



## Hurricane Winds in Houston, Texas

By: Jill F. Hasling, President and Certified Consulting Meteorologist  
Weather Research Center and The John C. Freeman Weather Museum  
April 19, 2007

Houston is located approximately 50 miles from the Texas coast so the main threat during a hurricane event is the high winds. The highest winds in a hurricane are just right of the track [direction of motion of the storm], in the eye wall. So when a hurricane is expected to make landfall near Galveston with maximum sustained winds of 115 mph, these maximum sustained winds are located in a region on average the size of 20 to 30 miles to the right of the track. A hurricane starts to weaken as the center of the storm moves inland and loses its heat source which is the warm ocean waters. The winds in the region of maximum sustained winds will decrease as the storm tracks toward Houston. If the region of maximum sustained winds reaches Hobby airport the winds would most likely be 70 to 80 percent of what they were at the coast. A hurricane with a region of sustained winds of 115 mph at the coast would weaken to a hurricane with sustained winds of 80 to 90 mph as the center passed just west of Hobby Airport. As the storm approaches downtown Houston this small region of maximum sustained winds would continue to decrease and would be 70 to 80 mph, and by the time this region of maximum sustained winds made it to Bush Intercontinental Airport, the winds would have decreased to 55 to 70 mph.

The wind field of a hurricane is circular with the winds blowing counter clockwise around the storm. A typical hurricane is about 300 miles across which would mean tropical storm force winds [38 to 73 mph] extend out 150 miles from the eye. The hurricane force winds [1 minute winds 74 mph or greater] can extend out 25 to 150 miles from the eye.

So if you want to estimate how long your property will be under the influence of tropical storm or hurricane force sustained winds then, you would need to reduce the winds from the coast as follows

<b>Galveston Coast</b>	<b>Hobby Airport</b>	<b>Downtown Houston</b>	<b>Bush Airport</b>
<b>Maximum Sustained 1 minute wind</b>			
38 mph	28 mph	25 mph	19 mph
50 mph	38 mph	33 mph	25 mph
58 mph	43 mph	38 mph	29 mph
76 mph	57 mph	49 mph	38 mph
99 mph	74 mph	64 mph	50 mph
114 mph	86 mph	74 mph	58 mph
148 mph	111 mph	96 mph	74 mph