HEAVY RAINFALL COMPROMISES INFRASTRUCTURE

Flooding due to heavy rainfall affects Milwaukee's buildings, roads, and communities.



Flooding in the Milwaukee area after a heavy rain event in June 2008.
Photos courtesy of Milwaukee Metropolitan Sewerage District

Heavy Rainfall

Milwaukee, Wisconsin. In recent years this metropolitan area has experienced serious problems associated with repeated heavy-rainfall events. Large areas of impervious surfaces are keeping much of the water from being absorbed, which overwhelms the stormwater system and floods portions of the city.

One such event occurred in July 2010, when some locations received over seven inches of rain within a 24-hour period. Streets were transformed into lakes and rivers, some streets developed sinkholes, Milwaukee's General Mitchell International Airport closed, and sewage overflowed into Lake Michigan. Many residents experienced flooding in their basements and first floors. In some cases the sewer system backed up into residents' basements.

Scientists from the Wisconsin Initiative on Climate Change Impacts predict that future rainfall events will be more frequent and more intense. To protect the city, Milwaukee's water resource managers are implementing numerous strategies, some of which are listed below.

Response

The City of Milwaukee and the Milwaukee Metropolitan Sewerage District are using a green infrastructure approach to lessen the percentage of rainfall that ends up in the stormwater system. Green infrastructure uses plants, soil, and other natural methods to reduce and filter stormwater runoff. At the same time, the city is working to increase the capacity of gray infrastructure, a term for the built stormwater and sewer management systems.

City officials are taking a wide, multi-faceted approach to achieve these goals. Medians and large city parking lots feature green infrastructure that absorbs more stormwater. The sewerage district's "Every Drop Counts" campaign shows residents how to reduce stormwater by installing rain barrels and planting rain gardens. In cooperation with the Southeastern Wisconsin Regional Planning Commission, the sewerage district also implemented the Greenseams program to purchase and protect undeveloped lands and open spaces adjacent to streams, shorelines, and wetlands. When these lands are preserved, so are natural water storage and flood management areas for today and tomorrow.

Green infrastructure is being used to filter and reduce stormwater.
Photos courtesy of City of Milwaukee

Addressing heavy precipitation-related issues now will help Milwaukee adapt to future conditions.

The City of Milwaukee Department of Public Works began a pilot project to replace private property sewer connections and disconnect downspouts. These two actions will help keep stormwater out of the sanitary sewer system, a problem that had been the largest contributor to basement backups during heavy rain events. The sewerage district continues to increase the storage capacity of the deep tunnel system that stores untreated wastewater and stormwater until it can be treated at the treatment facilities. This helps to reduce the amount of basement backups and sewer overflows.

To learn about additional stormwater activities:

- City of Milwaukee
  www.city.milwaukee.gov/ManagingYourStormwater

- Milwaukee Metropolitan Sewerage District
  http://v3.mmsd.com

Deep tunnel extension.
Photo courtesy of Milwaukee Metropolitan Sewerage District