Hurricane Jeanne approaching Florida in September 2004

2016 Severe Weather Awareness Week

Thursday, February 25th is Hurricane and Flooding Awareness Day

Once again, 2015 was a good year for Florida with no direct tropical storm or hurricane impacts, marking the second consecutive year this has happened. Despite our recent good fortune, history tells us that south Florida is one of the most vulnerable and hurricane-prone places in the country. On average, the center of a hurricane will pass within 50 miles of any point in South Florida every 6 to 8 years. This means that while hurricane strikes are typically not a yearly occurrence, statistics indicate that south Florida will at least be significantly threatened a few times a decade, and impacted directly by a hurricane at least once a decade. Indirect hurricane impacts as well as tropical storms passing over south Florida occur with higher frequency; at least every 2 or 3 years on average.

Therefore, we can't afford to become complacent. Be prepared **every year** for the possibility of a tropical storm or hurricane impacting our region.

Even in years when not hit directly by a tropical storm or hurricane, systems can pass close enough to south Florida to cause some impacts. In 2013, the center of Tropical Storm Andrea passed well to our north, but the tail end of its associated cloud band impacted south Florida with tornadoes, torrential and severe flooding. Do not focus too much on the center of a tropical storm or hurricane, but on its potentially far-reaching impacts.

IT'S NOT JUST ABOUT THE WIND

Tropical cyclones are multi-hazard weather systems. While the wind speed is what determines the classification of a tropical cyclone, other hazards such as storm surge, flooding and tornadoes can cause significant impacts including loss of life. Tropical Storm Isaac in 2012 was a heavy rain and flood producer. Tropical Storms Debby in 2012 and Andrea in 2013 spawned several tornadoes and Hurricane Sandy's near-miss in 2012 was still close enough to cause coastal flooding and beach erosion in the millions of dollars in total damage.

Remember: It doesn't take a major hurricane to produce significant impacts. Tropical storms directly impacting south Florida have been known to produce severe flooding, damaging winds and tornadoes. Take every tropical cyclone seriously, whether it's a tropical storm or a major hurricane.

Important: Historically, it is the water that causes most of the deaths in hurricanes. About 90 percent of all hurricane-related deaths nationwide occur from drowning from either the storm surge or freshwater flooding. As Debby and Isaac illustrated, the threat from storm surge is particularly high along south Florida's coasts, and residents of coastal areas are urged to heed advice from local officials and evacuate whenever storm surge flooding is expected. Become familiar with your county's storm surge evacuation zones and know whether you live in one or not. **Visit your county's emergency management web site for more information on evacuation zones**.

HURRICANE SAFETY TIPS: Regardless of the short or long term hurricane outlook, South Floridians need to be prepared every year. While the extremely active hurricane seasons of 2004 and 2005 will rarely be repeated, it only takes one big storm to affect our area for long lasting impacts to be felt. Now is the time to begin preparing for the 2016 hurricane season. Develop a plan and have it in place before a storm threatens. Know if

you live in a hurricane evacuation zone. Gather supplies such as bottled water, canned foods and batteries. Remember to buy enough provisions to last a minimum of three to five days in the event of a tropical system affecting our area. Buy and install hurricane shutters. A minimum of preparation can save lives and property.

People are also urged to be extremely cautious during the storm's aftermath. Typically, more people die after the passage of a storm than during the storm itself. After Hurricane Wilma in 2005, 30 people died after the storm's passage from a combination of factors including carbon monoxide poisoning, injuries while removing debris and vehicle accidents. Extreme care must be used when using generators, and make sure to run them in an outdoor location, not inside the house.

For a comprehensive list of hurricane preparedness information, visit ready.gov and Ready South Florida.

Flooding

South Florida's occasional torrential rains and flat terrain can lead to major flooding. While tropical weather systems produce most of the significant and widespread rain events, flooding also occurs from non-tropical weather systems. These torrential rainfall events occur at least two or three times a year, and in some years even more. In 2015, a total of two major/damaging flood events took place (February 28th in Miami and December 5th in southwestern Miami-Dade County). In each event, there was severe street flooding with a few structures also flooded. The December 5th significantly damaged crops in south Miami-Dade County.

In addition, there were 14 combined nuisance flood/heavy rain events across south Florida. Another type of flooding, tidal flooding due to astronomical high tide (king tides), impacted coastal areas in late September, early October, late October and late November. The late September event was the most widespread as many streets were inundated in vulnerable areas along the Intracoastal Waterway in southeast Florida and in Collier County.

A rare event called a "meteotsunami" affected Naples and Marco Island early in the morning of January 17th, 2016. This is an increase in ocean levels from a weather system such as a squall line or line of strong thunderstorms which moved onshore and led to brief flooding of coastal areas.

Flooding in Delray Beach on January 10, 2014 (Courtesy Kenneth Kraus)

PREPARE FOR FLOODING: The flat south Florida terrain lends itself to ponding of water in poorly drained or low lying areas during heavy rain events, rather than the flash flooding that occurs in other parts of the country. While this type of flooding is normally not as deadly or destructive, it can still lead to significant impacts as water can enter homes and other structures, as well as make driving extremely hazardous due to flooded roadways which can sometimes obscure canals. If water is covering a roadway, do not assume that you can drive through it. Turn around, don't drown.

All South Floridians need to be aware of their particular neighborhood's vulnerability to flooding. Fortunately, people can also plan well in advance for floods. The best advice is to have flood insurance, a separate policy from your homeowners insurance. Know if you live in an area which floods frequently from heavy rains.

Good flood safety information can be found at the [NWS Flood Safety web site](.).

Monitor NOAA Weather Radio before, during and after a tropical cyclone or flood event to stay abreast of the latest information. You can also visit the National Weather Service Miami Forecast Office web site at [weather.gov/southflorida](.) where a description of potential storm impacts and latest hurricane and flood watches and warnings will be available, as well as the National Hurricane Center's five-day tropical cyclone track and intensity forecast.