

## Storm Flood Relief and Flooding Mitigation



The frequency and strength of rain events and amount of impervious surface in Philadelphia creates conditions that can lead to localized flooding. Several areas of the City (South Philadelphia, Northern Liberties, Washington Square West and Germantown) have experienced significant basement flooding during intense rain events. PWD has established an assistance program to alleviate flooding conditions in basements due to heavy rainstorms. As a result of these events, the Philadelphia Water Department has initiated an intensive study of the basement flooding situation, which results in a combination of sewage and stormwater discharging into a property through a basement plumbing fixture when the combined sewer is overtaxed.

The completion of these system-wide sewer evaluations, which include analyses of alternatives to develop the most cost-effective, minimally disruptive solutions to protect these communities, will result in the implementation of a potentially billion dollar capital program over the next 10-15 years. Since 2005, PWD has:

- Initiated a hydraulic analysis of the sewer system in the flood prone areas in order to understand the cause of the basement flooding as well as to determine possible solutions.
- Begun and will continue to schedule flood relief capital projects into its capital program as determined by the hydraulic analysis.
- Completed the design and begun construction of the storm flood relief project in Northern Liberties
- Programmed flood relief projects in Snyder Avenue, in South Philadelphia, and is currently optimizing solutions for South Philadelphia and Washington Square West
- Conducting computer modeling of the Wingohocking sewer system in Germantown
- The Water Department has created a Backwater Valve installation program to provide relief for properties as quickly as possible while the other solutions are identified, designed, and constructed.

The Backwater Valve installation program consists of the Water Department, through private plumbers, evaluating flood prone properties to determine if they would benefit from the installation of a backwater valve(s). If the property is eligible, a backwater valve configuration is installed by a private plumber at no cost to the homeowner.

- Seventy-two (72) properties were served in Fiscal Year 2009 at a total cost of \$220,199.10.
- One hundred seventy-six (176) properties were served in Fiscal Year 2010 at a total cost of \$566,552.00.
- Ninety-six (96) properties were served in Fiscal Year 2011 at a total cost of \$202,438.00.