



## Hail, wind, and floods

As communities look for ways to protect themselves from large-scale weather-related events, design firms are equipped to help them meet the challenge.



**Rob  
Hughes**

**GUEST  
SPEAKER**

**T**hrough mid-2018, the U.S. experienced six weather and climate disaster events with losses exceeding \$1 billion each, including four severe storms and two winter storms, according to the U.S. National Centers for Environmental Information. The 1980-2017 annual average is six events; however, in each of the past five years (2013-2017) the annual average has nearly doubled to 11.6 events.

Although it might appear that in the first six months of 2018, the U.S. is experiencing a less active year for large-scale loss events than 2017 or 2016, NCEI is still assessing losses from two other 2018 events, the Colorado hail storms and South Texas flooding.

Unfortunately, given the effects of Hurricane Florence and the impact of severe weather events this summer the numbers for 2018 have grown significantly worse. As horrendous as Florence was and continued to be in its immediate aftermath, a single event does not necessarily affect the design community. Yet, sustained increases in severe storms, as noted, do effectuate change, which brings both opportunities and risk.

Aside from the personal impacts, let's look at the design community and how it may be able to have a positive impact on clients and the overall health,

safety, and welfare of our communities. Severe weather, and the increase in frequency of severe weather events, is a problem. And designers are what? Problem solvers.

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If you Google a combination of the words engineering/design/catastrophic/weather, a long list of engineering firm websites will pop up. The first few focus on post-event forensic and similar services, including:

- Hail and/or wind damage assessments

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- Flood damage assessments
- Structural integrity assessments
- Moisture intrusion analysis

For those firms entering the forensic arena, be well aware of the answer to a simple question: Who is your client? And understand your answer’s ethical implications. If you’re retained by an insurance carrier to evaluate the extent of property damage, the client’s interests may diverge from those of the property/policy holder. And chances are you’ve had direct interaction with the policyholder who may think you are his expert. This potential “conflict” is heightened if you are also recommending the scope and cost of repairs.

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Scrolling further through the Google search results are links to firms focusing on up-front, preventative architectural and engineering design services. An example of a recipient of such services is the New Jersey shore town, Stone Harbor. In December 2016, the town received a \$2.7 million grant to fund storm water control and flood mitigation in the 96th Street business district, an area flooded during superstorm Sandy that also experienced severe flooding during subsequent “Nor’easters.”

This area is one of only three ingress/egress points for car traffic into and out of the island, a critical safety concern. Neighboring towns to the south received a total of nearly \$22 million in funding for similar efforts. A measurable portion of the scope of the studies and related funds go to environmental and engineering firms; a valuable revenue source spurred by public need. A job well done should be a source of pride for the engineering community.

**EVOLVING WEATHER RISK AFFECTS STANDARD OF CARE.** Stone Harbor’s 96th Street is near the bay and has always had some stormwater control issues; nonetheless, the street and

town have thrived. However, the recent, recurrent flooding has prompted both concern and action. The change in approach also necessitated a change in the design criteria; what was once acceptable is no longer so (i.e., storm-water has traditionally been piped directly into the bay or the ocean). From a legal and risk perspective, that means the standard of care has changed and is continuing to do so.

As a design professional, you must meet the standard of care. If you were to design a home in Stone Harbor today based on acceptable foundation elevations from 1980, that would be unacceptable and a breach of the standard of care. Why? First and foremost, today’s building code requires a higher elevation; a failure to meet code requirements is typically viewed as a breach of the standard of care.

However, codes oftentimes lag “best” or “reasonable” practices. Thus, you and your peers help establish the standard and often, with the aid of government officials, act to revise the code and building standards to catch-up with and reflect the concerns of the design community. For example, following Hurricane Harvey and repeated flooding, Harris County, Texas amended its regulations covering flood plain management to increase public safety and minimize losses due to flooding. A \$2.5 billion bond initiative is now underway.

Designers must carefully examine contractual language relating to the standard of care and changes in the code. The standard of care must be tied to the time during which you render services; the absence of a time reference leaves an open-ended issue that’s not in your favor. And be especially wary of language that ties the time to a later period, such as the end of the project or end of the statute of limitation or repose. The latter could impose a standard 10 or more years after you actually worked on your design. A related concern: language that obligates you to identify changes in the code post-project. You can be sure plaintiff’s lawyers (and their experts) will point to any changes in the code/regulations that may have prevented or limited a weather-related loss.

As communities across the U.S. look for ways to protect themselves from the impact of large-scale weather-related events, design firms are well-equipped to help them meet this challenge. By managing their risks and carefully reviewing contractual language, they will enhance their ability to be rewarded for their efforts. ▀

ROB HUGHES is a senior vice president and partner at Ames & Gough. He can be reached by email at [rhughes@amesgough.com](mailto:rhughes@amesgough.com).