



The Warren County C.O.W.S and C.A.L.V.E.S Program

Full Mitigation Best Practice Story

Warren County, Kentucky

Warren County, KY – The 85,000 residents of Warren County, Kentucky, face a variety of natural hazards, such as tornadoes and other severe weather, chemical spills, flash flooding, landslides, earthquakes, and forest fires. A warning system alerts residents of impending danger, enabling them to take the necessary precautions to protect their lives and property.



In 1974, 31 residents of the small city of Brandenburg were killed by tornadoes. The loss of life was attributed to the fact that citizens did not receive warning of the impending storms. Subsequent tornadoes in 1976, 1986, and 1994 also caused death and injury that likely could have been avoided if there had been proper warning.

In July 1997, Warren County was awarded a grant through FEMA’s Hazard Mitigation Grant Program (HMGP) to install twelve Community Outdoor Warning Sirens, or C.O.W.S. The sirens had the capacity to warn 100% of the residents of Bowling Green, the county’s biggest city, and 80% of residents in the entire county. When the C.O.W.S. are activated during an emergency, residents know they must turn on their televisions or radios for further instruction.

The County recognized, however, that an outdoor warning system was not sufficient. In June 1999, the County received HMGP funds to install 250 indoor Community Activated Lifesaving Voice Emergency Systems, or C.A.L.V.E.S. The system is designed to warn people who are indoors or not close to a siren site, as well as supply disaster information in the event of a power outage. C.A.L.V.E.S. were placed in every school, nursing home, daycare, hospital, church, theater, indoor sporting arena, and emergency responder’s office. The system uses a series of beeps followed by a voice message from the activating agency to alert residents of an emergency.

The County also implemented an extensive public awareness campaign to educate residents about the new warning systems. It sent out brochures with instructions such as “When you hear the C.O.W.S. mmoooove indoors. When you hear the C.A.L.V.E.S. protect your herd!”

The warning system is credited with saving lives on April 16, 1998, when a tornado struck the county’s biggest outdoor shopping mall. Property damage totaled over \$2 million, but no one was killed.

Activity/Project Location

Geographical Area: **Single County (County-wide)**

FEMA Region: **Region IV**

State: **Kentucky**

County: **Warren County**

Key Activity/Project Information

Sector: **Public**
Hazard Type: **Tornado**
Activity/Project Type: **Warning Systems**
Activity/Project Start Date: **07/1997**
Activity/Project End Date: **01/2003**
Funding Source: **Hazard Mitigation Grant Program (HMGP)**
Funding Recipient: **Local Government**
Funding Recipient Name: **Warren County**
Application/Project Number: **9999**

Activity/Project Economic Analysis

Cost: **\$179,845.00 (Actual)**

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **Yes**
Federal Disaster #: **1018 , 03/16/1994**
Federal Disaster Year: **1994**
Value Tested By Disaster? **Unknown**
Repetitive Loss Property? **No**

Reference URLs

Reference URL 1: **<http://www.fema.gov/government/grant/hmgp/index.shtm>**
Reference URL 2: **<http://kyem.ky.gov>**

Main Points

- In July 1997, Warren County was awarded a grant through FEMA's Hazard Mitigation Grant Program to install twelve Community Outdoor Warning Sirens, or C.O.W.S.
- In June 1999, the County received HMGP funds to install 250 indoor Community Activated Lifesaving Voice Emergency Systems, or C.A.L.V.E.S.