

# The Climate Change Adaptation Program

The Philadelphia Water Department (PWD) is a combined drinking water, wastewater, and stormwater utility that provides drinking water to approximately 1.6 million customers and wastewater services to 2.2 million customers in Philadelphia and the surrounding suburbs. As PWD strives to be America’s model 21st century urban water utility, innovative technologies, leading research and adaptive management strategies play a critical role in all services. In 2014 PWD developed a Climate Change Adaptation Program (CCAP) to better understand the impacts that climate change will have on the drinking water, wastewater and stormwater systems, and how to plan and invest for a future that will look different from the past.

**WHY?** Impacts from climate change are now inevitable. There is scientific consensus that climate change impacts in Philadelphia will include:

- **more rain**
- **extreme storms**
- **higher air temperatures**
- **rising sea levels**

Drought may also increase in duration and frequency. These impacts will challenge the functionality and reliability of PWD drinking water, stormwater and wastewater infrastructure.

**HOW?** CCAP will perform a comprehensive risk assessment and develop adaptation strategies to inform existing programs and plans, major investments and guide operational and design standards. This will help ensure that climate change adaptation is integrated into ongoing infrastructure replacement planning and system upgrades. The CCAP will proceed in four phases:

- 1 Vulnerability Survey
- 2 Technical Risk Assessment
- 3 Adaptation Strategy Development
- 4 Adaptation Strategy Implementation

**Adaptation** is the alteration of human systems in response to or in anticipation of shifting climate conditions in order to minimize harm and exploit opportunities resulting from climate change impacts.

- IPCC AR4, 2007

**WHEN?** The process is estimated to take several years, during which CCAP will characterize climate-related risks to the utility and develop appropriate adaptation strategies to reduce risk and increase resilience. Several PWD programs and initiatives already increase climate resilience including the Green City, Clean Waters Program, Source Water Protection Program, Storm Flood Relief Program, Ecological Restoration Group and the Operations Unit, which manages the efficient operation of drinking water and wastewater facilities and infrastructure systems.

**OUTCOME:** CCAP will identify strategic upgrades, design recommendations and planning criteria to inform how PWD can minimize the impact of climate change and ensure clean, safe drinking water and environmentally progressive wastewater and stormwater services.

