

## **Use of Total Lightning Data at Chattanooga, Tennessee Emergency Management For Public Safety and Decision Making**

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Lightning is often an underrated threat when it comes to dangerous weather phenomena. The National Lightning Detection Network has recorded an average of 600,000 cloud-to-ground lightning flashes per year across Tennessee during the past ten years, with over 700,000 flashes in 2011. While attention is given to the dangers associated with large weather systems, such as hurricanes and tornadoes, lightning is the second leading cause of weather related deaths in the United States.

This information raises the question of what steps can be taken to improve lightning safety in a community. One improvement in lightning detection is the relatively new networks of sensors called the Lightning Mapping Arrays (LMAs). The NASA Short-term Prediction Research and Transition (SPoRT) Center has been collaborating with the Huntsville National Weather Service office on the use of data from the North Alabama LMA since 2003, and has since included several other offices to better implement data from the LMA into real-time operations. Much of that work has focused on the LMA's ability to detect intra-cloud lightning in addition to cloud-to-ground lightning strikes. Combined, these observations are called total lightning. Much of the research using total lightning data has been directed towards improving severe weather warnings, but total lightning can be very valuable in improving lightning safety.

An important step to increase lightning safety in a community is to provide the local Emergency Manager the tools and training necessary to use new technologies, such as data from a Lightning Mapping Array. A collaborative project is underway between the SPoRT Center, WFO Morristown, Tennessee, and the Hamilton County Emergency Management Agency to evaluate the use of total lightning data in making local level safety decisions. The Emergency Management Agency will have access to the latest lightning data centered on their area for use in making public safety decisions for the community. The collaborative project is now a year old. We will present the findings of the on-going project.