

Philadelphia Water Department

What is the City Doing to Better Manage Storm Water and Alleviate Property Flooding Caused by Exceptional Storms?

Why has flooding occurred in the Philadelphia region during recent heavy storms?

Over the past year, many communities in and around the Philadelphia region have been challenged by an extraordinary number of storms which deposited heavy rainfall in relatively short periods of time. Many neighborhoods experienced sewer backups into properties at varying degrees as a result of these storms.

What is unusual about these storms?

The intensity and the duration of the rainfall, particularly in those cases when a large volume of rainwater runoff is generated in a relatively short period of time, characterize these storms as events that are expected to occur possibly once in a hundred years. Our region has experienced an unusually high number of these events during the past year.

What other factors contribute to property or area flooding during some storms?

There are a number of environment and geographical conditions that contribute to flooding. These include:

- The City's combined sewer system – Although properly designed to handle the majority of rain events and the sewage collection necessary to protect public health, property and the environment, combined sewers can be overwhelmed by some storm events, especially flash flooding. It is also physically and financially impossible to install piping that can accommodate hurricane force flooding.
- Philadelphia is at the bottom of the Delaware and Schuylkill river watersheds, in addition to being located downstream in all the City's creek watersheds, including the Cobbs, Wissahickon, Tacony, Pennypack and Poquessing creeks. Stormwater runoff generated in suburban counties flows into our shared rivers and streams, and sometimes into our combined sewer systems. Channeling large volumes of runoff into these streams results in significantly fast and furious flows that overwhelm stream banks or pipes by the time these volumes reach Philadelphia.
- Significant development in suburban communities over the past decade has increased the amount of impervious surfaces (streets, sidewalks, houses, malls, etc.) resulting in increased volumes of stormwater runoff. Green space that was once available to allow stormwater to infiltrate or evaporate has decreased, providing less stormwater management protection for downstream neighbors.

What is the City doing to better manage stormwater and to alleviate property flooding?

The City and the Water Department are working on or developing a number of programs and strategies to better manage stormwater.

These include:

- The Water Department is consistently rehabbing or replacing its sewer infrastructure to ensure reliable and adequate service. This includes regular cleaning and other preventive maintenance measures to ensure as much capacity in our systems as is economically and physically feasible.
- The City recognizes that infrastructure alone is not the solution to better managing stormwater runoff. Many city agencies, in addition to the Water Department, are working to incorporate stormwater best management practices, also known as low impact development (LID), into their land maintenance and redevelopment strategies. LID includes porous paving, tree scaping, rain gardens and rain barrels, green roofs, which are environmental friendly features that allow the land to retain or infiltrate stormwater.
- The Water Department is leading a regional effort to develop and implement watershed management plans – plans based on watershed boundaries that are geared to restore and protect our region’s rivers and streams through sound land management practices that address stormwater, as stormwater has been identified as a major pollutant to our natural areas and as a destructive force to our streams and park areas.
- The Water Department is working with other City agencies to revise the City’s stormwater regulations to require new development and redevelopment to invest in stormwater controls that will rely less on infrastructure and more on green space to infiltrate and/or retain stormwater runoff to reserve capacity in our sewer systems and protect our streams and rivers. This effort complements joint stormwater management planning that is ongoing with our suburban communities.
- The Water Department is currently evaluating the sewer systems in City neighborhoods that have been the most impacted by this past year’s extraordinary storms. The department is working with City Council representatives and civic organizations to collect the necessary information to ensure the planning for effective and sustainable solutions.

###