

Poster Presentation:

Field Applications of the Enhanced Fujita Scale during Storm Survey of Long Track Tornado across Southwest and South Central Massachusetts in June 2011

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At 4:17 PM EDT on Wednesday, June 1, 2011, a tornado touched down in Westfield, Massachusetts. By late that afternoon, this tornado turned into one of the longest lived, strongest tornadoes in Massachusetts history, on the ground a total of 70 minutes and 39 miles.

Observing the veracity of this tornado on National Weather Service (NWS) Doppler radar and near real time videos made available on the Internet, staff at the NWS Forecast office in Taunton, Massachusetts, knew that survey teams would need to be assembled. Seven staff members from the NWS office as well as the Northeast River Forecast Center (NERFC) and NWS Eastern Region Headquarters were gathered to investigate this long track tornado during June 2 and 3, 2011.

In order to determine the strength of this tornado, the relatively new Enhanced Fujita (EF) scale would need to be utilized. This would only be the second time the EF scale, which was implemented by NWS field offices on February 1, 2007, would be used by NWS Taunton staff. There are major changes in using the EF scale in the field, including incorporating many more Damage Indicators (DIs) and Degrees of Damage (DODs). This would mean trying to determine structural integrity and age of buildings that were damaged or destroyed along the tornado's path, all the while working around utility and public works crews that were starting to repair power lines and clear the massive amounts of damage.

This turned into quite an interesting two-day project, including field surveys of the 10 cities and towns hit by this tornado, an aerial survey provided by the Civil Air Patrol, meetings between the two teams to examine the hundreds of photographs of damage, as well as a second visit to two towns along the path in order to reconfirm the first team's EF scale determination. There was intense local and national media coverage by television crews from Boston, Springfield, Hartford, and the Weather Channel, including reports on all three national television networks on the day of the tornado. Many newspapers and radio stations were also looking for interviews. All were clamoring for the final determination of this tornado. Finally, late on Friday, June 3, it was determined that this was an EF3 tornado, with estimated maximum sustained winds of 160 mph and a path width up to one-half mile.

This poster will examine the Enhanced Fujita scale, including a summary of the DIs and DODs now in use, and information on the development of the EF scale. Some of the many photographs will be used, including the DIs and DODs that were used to determine the strength of this tornado. Details about this tornado, along with three other weaker tornadoes that occurred on June 1, will also be included.