



City of Urbana Wind Mitigation

Full Mitigation Best Practice Story

Champaign County, Illinois



Urbana, IL - Mitigation doesn't always take the form of actual construction projects or acquisitions. Federal and State funding mechanisms like the Hazard Mitigation Grant Program (HMGP) can sometimes be used in creative ways to meet local needs. Private citizens and the business community are the players that make the mitigation happen. But what may be needed to jumpstart local interest is a combination of educational tools that provide technical information and marketing efforts to spread the word.

In 1996 a tornado ripped through the City of Urbana, located in central Illinois. More than 100 structures experienced wind damage and Champaign County received a Presidential disaster declaration. The occurrence of that tornado was not an isolated event, as the city lies within an area of the Midwest commonly called "tornado alley."

With the disaster declaration, came the availability of HMGP grant money for mitigation projects. According to Jan Horton, Hazard Mitigation Officer for the Illinois Emergency Management Agency (IEMA), when her staff and the State's Interagency Mitigation Advisory Group discussed mitigation needs, they realized that the mechanical strategies for more wind-resistant construction had been developed, but no one had been implementing them. A task force was formed composed of knowledgeable members with a vested interest who worked as partners in the development of an educational piece: "The Windstorm Mitigation Manual for Light Frame Construction."

The collaborative effort used FEMA HMGP funding, administered by IEMA, with matching funds contributed by State Farm Fire and Casualty Company. David Wickershiemer, a faculty member in the School of Architecture, University of Illinois at Urbana/Champaign (UIUC), compiled the manual with research assistance from the UIUC Building Research Council.

Including wind resistance philosophy, the manual demonstrates framing methods that can be used during construction to mitigate damages from sustained high winds. Additional HMGP funding and match dollars from State Farm and Simpson Strong-Tie Co., Inc., provided for the development of a "Companion Manual" designed for architects, engineers and contractors. It includes more detailed information on the structural planning principles in wind resistant wood frame construction.

The City of Urbana received an additional HMGP grant to expand on the mitigation message of the manuals. They created two videos and marketed them to prospective homebuilders and building contractors. The Institute of Business and Home Safety (IBHS), an insurance industry organization, and the Illinois Department of Commerce and Community Affairs (DCCA) provided non-federal matching funds.

The grant also allowed the city to provide funds for brackets and garage door upgrades, using the concepts described in the manual, on six model homes under construction at the time. Despite a tax rebate offered through the city (and funded by the HMGP grant) for builders who used these techniques, the wind-resistant strategies were not getting the anticipated exposure.

Craig Grant, manager of the Building Safety Division of Urbana at the time of the mitigation and coordinator of the video production, explained why the videos created more interest than the tax rebate: "The videos are effective in alerting people before they actually get into the building process about things they can do in home construction. We realized you had to reach the right people - the owners that would be paying the bill, as well as building contractors and building code officials."

The video entitled "Inland Wind-Resistant Construction, Upgrading the Wood Frame Home" introduces the concept of increasing a home's wind resistance with the implementation of simple framing techniques. It's intended for individuals attending home remodeling shows and representatives of local jurisdictions. The longer video, "Winds of Change? The Urbana Project," is a persuasive piece for builders and code officials. It presents research-based arguments for the wind-resistant upgrades from mitigation experts and building professionals, encouraging change in typical home construction methods.

The city used the recommended structural techniques in the construction of the model homes. This provided actual cost data that was incorporated into the video: the extra protection adds only three to eight percent to the cost of the building project. More than 12,000 consumers visited the model homes outfitted with wind-resistant upgrades during Urbana's Showcase of

Homes.

"Once we could show the hard cost figures for the upgrades and the actual way it was done, it got more people interested," said Grant. "Some people tried it, told others and that broke down barriers."

The additional HMGP monies helped distribute the wind resistance mitigation manuals and videos far beyond the City of Urbana. What started at the local level has become a widely used mitigation tool across the country.

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region V**

State: **Illinois**

County: **Champaign County**

City/Community: **Urbana**

Key Activity/Project Information

Sector: **Public**

Hazard Type: **Tornado**

Activity/Project Type: **Building Codes; Education/Outreach/Public Awareness**

Structure Type: **Wood Frame**

Activity/Project Start Date: **09/1996**

Activity/Project End Date: **08/1997**

Funding Source: **Hazard Mitigation Grant Program (HMGP); Private funds**

Funding Recipient: **Critical Facility - School**

Funding Recipient Name: **University of Illinois**

Activity/Project Economic Analysis

Cost: **\$28,852.00 (Actual)**

Non FEMA Cost:

Activity/Project Disaster Information

Mitigation Resulted From Federal
Disaster? **Yes**

Federal Disaster #: **1110 , 04/23/1996**

Value Tested By Disaster? **No**

Repetitive Loss Property? **Unknown**

Reference URLs

Reference URL 1: <http://www.tornadoproject.com/>

Reference URL 2: <http://www.state.il.us/iema/>

Main Points

- Because severe wind is prevalent throughout the area and new home building was on the rise, it was decided that the public needed materials to learn about wind-resistant construction.
- The manual "Windstorm Mitigation Manual for Light Frame Construction" was developed to explain how to build a home to withstand high winds. To illustrate the construction techniques and fastening materials, a number of demonstration houses were constructed in the City.
- The City continues to work with code enforcement organizations, such as the Building Officials and Code Administrators, to develop wind-resistant construction standards and practices.



An example of an educational tool for wind mitigation



One of the many manuals offered to homeowners