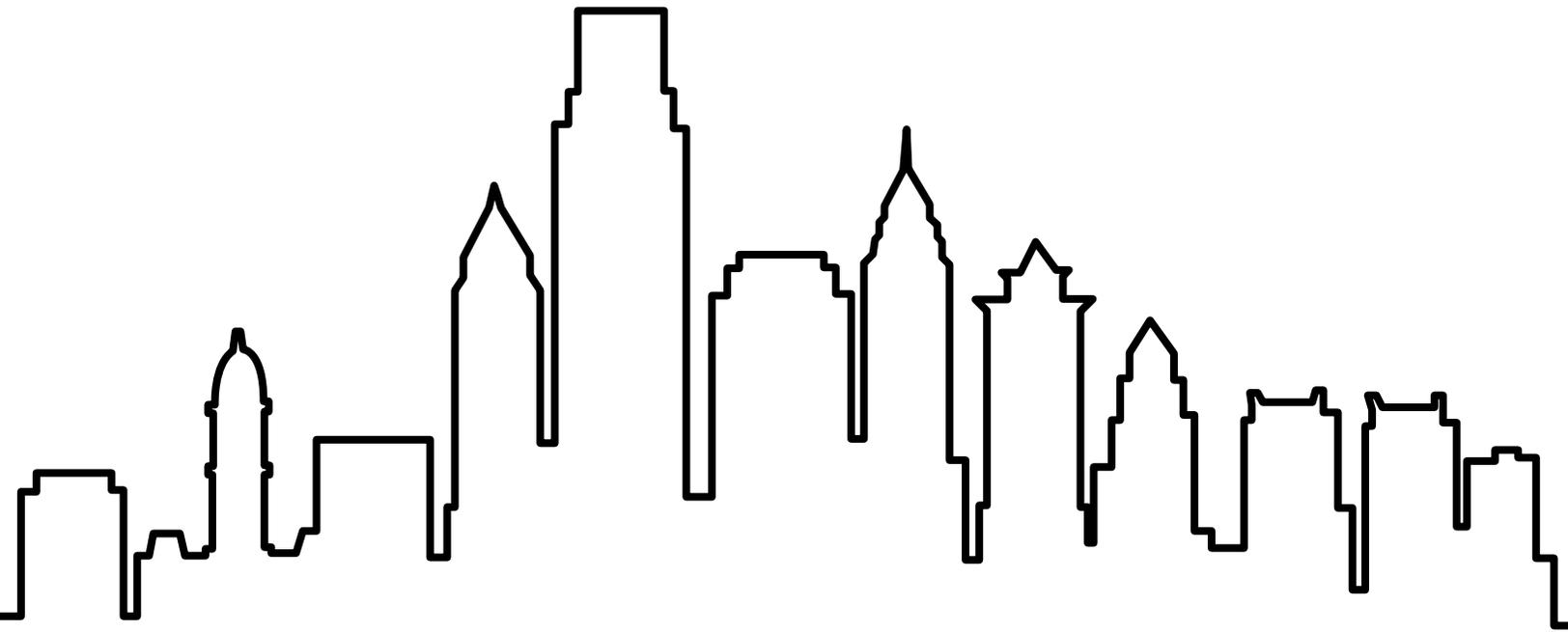


City of Philadelphia



Written by



In partnership with



Report analysis & information
design for CDP by





Philadelphia City Hall
Image Source: Flickr user bengrey

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CDP, C40 and AECOM are proud to present results from our third consecutive year of climate change reporting for cities. It was an impressive year, with 110 cities reporting on their climate change data (a 50% increase from 2012), making this the largest and most comprehensive survey of cities and climate change published to date by CDP. City governments from Dallas to Hanoi to Ouagadougou participated, including over 80% of the membership of the C40 – a group of the world's largest cities dedicated to climate change leadership.

Approximately two thirds of reporting cities measure city-wide emissions. Together, these cities account for just over 1 billion tonnes of greenhouse gas emissions, putting them on par with Japan, the world's third largest economy and fourth largest emitter of greenhouse gas emissions. Over 70% of all reporting cities now have a plan for adapting to the effects of climate change. And cities reported over 1,000 individual actions designed to reduce emissions and adapt to a changing climate.

CDP salutes the hard work and dedication of the world's city governments in measuring and reporting these important pieces of data. With this report, we provide city governments the information and insights that we hope will assist their work in tackling climate change.

The data presented here conveys information about every aspect of climate change measurement and management in Philadelphia.

This document contains the questionnaire data provided to CDP from the City of Philadelphia as part of its 2013 CDP submission.

To see all of the results for all participating cities, visit cdpcities2013.net

The graphics in this document are from the 2013 CDP Cities 2013 and Wealthier, Healthier Cities reports.



Philadelphia in context

Number of cities responding per year

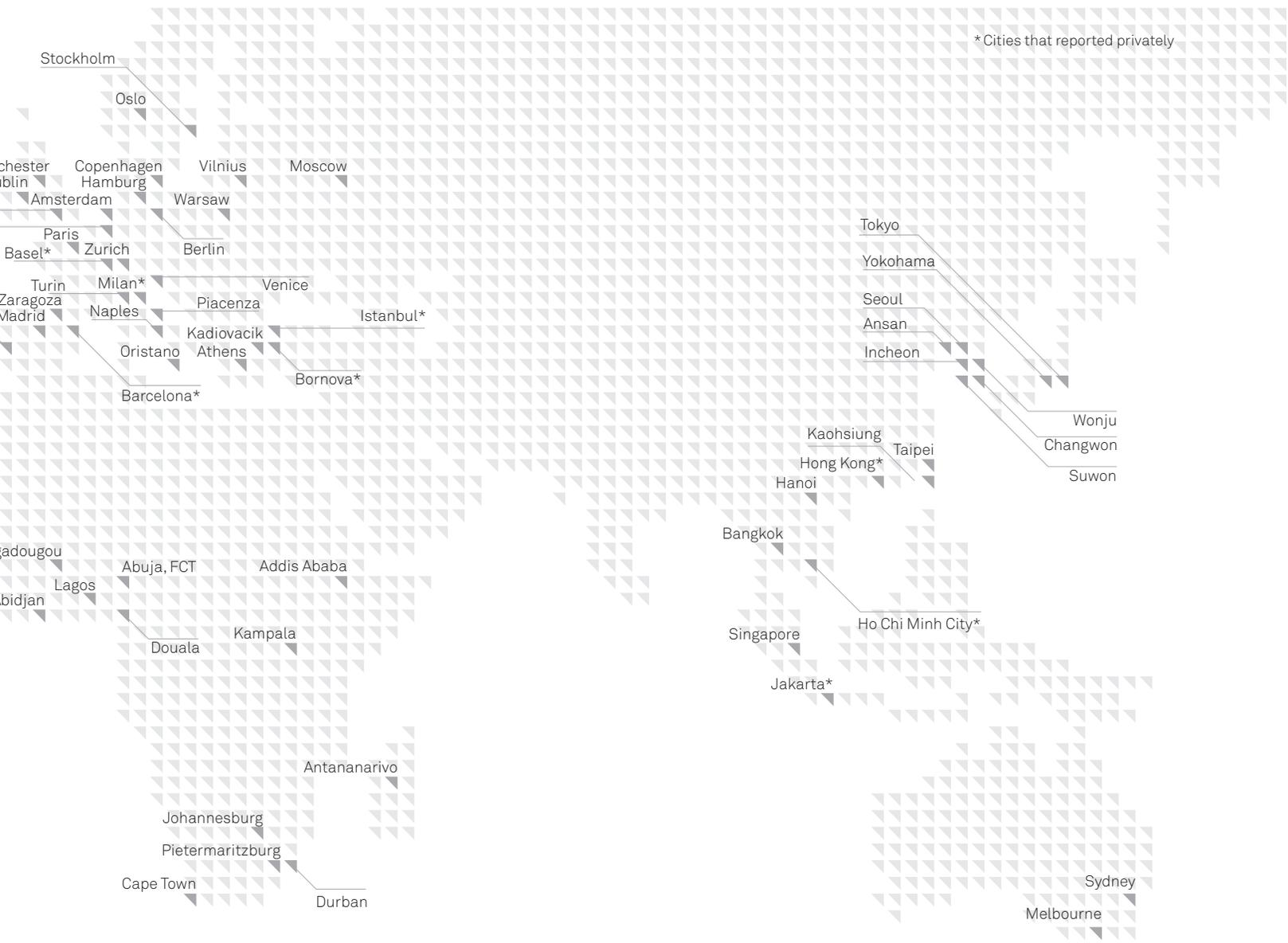
48
2011

73
2012

110
2013

■ Philadelphia participation





Total population of cities responding in 2013

296,471,000

Philadelphia
1,555,000
people

Where Philadelphia fits



27 cities
with **less than**
600,000 people

33 cities
with **600,000 to**
1,600,000 people

50 cities
with **greater than**
1,600,000 people

Year reported

2013

Area

325
km²

Population

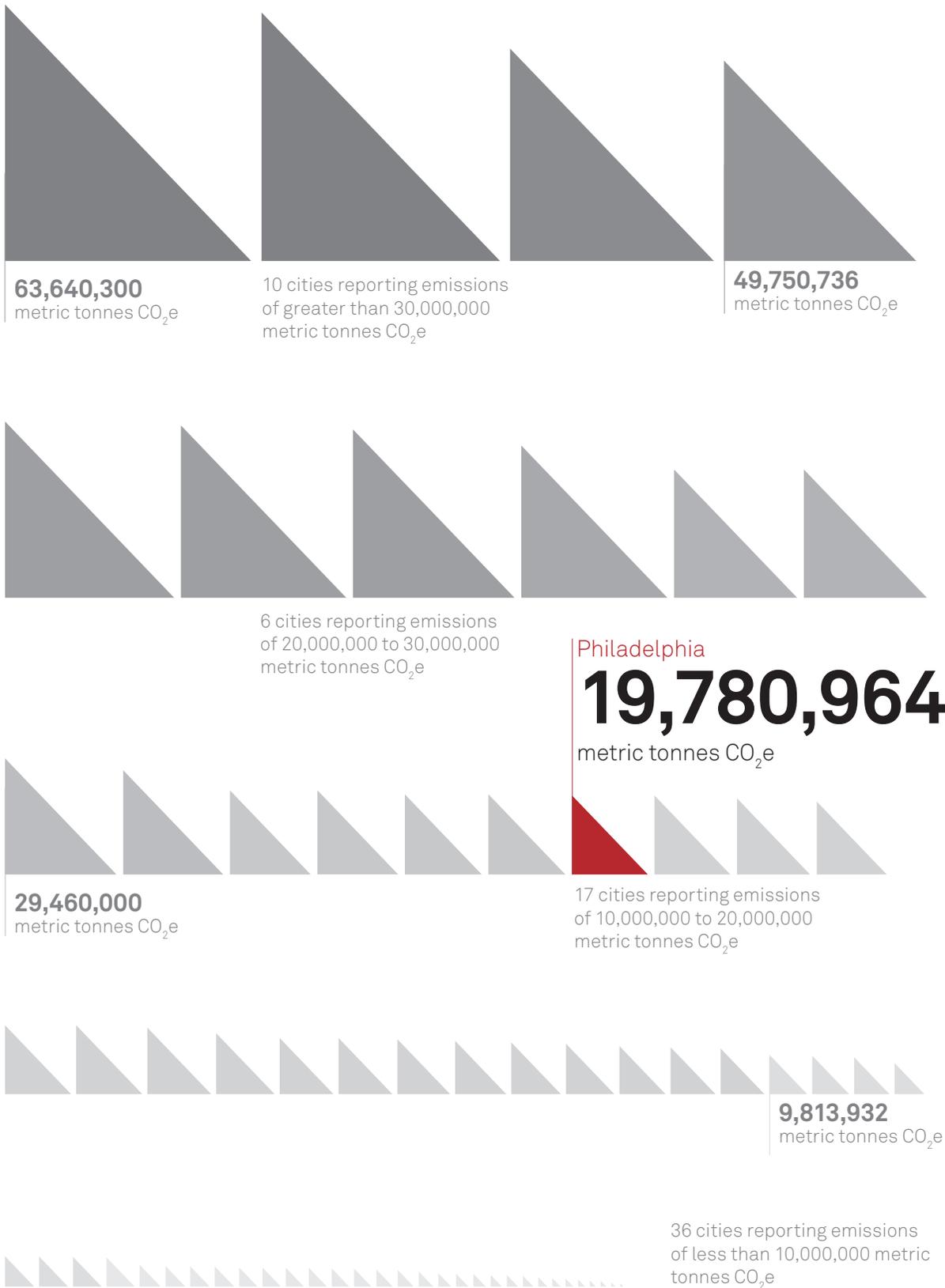
1,555,000

Philadelphia in focus

Inventory method

**2006 IPCC Guidelines for
National Greenhouse Gas Inventories**

69 cities reporting emissions in 2013



0 Introduction

Philadelphia is the fifth largest American city, with a population of over 1.5 million. Located within the Northeast Megaregion, Philadelphia is within 200 miles of 46 million people, and is the 8th largest regional economy in the world. Over the course of three centuries, Philadelphia has served as the country's first capital and earned a reputation as the "workshop of the world" for its industrial greatness during the 19th and 20th centuries.

Introduction

Today Philadelphia remains an important economic and cultural center. The region is home to over 40 colleges and universities and a diverse array of commercial and industrial interests. Fairmount Park, which is the largest municipal park in the eastern United States, adds to the quality of life enjoyed by residents who choose to live in a well-planned, pedestrian and bicycle-friendly city with good access to public transit. After several decades of population loss, Philadelphia is once again a growing city, adding almost 60,000 new residents since 2006.

Emissions Accounting Choice:
Government and Community.

1 Governance

The **Mayor's Office of Sustainability (MOS)**, created in 2008, is responsible for implementing Greenworks Philadelphia, the City's comprehensive sustainability plan. Most of the 167 initiatives described in Greenworks have a direct impact on greenhouse gas emissions, and some also serve as climate adaptation measures.

Beginning in 2011, MOS worked with graduate students at Columbia University's Earth Institute to catalog existing adaptation planning efforts in the city and to begin the process of developing a detailed climate adaptation strategy based on the most recent and regionally relevant climate science. In fall of 2012, MOS

Governance

convened a Climate Adaptation Working Group consisting of 25 representatives from across city government and will publish an adaptation plan in 2013 that will build on work that is already underway at the departmental level.

Philadelphia does not provide incentives for management of climate change issues, including the attainment of greenhouse gas (GHG) reduction targets.

National and/or regional climate change activities impact Philadelphia's own climate change activities.

Funding at the federal and state level that supports climate adaptation planning projects, such as the one funded by through FTA's Climate Adaptation Initiative for SEPTA (Philadelphia's transit agency) are of great interest. MOS engages regularly with federal partners and national/international organizations in discussing national climate policy issues.

2 Physical risks

Current and/or anticipated effects of climate change present significant physical risks to Philadelphia:

Seriousness

Low !!!

Medium !!!

High !!!

Timescale

Current



Short-term



Medium-term



Long-term



Risks & Adaptation

More hot days

Risk:  Timescale: 

Hotter summers

Risk: 

More frequent heatwaves

Risk:  Timescale: 

More intense heatwaves

Risk:  Timescale: 

Warmer water temperatures

Risk:  Timescale: 

Increased urban heat island effect

Risk:  Timescale: 

More frequent rainfall

Risk:  Timescale: 

More intense rainfall

Risk:  Timescale: 

Increased average annual rainfall

Risk:  Timescale: 

Reduced average annual rainfall

Risk:  Timescale: 

Reduced average annual snowfall

Risk:  Timescale: 

More frequent droughts

Risk:  Timescale: 

Change in seasonality of rainfall

Risk: 

Increased risk of storm surges

Risk:  Timescale: 

Increased frequency of large storms

Risk:  Timescale: 

Increased wind speeds

Risk:  Timescale: 

Sea level rise

Risk:  Timescale: 

Compounding factors may worsen the physical effects of climate change in Philadelphia.

Old infrastructure, large percentage of housing built before 1939, lower than average median household income.

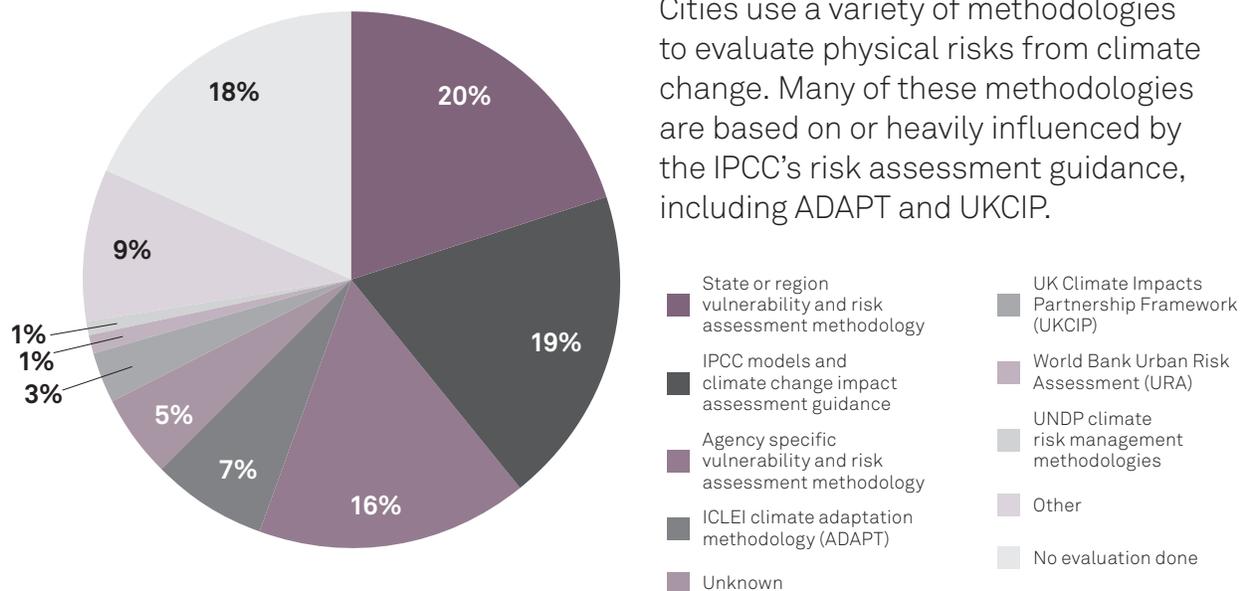
Philadelphia considers that the physical impacts of climate change could threaten the ability of businesses to operate successfully.

Some commercial and industrial areas are on low-lying land that is prone to flooding.

The City uses IPCC models and climate change impact assessment guidance to evaluate the physical risks to Philadelphia.

Primary methodology used to evaluate physical risks

% of responses



3 Adaptation

Philadelphia has a plan for increasing its resilience to the expected physical effects of climate change.

Actions Philadelphia is taking to reduce the risk to infrastructure, citizens, and businesses from climate changes include the following:

Increased urban heat island effect

Action: White roofs

Adopted in 2010, Philadelphia's cool roof ordinance requires all new construction and major renovation projects with sloped-roofs to install Energy Star-certified cool roofs. MOS worked with the Department of Licenses and Inspections (L&I) and City Council to ensure that the legislation helped Philadelphia move closer to Greenworks' goal of reducing citywide building energy consumption. L&I now distributes EnergyStar Cool Roof information to contractors during the permit process. Adaptation Strategies: (1) Reduce demand for energy during the summer months and extreme heat events; (2) Reduce vulnerability to the risk of increasing ground level ozone formation, or smog, during warmer summers by use of materials to reflect heat and reduce air temperatures.

Action: Community engagement / education

In 2010 the City of Philadelphia sponsored a neighborhood competition to reduce energy demand. The RetroFIT Philly "Coolest Block" contest was a first-of-its-kind, public-private partnership among the City of Philadelphia, ECA, and The Dow Chemical Company. Seventy-four blocks entered the contest to win cool roofs, air sealing, and insulation upgrades. To enter, each homeowner on a block had to participate, a requirement that encouraged neighbor-to-neighbor outreach and discussion about energy usage among community members. Over the summer, each resident on the winning block received a whole-home energy audit and installation of energy-saving materials

More intense rainfall

Action: Storm water capture systems

The Philadelphia Water Department's Green City, Clean Waters plan re-envisioned the stormwater infrastructure in Philadelphia and focuses heavily on green infrastructure as a highly beneficial alternative to traditional infrastructure.

More hot days

Action: Tree planting and / or creation of green space

The Philadelphia Parks and Recreation Department's (PPR) TreePhilly campaign is designed to help meet the Greenworks goal of reaching 30% tree canopy cover in all neighborhoods by 2015. PPR's Green2015 plan seeks to add 500 acres of new publicly accessible open space in Philadelphia by 2015 in order to provide walkable access for all residents.

Action: Reduce power consumption

To continue the trend of reducing energy use, the Mayor's Office of Sustainability (MOS) created the Energy Efficiency Fund (EEF), which offers funding to departments on a competitive basis to support the implementation of energy efficiency projects within existing City-owned facilities. The first round of EEF supported 10 projects, which are all underway or completed as of spring 2012. MOS anticipates measurable energy savings resulting from the projects beginning in 2012. MOS selected another 15 projects for the second round of EEF in spring 2012 and plans to make funding available for future rounds of projects. Adaptation Strategy: Reduce demand for energy from generators for cooling during the summer months and extreme heat events.

Hotter Summers

Action: Retrofit of existing buildings

MOS is implementing the City's first guaranteed energy savings project at the City's four largest downtown office buildings which are heavy energy users with high energy savings potential. In 2011, an energy service company determined the feasibility of energy conservation measures (ECMs) at each of the four facilities, and the City selected nine ECMs to implement, including installation of low-flow faucet aerators and plumbing fixtures at City Hall, the Criminal Justice Center, two City office buildings. Adaptation Strategy: (1) Installing low-flow faucet aerators is an example of how the City is reducing water consumption while maintaining washing and other healthy hygiene behaviors; (2) maintain standard of comfort for cooling with less energy on hot days.

Action: Retrofit of existing buildings

EnergyWorks, a collaborative program of the Metropolitan Caucus, is a comprehensive energy solutions program for home and commercial building owners in the five-county region. To administer residential projects, EnergyWorks partners with the Energy Coordinating Agency (ECA), the Keystone HELP Program, and AFC Financial to offer a one-stop-shop approach. Funded for three years through a grant from the U.S. Department of Energy's Better Buildings initiative, EnergyWorks is developing a scalable and sustainable model for streamlining the residential retrofit process. The Mayor's Office of Sustainability is committed to developing a strategy for extending components of the program beyond the ARRA dollars that supported its initial development. Adaptation Strategy: Reduce demand for energy from generators for cooling during the summer months and extreme heat events.

Action: Air quality initiatives

The Department of Health's Air Management Services (AMS) division measures and reports on Philadelphia's air quality and promotes cleaner air in the city. Following the 2009 launch of the Idle Free Philly campaign, AMS investigated almost four hundred idling complaints in 2010, issuing violations to offenders of the City's anti-idling ordinance. AMS also continued to coordinate with the Office of Fleet Management to retrofit the City's diesel vehicle fleet with cleaner burning engines.

Action: Projects or policies targeted at those most vulnerable

Philadelphia's Department of Public Health manages the excessive heat warning program to alert the public and protect public health when extreme heat poses risk to human health. PDPH works with the Philadelphia Corporation for Aging to reach serve residents who are most vulnerable to excessive heat.

Action: Increase share of renewable energy standards

The City of Philadelphia is leading by example and purchasing 20% of its total energy usage through renewable energy credits generated by wind, making it the sixth largest user of green power among local governments in the United States.

Action: Community solar projects

The Passyunk Avenue Revitalization Corp. (PARC) is both a nonprofit real estate development and management company and a public space maintenance and enhancement organization. With the income from its properties, PARC provides supplementary public space maintenance and improvement services from Broad Street to Ninth Street, Federal Street to Snyder Avenue. In January 2012, PARC began the installation of eight roof-mounted photovoltaic systems on residential and commercial properties. The 40-kilowatt solar arrays will provide approximately 80 percent of the electricity required by seven apartments, two commercial units, and five electric vehicle chargers. The CO₂ emissions reductions will be the equivalent of driving 100,000 fewer miles per year, or 18 round-trips between Philadelphia and Los Angeles. PARC worked with the Mark Group, a leading global provider of energy saving solutions with North American headquarters in the Philadelphia Navy Yard, to finance the project.

Philadelphia has undertaken or will undertake additional efforts to ensure operational continuity for both the city government and the businesses in the event of a significant weather-related event.

2012 Hazard Mitigation Plan

The City's Office of Emergency Management in collaboration with numerous City departments and external stakeholders developed The City of Philadelphia 2012 Natural Hazard Mitigation Plan.

Climate Adaptation Plan

A working group consisting of 25 representatives from various City departments is currently developing a Climate Adaptation Plan.

4 Social risks

Philadelphia faces social risks as a result of climate change.

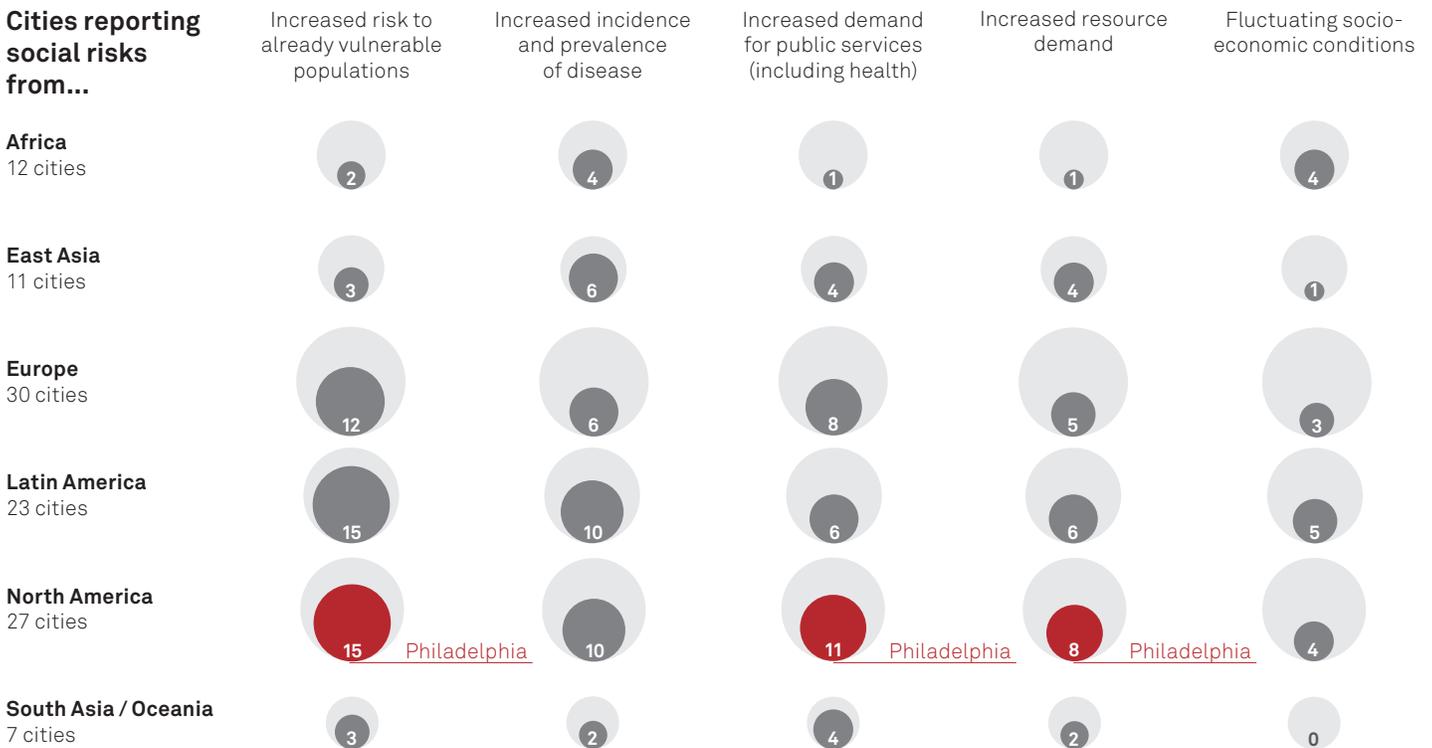
Increased risk to already vulnerable populations

Increased demand for public services (including health)

Increased resource demand

Top five social risks

By region, # of cities



5 Opportunities

Climate change action presents economic opportunities for Philadelphia.

Opportunities

Philadelphia is positioning itself to take advantage of opportunities from taking climate change action.

Development of new business initiatives (e.g. clean tech)

Clean technology action strategy.

Additional funding options

Improved efficiency of operations

See Greenworks.

Increased energy security

Increased attention to other environmental concerns

Further emphasizes importance and urgency of existing efforts

Increased infrastructure investment

Cities that report climate change presents an economic opportunity

and % of cities



No
4 cities
(4%)

Yes
98 cities
(91%)

Philadelphia

Don't know
6 cities
(6%)

LGO Methodology

Philadelphia is reporting a GHG measurement inventory for a period of one year.

Fri 01 Jan 2010 – Fri 31 Dec 2010

Boundary typology used for Philadelphia's GHG emissions inventory:

Companies, entities or departments over which operational control is exercised.

Emissions – Local Government

Philadelphia has used the following major sources of emissions in the municipal GHG emissions inventory:

Airport(s)

Buildings

Electricity transmission and distribution

Municipal vehicle fleet

Street lighting and traffic signals

Waste collection

Wastewater treatment

Water supply

The primary protocol used for calculating GHG emissions is the Local Government Operations Protocol (ICLEI/The Climate Registry/California Climate Action Registry/California Air Resources Board).

Generally the LGOP was followed except for a few areas where existing business processes made the LGOP difficult or impractical for use. As an example, LGOP excludes losses from Electricity transmission and distribution, however the City of Philadelphia's carbon accounting software included these losses in the emissions factor.

LGO Energy Data

Fuel consumption for Philadelphia's local government this year:

Motor gasoline (petrol)

447,770
gigajoules

Diesel/Gas oil

128,403
gigajoules

Biodiesels

211,454
gigajoules

Natural gas

1,079,302
gigajoules

Distillate fuel oil no. 2

30,345
gigajoules

Electricity and heat consumption purchased by Philadelphia's local government this year:

Electricity

735,122,891
kWh

Steam

123,352,000
Btu

LGO GHG Emissions Data

Total (Scope 1 + 2) emissions for Philadelphia:

482,390
metric tonnes CO₂e

Breakdown of Philadelphia's GHG emissions by scope:

Scopes are a common categorization method. Scope 1: All direct GHG emissions (with the exception of direct CO₂ emissions from biogenic sources). Scope 2: Indirect GHG emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling.

Total Scope 1 activity

139,696
metric tonnes CO₂e

Total Scope 2 activity

342,694

metric tonnes CO₂e

Philadelphia does not measure
Scope 3 emissions.

The main scope 3 emissions we explored calculating were for the waste stream and employee commute. At this time we did not have any accurate data on waste from City facilities or employee commute. We intend to revisit this in the coming years.

Breakdown of emissions by department,
facility, greenhouse gas, or other
classifications used by Philadelphia:

General Fund Buildings and Facilities

145,630

metric tonnes CO₂e

Street Lighting

36,025

metric tonnes CO₂e

Vehicle Fleet

53,320

metric tonnes CO₂e

Water Treatment

64,726

metric tonnes CO₂e

Wastewater Treatment

90,457

metric tonnes CO₂e

Airport Operations

92,232

metric tonnes CO₂e

Overall emissions have decreased.

Emissions have trended down based on the three previous inventories completed.

1990 – 587,899 metric tonnes CO₂e

2006 – 554,842 metric tonnes CO₂e

2010 – 482,391 metric tonnes CO₂e

We believe this is the case for several reason. First, the regional electricity grid has recently moved away from coal and switched to more natural gas sources. Second, the City has reduced the number of vehicles it uses and the fuel economy for City vehicles has steadily improved. Finally, while the City has continued to build new facilities, they are generally to replace previous buildings instead of adding floor space.

LGO External Verification

The GHG emissions data Philadelphia is currently reporting has not been externally verified or audited in part or in whole.

GHG emissions data was reviewed by ICF international at various stages of inventory completion.

C Date and boundary

Philadelphia is reporting a GHG measurement inventory for a period of one year.

Fri 01 Jan 2010 – Fri 31 Dec 2010

Boundary typology used for Philadelphia's GHG emissions inventory:

Geopolitical Boundary

Physical areas over which local government has jurisdictional control.

Emissions – Community

C GHG emissions data

Philadelphia has used the International Emissions Analysis Protocol (ICLEI) to calculate GHG emissions.

Philadelphia has used the following methods of calculation and processes for data collection:

In general the ICLEI protocol was followed, however in some cases data was not available in the same fashion or format as described in the protocol.

Electricity, natural gas and steam usage was provided by the local utilities.

Data related to on-site combustion of fuels was derived using the American Communities Surveys and allocated to Philadelphia based on population.

Emissions from transportation was derived using the local regional planning commission's transportation model and EPA MOVES. EPA's non road emissions model was used for off road vehicles

Industrial emissions were estimated by looking at EPA's GHG reporting project data and comparing it to previously known information from utilities.

Waste data was modeled using MSW and private collection data along with local landfill and incinerator emissions based on total waste. This was counted as scope 3 emissions because none of these facilities are within the City of Philadelphia.

Total (Scope 1 + 2) emissions for Philadelphia:

19,780,964

metric tonnes CO₂e

Breakdown of Philadelphia's GHG emissions by scope:

Scopes are a common categorization method. Scope 1: All direct GHG emissions (with the exception of direct CO₂ emissions from biogenic sources). Scope 2: Indirect GHG emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling.

Total Scope 1 activity

12,979,360

metric tonnes CO₂e

Total Scope 2 activity

6,801,604

metric tonnes CO₂e

Breakdown of these emissions by end user, economic sector, IPCC sector, GHG or any other classification system used:

End user: buildings, water, waste, transport. Economic sector: residential, commercial, industrial, institutional. IPCC sector: stationary combustion, mobile combustion, industrial processes, waste. Greenhouse gas: CO₂, CH₄, N₂O etc.

Buildings and Stationary Energy Use

13,068,937

metric tonnes CO₂e

Transportation

3,909,659

metric tonnes CO₂e

Street Lighting and Traffic Lights

36,025

metric tonnes CO₂e

Fugitive Emissions

1,165,473

metric tonnes CO₂e

Industrial Processes

1,514,290

metric tonnes CO₂e

Waste

1,836,091

metric tonnes CO₂e

Total amount of fuel consumed in Philadelphia during the reporting year:

Natural Gas

80,094

TJ

Electricity and heat that has been consumed by Philadelphia during the reporting year:

Electricity

52,880

TJ

Philadelphia does measure Scope 3 emissions.

Waste landfilled

1,738,116

metric tonnes CO₂e

Waste data was modeled using MSW and private collection data along with local landfill and incinerator emissions based on total waste. This was counted as scope 3 emissions because none of these facilities are within the City of Philadelphia.

Overall emissions have decreased from the 2006 benchmark and increased from 1990.

There are several contributing factors to overall emissions changes.

- A cleaner Electricity grid from 2006 to 2010

- Reduced Vehicle Miles Traveled from 2006 to 2010

- Industrial Emissions are down from 1990 and 2006

- Building energy use is up from 2006. It should be noted that two inventory years (2006 and 2010) had very different weather patterns and 2010 was a particularly cold year which is part of the reason for the large increase in natural gas use and in energy use in buildings.)

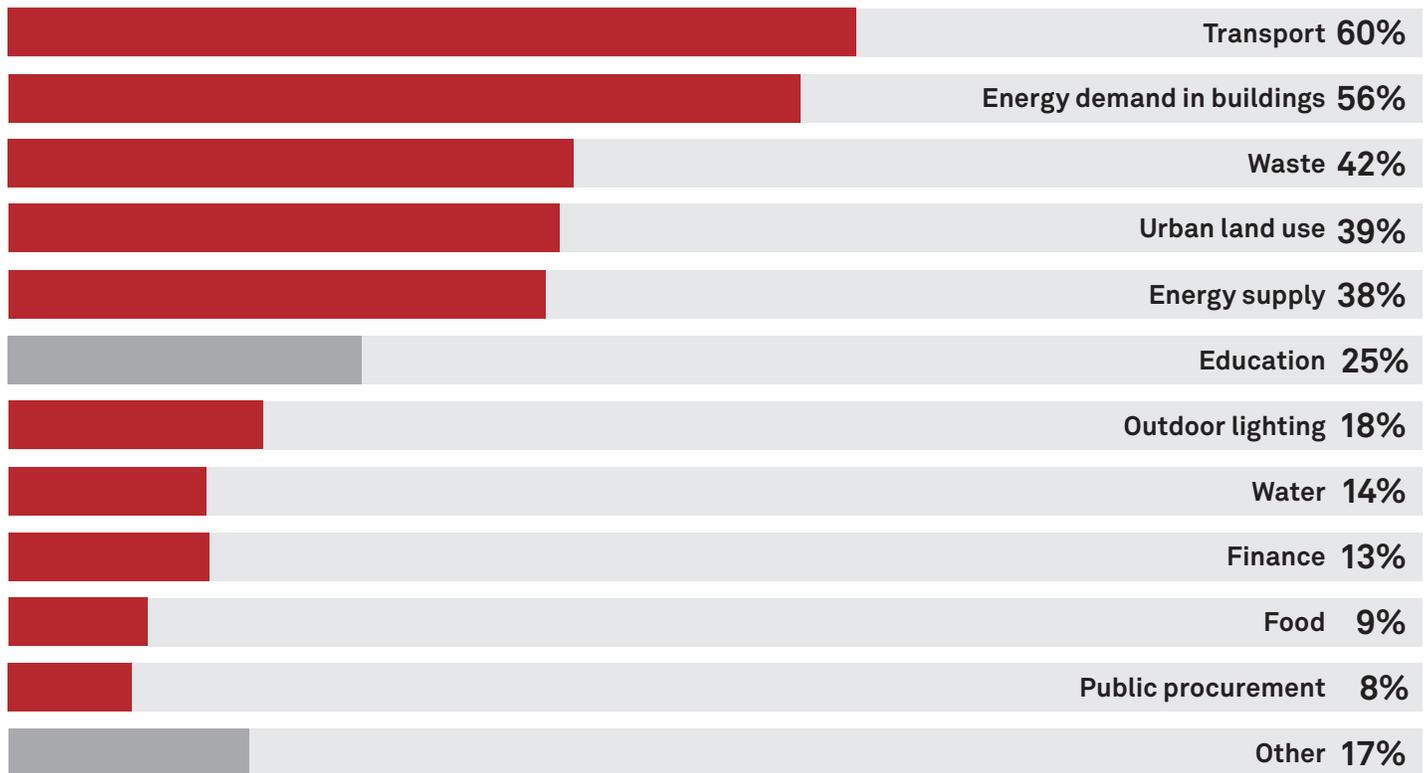
C External verification

The GHG emissions data Philadelphia is currently reporting has not been externally verified or audited in part or in whole.

GHG emissions data was reviewed by ICF international at various stages of inventory completion.

Cities reporting city-wide reduction activities

By category, % of cities



Strategy

6 Local government operations – GHG emissions reduction

Philadelphia has a GHG emissions reduction target in place for local government operations.

Philadelphia's local government operations
GHG emissions reduction
target in detail:

Baseline year

1990

Baseline emissions

587,899

metric tonnes CO₂e

Percentage reduction target

20%

GHG sources to which the target applies

Scope 1 + 2 Emissions

Target date

2015

Activities undertaken to reduce Philadelphia's emissions in its government operations:

Energy Demand in Buildings

Building codes and standards

LEED Silver required for all large municipal facilities.

Energy Demand in Buildings

Building performance rating and reporting

Energy benchmarking and disclosure for all municipal facilities over 10,000 square feet.

Energy Demand in Buildings

Energy efficiency/retrofit measures

Performance contracting for large projects and competitive funding for departments.

Energy Demand in Buildings

Financing mechanisms for retrofit

Guaranteed energy savings project using energy performance contracting in large city buildings (see Greenworks Update and 2012 Progress Report).

Energy Demand in Buildings

Renewable on-site energy generation

Philadelphia Water Department installed 250kW solar array at SE Wastewater Treatment Facility. Biogas plant at Northeast Wastewater Treatment Facility will offset 15% of the department's total energy use.

Energy Supply

Clean energy procurement strategies

City of Philadelphia purchasing/generating more than 20% of energy used from renewable sources.

Finance

ESCO financing

See above (financing mechanisms for retrofit)

Food

Promotion of climate smart eating habits

Greenworks Target 10 supports healthy, affordable food access for all Philadelphians.

Outdoor Lighting

LED / CFL / other luminaire technologies

Piloting LED lighting and control technologies at several Recreation sites.

Public procurement

Encourage sustainable food production and consumption

See above, Greenworks Target 10.

Transport

Infrastructure for non-motorized transport

City of Philadelphia released a Complete Streets Handbook in 2012 and has completed 428 miles of bike lanes.

Transport

Improve fuel economy and reduce CO₂ from motorized vehicles

City fleet using b20 biodiesel.

Transport

Improve fuel economy and reduce CO₂ from bus and/or light rail operations

SEPTA converting to hybrid diesel buses (60% of fleet at present) and implementing energy conserving regenerative braking system on regional rail cars.

Urban Land Use

Limiting urban sprawl

Zoning code revised and newly adopted in 2012 promotes smart, sustainable growth.

Urban Land Use

Greenspace and/or bio-diversity preservation and expansion

Target 9 of Greenworks promotes walkable access to public open space for all Philadelphians. In order to achieve this goal, Philadelphia Parks and Recreation is implementing Green2015, a plan to add 500 acres of new open space by 2015.

Urban Land Use

Transit oriented development

Mixed-use/mixed-income project at Temple University regional rail station will be complete in June of 2013 and will be the city's first LEED ND certified project.

Urban Land Use

Urban agriculture

The Philadelphia Food Policy Advisory Council works to promote urban agriculture and food access goals for the city. Initial recommendations from the council appear in the Greenworks Update and 2012 Progress Report under Target 10.

Urban Land Use

Compact cities

Philadelphia's City Planning Commission published Philadelphia2035, the Comprehensive Plan, in 2010. Many elements of the plan seek to capitalize on Philadelphia's many existing dense neighborhoods and steer new development in such a way that complements walkability and scale.

Water

Wastewater to energy initiatives

See previous - Biogas project at Philadelphia Water Department facility.

Water

Water metering and billing

Green City Clean Waters includes a re-structuring of stormwater billing that is parcel-based, and uses a formula combining total lot size with impervious surface to determine a customer's stormwater bill.

Waste

Improve the efficiency of waste collection

Single stream recycling collection, plastics 1-7.

Waste

Recycling or composting collections and/or facilities

See above. City achieved 72% diversion from landfill in 2012.

Waste

Waste prevention policies or programs

UnLitter Us waste reduction campaign targeted at youth.

7 Community – GHG emissions reduction

Philadelphia has a GHG emissions reduction target in place for its community.

Philadelphia's GHG emissions reduction target in detail:

Baseline year

1990

Baseline emissions

19,403,213

metric tonnes CO₂e

Percentage reduction target

20%

GHG sources to which the target applies

Scope 1 + 2 Emissions

Target date

2015

Activities currently being undertaken to reduce emissions city-wide:

Most of the actions from the previous (city) section also apply citywide

Energy Demand in Buildings

Building performance rating and reporting

Beginning in 2013, large commercial buildings will be required to annually benchmark and report energy and water use to the City of Philadelphia, which will then publish results beginning in 2014.

Energy Demand in Buildings

Financing mechanisms for retrofit

EnergyWorks program provides technical assistance, low-interest financing and quality assurance for residential and commercial property owners in the Philadelphia region. In addition, several utility energy conservation programs offer similar assistance.

Energy Supply

Combined heat and power

Philadelphia Gas Works, the City-owned gas utility, offers incentives for CHP projects and has one of their own at their headquarters facility. Veolia Energy, which operates Philadelphia's steam loop, also has installed large-scale CHP at their facility.

Transport

Improve fuel economy and reduce CO₂ from motorized vehicles

Target 12 of Greenworks seeks a 10% reduction in Vehicle Miles Traveled by 2015. As of 2012, the reduction was at 7.4%.

Anticipated lifetime emissions reductions reported by cities

By category (millions metric tonnes CO₂e)



Note that anticipated emissions reductions are difficult to estimate. This data therefore reflects a significant bias toward emissions reduction actions that are easier to quantify.

8 Planning

Climate change-related projects for which Philadelphia hopes to attract private sector involvement:

Adaptation Plan

Communications and outreach strategies and messaging on climate change adaptation messaging to vulnerable communities and high producing economic sectors within the city.

Philadelphia does incorporate desired GHG emissions into the masterplanning for the city.

Phila2035 references the Greenworks Target 5 GHG emissions reduction goal (20% reduction over 1990 levels by 2015), and sets a long-term emissions reduction goal of 45% by 2035.

Renewable energy targets:

20%
renewable energy by
2015

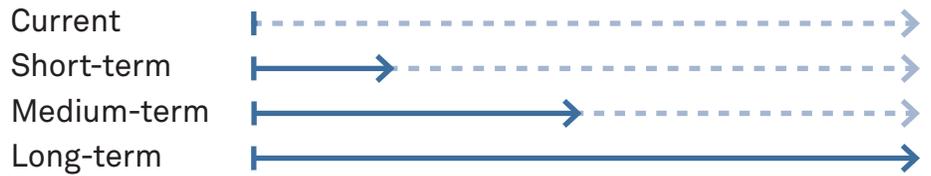
Greenworks Target 4 sets a goal of purchasing or generating 20% of the City's energy from renewable sources by 2015. The municipality is exceeding that goal, and city-wide the number has increased from 2% to 12% in three years.

9 Water

Philadelphia foresees substantive risks to its water supply in the short or long term.

Risks to Philadelphia’s water supply as well as timescale:

Timescale



Increased water stress or scarcity



Declining water quality



Inadequate or aging infrastructure



Flooding



Higher water prices



Regulatory



Actions (on the supply and demand side) that Philadelphia is taking to reduce risks to its water supply:

PWD in collaboration with the Partnership for the Delaware Estuary (PDE) and the Environmental Protection Agency (EPA) completed an assessment of the climate drivers, changing physical conditions, and the subsequent vulnerabilities that Philadelphia will face due to climate change. Based on these vulnerabilities, PWD is looking at adaptation options for Philadelphia's drinking water supply and identifying priority research needs for the future.

PWD's Delaware River Source Water Assessment identifies sea level rise as a priority concern for Philadelphia's water supply on the Delaware. Philadelphia's Baxter intake, which provides drinking water to nearly 1 million people, is located in the tidally-influenced fresh waters of the Delaware River. PWD is currently in the process of assessing what options exist to ensure that the salty water of the tidal Delaware does not reach the Baxter intake as climate conditions change. As part of this assessment, PWD is developing modeling capabilities to not only evaluate possible sea level rise and salt intrusion scenarios, but to examine issues related to nutrient fate and transport and spill event warning as well.

PWD's Office of Watersheds implements waterway restoration programs that are designed to reduce water temperatures and stress from higher temperatures, restore aquatic ecosystems, and maintain and improve the resiliency of aquatic systems. PWD also leads multiple ongoing watershed planning efforts that are intended to improve the health of the water resources in Philadelphia watersheds while respecting the diverse needs of stakeholders. Specific investigations conducted as part of the plan development included issues related to climate change impacts, such as the affect of sea level rise and increased water salinity on aquatic vegetation.



Boathouse Row
Image Source: Flickr user santoplacido



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