

rkansas has a long history of property damage from tornadoes. Depending on what statistics you read and what criteria you use, Arkansas qualifies for the dubious honor of belonging to Tornado Alley, a loosely defined corridor extending from north to south through the Central Plains of the United States. Other states such as Oklahoma, Kansas, and Texas are perennially on the list, but most states in the Midwest and Central South can readily be included. (www.tornadochaser.net 2006) One of the results of living in this region is that the people of Arkansas become resilient and they learn to respond to disaster quickly.

Statewide, disaster response is coordinated by the Arkansas Department of Emergency Management (ADEM), in close coordination with the Federal Emergency Management Agency (FEMA) and other federal response agencies.

ADEM is tasked with "...maintain[ing] a management system that effectively and efficiently provides mitigation of and recovery from the effects of natural and man caused disasters." They are also responsible for "development of state or local standards to protect and substantially improve structures from disaster damage." (www.adem. state.ar.us/2006)



A tornado struck the town of Marmaduke in Green County, Arkansas, on April 2, 2006. Ninety percent of the homes and businesses were affected by storm damage. (FEMA photo by Win Henderson)

Worst-Hit Areas

Most recently, the city of Marmaduke in Greene County was hit by severe storms and tornadoes resulting in massive property damage. Four to five hundred homes were affected, with 130 houses and 25 mobile homes destroyed. Marmaduke is now faced with reestablishing basic services and they still have a long way to go before they can think about extended recovery efforts. (www.fema.gov 2006)

Marmaduke also was struck by a tornado on March 1, 1997, resulting in one fatality and five injuries. Fortunately, a tornado warning was issued 22 minutes before it tore through the city, which undoubtedly helped prevent additional fatalities. This weather event was part of the same massive storm system that affected the city of Arkadelphia in Clark County, the focus of this story.

This is not the first time that a tornado disaster has caused considerable damage to an Arkansas city. Like many other areas of the United States, Arkansas routinely experiences dozens of tornadoes touching down during the spring season.

On April 10, 1929, in northern Jackson County, Arkansas,



A back hoe clears debris in Marmaduke, Arkansas, after a tornado scattered debris everywhere. (FEMA photo by Win Henderson)

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a tornado touched down in the town of Sneed and was responsible for 23 fatalities. It was rated an F5 (wind speeds of 261-318 mph), which is the maximum rating on the Fujita Scale of tornado intensity (see page 9 for Fujita Tornado Damage Scale sidebar). Usually referred to as the Sneed tornado, it was the strongest tornado ever recorded in Arkansas. At least two F4 tornadoes (wind speeds of 207-260 mph) also touched down on that same day. (www.srh.noaa.gov 2006)

On Sunday, April 21, 1996, an F3 tornado first touched down outside Ft. Smith in northwest Arkansas. It then caused extensive damage to buildings in the downtown area, proceeded through an industrial area, and then through residential areas in Ft. Smith and the nearby city of Van Buren. Although forecast in advance, the severity of the storm was underestimated in warning reports and there were two fatalities directly related to the tornado. A second tornado touched down further along the same path, taking two more lives and causing significant damage in nearby St. Paul, Madison County, Arkansas. (www. nws.noaa.govom/assessments/pdfs/ ftsmith.pdf 2006)

In 1999, a record-breaking 107 tornados touched down across the state exceeding a previous record for the number of tornadoes touching down in a single year.

The Arkadelphia Story

On March 1, 1997, a particularly severe tornadic incident occurred that would have far-reaching effects on the city of Arkadelphia. That day, 15 tornadoes struck within the state including one tornado track that swept through the town of Hope and proceeded through downtown Arkadelphia, destroying many of the homes and businesses in the area before lifting back into the skies. A short distance further, a second tornado descended along the same path and continued its destructive track through Little Rock, causing extensive damage there. In Clark County, the width of the tornado's path on the ground was only .24 to .6 miles wide, but its intensity and level of destruction caused consequences that were far reaching.

Fortunately, during this outbreak, the National Weather Service issued tornado warnings from 10 to 32 minutes before the tornadoes struck, using NEXRAD radar to provide much more lead time than was previously possible (http://lwf.ncdc.noaa.gov/oa/reports/ marchflooding/marchflooding.html 2006). Without this lengthy advance notice, the potential for additional fatalities would have been much greater. (http://lwf.ncdc.noaa.gov/oa/reports/

marchflooding/marchflooding. html#SUMMARY 2006) Based on damage encountered along the tracks, several of the tornadoes were reported to be of F4 intensity.

A number of things happened as a result of the damage caused to downtown Arkadelphia. First, there was the immediate response from emergency teams assigned to assess the damage to infrastructure and services. Next, there was the review of warning systems that would allow residents to avoid future destructive storms and respond to potential disasters as quickly as possible. Finally, there was an unanticipated benefit: the city banded together almost immediately and made a comprehensive plan to rebuild their town and make it even better than before.

The Assessor's Point of View

Clark County Assessor Kasey Summerville reviewed the trend in property values in downtown Arkadelphia since the 1997 disaster. She has been the assessor since January 2003. She was living in the community and working for a bank on Main Street at the time of the tornado.

She reports her recollections and the impact the tornado had on the community:

After the initial shock of the tornado, com-



Black and white photos grimly portray the 1997 destruction, which sharply contrasts with the street scenes in Arkadelphia today. (photos courtesy of Steve Fellers and the Daily Siftings Herald)

munity leaders quickly banded together to create a plan to rebuild.

The most severely hit residential area was a mobile home park. The mobile homes were very old and were not in the best of shape. Now that neighborhood is full of newly constructed homes that have been purchased by the displaced families with the assistance of the 2025 Commission and the South Arkansas Community Development down payment assistance program.

Businesses, churches, and homes were all repaired or rebuilt better than they were originally. From an assessor's point of view, the overall market is doing significantly better than it was nine years ago. There has been an increase in assessed values throughout Arkadelphia. The most recent reappraisal in 2004 showed a 17% increase in market value since the 2001 reappraisal for Clark County.

The courthouse, which was originally built in 1899, was in need of a major remodeling before the 1997 tornado. The tornado severely damaged the courthouse and portable buildings needed to be set up and used as offices while the building was renovated. Today, downtown Arkadelphia has a beautiful courthouse that retains its historic flavor, but also has modern improvements. It is a very nice and inviting atmosphere to work in.

Rebuilding and Recovery

From a review of city ordinances enacted immediately following the tornado and for a considerable time thereafter, it is apparent that the city had a well-defined goal for the future of their city. Two days following the tornado, a disaster declaration ordinance defined strict guidelines for contractors, carpenters, and workmen doing disaster repair work.

Two weeks later, an ordinance established strict criteria for the rebuilding of factory-built homes. One of the hardest hit areas in Arkadelphia was a mobile home park. The intent of the city's Board of Directors was to restrict redevelopment to structures that could withstand the destructive powers of a severe storm. The ordinance required manufactured homes to meet the same basic structural requirements as permanent single-family dwellings. An additional ordinance, passed in December 1998, permitted the creation of smaller lot sizes to meet the needs of the community.

Due to the effects of the tornado of March 1, 1997, and the need to allow affordable housing to be rebuilt, this change in replatting procedure is necessary to reduce the cost of buildable lots as affordable housing affects the health, safety, and welfare of all of the citizens of the City of Arkadelphia, and therefore an emergency is declared

and this ordinance shall be in effect from and after its passage and publication. (www.cityofarkadelphia.com/Minutes_Ordinances/ Ordinances/ordinances.html 1998)

Another ordinance, passed 4 months after the tornado, provided for distribution of disaster relief funds to families who were trying to rebuild. Preference was given to families whose homes had been totally destroyed, with a focus on helping them to purchase property within their financial means. Financial assistance also came from other sources such as FEMA, the Red Cross, the Small Business Administration, state-donated funds, churches, and donated labor.

Even though property values were temporarily affected with the destruction of property, they soon returned to the same or higher values due to improvements spawned by the disaster.

Community development plans were formulated by local leaders who formed a group called the 2025 Commission. This group has dedicated themselves to planning sustainable growth for downtown Arkadelphia and the surrounding area.

Streetscape Program

One of the ongoing projects intended to restore economic vitality to the area is the Streetscape Project in downtown



The house (left) was appraised at market value for \$26,768 prior to the tornado. It was destroyed and the lot was sold in August 1997. The new owner built a house and it was appraised at market in 2000 for \$96,000. After the last reappraisal in 2004, the market value was \$130,150. An area business (right) received some damage from the tornado. The building had a market value of \$14,336 prior to the storm. The post-storm value after it had been remodeled was \$42,086. The 2004 reappraisal market value was \$67,800. (information and photos provided by Kasey Summerville, Clark County Assessor's Office)

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Arkadelphia. This program has just completed Phase I and is beginning Phase II of improvements to beautify the downtown. Improvements include the addition of decorative lamp poles, installation of simulated brick crosswalks, widening of sidewalks, and landscaping with ornamental trees. The improvements have resulted in slow but steady economic growth in the downtown area as businesses take advantage of the attractive new surroundings.

Clark County Assessor Kasey Summerville summed up the Streetscape Project and how it has affected the community.

Phase I of the Streetscape Project has made the downtown area more attractive. Hopefully, this will help retain current businesses and attract new businesses. Overall the improvements have attracted new business and the City of Arkadelphia has worked hard to not let the interim appearance be a hindrance or discouragement to current or future businesses.

City Manager Jimmy Bolt offered some very positive comments about the benefits of Streetscape.

The Streetscape improvements to Arkadelphia's tornado stricken downtown has encouraged the rebuilding and upgrading of this area. This resulted in businesses wanting to locate in the area, and many in fact have. The reinvestment into downtown is leading our community to a bright future.

Arkadelphia's Future

All indicators point to the continued

growth and recovery of Arkadelphia and surrounding areas.

Thanks to the concerted action of community leaders, along with sufficient funding from a variety of sources, the city is now ready to pursue part 2 of their Streetscape Project over the next several years.

Arkadelphia is currently pursuing other projects that will continue to improve the area and make it an attractive place to live and work.



Current projects include Ouachita Riverpark, a riverside park that will emphasize Arkadelphia's history as a river community; a newly completed recreation center; a youth sports complex that is in phase one of a three-part development plan; and a new police facility that is currently under construction.

Clearly, Arkadelphia is moving ahead with their plans for sustainable long-term growth. It has taken the severe destruction left by a tornado and turned it into an opportunity for progress.

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Streetscape improvements have made downtown Arkadelphia a pleasant and attractive center for community and business activities. (photos by Matthew Strawn, GIS Coordinator/Network Administrator, City of Arkadelphia Building Department)