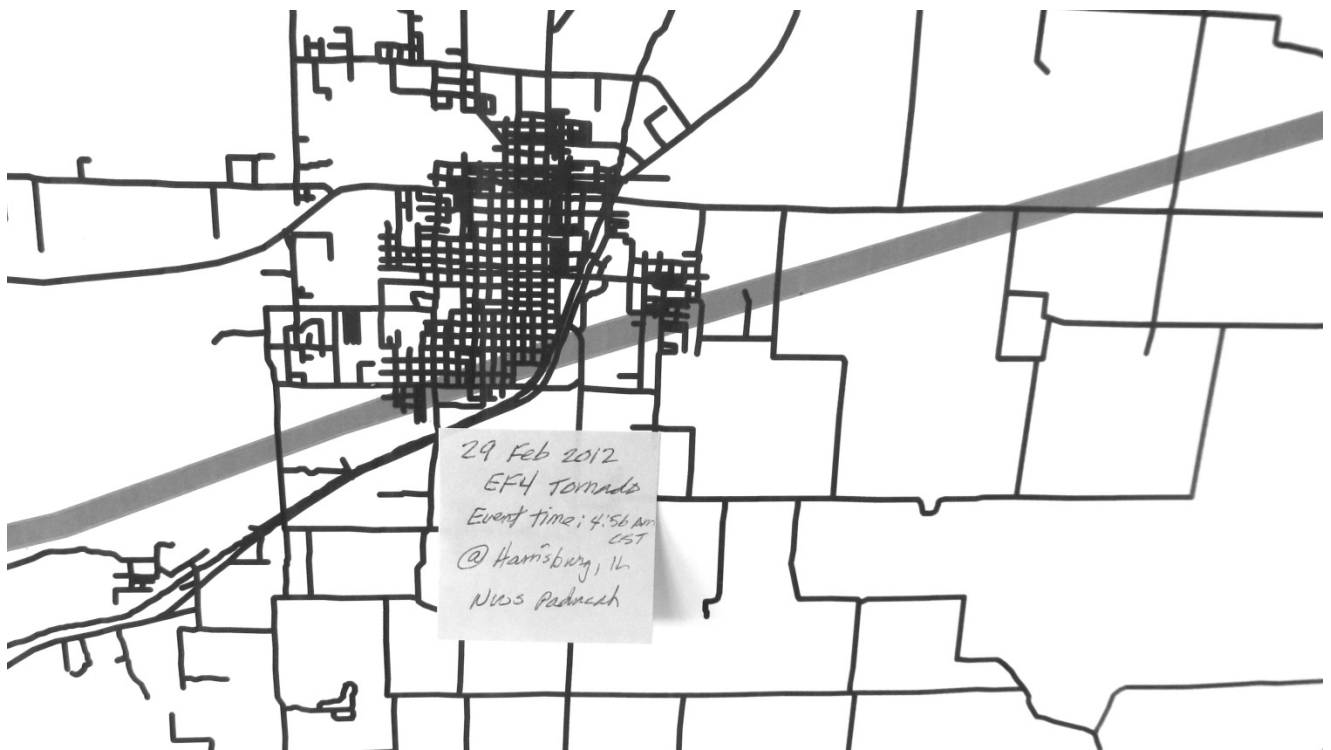


# Quick Response Post-Disaster Study Final Report

## Disaster Management with Limited Local Resources: The 2012 Illinois Leap Day EF-4 Tornado



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**The views contained in this report represent those of the author only**

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## **Disaster Management with Limited Local Resources: The 2012 Illinois Leap Day EF-4 Tornado**

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Disaster Management with Limited Local Resources:  
The 2012 Illinois Leap Day EF-4 Tornado

**EXECUTIVE SUMMARY**

❖ **Premises:**

- From April to September 2012, a quick response type of post-disaster field study took place in Southern Illinois. This study was supported by the Quick Response Grant Program from the Natural Hazards Center located at the University of Colorado at Boulder
- The principle investigator was Dr. Jack L. Rozdilsky, Assistant Professor in the Emergency Management Program at Western Illinois University
- The event studied was the February 29, 2012, Leap Day EF-4 Tornado Disaster which impacted the city of Harrisburg, Illinois, leaving 8 dead and substantial community damage

❖ **Findings:**

- It was qualitatively determined that the Saline County Emergency Management Agency operates in an environment of limited financial and material support
- Despite the limitations faced, the Saline County Emergency Management Agency adapted to perform its duties well in coordinating the disaster response to the tornado
- The involuntary use of multiple temporary emergency operations center sites during the response made disaster management more complicated than it needed to be
- Gaps in local emergency management capacity were filled by community generosity, mutual aid from a statewide emergency management professional organization, and support from local and national faith-based organizations
- A best practice observed was the removal of urban debris blown into adjacent farmland
- It is recommended that the Saline County Emergency Management Agency be provided with additional financial and/or material resources so that it can operate above the minimum subsistence level and work towards developing a permanent emergency operations center to better manage future disasters
- This case study provides insight into some of the challenges county-level emergency management offices face on a day-to-day basis in economically distressed rural areas

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Regional cooperation is acknowledged from numerous county emergency management offices in Southern Illinois, Illinois Emergency Management Agency Region number 11, and members of the Illinois Emergency Services Management Association.

Local cooperation is acknowledged from the Saline County Emergency Management Agency, members of the Harrisburg faith-based community, and other individuals involved in the Illinois 2012 Leap Day Tornado Disaster response efforts.

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## **Disaster Management with Limited Local Resources: The 2012 Illinois Leap Day EF-4 Tornado**

### **INTRODUCTION**

This introduction provides an outline and brief summary of the main topics explored in this report.

On Leap Day 2012, a large portion of the central United States was affected by an unusually severe storm system. On Wednesday February 29, the Illinois city of Harrisburg and Saline County were impacted by an EF-4 tornado. The disaster was especially tragic in Harrisburg, as eight persons were killed and a large portion of the city suffered severe damage. While Local and State Disaster Declarations were made, there was a controversial denial of a Federal Disaster Declaration for this event. The Saline County Emergency Management Agency took a lead role in the disaster response efforts.

This study started with the question of, “As the 2012 Illinois Leap Day Tornado exceeded existing local management capabilities, what adaptations and improvisations have emergency managers taken to manage this crisis using only limited local resources?” Using the Saline County Emergency Management Agency, a county-level government agency, as the unit of analysis, the tornado disaster response was explored using qualitative methods. Face-to-Face interviews and field observations took place during spring and summer 2012. The qualitative approach was used to create a rich contextual analysis of factors which influenced the ability of county-level emergency management to respond to the disaster. Adaptive behaviors and actions which filled gaps in local response capabilities were also explored.

This study’s opening premise was that the Saline County Emergency Management Agency operates in a limited resource environment. A limited resource environment means that both financial allocations and the level of material support provided to the emergency management agency is at a level which is low enough to create operational hardships. Qualitative exploration of that premise concluded that the agency does indeed operate in a limited resource environment. An attempt to provide quantitative verification of that premise took place, but due to difficulties in collecting such data, the quantitative verification was found to be beyond the scope of this study. However, an ancillary finding was made; in Southern Illinois county-level emergency management agencies often have a greater online presence than county governments.

A context for factors considered in this study is then provided. The first part of the context provides geographic, cultural, governance, and operational perspectives for this study. Illinois is both a geographically and culturally diverse state. Regional variation in Illinois is described and Southern Illinois is placed within that context. It has been said that Southern Illinois is spiritually closer to Mississippi than Chicago. A brief introduction to Saline County is then provided in terms of governance and demographics. An overview of the Saline County

Emergency Management Agency is also provided, in terms of mission, organization, and selected activities. It is important to have some understanding of the agency so that the reader will be able to place the agency in a context when considering the response activities in relation to the 2012 Illinois Leap Day Tornado. The second part of the context addresses economic challenges facing both the State of Illinois and Saline County. This section of the report provides some background information about the distressed economy in the study area. The context section concludes by posing the open question: Is it possible that in the near-future emergency management capabilities in economically distressed rural areas will be gutted to the point of ineffectiveness by involuntary budgetary reductions and lack of material support?

The five findings of this study are then presented:

1. A primary recommendation of this study is that due to the unnecessary complexities that Saline County brought upon itself due to the lack of a suitable emergency management facility, the Saline County Emergency Management Agency needs to have a dedicated emergency operations center.
2. Weaknesses present due to a county emergency management office operating with a lack of resources were counteracted by the strengths that the Illinois Emergency Services Management Association's Emergency Management Assistance Team brought to bear on the disaster's management.
3. Due to the lack of resources, it was beyond the scope of the county emergency management agency to deliver post-disaster humanitarian aid. The local faith-based community filled this gap by taking a leadership role in running a large aid distribution center, a need that would have otherwise gone unmet.
4. The value-added humanitarian services provided by Operation Blessing greatly expanded on the scope of relief aid available and enhanced the ability of locals to meet their own needs in the post-disaster environment.
5. Debris removal from farmland is an important issue that must be dealt with during tornado disaster recovery in rural communities.

In conclusion, while the overall disaster response to the 2012 Illinois Leap Day Tornado went well, this case of tornado disaster response pointed out a looming issue related to response generated demands. During a disaster, needs made evident by the hazard itself are agent generated demands. Response generated demands are defined as needs that are made evident as individuals, organizations, and communities attempt to meet agent-generated needs.

During the tornado disaster, the county emergency management office had challenges meeting response generated demands. While factors such as community generosity and outside assistance helped to fill the management gaps with respect to response generated demands, that situation may not be the case for future disasters. To begin to address the response generated demand gap, it is recommended that the Saline County Emergency Management Agency be provided with additional financial and/or material resources so that it can operate above the minimum subsistence level and work towards developing a permanent emergency operations center to better manage future disasters.

## **THE DISASTER**

This quick response study focuses on an event that will be called the 2012 Illinois Leap Day Tornado Disaster.

### **The National Leap Day Tornado Outbreak**

On February 28<sup>th</sup> and 29<sup>th</sup>, 2012, a severe weather system impacted Nebraska, Kansas, Missouri, Illinois, Indiana, and Tennessee. This severe weather system produced 42 tornadoes, with a majority of them being in the EF-0 to EF-2 range. One EF-3 tornado occurred in Missouri and one EF-4 tornado occurred in Illinois. EF refers to the Enhanced Fujita scale, a scale which assigns tornadoes a rating based on wind speeds and damage potential.<sup>1</sup> The three most damaging tornadoes in this outbreak occurred in Branson (Missouri), Harveyville (Kansas), and Harrisburg (Illinois). In total, 15 persons were killed in the Leap Day Tornado outbreak. Early estimates indicated that total damages from this weather event would add up to hundreds of millions of dollars. Historically, this late-February 2012 tornado outbreak would be the second largest February tornado outbreak since record keeping began in 1950 (Masters, 2012).

Later in that same week on March 2<sup>nd</sup> and 3<sup>rd</sup>, an outbreak of 75 tornadoes occurred in the Ohio Valley and the Southeast. These February and March tornadoes were the first billion dollar weather disaster the United States faced incurred during the year of 2012.

### **The Leap Day Tornado Outbreak in Illinois**

In the early morning hours of February 29, 2012, (Leap Day) in Southern Illinois, three tornados were reported. An EF-2 tornado occurred near Marion, another EF-2 tornado occurred near Mounds, and an EF-4 tornado touched down in the Harrisburg area. The Harrisburg area tornado is the event which is the focus of this study.

The Harrisburg area tornado first touched down in Carrier Mills at 4:51am. At 4:56am, the tornado was on the ground in Harrisburg. At 5:10am, the tornado was in Ridgway. The track length of this tornado was 26.5 miles impacting both Saline and Gallatin Counties. The tornado

was rated as EF-4 with wind speeds of 180 miles per hour. The average path width was estimated to be 275 yards (Paducah WFO, 2012).

In terms of Illinois tornadoes, both a February tornado and an EF-4 rated tornado are rare. According to records from the Illinois state climatologist, 2,320 tornadoes were reported in Illinois between 1950 and 2011. Only 39 of them have occurred during the month of February. In regards to EF-4 rated tornadoes, only 40 have occurred in Illinois since 1950 (“Harrisburg Tornado,” 2012, March 1).

## The Harrisburg Area Tornado Disaster

For the disaster event of the 2012 Illinois Leap Day Tornado, the city of Harrisburg and the County of Saline suffered a majority of the deaths, injuries, and damages. In Gallatin County, there was some rural damage. Also in Gallatin County, in the city of Ridgway there were injuries, cars were overturned, homes and businesses were damaged, and a large church was destroyed.

In Harrisburg, the events were especially tragic. The early morning tornado killed six persons instantly. In March and June there were two more deaths of victims who suffered serious injuries on February 29. The death toll for the tornado in Harrisburg stands at eight (Fitzgerald, 2012, June 1). Injuries were recorded for approximately 110 persons (Paducah WFO, 2012).

In the city of Harrisburg, the tornado hit a cross-section of the city’s neighborhoods. Over 200 homes and 25 businesses were damaged (Paducah WFO, 2012). A retail business district along U.S. Route 45 and an adjacent residential area were devastated. The city’s hospital also suffered moderate damage. The Saline County Emergency Management Agency (SCEMA) reported in a March 5 briefing that 66 homes were completely destroyed and 38 required extensive repairs (SCEMA, 2012, March 5). While portions of Harrisburg were devastated, the city’s downtown and other neighborhoods remained relatively unscathed.

In the hours following the disaster, state and federal emergency management representatives, non-governmental relief workers from multiple organizations, and national media converged on the small city. Harrisburg was the focus of national attention on February 29<sup>th</sup> and March 1<sup>st</sup>, 2012. Although the city had experienced disasters in the past, the situation was overwhelming.

SCEMA stood up its emergency operation center (EOC) approximately two hours after the tornado’s impact, in a courtroom in downtown Harrisburg. Illinois Emergency Management Agency (IEMA) representatives arrived in Harrisburg shortly after the disaster to provide response assistance. An Emergency Management Assistance Team (EMAT) associated with the Illinois Emergency Services Management Association (IESMA) arrived on the evening of February 29, with its mobile EOC. The Saline County EOC was activated on February 29 and demobilized on March 30. During that time period, the EOC moved from a temporary courthouse location to a second temporary location.

For the purposes of this study, factors related to the disaster response were investigated. Therefore, the generalized description of disaster related-events will cease at this point in the report so that specific descriptions of response related events can be presented as relevant to the findings.

## Disaster Declarations and Federal Denials

On February 29, 2012, upon recommendation of SCEMA, the Principle Executive Officer for Saline County proclaimed a disaster. On that same day, the Governor of the State of Illinois issued a state-level disaster declaration. These proclamations facilitated a process for the state to request federal disaster assistance. On March 7, 2012, the Governor of Illinois requested federal assistance, specifically individual assistance for Southern Illinois counties including Saline and Gallatin. On March 10, 2012, the U.S. Department of Homeland Security – Federal Emergency Management Agency (DHS-FEMA) denied Illinois’ request for a major federal disaster declaration. The State of Illinois appealed the denial of the federal disaster declaration. That appeal was subsequently denied by the federal government in late March.

The initial denial and second ruling against the appeal were very demoralizing for the hard hit communities in Southern Illinois. As Federal disaster declarations were declared for tornadoes that occurred in Indiana and Kentucky that same week, both Illinois’ governor and congressional representatives were very disappointed in the outcome of the federal process. Apparently at issue was the circumstance where a federal disaster will not be declared unless the damage exceeded \$12 million (Grimm, 2012, March 21). Such damage thresholds are based on DHS-FEMA internal decision processes, although a specific formula has not been revealed.

As a result of the denial, Illinois Senator Richard Durbin introduced the ‘Fairness in Federal Disaster Declarations Act of 2012’ (S. 2303, 2012). The bill remains in the legislative process at the time of writing. The bill would add economic considerations as a factor in the determination process used by DHS-FEMA, as it weighs federal disaster declaration requests from states. The bill’s intention is to make the criteria for federal emergency designations clear and consistent. Senator Durbin’s office has suggested, “That DHS-FEMA has pointed to the relatively higher level of damage a disaster needs to incur in states with greater population” (Office of U.S. Senator Richard J. Durbin, n.d.).

This quick response study has found that despite being a part of the fifth most populous state, the downstate rural communities investigated in this study are operating in an economically distressed, limited resource environment. This situation limits the effectiveness of public emergency management practice. A concern that exists is that it may not be possible for disasters in small towns, in states which have large base populations, to ever be able to meet the financial damage thresholds for federal disaster declarations. In terms of federal disaster declaration policy, a one-size-fits-all approach may not be appropriate for states which have large overall populations, a high degree of regional and economic diversity, and an urban/rural divide. One

can speculate as to what the outcome of the federal disaster declaration process would have been for the 2012 Illinois Leap Day Tornado Disaster if the process were more sensitive to localized economic considerations and regional variations.

## **METHODOLOGY**

The research question on which this study is based is:

“As the 2012 Illinois Leap Day Tornado exceeded existing local management capabilities, what adaptations and improvisations have emergency managers taken to manage this crisis using only limited local resources?”

As the study proceeded, an exploration of the behavioral adaptations made during response led to the consideration of questions concerning the nature of the barriers and constraints which created the need for the adaptations. Secondary questions concerning the premise of what exactly the limited resource environment consisted of also became relevant. While qualitative pursuit of that question yielded useful results, it was also determined that due to lack of publically available budget data online, quantitative conclusions concerning that question were beyond the scope of this study.

To address the question, an overall method of qualitative research was employed. Specifically methods of case study research were applied during the field work. Yin describes case studies as, the preferred method when the focus is on a contemporary phenomenon within a real-life context (Yin, 1994). The unit of analysis for the case was the Saline County Emergency Management Agency. Issues related to the agencies disaster response activities were explored. This fieldwork can be classified as a single-case exploratory study of local emergency management practices during disaster response. The scope of this quick response project did not allow for exploration of other cases of tornado disaster response in other rural towns. The case study methods allowed for an unfolding process of realization, in order to attempt to interpret events in the context of the greater whole of the 2012 Illinois Leap Day Tornado Disaster. Field procedures included gaining access to key organizations, seeking guidance from local knowledge sources, structured primary informant interviews, reconnaissance surveys, and acquisition of spatial, ephemeral, and archival data. A snowball sampling method was employed to broaden the sample to include persons who acted in some sort of emergency management capacity during the disaster response, emergency managers who responded to the disaster through mutual aid assistance, and other persons involved in the humanitarian relief process. A probabilistic sampling technique was not employed, so results have limited generalizability. Eight professional emergency managers were initially interviewed, four were interviewed for a second time, and three were interviewed for a third time. As the face-to-face interviews during the aftermath of the disaster covered a wide range of response-related topics, for some respondents it took multiple sessions to work through the structured interview question set. In addition, four other community representatives involved in the disaster relief process were interviewed. The data collected included notes from the face-

to-face interviews, documentation, archival records, direct observations, participant observations, and collection of physical artifacts. Analysis took place by attempting to discern converging lines of inquiry from multiple sources of evidence. Interviews continued until saturation was reached and no new patterns of information emerged to inform the development of the case.

Fieldwork took place at multiple locations in Illinois from April to August 2012. Once initial qualitative data was collected, another set of comparison interviews across the topics were performed to discern common patterns and or themes. Additional literature research was then performed to augment and better understand new and emerging themes. Such research is reflected in the context sections of this report. The applied qualitative case study methodology allowed a deep, context rich understanding of how one a county emergency management agency in Southern Illinois experienced a tornado disaster response.

## **OPENING PREMISE**

### **Does Saline County's Emergency Management Agency Operate in a Limited Resource Environment?**

Given the large list of duties incumbent upon rural county-level emergency management offices in Southern Illinois during times of normalcy, when stricken with a disaster, local emergency management offices are stretched to their functional limits. This study's premise is that the Saline County Emergency Management Agency (SCEMA) operates in a limited resource environment both during times of normalcy and disaster. A limited resource environment means that both financial allocations and the level of material support provided to the county emergency management agency is at a level which is low enough to create operational hardships. These hardships are reflected in terms of a small paid staff, facilities which are barely adequate, and an overall operational environment in which it is challenging to provide day-to-day quality public services. It is important to note that despite such challenges, many rural county emergency management offices continue to operate at the highest possible levels, mostly due to the dedication of the men and women who staff such offices. When jurisdictions with such limited resource emergency management offices are stricken by a major natural disaster, due to the limited resource environment, many additional management challenges must be overcome.

This study used qualitative methods (as described in the methodology section) to study the post-disaster emergency management environment in Saline County after the 2012 Leap Day Tornado. While this studies overall methods were qualitative, the premise was explored from both the qualitative and quantitative perspectives.

## Qualitative Perspective on the Premise

Qualitative findings, detailed in later sections of this study, indicated that SCEMA had a lack of a proper Emergency Operations Center (EOC) and had to engage in a variety of activities to enhance disaster management to overcome the lack of resources. Such findings have indicated to this author that SCEMA operates in a limited resource environment. This quick response study was able to conclude that from a localized qualitative perspective that a limited resource environment influenced how the disaster response was implemented. Examples of how operational activities were affected by a lack of resources are provided in later sections of this report.

From interviews with county-level emergency management personnel who were directly involved in the management of the 2012 Leap Day Tornado, it was determined that emergency managers were attempting to do the best that they could with the resources available. Also, from interviews with other emergency managers from nearby Southern Illinois jurisdictions who responded to the Saline County disaster, a common theme emerged that many emergency management offices are attempting to do the best that they can with the few resources that they are provided. While Saline County has a designated, single-purpose emergency management agency, for other emergency management agencies in the region it was not uncommon for emergency management duties to be part of a bundle of tasks cobbled together to provide for a person to have full-time equivalent employment. Rural emergency managers wear many hats, meaning that their specific job duties are well beyond focusing on emergency management related tasks only. Management of rural emergency medical services, rural ambulance and emergency medical transportation management, duties at public health agencies, duties at county sheriff offices, or volunteer fire brigade responsibilities were amongst the many duties that rural emergency management officials have in their day-to-day work.

County-level emergency managers in Southern Illinois experience cognitive dissonance over the struggle to maintain quality day-to-day operations, while at the same time knowing the entire list of tasks they want (or need) to achieve. Specifically, this cognitive dissonance is experienced by holding two conflicting beliefs simultaneously. One belief is the sense of accomplishment and satisfaction that results from accomplishing many goals with limited resources. The conflicting belief is a sense of despair that exist from knowing that there is much more that could be done to protect public safety, if only the resources were available. The sense of satisfaction is simultaneously held with the sense of disappointment in knowing that more can be done creates psychological discomfort. This discomfort can be manifested if the rural emergency manager in Southern Illinois pauses to consider that they may rank amongst some of the most over-utilized and under-appreciated county government employees. However, the person who is the rural emergency manager does not often have idle time to pause and consider his or her state of affairs.



## Quantitative Perspective on the Premise

For a quantitative analysis of the question, “Does Saline County’s Emergency Management Agency operate in a limited resource environment?” the initial step taken to answer the question was to establish a group of other counties to compare to Saline County. In other words, is SCEMA financially worse off or better off than comparable jurisdictions in the region? In terms of attempting to group counties together for comparative purposes, the state of Illinois’ Emergency Management Agency (IEMA) has divided the state into eight regions and a central office in Springfield. Saline County is located in IEMA Region number 11. This region makes up sixteen counties in the southern portion of the state with a total population of 344,155 persons. As 15 other counties in this region, they share geographic features, they have similar demographics, and they face similar hazards. Therefore, for the purposes of this study these other 15 counties were deemed to be comparable to Saline County.

The scope of this study allowed for Saline County to be studied in detail, and budget information was obtained for SCEMA, and to a lesser extent the county. As such public information was not available online, face-to-face contact was needed to obtain the documentation. It was not possible to replicate this time consuming process for 15 other counties. Therefore, publically available documentation that was posted online was sought. As it was determined that very little online county budget data exists, as later explained, the amount of time and effort needed to compile a basic data set of budgets for 15 Southern Illinois counties and their emergency management agencies was beyond the scope of this study. Therefore, an attempt to obtain budget information for comparable county-level emergency management offices was futile and no quantitative conclusions were able to be drawn. This circumstance is both a limitation of the study and an interesting finding which warrants future study.

Specifically, it was determined that obtaining specific budget data for county-level emergency management offices would be a large project in itself. It was determined that nine of the 16 counties had no county government presence at all on the internet – not even a basic county government internet home page with an address of the courthouse and the names of elected officials. Of the seven counties which had an online presence, only two of them had some budget information available online. Therefore, without visiting an additional 14 counties or following up in greater detail with multiple officials from multiple counties, it was not possible to obtain comparable emergency management agency budget information for this study. It can be suggested that with more time and resources, a future study would be able to gather a set of IEMA Region 11 county-level emergency management budget data.

## An Ancillary Finding Regarding Online Presence

While not originally intended as a part of this study, a relevant ancillary finding was made. In Southern Illinois IEMA Region 11, 63 percent of county-level emergency management offices have some sort of internet presence while only 44 percent of county governments had an internet presence. In many cases emergency management offices would be using the internet for public outreach, even if their parent county government body had no internet presence.

For county-level emergency management agencies in IEMA Region 11, ten out of 16 offices either had their own web page or took advantage of social media web applications (like Facebook-based web pages) to establish an internet presence. Saline County is an example of an emergency management agency which had successfully used both a web page and social media, while at the same time Saline County government does not have a web page at all.

Evidence of the successful public service provided by SCEMA's web presence was demonstrated in the tornado disaster's aftermath. While Future Farmers of America (FFA) volunteers were clearing debris from a farm field outside of Harrisburg, they found a damaged photograph of a young girl and brought it into SCEMA. SCEMA posted an image of the found photograph on its Facebook-based web page. Using the Facebook page, a local family located the photograph, which was blown out of their home. The emergency management office then worked with a local Hallmark card and gift store to restore and frame the picture so that it could be returned to its owner. The ceremony to return the photograph to its owner was described by local media as a 'photographic miracle' (Wyrick, 2012, September 25).

## THE CONTEXTS FOR THIS STUDY

### Local and Regional Contexts for This Study

#### The Regional Context for Southern Illinois

Illinois is a diverse Midwestern state. In terms of population, it is the fifth largest state in the union with a 2011 population of 12,859,752 (U.S. Census Bureau, 2012). In terms of geography, economy, and culture the state can be divided into three distinct zones. A former governor of Illinois described the state as follows:

“Of course, to combine all the strength of Chicago with the quiet beauty of Southern Illinois (which is geographically and spiritually closer to Mississippi than it is to Chicago) is to realize that Illinoisans have the best of all worlds, and that Teddy Roosevelt was right when he said almost a hundred years ago that Illinois is the most American of all the states (Thompson, 2005).”

The northeastern portion of the state is the Midwestern metropolis of Chicago, along the Lake Michigan shoreline. This area is the third largest metropolitan area of the United States and the cosmopolitan cultural influences of this globalized urban center are dominant in a six county region referred to as 'Chicagoland'. The remaining 96 counties of Illinois are referred to as 'downstate'.<sup>2</sup> In terms of indicators such as population size, economic activity, and political power Chicagoland has an oversized influence.

The middle one-third of the state, Central Illinois, contains large swaths of agricultural lands on the prairie plains. This middle area of the state is home to the state capital Springfield, universities, a few moderate sized cities, and many small towns. This area could be considered to be culturally Midwestern with an economy based on agriculture, natural resources, and some urban manufacturing centers such as John Deere in Moline, Archer Daniels Midland in Decatur, and Caterpillar in Peoria. The phrase 'Will it play in Peoria?' makes reference to central Illinois as a bellwether for middle of the road Midwestern cultural values.

Southern Illinois is colloquially referred to as 'Little Egypt'. Historical lore suggests this nickname could have originated in the 1830s from a situation where poor harvest conditions in the central and northern parts of Illinois caused northern settlers to travel down to 'Egypt' to buy grain.<sup>3</sup> Others have suggested due to the geographical setting of Southern Illinois with valleys between the Mississippi and Ohio River that some settlers imagined it to be similar to the land of the Nile River delta. The nomenclature used for many Southern Illinois place names reflects names of Egyptian cities such as Cairo, Thebes, and Sparta. Natural resource-based industries such as mining, agriculture, and outdoor recreational tourism drive the economy. In terms of culture, as mentioned earlier a former governor of Illinois referred to Southern Illinois as "Geographically and spiritually closer to Mississippi than it is to Chicago."

When interviewing public officials and others in Southern Illinois for this project, a sentiment that was observed can be summarized as, "Things work differently down here." A perception is present that when persons from other parts of the state interact with Southern Illinoisans they sometimes indirectly suggest that perhaps the ways things are done at the state capital in Springfield or in Chicago would work better for their locales. Such perceptions can lead to banter with lighthearted mockery or at worst a sense of resentment. Southern Illinoisans feel their ways of doing things are just fine, regardless of cultural differences with other parts of the state.

These sentiments are reflected in the following quotation, which highlights problems with the one-size-fits-all approach to public policy in Illinois:

"The uniqueness of the individual places that compose Illinois underscores that the composition of their populations varies dramatically, and a one-size-fits-all approach to public policy is unlikely to succeed. How the state can manage public programs with such diverse local populations is an important policy question that warrants discussion (Hall, 2012, p.16)."

## The Context of Saline County

The geographic unit of analysis for this study is Saline County, Illinois. The 2012 Illinois Leap Day Tornado damage was most severe in Saline County. Census data indicates that Saline County had a 2011 population of 24,961 persons and the county's size is 380 square miles (U.S. Census Bureau, 2012a). Major cities in Saline County include Carrier Mills, Eldorado, and Harrisburg. A portion of the Shawnee National Forest is located in the county. Saline County is home to a large underground coal mine near Galatia. The mining industry, natural resource related employment, and outdoor recreational activities are the main economic drivers. The city of Harrisburg, with a 2011 population of 9,039 (U.S. Census Bureau, 2012b) is the governmental, administrative, mercantile, and social services center for the county. Harrisburg is known as the gateway to the Shawnee National Forest.

The Saline County Emergency Management Agency is a part of the government of Saline County. Therefore, a cursory understanding of Saline County government is necessary. When working on any type of study involving aspects of public government in Illinois, one cannot assume that all places operate under the same set of standard operating procedures. Illinois is unique in the nation in that there are 6,698 local units of government (U.S. Census Bureau, 2012c). According to the United States Census Bureau's 2012 Census of Government, Illinois ranks first in the nation in terms of the number of local governmental units, which is approximately 2,000 more than the second ranked state - Pennsylvania. In each of Illinois' 102 counties, numerous municipalities, townships, and special districts can exist.

Saline County is governed under a township type organization, where voters choose to establish township governments. Thirteen county board commissioners are elected on an at-large basis. In this election cycle, for the November 2012 election 10 Democrats and seven Republicans will vie for 13 seats (Fitzgerald, 2012, March 17). Every 10 years, each county board position is up for election at the same time, with the winners in the general election drawing for four year and two and one-half year terms.

Once a person is elected to the Saline County Board of Commissioners they will have a number of duties. These duties include monthly board meetings, determining the county's operating budget, appointing non-elected directors for county agencies, and service on committees to study the particular problems that arise within their areas of responsibility in order to submit recommendations to the full board for action (Illinois Association of County Board Members and Commissioners, n.d.). County agencies, such as the emergency management agency, are under direct oversight and governance of the County Board of Commissioners. Compensation for county board positions in Saline County is \$2,400 per year (DeNeal, 2011, December 7). Given the limited budget available for county operations, the board recently made a decision to

eliminate health care for its members (Stewart, 2012, May 31). This reduction of benefits is indicative of the difficult budget decisions due to a distressed economy.

For the 2011-2012 fiscal year, the Saline County Board of Commissioners was required to work extremely hard with budget issues to avoid layoffs of county personnel. The 2012 county budget was approved at \$17,000 in the red with the county's general fund total projected expenditures for fiscal year 2011-2012 at \$5,770,430 (DeNeal 2011, November 16). The trajectory of most county departments' budgets over the last decade has been either stagnant or downward, with the exception of law enforcement related agencies.

While budget information is considered as public record, for some Illinois Counties such public records are somewhat difficult to access. Out of Illinois' 102 County governments, 37 have no internet website. Saline County is one of the 37 counties graded "F" in this public information category by the non-government organization Sunshine Review, which monitors issues related to government transparency (Sunshine Review, n.d). The low grade is due to the situation of county government having no website. For smaller rural counties that struggle to maintain basic government functions, a county government website can be a task beyond the scope of what can be accomplished. However, such a lack of basic public information disseminated through what can today be considered as a common method of public outreach can be detrimental for citizens who want to take an active interest in government affairs. In an earlier section of this paper, this lack of available information online was described as a problem when attempting to draw comparisons between the budgets of county-level emergency management agencies.

To highlight the vast differences in county governance that exist in Illinois, a comparison will be provided between Cook County and Saline County. Please note, analysis of such comparisons may be limited due to the facts that county-level governance in the home county of Chicago which is the second most populous county in the nation will be by necessity much different in size and scope that a rural county in Southern Illinois. Yet, a key point to be made is that a 'one size fits all' approach to working with county governments across Illinois is not a practical approach. Cook County has a home rule governance structure with a chief executive officer and board commissioners whose salaries are \$84,000 per year (Slife, 2011, September 22). In addition Cook County has an elaborate web presence with complete information on county board members, their meetings and decisions, and an elaborate presentation of the county budget complete with downloadable data sets. For Saline County, board commissioners earn \$2,500 a year, there is no county website, and in fact it is difficult to find the names of county board commissioners using common internet search methods. Understanding the nature of the vast differences in the state's county governments is relevant when considering how and why local disaster management capabilities greatly vary across the state.

## The Context of the Saline County Emergency Management Agency

The mission statement of the Saline County Emergency Management Agency, or SCEMA, is:

“The mission of the Saline County Emergency Management Agency is to maintain the highest possible level of preparedness to protect the lives and property of the Saline County citizenry before, during, and after a natural or manmade disaster. The Saline County Emergency Management Agency works with all emergency responders, public and private agencies, business communities, and volunteer organizations to meet this mission (SCEMA, n.d.)”

SCEMA is a county government office governed by the Saline County Board. The director of the agency is a county official who is appointed by the Saline County Board Chairman with approval of the Saline County Board. Mr. Allen C. Ninness is the director of the agency. He has over twenty years of experience in the emergency management profession. SCEMA is a National Incident Management System (NIMS) certified operation.

Physically, Saline County’s Emergency Management Agency has been housed in the basement of the county administrative building / courthouse located in downtown Harrisburg. Observation of this work space has indicated that the office is a rather crowded space that has been subject to many phases of adaptive reuse. The basement office has been converted from what were previously lockup areas of the county jail. While some Illinois county-level emergency management offices have been purposely built underground for civil defense related purposes, this does not appear to be the case in Saline County. The underground jail location appears to be due to lack of space for offices. In the emergency management office, lockup areas have been converted to storage and filing spaces and what was once an inmate’s shower is now a location for a filing cabinet. From this observer’s perspective, it is difficult to understand how an important function of county government has been able to effectively operate out of such an ill-suited workspace.

For 2012, Saline County’s budget allocation for the emergency management agency was \$46,749. This budget provides for salaries and all other operational expenses. The budget trend for county emergency management has been flat the past two years with the 2011 budget at \$46,467 and the 2010 budget at \$45,384 (A. Ninness, personal communication, April 26, 2012).

In addition to county provided funds, Emergency Management Performance Grant (EMPG) funds support local and county emergency management offices in Illinois. The EMPG program is a federal government grant-in-aid program that provides resources to assist state, local, and tribal governments in preparing for all hazards, as authorized by the Robert T. Stafford Disaster Relief and Emergency Assistance Act. EMPG funds are used for planning, operations,

equipment acquisitions, training, exercises, and construction / renovation projects that enhance or sustain all-hazards emergency management capabilities (DHS-FEMA, 2012). During 2012, DHS-FEMA awarded \$339,500,000 to the states, of that funding \$6.8 million was awarded to Illinois. In Illinois, \$4 million of the \$6.8 million was distributed to 120 city and county-level emergency management agencies. As a sub-recipient for State of Illinois EMPG federal funding, Saline County was awarded \$20,084.70 in July 2012 (“Grants Will Help,” 2012, July 13). The funding is being used to help maintain operations, administrative costs, equipment and day-to-day operations within the agency. Also with the extra money, SCEMA was able to hire extra help on a temporary basis (Fitzgerald, 2012, September 11).

Combined county allocated funding and the EMPG award provided a funding base of approximately \$66,800 for SCEMA. SCEMA is appreciative of the funding available from both the Saline County Board of Commission and the State / Federal Government to maintain its operations.

Despite best intentions, one point to note is that in Illinois funding on paper does not always translate to funds made available for use in a timely fashion. Given Illinois’ large structural budget deficits at the state level, cash flow problems are present. These economic issues will be highlighted in a later portion of this study. At times budget promises of funding, in terms of financial transfers from state government to other entities (such as county and local governments, universities, and vendors) has been problematic. State government is behind on payments to many entities. This problem hits agencies in local governments very hard as it is very difficult to sustain operations when budgeted funds have been ‘allocated’ in theory, but in reality these allocated funds arrive late if at all. In terms of budgeting, SCEMA (like any other governmental agency in Illinois) needs to be very careful in both budget planning and the control of spending.

In terms of staffing, the Saline County Emergency Management Agency has a staff of one. Currently that consists of one full-time director, and one additional paid staff member on a temporary basis, and many volunteers. Critical functions of the agency are supported by 4 to 6 community volunteers who are essential in providing day-to-day support with activities such as planning and clerical tasks. A cadre of 45 additional volunteers is also on the agency’s roster to provide support to the office with various tasks. Even with the allocated funding, the agency is very dependent on volunteer service.

In addition to the volunteers, SCEMA is supported by partnerships with universities, through grant-based projects and service learning based community outreach. To meet Disaster Mitigation Act of 2000 (DMA 2000) planning requirements the agency has a grant based project partnering with Southern Illinois University-Carbondale and the Polis Center of Indiana University-Purdue University Indianapolis to produce a mitigation plan (Stewart, 2012, January 13). The Emergency Management Program at Western Illinois University (WIU) has partnered

with SCEMA to provide technical assistance in project scoping and design considerations for a future emergency operations center (SCEMA, n.d. a). The WIU Project has been approached from a service learning perspective to support the local emergency management agency in a disaster stricken area of the state.

In working on the hazard mitigation planning process, several issues facing SCEMA were identified (DeNeal 2012, February 22). In terms of general county preparedness needs, hardening of infrastructure for local government buildings and the provision of generators were identified as needs. In addition more work is needed to identify functional needs populations and to develop strategies to deal with those needs. Technology needs such as more portable radios and an enhanced repeater system were identified. Physical development needs including the creation of a county site where residents can bring storm debris were identified. In terms of specific hazards, the looming threat of earthquakes brought forward issues of whether or not evacuation routes would be needed as well as the need for water storage areas in the county were highlighted. Salt storage sites for responding to winter storms were identified as a need. The hazard of flooding presented a variety of needs including the build-up and rip-rapping of existing levees, installation of pumps needed to drain floodwaters, the elevation of roads, and the use of remotely-controlled flood swing gates to prevent flooding of critical roadways. In addition, drainage ditch maintenance and the need for basic map information on drainage pathways were identified as part of the DMA 2000 planning process.

It is important to note that the list of needs identified in the previous paragraph is placed on top of the already established duties of incumbent upon the agency. For example, state mandated activities such as the two-year cycle of compiling and updating Emergency Operations Plans are necessary. These mandates and their due dates can force critical decisions to be made as to what necessary work will be accomplished and what necessary work will need to be tabled. As with all county emergency management agencies in Illinois, Southern Illinois county-level emergency management agencies are responsible for both strategic planning and operational activities. These activities include facilitating response, recovery, mitigation, and preparedness in an all hazards environment. In addition, terrorism-related Homeland Security concerns also fall under the domain of the county emergency management agencies. Notwithstanding other duties, such as responding to stakeholder and constituent queries, volunteer management, grant and contract management, personnel management, budget juggling, and public outreach, the rural county emergency management agency's to-do lists are constantly at full capacity. This immense list of duties is what exists during times of normalcy. Any sudden-onset natural disaster related activities are added on top of these already existing duties.

This study focuses on the Illinois 2012 Leap Day Tornado which severely impacted Saline County. However, in the last ten years (prior to the EF-4 tornado) Saline County faced many other natural disasters (SCEMA, n.d. b). In June of 2011, heavy storms and flooding impacted



Saline County resulting in a Federal Disaster Declaration (DR-1850). In January 2009, winter storms impacted the county resulting in a Federal Disaster Declaration (DR-1826). In June 2008, Saline County was hit by flooding which damaged both homes and businesses in Harrisburg's Route 45 business district. Harrisburg lies in a flat watershed with complex dynamics, so even though the city is not adjacent to the Ohio River, when the river reaches flood stage it can create a backflow going all the way to Harrisburg (Fodor 2009, March 17). The June 2008 flooding was a County and State declared disaster, but Federal disaster aid was denied. In April and May of 1996, severe storms and flooding also impacted Saline County resulting in a Federal Disaster Declaration (DR-1112).

In summary, this section of the paper provided a detailed snapshot of what a county-level emergency management office deals with on a day-to-day basis. In terms of local emergency offices in rural downstate Illinois, many face challenges similar in nature to those faced by SCEMA. These challenges consist of funding and material support that is not necessarily supportive of the entire scope of work, dealing with all four phases (response, recovery, mitigation, and preparedness) of emergency management, performing Homeland Security related duties as needed, and on occasion coping with major natural disasters as best they can. These tasks are often accomplished by a staff of one, augmented with volunteer support.

During times of normalcy, the work of these local emergency management offices is often ignored. In Saline County, on Tuesday, January 17, 2012 (about a month prior to the Leap Day Tornado Disaster) SCEMA was engaging in a hazard mitigation planning process. As mandated by the DMA 2000, public input meetings are a part of the process. A local newspaper reporter was covering the meeting for a Harrisburg-based newspaper. The headline for the article was, 'Low interest in Disasters: Municipalities learn of potential for Saline disasters.' The reporter noted the small crowd in attendance as, "The intent was to hear public input on a draft of the county's multi-hazard plan, but there was little input provided during the meeting (DeNeal, 2012, January 18)." It is ironic to note that about a month later the low interest in disasters became a high interest in disasters. The interest was so high in fact, national media outlets, including Weather Channel personality Jim Cantore, reported live from Harrisburg on February 29, 2012.

As this report is being written in autumn 2012, it has been observed that while the Saline County emergency manager's job has become exponentially much larger, the office still remains at essentially a staff of one. If a public emergency management input meeting were held today this author would posit that public interest would be low. One of the challenges local emergency managers face is the bust-boom-bust cycle of interest in disasters by citizens which they serve.

## **An Economic Context for This Study**

### **An Illinois Context of Economic Distress**

While Illinois has been a historically prosperous state, the present day economic picture is one of distress. A brief description of Illinois' economic plight is necessary as any event in the state, including sustaining local emergency management capabilities and disaster response, plays out in the context of a sluggish state economy and a set of complicated structural deficit issues.

The great national recession of 2008-2009 and state government decisions (or indecisions) made during the last decade have put Illinois in a precarious financial situation. While Illinois has not been alone in terms of states having to make difficult budget choices, the situation in Illinois is especially acute. Six factors have been suggested that impact Illinois' financial sustainability. These factors are Medicaid spending growth, federal deficit reduction, underfunded retirement promises, narrow eroding tax bases and volatile tax revenues, local government fiscal stress, and state budget laws and practices that hinder fiscal stability and mask imbalance (Merriman, 2012, September 14).

The intensity of the nation's economic recession during 2008-2009 hit Illinois especially hard. Approximately four years after the recession started, high unemployment and poverty continue to linger in Illinois. The state's October 2011 unemployment rate was measured at 10.1 percent in October, almost twice as high as it was in December 2007 ("Report: Illinois Poverty", 2011, December 10). After contentious state government debate, a major tax increase was approved in 2011 and it has provided some stability to the state's financial situation at the cost of considerably higher tax rates. A 2012 state fiscal analysis indicated that, "Higher taxes create negative incentives, but an insolvent state government is hardly an attraction for business either (Giertz, 2012, pg. 36). A larger problem is the states' growing structural deficit. The public employee pension system has been underfunded and by the end of calendar year 2012, the state will be approaching \$100 billion in pension related debt. These problems have been compared to the federal debt:

"The Illinois economy for the most part lives or dies with the national and world economy and state leaders can do little to change these underlying drivers. However, Illinois faces its own fiscal challenges connected to a structural deficit not unlike those faced at the national level (Giertz, 2012, pg. 36)."

The structural deficit has reached the point where the state has real present day cash flow issues. In other words, the state is unable to pay its bills on time. As of January 2012, the state Comptroller's office estimated Illinois has a backlog of \$8.5 billion in unpaid bills. Related to that issue, it has been projected that the state will end the fiscal year with a \$508 million operating deficit (Office of Senator Mark Kirk, 2012, April).

While these economic issues may seem ancillary to local emergency management issues, in Illinois for the near-term local emergency management offices will be working in the same fiscally constrained environment as every other branch of public government. During times of economic distress on the larger level, there will not necessarily be options available for state government to provide financial assistance to local governments, as has been the case in the past. For the near-term if local governments are experiencing their own funding gaps or need additional assistance it is likely ill advised to count on additional funding from the state. Perhaps at this point, in time it is also ill advised to even count on the maintenance of current funding levels for existing programs and obligations?

### A Saline County Context of Economic Distress

In the context of the state's economic woes, we can consider Saline County, which is the unit of analysis for this study. Economic distress is not evenly distributed throughout the state of Illinois. Due to the nature of the metropolitan setting, the Chicago area (while not without its economic problems) is more financially resilient than downstate areas. In Southern Illinois, the economic stresses are very visible and more pronounced.

Poverty in both Southern Illinois and Saline County is more pronounced than other parts of Illinois. In an attempt to deal with the state's budget problems, at the time of writing of this report, state government was considering closing a large state facility (a prison) to the west of Saline County. Opponents to the closure noted that taking that action would further damage a weak regional economy as 18.2 percent of the population of Southern Illinois lives below the poverty level (Suhr, 2012, July 1). A 2011 community indicators study suggested that, "More children in Saline County live in poverty than children in comparative counties, in Illinois, Indiana, Kentucky and the nation. In 2009, Saline County had over 28% of its children under 18 years of age living in poverty (Wellborn Baptist Foundation, 2011)."

Income levels in Saline County are also well below state averages. The 2007-2011 median household income for Saline County was \$36,083 while the median household income for Illinois was \$56,576 (U.S. Census Bureau, 2012a).

Unemployment rates in Saline County are comparable to the state as a whole. For Saline County in October 2011, the unemployment rate was 9.7 percent ("Unemployment Among," 2011, November 25). In comparison, the Illinois unemployment rate for August 2011 was 10.2 percent (Illinois Department of Employment Security, 2012, September 20).

The economic woes for Southern Illinois have also been enhanced by demographic trends. From 1990 to 2010 Saline County has experienced a population loss of 6.2 percent. For the same time period, the State of Illinois has experienced a population gain of 12.2 percent (Wellborn Baptist Foundation, 2011). The county faces a situation of double jeopardy with shrinking population

and falling public revenues. The provision of public services becomes more expensive as the costs are spread amongst a smaller tax base. The southern tip of Illinois between the Mississippi and Ohio Rivers has long suffered from demographic and economic decline originating with Twentieth Century societal changes such as the decline in river traffic, agricultural consolidation, and a reduced demand for Illinois high-sulfur coal. A 2012 state of the state survey for Illinois highlighted this issue:

“The inequalities in population growth across the state also lead to diseconomies of scale and unequal quality of government services and functions. As populations fall, communities’ ability to negotiate for lower rates for public utilities, labor contracts, and the like similarly declines. These diseconomies of scale could then lead to higher program costs even while service populations fall. The upshot is that inequalities emerge in the quality of public goods and services (Hall 2012, pg. 17).”

### An Open Question of Economic Distress as Related to Hazard Management

For Southern Illinois and Saline County, the newest emerging threat to public safety may be a problem entirely of human origin. This new threat is the impact of a distressed economy on emergency management capabilities. While not a disaster by definition per se, this slow moving deeply-seated crisis has the potential to exacerbate disaster impacts. An open question is:

“Is it possible that in the near-future emergency management capabilities in economically distressed rural areas will be gutted to the point of ineffectiveness by involuntary budgetary reductions and lack of material support?”

This study suggests that the question needs to be considered for Southern Illinois. An interesting corollary question that this study cannot answer is, “How many rural emergency management offices across the Midwestern United States are challenged by budgetary restrictions to the point that public safety may be diminished?”

The next section of the paper focuses on the management of the response during the Illinois 2012 Leap Day Tornado. Despite the context of budget challenges outlined in this section of the study, the Saline County Emergency Management Agency did find ways to effectively manage the response to the tornado disaster. However, as we look towards future disasters, can we expect such local emergency management offices to function effectively without proper support?

## Findings

This section of the report describes the primary findings derived from the quick response post-disaster study of the 2012 Illinois Leap Day Tornado Disaster. The findings focus on the emergency response to the tornado and how the Saline County Emergency Management Agency (SCEMA) managed the disaster response in a limited resource environment. Looking back on the Leap Day Tornado Disaster, the event is perceived as a tragic natural disaster impacting a rural Midwestern small town. The disaster, not its management, is what is remembered. Local emergency response efforts were well implemented. One local official characterized the Leap Day Tornado Disaster's management as, "While the big things went well, the small things were painful."

This study draws five primary findings based on three themes.

- I. The primary issue related to managing the disaster when working with limited resources
  1. Complications due to not having a standing emergency operations center
- II. Activities that enhanced disaster management despite limited resources
  2. Peer-to-peer emergency management mutual aid
  3. Volunteer-based creation & management of an aid distribution center
  4. Value-added assistance from a national-level faith based organization
- III. A best practice rural disaster management observation
  5. Farmland debris removal

The following sections of this report present the five findings.

### **Finding 1.**

#### **The primary issue related to managing the disaster when working with limited resources**

- **Complications due to not having a standing emergency operations center**
  - *A primary recommendation of this study is that due to the unnecessary complexities that Saline County brought upon itself due to the lack of a suitable emergency management facility, the Saline County Emergency Management Agency needs to have a dedicated EOC.*

From a qualitative standpoint, SCEMA operates in a limited resource environment. One of the results of this situation is that the agency does not have a dedicated emergency operations center (EOC). When it came to the management of the Leap Day Tornado Disaster, these efforts were made much more complicated due to not having a dedicated EOC. Due to not having a dedicated EOC, work started in a temporary space which was not entirely suitable to the task, then the operations had to move across town to another temporary space. All of these actions

took place as the EOC was in a state of activation. This circumstance added new layers of complications to what was already a complex situation. Having to juggle operations between temporary spaces is not unknown to emergency management as Kendra and Wachtendorf have pointed out such complexities and adaptations in their studies of the relocation of the New York City EOC in the wake of the collapse of World Trade Center Building Five during the 2001 terrorist attack (Kendra and Wachtendorf, 2003). However, a disaster-forced relocation of an EOC is much different from an EOC relocation having more to do with past policy decisions that have no relation to the disaster at hand. Specifically, in this case those past decisions are policy and governance decisions that have resulted in an underfunded and ill-equipped local emergency management agency.

On the morning of the tornado, the emergency manager's small basement office (converted from a jail lockup) was not an adequate site from which to coordinate disaster response activities. Operations were moved across the street to a courtroom in the Saline County Criminal Justice and Detention Center. Prior to the tornado, cooperative arrangements had been made between SCEMA and the officials working at the First Judicial Circuit, Fifth Appellate District, of the Illinois Court System. This cooperation allowed for the emergency management agency to make temporary use of a courtroom space, if it was needed for EOC purposes. The courtroom was designated for judicial uses such as first appearances, probation related matters, and court overflow. The tornado hit Harrisburg at approximately 5am. In the immediate aftermath of the tornado, emergency managers from adjacent counties provided assistance to SCEMA in getting organized to manage the disaster. The Franklin County Emergency Manager Ryan Buckingham provided key assistance to Saline County during the early hours of the disaster. Within three hours, the EOC was up and running from the courtroom. This conversion of the space was not impromptu or ad-hoc, as prior agreements had been made for such emergency uses and the courtroom had minor alterations made to it to support an EOC work environment on a temporary basis. These alterations included enhanced wiring for external phone and data lines, as well as long narrow strips of corkboard-type material mounted to the wall so that large yellow sheets of paper could be tacked up without damaging the walls. It is important to note that while portions of Harrisburg were devastated by the tornado, the downtown Harrisburg area where the courthouse temporary EOC was located remained unscathed.

As typical of many counties in rural Illinois, cooperative arrangements with other units of government to use their spaces for temporary EOCs are made. However, these spaces are not necessarily suited for EOC purposes. At its peak use, in the immediate aftermath of the disaster, sixty persons were occupying the temporary Saline County EOC making it difficult for the EOC to function effectively. Due to factors that can be related to the dynamics of interactions in the space, EOC coordination activities and incident command activities blended together at times making for organizational confusion. Also, problems came up where the policy making would take place at the same table where operational activities were being coordinated. This is in part

due to a lack of training in the Incident Command System (ICS) by the EOC workers, but it can also be related to what happens when an EOC space is not properly designed. For example, an EOC space designed according to a common system used in emergency management (such as the Incident Command System, Emergency Support Functions, or major management activities) would function in ways which limit organizational confusion. A space that is purposely built for an EOC would have designated areas set aside for those persons working at the strategic policy level. They would be in separate zones from those persons working at the tactical management level. Information from post-disaster interviews indicated that the Saline County Emergency Manager and his core volunteers (who were trained in the NIMS and ICS) were fully aware of the dilemmas that can be created when span of control brakes down or EOC functions blend together. However, when working out of a temporary space during stressful times, there is a limit to what can be controlled. These limits, created in a large part by working out of an ill-suited EOC space, were points of frustration. While SCEMA was very grateful to the court system for allowing county emergency management to use its space during its time of need, the limits on using the space for EOC purposes became evident.

As the scope of the tornado disaster became clear in the early afternoon, it became apparent the temporary use of the courtroom for EOC purposes would go beyond a two or three day period. Eventually, the court system would need its room back. From February 29 to March 12, the EOC operated out of the room in the courthouse. The 13 day stay in the courthouse was likely longer than any of the involved parties would have foreseen prior to the disaster. While after the first week of the response, the EOC rarely had 60 persons in it at once, the amount of ‘stuff’ began to compound. As response transitioned into recovery the tasks incumbent on the county emergency management office increased exponentially. Damage assessments, debris removal plans, paperwork in preparation for the Presidential Disaster Declaration request, and the copious documentation needed for potential future cost reimbursements all contributed to growing boxes and piles of stuff. This stuff comes with crates, photocopier machines, stacks and stacks of large yellow sheets of paper, etc. At this point it was evident that there was no way that the operation would be able to move back to the small emergency management office in the former jail cell in the basement of the courthouse.

An additional task was now incumbent upon the emergency manager, to find another operational space to carry on with the immediate-term management of the disaster. Fortunately another cooperative arrangement was able to be forged with a private sector firm – Clear Wave Communications.<sup>4</sup> In a vacant office space adjacent to Clear Wave Communications’ Harrisburg Sales Office, SCEMA was given permission to move the EOC to that space. On March 12, SCEMA transferred its operations to the Clear Wave Communications owned space. About two weeks out from the disaster, as the EOC was still activated, SCEMA had to now lean heavily into its volunteer labor pool to relocate its EOC and all the associated stuff to a location across town. An emergency manager in a jurisdiction with a dedicated EOC would never have to

engage in such distracting and time consuming activities during an active disaster time period. However, as with the courtroom space, SCEMA appreciated the generous donation of office space that was provided without cost to the agency. The Clear Wave Building space is a large empty square room that was originally designed for office-type use. It is larger than the courthouse space. The room was hastily set up with folding tables in a square on one side and desks for the emergency management 'office' on the other side. Due to its sheer size, this space worked much better for the EOC. As management of the immediate aftermath of the crisis drew to a close, the EOC was deactivated on March 30. The folding tables were then used for a work / meeting space.

Even as the formal operations of the EOC ceased at the end of March, SCEMA remained at the Clear Wave Building. As of autumn 2012, SCEMA is still operating out of this temporary space. While not ideal, in many ways the space is turning out to be well-suited for the functioning of SCEMA. The recovery process requires a space to host the many meetings of community task forces involved in the rebuilding process, and a larger office space was needed. The office space in the Clear Wave building works well for that purpose. However, everything is in one big room and this does not make for an ideal workspace. For example, a community meeting, a constituent meeting, phone calls, and computer printing can all take place simultaneously in an open room making for a distraction filled work environment. The alternative is bringing everything back to the small crowded office in the former jail in the courthouse basement, which is not exactly possible now.

A looming significant issue facing SCEMA is what happens when the business needs its space back and the agency is told to leave? In autumn 2012, SCEMA is just starting to address the backlog of other standing duties that have stacked up during the tornado disaster. There is also a long list of new disaster recovery duties created out of the tornado's aftermath. Any future planning for SCEMA is in limbo, as the location which the agency operates out of is uncertain.

In terms of futures, one option is returning all operations to the original basement office, which would essentially decapitate SCEMA. Another option is remaining dependent on the generosity of the business to extend the use of the site or arranging for long-term use of the site at no cost, but those requests are a lot to ask for from a business during a sluggish economy. Another option is for county government to step forward with an increased financial commitment to SCEMA, to pay for the space that is being used, or to acquire new space for SCEMA. Additional county financial support is unlikely given past trends and current budget woes. External funding can always be sought. Using existing staffing at SCEMA to search for external funding would have a high opportunity cost in terms of other necessary work not getting done. Perhaps outside assistance could be used for such exploration? These are the types of questions faced on a day-to-day basis at SCEMA.



## **Finding 2.**

### **Activities that enhanced disaster management despite limited resources**

#### ➤ **Peer-to-peer emergency management mutual aid**

- *A primary finding of this study is that the weaknesses present due to a county emergency management office operating with a lack of resources were counteracted by the strengths that the Illinois Emergency Services Management Association Emergency Management Assistance Team brought to bear on the disaster's management.*

One specific organization that stood out in terms of peer-to-peer mutual aid assistance was the Illinois Emergency Services Management Association (IESMA). IESMA describes itself as:

“A membership organization comprised of professional emergency managers, emergency management staff, and private sector partners across the State of Illinois. As the voice of emergency management, IESMA serves as the conduit from local to state and federal agencies. IESMA utilizes a collaborative platform to enhance the emergency management profession through mutual aid services, public relations, and professional standards (IESMA, 2012).”

Part of IESMA's role in Illinois is the provision of mutual aid through an Emergency Management Assistance Team (EMAT). When disaster overwhelms a local jurisdiction's capabilities, EMAT mutual aid responders can be deployed. EMAT has north, central and southern teams covering all regions of Illinois. These teams arrive with all the necessary equipment to operate in a self-sustaining manner, including a mobile EOC. This EOC can act as a stand-alone operations center or as an adjunct to existing EOCs (IESMA, 2012a).

IESMA has developed a memorandum of understanding with the Illinois Emergency Management Agency regarding EMAT deployment. A very specific procedure for EMAT deployment has been established. An excerpt describing the mechanics of the procedure is listed in the end notes, as such specific language may be of interest to emergency managers reading this report.<sup>5</sup> For places which do not have a high degree of state-local cooperation but wish to develop it further, the Illinois EMAT example can serve as a model.

In terms of the 2012 Leap Day Tornado, the EMAT deployed to Saline County on February 29. As the situation escalated to a state declared disaster, the EMAT trailer set up in the parking lot in the back of the building where the temporary EOC was established in the courtroom. EMAT's mobile EOC functioned as an adjunct to the Saline County EOC. The EMAT team stayed on site in Harrisburg from February 29 to March 12. Over 1,740 hours of service were logged by the EMAT team. The EMAT teams provided services to Saline County that included, EOC support, field operations, damage assessment, incident action planning, and crisis management (Shannon, 2012, April).

While there were many forms of mutual aid assistance provided by a variety of agencies during the disaster, in interviews with local emergency management officials active during the 2012 Leap Day Tornado, the work of EMAT consistently came up as an important asset supporting the successful disaster management activities. This study determined four primary reasons why EMAT was important to managing the 2012 Leap Day Tornado: 1) Services are provided with no cost to local jurisdictions who have agreements with the IESMA Emergency Management Mutual Aid System; 2) EMAT's foundation is built on the community building activities of IESMA; 3) EMAT mutual aid responders come in knowing what to do; 4) EMAT responders also provides valuable intangible services, such as peer-to-peer coping assistance.

First, the assistance EMAT provided to SCEMA was provided without cost to Saline County. For all the downstate counties in Illinois where finances are an issue, having an in-state skilled cadre of professional emergency manager's on-call for free is invaluable.

Second, IESMA works to build community amongst the state's professional emergency managers. Events such as annual conferences in Peoria, committee meetings in Champaign-Urbana and Springfield, trainings in every region of the state, and the occasional celebration and recognition of each other's efforts get emergency managers together in times other than disasters. During these events, emergency managers from the state's three distinct regions get to know and understand each other. There is an old adage in emergency management that suggests 'You never want to shake hands with someone for the first time during a disaster.'

It was observed that emergency managers from both the Chicagoland area and Southern Illinois were working together as part of the EMAT group deployed to Harrisburg. Despite the occasional banter which included ribbing each other on the athletic prowess of Chicago sports teams vs. St. Louis sports teams or the way that city people talk vs. the way that country people talk, the men and women came together as professionals and friends. These relationships are due to the community building activities in which IESMA has engaged in for years. In Illinois, upon meeting another Illinoisan for the first time a situation of mistrust could quickly develop for reasons as minor as what city you originate from or whether your allegiances are with Chicagoland or downstate areas. At least amongst EMAT members, such problems do not exist. IESMA community building amongst the state's emergency management professionals is an invaluable service that is sometimes taken for granted.

Third, the issue of the 'training gap' was not a problem with the EMAT team. One issue that was noted by SCEMA was the differential training (or a training gap) that some disaster workers had when they were sent from a wide variety of entities to respond to the tornado. Without question, in the immediate hours following the disaster, the brave work of many men and women was invaluable. But as the immediate response activities shifted to more complex emergency management activities, it became clear that some persons contributing to the efforts did not

necessarily understand the management schemes being applied. Management schemes applied by professional emergency managers to handle a variety of emergencies include the Incident Command System (ICS), the National Incident Management System (NIMS), and the National Response Framework (NRF). Personnel from SCEMA and EMAT began to notice a training gap where it was realized that some actors involved in the disaster response did not necessarily understand the emergency management system in place. Specifically, coordination between the strategic type of activities taking place at the EOC level and the tactical and operational type of activities taking place in the field was not as smooth as it could have been. SCEMA noted that some instructions and information did not filter out to the user in the field. The situation was described as “Not enough pull back.”

In interviews that took place with local emergency management professionals, the issue often came up that some persons working in the field had no idea of the overarching management schemes that were in place during response to the large disasters. It was noted that professional emergency managers and urban-based mutual aid responders contributed in different ways than the rural-based first responders. A rural/urban difference in how and whether first responders use NIMS was present, as described below:

“Theoretically, a system like NIMS that attempts to standardize processes, structures, and terminology, can overcome complexity caused by convergence. However, emergency managers interviewed viewed convergence as largely an issue exclusive to urban area disaster response (Jensen, 2009, pg. 229).”

In the Leap Day Tornado, many of the initial responders were drawn from rural areas. Perhaps these responders believed that dealing with the complexity of convergence and the intricacies of NIMS applies only to big cities like Chicago, but not to small towns like Harrisburg? This study concurs with Jensen’s (2009) findings regarding rural and urban differences in emergency managers’ perceptions of NIMS. First responders in rural areas of Illinois perceived lack of fit for following NIMS-based response guidelines. For professional emergency managers, this difference was noticeable during the immediate disaster response to the tornado.

The EMAT group of mutual aid responders came into the field fully trained and literate in NIMS. This background knowledge allowed for a transparent merging of EMAT into existing local disaster operations. EMAT was able to provide a backstop to fill unstaffed ICS positions. For example, staffing the documentation function of the planning section, or the handling and sorting of thousands of phone calls coming in from the outsiders with offers of resources are important functions. But when due to limited resources, county emergency managers struggle to keep the EOC up and running, such tasks will not rise to the level of importance of getting done. Knowing that a trained and prepared EMAT member can provide critical support in a variety of

functions provides an important backup to an emergency manager who is working with few resources and large groups of persons who are not familiar with NIMS.

Fourth, EMAT members provided intangible support, such as providing peer-to-peer coping assistance. While such duties are not formally assigned to EMAT members, due to the community that has been built around IESMA, it is not uncommon for emergent new forms of support to materialize. An often neglected consideration in emergency management is the psychological toll that dealing with disaster has on county-level emergency management officials. Through interviews with persons working in the EOC and mutual aid responders, this author is able to comment on an instance of how an EMAT member helped the county emergency manager to better cope with stressful EOC situations by reminding him to take pauses.

Given the extent of the disaster, along with the nature of the EOC, there were a myriad of stressors that the county-level emergency manager faced. The Saline County Emergency Manager, Allen Ninness, has given this author permission to describe one instance of stress in the EOC, and how it was dealt with. This anecdote may be useful to emergency managers in considering how they would deal with such stress, if a large disaster were to occur in their jurisdiction.

One instance where the building up of stress was recognized took place in the temporary EOC that was established in the courthouse, during the first week of EOC activation. As the setting was improvised, many basic office supplies were rapidly shifted from a variety of county offices to the temporary EOC. As there were larger issues to deal with, the organization of office supplies was lax. When the EOC was in full activation, one of the workers in the EOC asked Mr. Ninness where the pencils were located. He then went out of his way to find the pencils, an activity taking minutes. This minor event in the operation of the EOC was remembered by Mr. Ninness as significant. This event created a learning moment as it was pointed out by a colleague “Do you really need to be finding pencils right now?”

Mr. Ninness was fortunate that he had arranged for a professional colleague to be assigned to ‘shadow’ him. This person had the mission of doing nothing other than watching over Mr. Ninness’ shoulder. The colleague was a trusted person who was associated with IESMA. When the colleague noticed small actions that indicated that the stress may be affecting Mr. Ninness’ decision making, the colleague would point out the circumstance immediately. Looking for a pencil, while other more important duties were pending, is not the best use of time. In what was described as the ‘Fog of War’, the high amount of stress can make it difficult to focus on what is important. The action of the IESMA colleague in pointing this situation out allowed for Mr. Ninness to take a brief pause for reflection. In the hectic EOC environment, Mr. Ninness would

not likely have taken these brief pauses, unless prompted to by others. These brief pauses contributed to psychological well-being and better decision making.

### **Finding 3.**

#### **Activities that enhanced disaster management despite limited resources**

- **Volunteer-based creation & management of an aid distribution center**
  - *Due to the lack of resources, it was beyond the scope of the county emergency management agency to deliver post-disaster humanitarian aid. The local faith-based community filled this gap by taking a leadership role in running a large aid distribution center, a need that would have otherwise gone unmet.*

In interviews with Saline County Emergency Management officials when questions were asked concerning the most successful elements of the disaster response, the volunteer efforts of the local faith-based community were suggested as a critical component of the tornado response efforts. While covering the full extent of the assistance that many local and regional faith-based organizations had provided to Saline County in its time of need is beyond the scope of this study, it needs to be acknowledged that over a dozen churches in the Harrisburg vicinity pitched in to provide significant assistance in the disaster's aftermath. This portion of the report will focus on a specific faith-based community action that provided significant disaster response services to Saline County. Many clergy in Harrisburg used connections previously established through the local Ministerial Alliance to coordinate disaster relief efforts. In autumn 2012, faith-based groups were still playing important roles, as the Dorrisville Baptist Church in Harrisburg was currently offering housing, food, and facilities at no charge to volunteers who traveled to Harrisburg to assist with disaster recovery efforts (Dorrisville Baptist Church, 2012). Immediately after the tornado disaster, the First Baptist Church of Harrisburg went into action by providing sheltering and mass feeding activities. First Baptist Church had not previously acted as a primary point of organization for disaster relief in the community. However with the tornado, the Church was in an area of Harrisburg untouched by the disaster and it was directly down the street from the location where the temporary EOC was established in the courtroom. The church quickly became a primary contributor to the disaster relief effort, as initial efforts of the American Red Cross used this site as a focal point. Tons of various supplies arrived from all parts of the country as national media told the story of the tornado impacting this small Illinois town. In the week following the tornado, as the local churches divided up various duties, the First Baptist Church of Harrisburg became involved with donations management.

Due to the sluggish economy, there were many abandoned sites of former retail businesses in Harrisburg. While in times of normalcy that situation would be a curse to economic development, during times of disaster the redundant spaces can be a blessing as they can be put into use for short-term humanitarian relief purposes. In Harrisburg, one such site was an

abandoned discount grocery store called 'Mad Pricer'. Building on existing community connections established prior to the disaster, organizations such as SCEMA, the City of Harrisburg, the local Ministerial Alliance, and the local private sector were able to broker a deal where the abandoned Mad Pricer grocery store was able to be put into use as a distribution center for humanitarian aid. A real estate broker was able to provide the former store site at no cost and the City of Harrisburg paid for the utilities and covered liability. As soon as the site was made available, a massive cleaning of the abandoned store took place. Then, a portion of the store had to be sectioned off with a backroom area for receiving, sorting, and storing goods. Given that the site had a loading dock which facilitated the offloading of semi-trucks with forklifts, the operations went smoother than imagined. The front of the store was sectioned off to essentially function as a 'store' area. The former Mad Pricer functioned as a free store that was made available for Saline County residents who needed material aid due to the losses they sustained during the tornado.

As First Baptist Church of Harrisburg was working with donations management issues, it became the local organization taking the day-to-day lead in operating the distribution center, with Reverend Chris Winkleman becoming the primary point person for the large operation. Operation Blessing, a national-level faith-based humanitarian group, who was working in cooperation with SCEMA to organize volunteers, played a crucial role in establishing the aid distribution center. Operation Blessing provided both the initial person power and knowledge to get the distribution center up and running and then provided on-the-job training to the local faith-based community so that the operations could be sustained once the national group moved on to other disasters. This large distribution center operated from the beginning of March to the beginning of June. Once the site was closed to the public, it took approximately another month of work to demobilize the site and find uses for the large amount of stuff that flowed into Harrisburg, but was not distributed.

Lessons learned by First Baptist Church of Harrisburg staff were many, as they unknowingly took on the operational roles of running a large retail store (that is, a retail store where money is not exchanged). Both knowing 'when to say no' and knowing 'when to say stop' were key points that came up upon reflecting on the post-disaster activities. While the core mission of a church in a community will likely have little to do with 'saying no' or 'saying stop', during a disaster it was quickly learned that organizing and running a massive relief facility can become overwhelming. Persons involved in the operation suggested having a better realization of the church's limits and actual capabilities would have been useful. It is important to keep in mind that in the background normal church duties (such as Sunday services, Bible studies, congregational services, etc.) were still going on during the disaster relief effort.

While all persons involved in running the distribution center would again step forward again to serve the community in its time of need, if the effort with an aid distribution center were to be

done over again, not everything would be done in the same way. One example of something to be done differently is the credentialing of disaster victims so issues of who is eligible for aid and who is not eligible don't have to be dealt with at the distribution center. The next time, a better system would need to be established to provide standardized identification to disaster victims. While the purpose of the distribution center was to aid disaster victims, given the poverty levels in Saline County it is likely that some persons not having anything to do with the tornado benefitted from the free food distribution. While this issue was present, it did not significantly disrupt operations, and no-one was denied food. However, it could have been handled better.

A final major lesson that was repeated many times was referred to colloquially as 'A.B.C.' meaning 'anything but clothes'. Massive time and effort was put into receiving and sorting the tons of used clothing that flowed into Harrisburg from all parts of the country. During the disaster the need for clothing was never critical. In fact, there was likely a large enough latent reserve of used clothing in Southern Illinois that could have filled any need that existed. One of the reasons the demobilization of the aid distribution center was such a massive chore was due to the need to find something to do with the massive amounts of used clothing. In retrospect, those managing the center said perhaps they could have got ahead of the curve in being more proactive to communicate the message that clothes were not needed. However, given the facts that everything was happening at once, and it is difficult to turn back any expression of generosity, Harrisburg became a receiving point for more clothes than ever needed.

There was also an overabundance of other items. In the backroom of the distribution center, one item observed was a large pallet of lock-sets. While such a donation of hardware is generous, to this observer there were likely more locks than needed, even if every one of those locks was put into use reconstructing every door blown down in Saline County. On the other hand, items that were in high demand included cleaning items, baby food and diapers, and pet food.

As has been indicated in other post-disaster studies, such as Phillips and Jenkins work concerning the roles of the faith-based organization after Katrina, the local faith-based community often steps forward during disasters and provides a variety of humanitarian services to the stricken community (Phillips and Jenkins, 2010). The 2012 Illinois Leap Day Tornado Disaster was not an exception to this phenomenon observed in other disasters. When disasters strike small towns where the local emergency management authorities are overwhelmed, value added disaster relief services provided by the local faith-based community are critical to helping the community cope with the crisis at hand.

#### **Finding 4.**

##### **Activities that enhanced disaster management despite limited resources**

###### **➤ Value-added assistance from a national-level faith based organization**

- *A primary finding of this study is the value-added humanitarian services provided by Operation Blessing greatly expanded on the scope of relief aid available and enhanced the ability of locals to meet their own needs in the post-disaster environment.*

In the immediate aftermath of the 2012 Leap Day Tornado Disaster, Operation Blessing was one of the many national-level faith-based organizations that self-deployed into Harrisburg to provide humanitarian aid. Operation Blessing International (OBI) is a faith-based charity which, among other activities, is active in disaster relief throughout the United States.<sup>6</sup>

To this author's knowledge, local officials had no relationship to OBI prior to the disaster, nor did they call them for aid in response to the tornado. OBI just showed up in Harrisburg without prior coordination. The author would be remiss not to mention that OBI was one of many national-level voluntary and / or faith-based organizations that provided valuable aid to tornado disaster victims. However, during interviews and debriefings with persons from government and local community organizations who were involved in the tornado response, a common theme that emerged was the quality of services provided by OBI.

On February 29, OBI first arrived with a convoy of relief vehicles including a mobile command center, a mobile kitchen with supplies to serve up to 2,500 hot meals per day, and construction equipment (Drake, 2012, February 29). From the county emergency management perspective, OBI came into town understanding the bigger picture of the emergency management system as their organizers were NIMS trained. They arrived with few demands, and a very small footprint, but they brought with them a large array of resources that were deployed in ways which were appropriate to the community. OBI also determined that local emergency management capacities were spread thin, so they began to assist SCEMA with the overall issue of volunteer organization. From the local-faith based perspective, OBI assisted by providing start up labor and resources, along with capacity building for the aid distribution center. One of the reasons that the aid distribution center at the former Mad Pricer grocery store was successful was that OBI provided a solid organizational base on which to start the large project. OBI aid to Saline County was quantified as 3,129 volunteers providing 23,733 volunteer hours of service valued at \$461,529.80 (Herrington-Gettys, 2012, September 5). The work of OBI in response to the 2012 Leap Day Tornado Disaster was deemed as significant in the State of Illinois as it was featured as a best practice at the IEMA annual statewide emergency conference in Springfield.



## **Finding 5.**

### **A best practice disaster management observation**

#### **➤ Farmland debris removal**

- *A primary finding of this study is that debris removal from farmland is an important issue that must be dealt with during tornado disaster recovery in rural communities.*

Within the overall picture of the Leap Day Tornado Disaster, this issue may be remembered as a minor footnote to the larger event, but in retrospect this aspect of disaster response was very significant to the local community. After a tornado, debris removal from farmland is an important issue yet neglected issue. This aspect of debris removal is not a visible and does not demand as much attention as urban debris. When the tornado took a path through populated areas of Harrisburg, a large amount of urban debris became airborne. As the tornado's path took it across Saline County, eastward towards Gallatin County and the City of Ridgway, much of the airborne debris from Harrisburg settled in agricultural lands directly east of the city.

As the tornado was in late February, the planting season was approaching. In the post-disaster environment, while the lands adjacent to town may appear to the casual observer as areas needing less immediate attention than the devastated urbanized areas, to the farmer these lands are his/her livelihood. While the need to remove large pieces of debris from the fields (like walls and roofs of homes) is obvious, even smaller shards of debris a foot or less in size can have devastating effects on modern precision farming equipment. If the debris becomes plowed into the field or settles into the soil after rainstorms, it will continue to be plowed-up for years. Damage to combine headers, discs, tires, and a variety of farm equipment can have detrimental impacts on the farming operation for years to come. In the Midwestern United States, when tornadoes deposit debris from small towns into adjacent agricultural lands, the debris removal issue for farmland can be significant.

In Saline County, the way this issue was handled was by volunteers from the youth organization Future Farmers of America (FFA).<sup>7</sup> On the Wednesday, exactly one week after the tornado, 350 FFA members from Illinois high schools traveled to Saline County to assist farmers in debris removal from their fields ("350 High School Students", 2012, March 7). The FFA volunteers were organized by Operation Blessing, who was working in cooperation with SCEMA to organize volunteers. The FFA volunteers were especially suited to the task at hand, as they understood both the importance of what they were doing as well as understanding how small pieces of debris can wreak havoc on modern farming equipment. An ancillary benefit to this activity was that FFA volunteers found a relatively intact photograph that was blown out a home in Harrisburg. With the assistance of SCEMA that photograph was able to be returned to its owner. This circumstance is described in an earlier section of this report as an unanticipated benefit of SCEMA's use of social media for public outreach.

For small cities adjacent to agricultural lands an important best practice lesson learned from the 2012 Illinois Leap Day Tornado Disaster was the need to consider how to deal with debris in the farmland areas adjacent to cities. Given that this task was beyond the capabilities of the county emergency management agency, volunteers organized to meet this need. While this need may not be as visible as debris removal in urbanized areas, for rural communities this issue is nonetheless important.

## CONCLUSIONS

Disaster researcher Enrico Quarantelli has stated that:

“Good disaster managing must recognize correctly the difference between agent and response generated needs and demands (Quarantelli, 1996, pg. 5).”

Based on the work of Quarantelli and others, McEntire has suggested definitions for agent and response generated demands in the context of disaster recovery (McEntire, 2007). Agent generated demands are defined as the needs made evident by the hazard itself. Response generated demands are defined as needs that are made evident as individuals, organizations, and communities attempt to meet agent-generated needs. For a tornado, setting up mass feeding operations in the immediate aftermath of the disaster for those persons whose residences were destroyed would be an agent generated demand. A response generated demand would be the need to find a suitable space to establish an emergency operations center (EOC) to coordinate response activities.

The Saline County Emergency Management Agency (SCEMA) recognized the difference between agent generated demands and response generated demands. Emergency management offices in Southern Illinois are fully aware of the agent generated demands that can be created by a tornado. In both the recent and distant past, deadly and destructive tornados have impacted both Saline County and the Southern Illinois region. In fact, in a hazard mitigation planning meeting that was held in Saline County approximately one month prior to the Leap Day Tornado Disaster, tornadoes were presented as one of the primary natural disaster risks the county faces (DeNeal, 2012, January 18). On April 28, 2002, an EF-2 tornado impacted Saline County with minor damages nearby the town of Galatia (Paducah WFO, 2010). Historically, the March 18, 1925, Tri-State Tornado's path through Missouri, Southern Illinois, and Indiana passed in the near vicinity of Saline County. That tornado killed 695 persons making it the deadliest tornado disaster in United States history (Paducah WFO, 2010a). In this 1925 disaster, the Southern Illinois small towns of Gorham and Parrish were completely destroyed with most of their residents killed and 234 lives were lost in Murphysboro.

A weakness that existed in the management of the 2012 Illinois Leap Day Tornado Disaster was the inability of the county-level emergency management office to meet response generated demands. Due to the fact the office operated in a low resource environment, it was lacking certain operational elements that would have facilitated a more efficient response, such as a dedicated emergency operations center. Given that after the disaster, the Saline County Emergency Management Agency (SCEMA) still does not have a dedicated EOC space, a major concern is how will the agency better deal with response generated demands during the *next* major natural disaster?

The next major natural disaster that can impact Saline County is a matter of significant concern. It should be noted that Saline County is located in an area of Southern Illinois that is at risk for earthquakes occurring in the active New Madrid Seismic Zone (NMSZ). The NMSZ was the location of one of the most powerful earthquakes (magnitude 7.5 to 8.0) to occur in the United States during the winter of 1811-1812. While at that time the area was sparsely populated, if such an Earthquake were to occur today it is estimated that a large portion of the Midwestern United States would be devastated and the resulting damages would be in the \$60 to \$80 billion range (IEMA, n.d.). The United States Geological Survey (USGS) has estimated that for the next 50 year time period the probability of a repeat of the 1811–1812 earthquakes is seven to ten percent (USGS, 2007). It can be suggested that the 2012 Illinois Leap Day Tornado Disaster may have been a small dress rehearsal for a potential future natural disaster that may be regionally catastrophic. Such an earthquake disaster would clearly require a long-term EOC activation for many locales in Southern Illinois. For Saline County, that would be problematic since a dedicated EOC space is non-existent.

In these conclusions, it should be noted that as Illinois is a diverse state and not all counties find themselves in the same situation as Saline County. In fact, many counties *do* have their own designated EOC. These counties tend to be in the more urbanized areas of the state. The weakness in the disaster management system of being unable to meet response generated demands does not exist equally in all jurisdictions of Illinois. This issue may be considered in terms of urban/rural divides and regional economic differences.

There is a direct relationship between the financial and material support provided to emergency management offices and their ability to meet response generated demands. While it is beyond the scope of this study to provide specific insights as to how budget and policy decisions were made during the past decades in Saline County, it can be confidently suggested that SCEMA operates in a limited resource environment. It can also be suggested that for the near-term financial circumstances for SCEMA will not be improving. Given the distressed state of the economy for both Illinois and Saline County, it is unlikely that a windfall of new funds will be available to county level emergency management anytime soon. In the aftermath of the 2012 Illinois Leap Day Tornado Disaster, SCEMA will need to continue to muddle through future

disaster responses as best as possible with the realization that its work will be more complicated than it needs to be.

Options for improving the situation are to continue to enhance cooperative relationships with state-based mutual response partners. Also, county emergency management will need to increasingly rely upon community-based generosity and the services of volunteer and/or faith-based organizations. Alternatively, external funds can be sought to augment emergency operations prior to the next disaster. However, given the circumstances of an effective staff of one person (supported by volunteers), the time and expertise needed to pursue duties of funds development, and the incumbent contract and grant administration work that pursuit of external funding would bring, such endeavors may be more work than the office is capable of handling.

In closing, two suggestions for wider questions that need to be explored are provided:

1. For rural Midwestern communities, how does the inability to meet response generated demands hinder the capability for disaster response?
2. What strategies can limited resource rural emergency management offices plan to use when they need to rapidly ramp-up their abilities to meet response generated demands?

While this study has focused upon one county in southern Illinois and its experiences during a tornado disaster response, the author is hesitant to draw wider conclusions concerning the rural Midwestern United States. However, it can be suggested that the state of affairs for emergency management offices in rural America is a topic deserving more study. As rural America has suffered through the recent economic downturn, the ability of local governments to provide public services has become more difficult. Demographic trends have also been impacting the ability of many small towns to meet their own needs. For many small towns and rural county-level emergency management offices that operate in a low resource environment, it is possible for problems to remain relatively invisible until the disaster strikes and response services are needed. When the tornado strikes a small town, the weaknesses will become rapidly evident as an enormous amount of time and effort will be needed to meet basic response generated demands.

It is necessary to meet minimum response generated demands to build a foundation for activities to meet agent generated demands. It can be speculated that a gap exists where many rural communities have a minimal foundation established to meet response generated demands during times of emergency. In some cases, generosity from the community and outside assistance may fill the gaps. In other cases, the gaps will not be filled and public safety will be put at risk. A proposed future study would be to look at other natural disasters in the rural Midwest to

determine the extent to which the inability to meet response generated demands hinders the effectiveness of disaster response.

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## END NOTES

1. The EF or Enhanced Fujita Scale is a scale that has been used since 2007 to rate tornadoes by their wind speed and damage potential. The operational EF scale is as follows: EF-0 rating = 3 second gust wind speeds of 65-85 miles per hour; EF-1 rating = 3 second gust wind speeds of 86-110 miles per hour; EF-2 rating = 3 second gust wind speeds of 111-135 miles per hour; EF-3 rating = 3 second gust wind speeds of 135-165 miles per hour; EF-4 rating = 3 second gust wind speeds of 166-200 miles per hour; EF-5 rating = 3 second gust wind speeds of over 200 miles per hour. (Source: National Weather Service Storm Prediction Center, Available:

<http://www.spc.noaa.gov/efscale/ef-scale.html>

2. Depending on the location of the observer, in Illinois term ‘downstate’ can be used in a stereotypical manner as either derogatory or complimentary. Persons whose allegiances lie within the ‘Chicagoland’ area may consider the term ‘downstate’ to be derogatory as the state’s northeastern citizens would see the rest of the state as parochial and narrow-minded. Persons whose allegiances lie within northwestern, western, central, eastern, and southern Illinois may consider the term ‘downstate’ to be complementary as these persons would not consider themselves to have the negative qualities of being citified and cynical like the people in ‘Chicagoland’. These divisions are often displayed during debate over contentious state political issues where ‘Chicagoland’ Democrats face off against downstate Republicans. Downstate politicians are convinced that Chicago gets *their* highway money and *their* school funds. On the other hand ‘Chicagoland’ politicians imply without their region’s political and economic muscle of the state ‘downstaters’ would lose many benefits they now enjoy, such as an international trading center for the state’s agricultural products. See the works cited reference of Thompson (2005) for a more detailed discussion of the regional distinction.

3. Regarding the “Little Egypt” nickname for Southern Illinois, some has suggested it was meant as a Biblical reference. Traveling down to Egypt to buy grain was referred to in the Old Testament book of Genesis where during a famine Jacob sent his sons down to Egypt to buy grain (Genesis 42:1-5).

4. Clear Wave Communication describes itself on its website (*available at <http://www.clearwave.com/main.php>*) as a privately owned company which is a facilities-based telecommunications service provider that owns and manages its own network equipment. The company provides packages of telecommunications services for business and residential users, such as full-suite voice solutions, high-speed data and Internet access and Internet services to Saline County and other areas in Southern Illinois.

5. The language provided below is quoted directly from the Illinois Emergency Services Management Association’s Emergency Management Assistance Team “Procedure for requesting of providing assistance during a declared disaster”. For readers who are professional emergency

managers this language serves as a ‘model’ example of how a statewide emergency management professional organization provides services to state and local governments.

*IESMA-EMAT Procedure for requesting of providing assistance during a declared disaster*

*Source: April 2012 IESMA Newsletter*

*Available: <http://www.iesma.org/docs/IESMA%20Newsletter%20-%20April%202012.pdf>*

“When a disaster is declared to have occurred within the jurisdiction of a local governmental unit by the Governor of the State of Illinois, and resources available through local or regional units are insufficient to adequately respond to the disaster such that the local resources are being utilized to the fullest possible extent, the affected local governmental unit may request assistance from IEMA by contacting the State Incident Response Center (SIRC). All IEMA approved requests for assistance to or from Illinois Emergency Services Management Association (IESMA) shall be coordinated within SIRC. The SIRC may request assistance from the Illinois Emergency Services Management Association (IESMA). Upon receipt of a request for assistance from the SIRC, IESMA shall dispatch to the affected area any and all personnel and equipment which are available from the IESMA and the Emergency Management Assistance Team. Personnel and equipment so dispatched shall report to the State Incident Commander at the Unified Area Command Post (UACP), who shall assign the personnel and equipment to the Local Incident Commander in support of local operations. Upon completion of the disaster response operation, the dispatched personnel and equipment shall be subject to further re-assignment in support of the operation at the discretion of the State Incident Commander. The State Incident Commander may re-assign the personnel and equipment for additional missions, or provide for the timely release of the personnel and equipment of the IESMA and the Emergency Management Assistance Team (EMAT).

6. The Operation Blessing International Relief and Development Corporation is a 501(c)(3) nonprofit, humanitarian organization based out of Virginia Beach, Virginia. It describes itself as a non-denominational organization with core programs of disaster relief, medical aid, hunger relief, orphan care, water wells and community development. It has a clearly stated faith-based mission to demonstrate God’s love by alleviating need and suffering through international relief aid. [Source: *Operation Blessing International. (n.d.). Frequently asked questions website. Retrieved from [http://www.ob.org/\\_about/faq2.asp#](http://www.ob.org/_about/faq2.asp#)*] The organization is active in both domestic disaster relief and international humanitarian projects. It was founded by Christian evangelist M.G. ‘Pat’ Robertson in 1978. It is one of the ministries of the Christian Broadcast Network. Other ministries of the Christian Broadcast Network include the 700 Club & Prayer Center and Orphans Promise. [Source: *Christian Broadcast Network. (2012) Our ministries website. Retrieved from <http://www.cbn.com/partners/about/our-ministries/>*]



7. Future Farmers of America (FFA) is a national organization founded by young farmers in 1928. The mission of the organization is “to make a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education.” FFA is organized at the local chapter level, where local chapters may be chartered in any public school with an agricultural education program. [Source: *Future Farmers of America. (n.d.) Mission and motto website. Retrieved from <https://www.ffa.org/about/whoweare/Pages/MissionandMotto.aspx>*] The organization has an active presence in many rural Midwest farming communities. The National FFA organization considers assisting in recovery from weather disasters as a part of its outreach mission.

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## APPENDIX

### List of Acronyms Used in the Report

DHS-FEMA	U.S. Department of Homeland Security-Federal Emergency Management Agency
DMA 2000	Disaster Mitigation Act of 2000
EF	Enhanced Fujita (scale)
EMAT	Emergency Management Assistance Team
EMPG	Emergency Management Performance Grant
EOC	Emergency Operations Center
FFA	Future Farmers of America
ICS	Incident Command System
IEMA	Illinois Emergency Management Agency
IESMA	Illinois Emergency Services Management Association
NIMS	National Incident Management System
NMSZ	New Madrid Seismic Zone
NRF	National Response Framework
OBI	Operation Blessing International
SCEMA	Saline County (Illinois) Emergency Management Agency
SIRC	State Incident Response Center
WIU	Western Illinois University
UACP	Unified Area Command Post
WFO	Weather Forecast Office
USGS	United State Geological Survey

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## **End of Report**

# **Disaster Management with Limited Local Resources: The 2012 Illinois Leap Day EF-4 Tornado**

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