

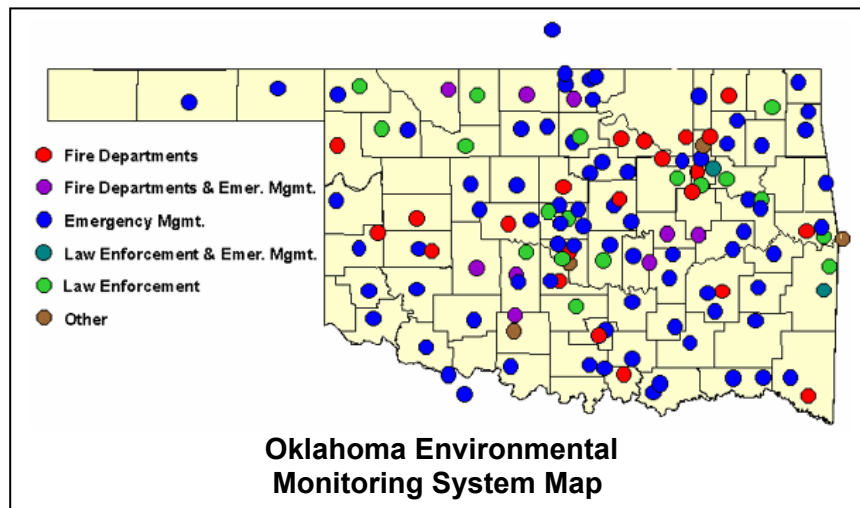
Best Practices for Road Weather Management

Version 2.0

Oklahoma Environmental Monitoring System

Public safety officials with various agencies utilize Oklahoma's First-response Information Resource System using Telecommunications (OK-FIRST) to accurately identify weather threats and make effective public safety decisions. OK-FIRST is a decision support system that facilitates data sharing and provides emergency managers with web-based, real-time environmental data.

System Components: Through the information system, emergency managers obtain agency-specific, county-level weather data from the Oklahoma mesoscale environmental monitoring network (i.e., mesonet) and various radar systems. The mesonet includes over 110 Environmental Sensor Stations. The OK-FIRST web site and electronic bulletin board system also foster communication and information sharing among various public safety agencies in different jurisdictions. The Oklahoma Department of Public Safety maintains a leased-line, digital communication network named the Oklahoma Law Enforcement Telecommunications System (OLETS). Over 200 participants access OK-FIRST through OLETS including law enforcement, emergency management, and fire service agencies.



System Operations: Mesonet data is packaged into five-minute observations and transmitted via OLETS and a radio communication system to the University of Oklahoma for quality assurance, integration with National Weather Service data, and dissemination via the web. Emergency managers access OK-FIRST to identify and respond to severe storms, tornadoes, flooding, and wild fires.

Transportation Outcome: On May 3, 1999 over 50 tornadoes impacted northern and central Oklahoma damaging nearly 10,000 buildings, and causing 44 fatalities and over 700 injuries. In Seminole County emergency response vehicles were traveling to the Oklahoma City area on Interstate 40. With information from OK-FIRST the county's emergency manager identified a developing tornado that would cross the freeway in front of the emergency vehicle convoy. When responders were notified they stopped near Shawnee, Oklahoma and closed the interstate to prevent response and passenger vehicles from driving into the tornado's path.

Emergency managers in Logan County spotted a tornado in the path of an ambulance transporting a critically injured victim from Crescent to a hospital in Guthrie, Oklahoma. Ambulance personnel were instructed to halt the vehicle until the tornado had passed. These decisions ensured the safety of both response personnel and the traveling public.

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Emergency managers have also used OK-FIRST to respond to flood events. In one county, emergency managers monitored rainfall amounts during a storm, and closed a susceptible bridge before it was washed away. In another county, emergency managers observed water levels within six inches (15.2 centimeters) of flood stage, but decided to do nothing. Information from OK-FIRST indicated that the threat had passed as waters were receding. In addition to enhancing safety OK-FIRST results in productivity improvements by decreasing the number of storm spotters and by minimizing overtime for winter road maintenance personnel.

Implementation Issues: In 1996 OK-FIRST was funded by a grant from the Technology Opportunities Program (formerly the Telecommunications Information and Infrastructure Assistance Program), sponsored by the US Department of Commerce. The DPS has provided support funding since that time. After system components were installed, integrated, and tested all participating agencies were offered training on the Oklahoma Mesonet to learn how access to environmental information could enhance their operations. An independent evaluation found that the knowledge and skills of OK-FIRST users were significantly enhanced.

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