Climate Change Adaptation in Philadelphia
April 17th, 2013
Alex Dews - Policy and Program Manager, Mayor's Office of Sustainability
Scott Schwarz - General Counsel, Philadelphia Water Department
Climate Volatility and Change

Since 2010, Philadelphia has experienced:
The snowiest winter ever
The two warmest summers ever
The most days over 90 degrees ever
The warmest July ever
The wettest month ever
The wettest year ever
Two hurricanes
And a direcho.
### Fig. 02: Emerging practices from C40 Cities in climate change governance

- **High Level Responsibility**: 93% of C40 Cities (39) have established climate change responsibility at the highest level.
- **Climate Change Action Plan**: 62% of C40 Cities (26) have developed a climate change action plan.
- **Oversight**: 50% of C40 Cities (21) have a dedicated council or steering committee.
- **Reduction Targets**: 57% of C40 Cities (24) have specific GHG reduction targets for city-wide emissions.

### Fig. 07: Cities that incorporate reduction targets into master planning, by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>69%</td>
<td>29/42</td>
</tr>
<tr>
<td>Africa</td>
<td>100%</td>
<td>3/3</td>
</tr>
<tr>
<td>Europe</td>
<td>89%</td>
<td>8/9</td>
</tr>
<tr>
<td>East Asia</td>
<td>80%</td>
<td>4/5</td>
</tr>
<tr>
<td>North America</td>
<td>80%</td>
<td>8/10</td>
</tr>
<tr>
<td>Southeast Asia and Oceania</td>
<td>80%</td>
<td>4/5</td>
</tr>
<tr>
<td>Latin America</td>
<td>25%</td>
<td>2/8</td>
</tr>
<tr>
<td>South and West Asia</td>
<td>0%</td>
<td>0/2</td>
</tr>
</tbody>
</table>
Climate Adaptation Working Group Survey

2. The scientific literature identifies the following most likely effects of climate change for the Philadelphia region. Please rank each of the following in terms of significant impact on your department:

<table>
<thead>
<tr>
<th>Effect</th>
<th>Significant</th>
<th>Somewhat significant</th>
<th>Moderate</th>
<th>Minimal or no impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea level rise</td>
<td>41.7% (5)</td>
<td>33.3% (4)</td>
<td>0.0% (0)</td>
<td>25.0% (3)</td>
</tr>
<tr>
<td>Extreme heat events, annual/seasonal temperature increases</td>
<td>45.5% (5)</td>
<td>54.5% (6)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Drought</td>
<td>16.7% (2)</td>
<td>41.7% (5)</td>
<td>16.7% (2)</td>
<td>25.0% (3)</td>
</tr>
<tr>
<td>Increase in heavy downpours, increased annual/seasonal precipitation</td>
<td>58.3% (7)</td>
<td>33.3% (4)</td>
<td>0.0% (0)</td>
<td>8.3% (1)</td>
</tr>
</tbody>
</table>
Temperature Data and Trends

Philadelphia

Average number of days in center city with temperatures over 90°F (30°C)

United States

“Since the 1970s, unusually hot summer temperatures have become more common in the United States, and heat waves have become more frequent.”

Observed Increases in Heavy Rainfall

Increases in the amount of precipitation falling in heaviest 1% of daily events, 1958-2007

Percentage Change in Very Heavy Precipitation

0 - 10%  10 - 20%  20 - 30%  30 - 40%  40 - 50%  >60%

USGCRP, Global Climate Impacts in the United States 2009
Sea Level Rise Past Occurrences (NOAA)

Philadelphia, PA  2.79 +/- 0.21 mm/yr
Public - Percy Street Porous Paving

Before

After
Private - Parcel based Stormwater Billing and SMIP Program

www.phillystormwater.org
Washington Avenue Green and Race Street Connector
Stormwater Management Development Standards
Energy Efficiency and Demand Response
### Air Quality and Heat Health Alert Programs

#### AQI Value | Actions to Protect Your Health From Ozone
---|---
**Good** (0–50) | None

**Moderate** (51–100*) | Unusually sensitive people should consider reducing prolonged or heavy outdoor exertion.

**Unhealthy for Sensitive Groups** (101–150) | The following groups should **reduce prolonged** or **heavy** outdoor exertion:
- People with lung disease, such as asthma
- Children and older adults
- People who are active outdoors

**Unhealthy** (151–200) | The following groups should **avoid prolonged** or **heavy** outdoor exertion:
- People with lung disease, such as asthma
- Children and older adults
- People who are active outdoors
Everyone else should limit prolonged outdoor exertion.

**Very Unhealthy** (201–300) | The following groups should **avoid all** outdoor exertion:
- People with lung disease, such as asthma
- Children and older adults
- People who are active outdoors
Everyone else should limit outdoor exertion.

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*For AQI values above 100, the health effects are more severe and specific recommendations may be necessary.

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**Stay Cool Guide: How To Protect Your Health When It’s Hot**

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**READY Philadelphia** Or Not?

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www.phila.gov/ready or call 3-1-1