Lightning Strikes Twice in Ellicott City

Janice Kaspersen • May 29, 2018

You’re probably aware of the flooding that occurred in Ellicott City, MD, over the weekend, with some areas receiving as much as 8 inches of rain in just a few hours on Sunday evening. Hundreds of people had to be rescued from the rapidly rising water, and one was killed—a National Guardsman who was swept away as he tried to save someone else. You can see the extent of the damage and the devastated downtown area, with the ground floors of many buildings completely inundated, in the links above and in any number of other articles online.

Not quite two years ago, floods hit the same area. An article in Stormwater magazine covered that event, which dropped 6.6 inches of rain in three hours on July 30, 2016, and was termed at the time a 1,000-year flood. Two people died in that flooding, which caused an estimated $20 million in damages. Early reports say this year’s damage to infrastructure is far worse.

As the author of that article noted, storms of this size are rare. He asks, “How does an event like this compare to the typical design storm, and would the typical stormwater management design associated with site development be able to safely convey the infrequent runoff scenario in a safe manner?”

The article raises many important points and asks questions for designers to consider. On one hand, it notes, “One could argue that stormwater management facilities with a 25- to 50-year service life should not be required to design for a storm event that has a 1-in-100 probability of recurrence, yet historically these atypical storm events seem to occur more frequently.” Designing to accommodate very large events—far larger than the 100-year storm—is cost-prohibitive, in a time when many cities can’t afford even routine infrastructure repairs and upgrades. The author suggests that there are some intermediate steps we can take, however: “It is unrealistic to design storm drain infrastructure to safely convey rare storm events that may never occur…. However, when site conditions permit, an engineer should consider the value of increasing segments of infrastructure. Although not intending to overdesign systems, adding unnecessary cost to the developer, minor design changes such as increasing pipe slope or upsizing pipe segments to provide better design flows can be beneficial to safely conveying occasional high-rate flows.” The full article gives a more thorough account than I’ve summarized here and is well worth reading.

Many stormwater upgrades such as additional retention ponds and drainage pipes were in fact in the works in and around Ellicott City and Howard County, funded by FEMA and other sources based on the 2016 events. All of this is little consolation to those who’ve been hit twice in less than two years by floods they never expected could happen at all.