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Hurricane Harvey Observations from Bill Read

Former National Hurricane Center Director and Leadership Partner Bill Read had a front row seat to Hurricane Harvey as a resident of League City, Texas. Bill was kind enough to share his experience and insights with FLASH Enews about this mega-catastrophe and its impact on his hometown.

Harvey made landfall on the Texas coast just north of Corpus Christi, with the towns of Port Aransas and Rockport experiencing the full force of the winds in the eye wall. Wind damage was widespread and what one would expect from a category four storm. Relatively little has been reported on the impact there because of the massive flood that ensued over southeast Texas as Harvey stalled and then drifted slowly east.

We ended up with a storm total of 45.34 inches of rainfall at our house. A couple of rain gauges within three miles of us had around 50 inches. There are unofficial reports of 60 inches of rain, which are being verified. A large portion of Southeast Texas experienced more than three feet of rain. From 10 p.m. Saturday night on August 26 until 1 a.m. Sunday morning I recorded 16.5 inches – that is almost six inches of rain per hour in just three hours. We ended up with 29 inches in 16 hours during that portion of the storm. The onset of flooding throughout the Houston area was swift and violent Saturday night and Sunday morning. Creeks and bayous quickly exceeded their banks, and swollen drainage ditches were unable to discharge water because of the flood levels on the main streams. That led to sheet flow flooding over much of the metropolitan area. Most rivers and bayous exceeded previous record levels, some by an alarming margin.

Impact – The death toll from Harvey as of September 14 was tentatively between 60 and 70. As of today, I have not seen any definitive estimate of the number of houses flooded in the entire area other than the Harris County (Houston) estimate of 136,000 in that county alone. Galveston County, where I live, is saying 20,000 structures flooded. Perhaps 200,000 total is not an unreasonable estimate. Media quoted an insurance industry representative who said over 500,000 cars were lost to flooding. We don't know yet what the dollar losses will be, but it will be large. We were fortunate. Floodwaters came up on the slab of our home. Another three inches would have put water into the house. A number of good friends, including two other retired NWS folks, were not as fortunate. They suffered severe flooding. In Dickinson, the city just south of us, 80 percent of its 6,600 homes flooded. I'm sure you have seen the pictures.

As I write this, it's been a little over a week since the rain ended and most of the water receded. The dichotomy of life going back to normal for those of us not flooded, to just beginning the difficult and long road to recovery for those who were flooded, is striking. I am still distilling everything that happened and thinking about what can be done to improve things for the inevitable next time. Mitigating the situation for those who were flooded is a difficult question. Who can afford to elevate all the slab houses? I haven't seen much of that done in the past. What government entity is willing and able to buy out 200,000 properties, or even maybe the 50,000 most vulnerable? I suspect for most the recovery will be to restore their home pretty much to as it was. Many will have to pay for restoration with their own money.

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Many will have to pay for restoration with their own money. Relatively few had flood insurance. There may be drainage improvements that can mitigate some of the flood risk, but will communities be able to get and dedicate the resources to do this? The biggest flood control projects that were in the works are delayed mainly due to funding issues at the federal level. Many op-ed articles have been published about the rationale of development planning in our area. I hope community leaders will put forth the effort to seriously look at this issue and listen to ideas that might reduce putting future developments at flood risk.

Lastly is the issue of flood insurance. My opinion for decades has been that the use of the 100-year event for planning land use and development, and as a yes/no requirement for purchasing flood insurance, has made flood disasters worse for the people it impacts. Why would someone not in our business, or familiar with how flooding works, see the need to buy flood insurance if they are outside the 100-year flood plain? When buying a house very few realtors, certainly not the lenders and sadly in my experience even many insurance agents, recommend the buyer purchase flood insurance if they are outside the 100-year flood plain. For starters, shouldn't we require flood insurance for at least the 500-year flood plain? There are a myriad of other problems with National Flood Insurance Program that an event like Harvey should serve as a catalyst to overhaul the program.

I seem to have a history with inland rains from tropical cyclones. I flew Hurricane Agnes in 1972 – over 100 lives lost due to flooding mainly in the mid-Atlantic region. I was the overnight warning forecaster during the Texas Hill Country floods from Tropical Storm Amelia where up to 48 inches of rain fell over a two-day period. I was working the daytime forecast shift in 1979 when Tropical Storm Claudette dumped 43 inches in 24 hours over Alvin, Texas, flooding some of the same communities flooded during Harvey. In 2001, I was the Meteorologist-In-Charge of the Houston office during the Tropical Storm Allison urban Houston floods where up to 38 inches of rain fell in a short period of time. So, I was not as surprised as many when the forecast rains from Harvey materialized August 25 -30. Only this time I was part of the Big Rain.