

Technical Investigation of the May 22, 2011, Tornado in Joplin, Missouri

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Abstract

The May 22, 2011 event in Joplin, Missouri was the deadliest single tornado disaster in the United States in the 61 years that official records have been kept. As part of its Disaster and Failure Studies Program, the Commerce Department's National Institute of Standards and Technology (NIST) sent four engineers to Joplin, Missouri on May 24, 2011, to conduct an initial reconnaissance of the damage caused by the tornado. Based on analysis of the data collected and other criteria required by law and regulation, NIST Director Patrick Gallagher established a Team under the National Construction Safety Team (NCST) Act on June 29, 2011, to conduct a technical investigation of the Joplin Tornado.

The primary objectives of the NIST technical investigation of the Joplin tornado are to:

1. Determine the tornado hazard characteristics and associated wind fields in the context of historical data
2. Determine the pattern, location, and cause of fatalities and injuries, and associated performance of emergency communications systems and public response
3. Determine the response of residential, commercial, and critical buildings, including the performance of designated safe areas
4. Determine the performance of lifelines as it relates to the continuity of operations of residential, commercial, and critical buildings
5. Identify, as specifically as possible, areas in current building, fire, and emergency communications codes, standards, and practices that warrant revision

The presentation will provide an overview of the Joplin tornado investigation and progress in selected areas. More information about the overall investigation is available online at http://www.nist.gov/el/disasterstudies/weather/joplin_tornado_2011.cfm. A set of four presentations with additional detail on the current progress of the investigation is available at <http://www.nist.gov/el/disasterstudies/ncst/agenda12.cfm>.