

CASE STUDY

Philadelphia's Green City, Clean Waters



IDENTIFYING HAZARDS:

Established in June 2011 by the City of Philadelphia, [Green City](#), the Philadelphia Water Department's [Clean Waters program](#) (formally known as the Combined Sewer Overflow Long Term Control Plan Update) is a 25-year plan to protect and enhance local watersheds by managing stormwater with innovative green infrastructure. The plan was developed in partnership with the Pennsylvania Department of Environmental Protection (PADEP) and to meet the water quality goals of the Pennsylvania state government. The city and state recognized that heatwaves and flood risk present hazards that would increase over time due to climate change and are likely to have significant impacts in Philadelphia. The green infrastructure approach for stormwater infrastructure is meant to reduce the effects of excessive heat. In addition, stormwater infrastructure is meant to decrease the risk of floods to the city and its communities.

POLICY APPROACHES TO INCREASE RESILIENCE:

The Green City, Clean Waters plan focuses on identifying the most cost-effective and technically feasible options to reduce sewage overflows and seeks to leverage public-private partnerships and collaboration to advance green solutions.

- The Philadelphia Water Department rolled out a range of **incentive programs**, such as the Parcel-Based Billing Initiative, which provides customers free cost-benefit analysis of retrofitting their property with green stormwater management opportunities.
- The department, with the understanding that, by design, much of the program's implementation will be done by private entities, **focused heavily on introducing guidance** on green best practices and invested in its capacity to play a supporting role.

Within the program's first eight years, the Philadelphia Water Department and private partners surpassed installation targets, with over 835 acres of green space added to the city and a reduction by more than 1.5 billion gallons in annual pollution from stormwater runoff and combined sewer overflows.

Illustrative Checklist for Incorporating Climate Considerations in PPPs

✓	Have project developers identified potential climate hazards, particularly those that have been identified as most impactful in this jurisdiction and/or for water infrastructure in general?
✓	How have the project developers integrated identified climate hazards into project design and financial projections? What risk management and resilience measures have been put into place for each of the identified material hazards?
✓	How sensitive is the provision of service to business interruption events? What are the revenue losses associated with system slowdowns or stoppage?
✓	What risk management measures have been put in place to ensure the resilience of a project and what is the estimated change in CapEx, OpEx, and life of the assets with these risk management measures?
✓	Have changes in water demand and wastewater discharge, related to climate change (from both physical and transition impacts) been incorporated into the project finances?
✓	Has the developer included projected changes in the cost of water or energy (due to climate change impacts)?
✓	What types of expertise within state government offices should be engaged in approval (i.e. engineering, climate experts, finance experts)?
✓	How are climate considerations for existing infrastructure monitored as part of operating contracts?

Interested in learning more about this work or Climate Finance Advisors, contact us here: info@climate-fa.com