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**NAVAL
POSTGRADUATE
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MONTEREY, CALIFORNIA

THESIS

**STRATEGY FOR UPGRADING PREPAREDNESS IN
SMALL AND RURAL COMMUNITIES TO MEET
NATIONAL PREPAREDNESS STANDARDS**

by

Mark G. Stigler

December 2010

Thesis Co-Advisors:

Lauren Fernandez
Sam Clovis

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**STRATEGY FOR UPGRADING PREPAREDNESS IN SMALL AND RURAL
COMMUNITIES TO MEET NATIONAL PREPAREDNESS STANDARDS**

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ABSTRACT

In order for the smallest units of government—towns, villages, small cities, and rural areas—in the least populated areas of the country to successfully meet the national preparedness, response, recovery, and interoperability goals of the National Preparedness Guidelines, they must adhere to the compliance metrics of the National Incident Management System. This ensures personnel and resource accountability as well as successful multiagency coordination during times of disaster.

Efforts by small towns and rural areas to meet NIMS compliance standards have been problematic. Failure of some units of government to meet these requirements has affected their ability to effectively respond to and recover from major disasters, as evidenced when coordinating with resources outside their immediate area or NIMS-compliant agencies. NIMS is built around the concept that all units of government and all disciplines from the federal to the local level must not only understand their role during incident response but also have the ability to seamlessly interoperate with each other and account for personnel and resources to successfully manage an incident. This research examines the reasons for the inability of some small towns and rural areas to meet these preparedness standards. The research findings drive the proposed solutions.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAR	After-Action Report
ACEMD	Aiken County Emergency Management Department
ACEMS	Aiken County EMS
COML	Communications Unit Leader
CP	Incident Command Post
EAS	Emergency Alerting System
EMAC	Emergency Management Assistance Compact
EMR-ISAC	Emergency Management and Response Information Sharing and Analysis Center
EMS	Emergency Medical Service
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
FLSA	Federal Fair Labor Standards Act
GIS	Geographic Information System
GVWFD	Graniteville-Vaucluse-Warrenville Volunteer Fire Department's
HAZMAT	Hazardous Materials Team
IAP	Incident Action Plan
IC	Incident Command
ICS	Incident Command System
LTIMT	Local Tribal Incident Management Team
MABUS	Mutual Aid Box Alarm System
NAPA	National Academy of Public Administration
NEMA	National Emergency Managers Association

NICC	National Infrastructure Coordinating Center
NIMS	National Incident Management System
NRC	National Response Center
PIO	Public Information Officer
PKEMRA	2006 Post-Katrina Emergency Management Reform Act
PNSR	Project on National Security Reform
PPE	Personal Protective Equipment
RDPC	Rural Domestic Preparedness Consortium
RPG	Regional Preparedness Groups
RUL	Resource Unit Leader
UCP	Unified Command Post
USCA	University of South Carolina Aiken
WCNWG	Waukesha County NIMS Working Group

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I. INTRODUCTION - DEFINING THE PROBLEM

A. BACKGROUND

Depending on the definition of “rural,” it has been estimated that from 17 to 49 percent of the population of the United States live in rural areas of the country. Rural areas may cover as much as 80 percent of the landmass (Cromartie & Bucholtz, 2008, pp. 29–30). The demographic of our population that live in small towns and rural communities is estimated at 50 million people (Hamilton, Hamilton, Duncan, & Colocousis, 2008, p. 6). The challenges these rural inhabitants face in the public safety and homeland security arenas are many and come from every corner. They receive their law enforcement services from relatively small sheriff’s departments and the occasional small-town police department with a few part-time and full-time officers. The fire and emergency medical services (EMS) are generally staffed by volunteers or paid-on-call personnel who have other full-time jobs that provide their livelihood.

In rural areas, emergency management is usually the purview of one emergency manager for an entire county, with little or no staff support. The local township or village hall may have just one full-time clerk who runs the day-to-day operations of the municipality, including finances, community relations, and logistics. Full-time county road crews that run plow trucks, road graders, and salters are sparse and usually have little additional staff to call in during times of emergency. Communication modalities, including the Internet and cell-phone coverage in rural areas and in small towns, are not as widespread as urban areas. Public power supply infrastructure is more brittle than in urban areas, and repair crews are stretched thin. All of these factors lead rural residents to rely more on the goodwill of their neighbors than the government for help during emergencies. They understand the mutual benefit that comes with building relationships based on a common need.

The economics of small-town and rural America are more fragile than their urban counterparts. “Rural areas often lack economic diversity; they frequently rely on a limited number of industries, which can limit job advancement and make rural jobs more

vulnerable to market forces and industrial restructuring” (Jensen, 2006, p. 3). The economic downturn of the last several years has led to greater unemployment in these areas as factories close with little hope of other employment. As the number of jobs in rural areas fell, “the nonmetro unemployment rate rose to 9.2 percent in the second quarter of 2009, up from 5.2 percent a year earlier. This was the highest second-quarter nonmetro unemployment rate since 1983” (United States Department of Agriculture [USDA], 2009, p. 3). Some rural counties only have one or two major employers, and when they close or lay off workers, there is no other place for residents to work, unlike their urban cousins, who can search elsewhere in the same city. Rural farmers, feed mills and agri-businesses find it more difficult to hire help because prices will not support additional salaries. Many rural residents work multiple part-time jobs just to keep their families going and pay their mortgages. In some areas of the country, rural education systems can be substandard, especially in poor counties where few rural adults are likely to have a college degree. Both of these factors limit the ability of rural workers to secure good jobs or to attract and create quality jobs in rural places (Jensen, 2006, p. 3).

“Poverty rates are higher and more enduring in rural America due to a number of factors: limited economic diversity, isolation and sparse population, and lower educational levels among working adults” (Jensen, 2006, p. 4). Municipal tax bases that support rural governments have shrunk as bankruptcies and unemployment have exploded. That tax money is needed to provide the spartan level of public services needed in rural areas. Many communities have no extra or discretionary funds to spend on unfunded mandates from the federal government or to use to plan, prepare, or train for a disaster that may never come. All of these factors have a negative cumulative effect on emergency management and public safety—key parts of the homeland security project.

Another problem facing small-town and rural America is that the population migration rates have fallen off steeply over the last decade. Rural areas are not gaining in population and barely sustaining what they have due to a number of factors, including an aging population demographic and an emigration of young adults looking for work. Metro areas have grown at twice the rate of rural areas since 2000 (USDA, 2009, p. 5). This “likely occurred among all age groups because it corresponds with the mortgage

foreclosure crisis that began in late 2006 and the onset of the current economic recession in late 2007. Net migration rates dropped most sharply in counties with the highest foreclosure rates” (USDA, 2009, p. 5).

All of these factors have led rural Americans to rely on their neighbors and friends, not the federal government, for mutual aid. “Self-reliance, reinforced by mutual assistance, is a fundamental American virtue” (Jenkins, 2006, p. 158). Because of their economic tentativeness, physical dispersal, and emotional isolation, rural Americans band together in times of need, share resources, and work as one. However, even with this admirable trait, local capacity to handle a large-scale or widespread disaster, attack, or cataclysmic event is very limited, and their capacity to respond is easily overwhelmed.

B. DEFINING RURAL AREAS

Work completed by William Eller in his NPS—CHDS thesis research, “Leveraging Rural America in the Fight against Terrorism in America through the Use of Conservation Districts” (2010), indicates that there are various definitions for what is considered a small town or rural area. His research shows that the federal government has different definitions for what is considered rural, depending on the agency and on the parameters of the grant programs. The Homeland Security Act of 2002 defines “local government,” as including “rural community, unincorporated town or village, or other public entity” (Homeland Security Act of 2002, 6 U.S.C. § 101, et seq.). Government websites have been established to determine whether a user is “rural” for purposes of federal programs (Rural Assistance Center, 2008). According to the U.S. Census Bureau, “rural” refers to people and places in non-metropolitan counties, while “urban” refers to metropolitan counties. In general terms, metro areas consist of a county with one or more urbanized areas with a total population of 50,000 or more. Metro areas consist of both cities and suburbs.

All definitions are subject to considerable variation for socioeconomic characteristics (Eller, 2010, p. 19). The typical method in defining rural is to establish “urban” first, and whatever is left constitutes “rural.” In population statistics, for instance,

the “rural population is what is left over once the cities are counted” (Drabenstott, 2002, p. 2). Figure 1 depicts the size and scope of the Census Bureau’s definition of “rural,” using nonmetropolitan and metropolitan counties.

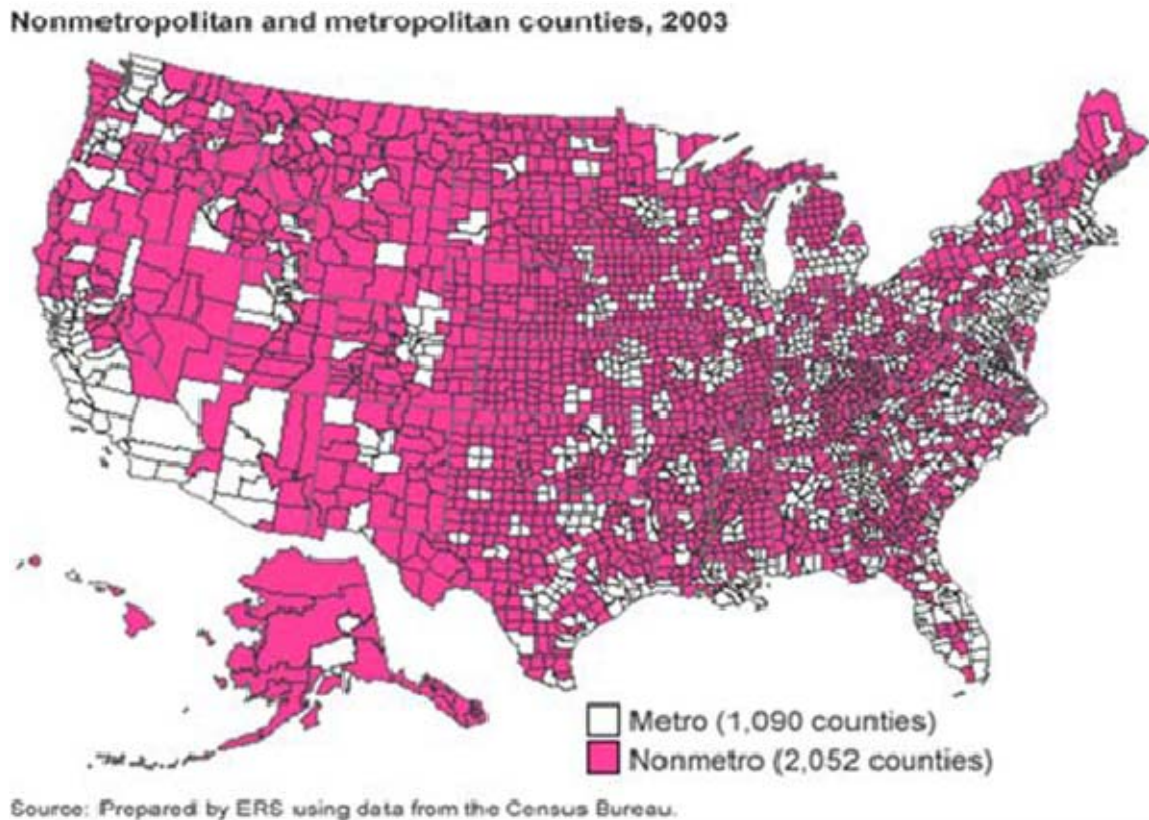


Figure 1. Non-metropolitan and Metropolitan Counties Meeting the Census Bureau Definition of “Rural” (From U.S. Department of Agriculture, Economic Research Service, 2004).

For the purpose of this thesis, small-town and rural areas are defined as unincorporated areas of a county and incorporated townships and villages with populations under 10,000 for townships and fewer than 50,000 in total for the entire county. Rural governments are generally served by a small paid staff and many public safety volunteers. Residents are geographically isolated or dispersed outside of the towns and villages and are not in close proximity or adjacent to large metropolitan areas. Small towns and rural municipalities have a tax base that most closely equals the geography of the services provided, requiring little state or federal funding.

C. AREA OF RESEARCH FOCUS

The target area for this research is the state of Wisconsin, which is about 85 to 90 percent rural. (See Figure 2). The total population in the state is 5,654,774, spread across 72 counties, covering 54,310 square miles. Rural counties within the state may have as few as 12 persons per square mile as compared to the state average of 98 persons per square mile. There are more than 2,330 emergency response agencies in the state of Wisconsin from the local, tribal, and state levels (Wisconsin Office of Justice Assistance, [WOJA] 2008, p.3). The state of Wisconsin is governed under the home rule concept that was added to the state constitution in 1924 and included the wording granting cities the right to govern their own affairs: “Cities and Villages organized pursuant to state law may determine their local affairs and government, subject only to this constitution and to such enactments for the legislature of statewide concern as with the uniformity shall affect every city or every village” (Milsap, 2008, p. 4). This law has resulted in the establishment of over 550 law enforcement agencies and over 850 fire departments in Wisconsin.

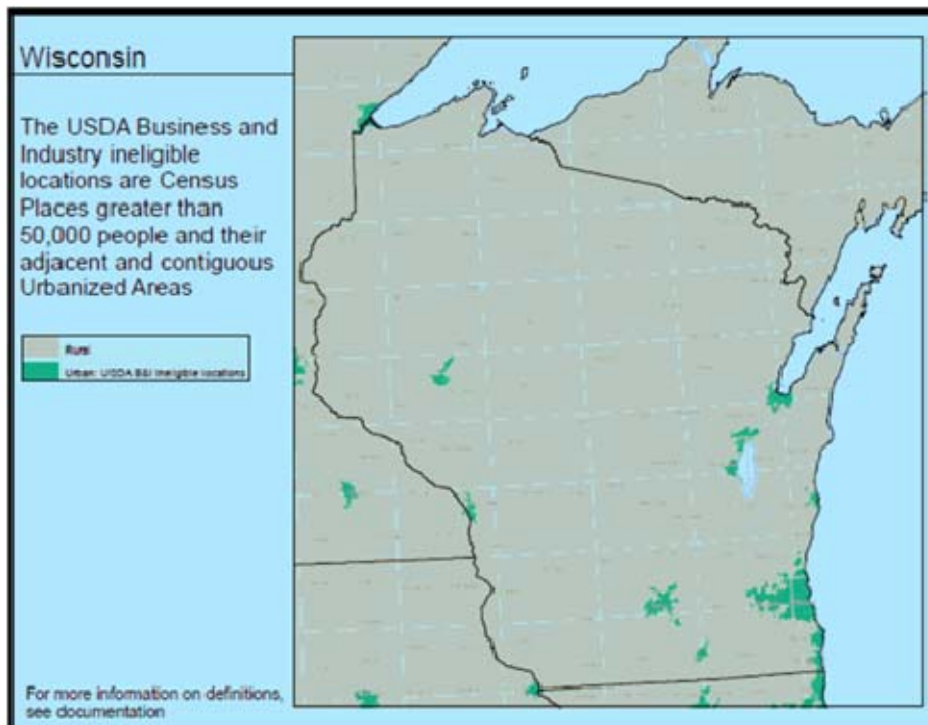


Figure 2. U.S. Census Bureau, Rural Population in Wisconsin.

Although Wisconsin has recognized the need for regional collaboration, it has focused on the urban areas, not the rural areas. The 2008 Wisconsin Preparedness Report states: “A key component of Wisconsin’s approach is the development of community-based public-private partnerships in key urban areas of the state” (WOJA, 2008, p. 4).

It is recognized that there is a lack of consistent NIMS application across the state, especially in the law enforcement realm: “Trainers, police chiefs, and emergency managers attribute a wide range of factors to the variance in NIMS implementation: lack of funding, inadequate staffing, competing priorities, lack of commitment by local government and law enforcement leadership, and the inability to turn NIMS theory into practice” (Bauer, 2009, p. 2). A 2006 report by the Wisconsin Legislative Audit Bureau details law enforcement problems around the state with the use of a major component of NIMS, the Incident Command System. In a survey conducted in November 2006 of the 72 county emergency management units regarding their activities, only half the counties even responded; of those respondents, one-half of the counties had “unanticipated problems in responding to recent emergencies, including that municipalities were not sufficiently prepared for an emergency” (Bauer, 2009, p. 7; Wisconsin Legislative Audit Bureau [WLAB], 2006, p. 3).

D. PROBLEM STATEMENT

1. Background on Local Preparedness and National Preparedness Standards

“The national preparedness system is, both literally and figuratively, only as strong as its weakest link.”

National Academy of Public Administration, 2009, p. 64

The federal government has chosen to measure national preparedness in the homeland security realm by insisting that government entities at the federal, state, tribal, and local levels meet the compliance requirements found in the National Incident Management System (NIMS) (see Figure 1). This quantifiable method of calculation requires that all jurisdictions and agencies must meet 28 objectives (see Figure 3) and certify once a year that they have done so through a system called the NIMS Compliance

Assistance Support Tool (NIMCAST). This research examines and compares 11 NIMS objectives that are related to response. NIMCAST is a self-assessment instrument for state, tribal, and local governments to evaluate and report their jurisdiction's implementation of NIMS to the federal government. This thesis analyzed those objectives related to response.

NIMS Objectives

1. Adopt NIMS by all departments/agencies;
2. Planning process to implement NIMS objectives across government;
3. Single point of contact for NIMS;
4. Grants must support NIMS objectives;
5. Grant audits must include NIMS objectives;
6. Assist tribes with NIMS adoption;
7. Revise EOPs, SOPs, to include NIMS;
8. Develop mutual aid agreements;
9. Training to deliver NIMS;
10. Implement IS-700;
11. Implement IS-800;
12. Implement ICS-100;
13. Implement ICS-200;
14. Implement ICS-300;
15. Implement ICS-400;
16. Incorporate NIMS into all training and exercises;
17. All-hazards, multi-discipline exercise program;
18. Incorporate corrective action plans;
19. Apply plain language communications;
20. Systems and tools: common operating picture;
21. Inventory assets by kind and type;
22. Interoperable communications, equipment, and systems;
23. Mutual aid agreements (EMAC);

24. Credentialing personnel;
25. All incidents must use ICS, IAP, UC;
26. Multi-agency coordination: use MACS;
27. Public information: use PIO, JIC, JIS;
28. Ensure public information is accurate and can be disseminated during events.

Beginning in fiscal year (FY) 2005, Homeland Security Presidential Directive (HSPD)-5 requires federal departments and agencies to make adoption of NIMS by state and local organizations a condition for federal preparedness assistance through grants, contracts, or other activities. The National Integration Center relies on its implementation guidelines (objectives) contained in NIMSCAST to determine whether states have met the HSPD-5 adoption requirement (USDHS, FEMA, n.d.4).

A problem facing the nation is that the smallest units of government—towns, villages, and rural counties—in the least populated areas of the country are unable or unwilling to achieve the levels of preparedness expected by the National Preparedness Guidelines and the compliance metrics of the National Incident Management System (White House, 2003, p. 3). A blunt conclusion stated succinctly in the 2008 study conducted by the National Emergency Managers Association (NEMA) on barriers to NIMS compliance speaks to the heart of the issue: “Poorer, rural states can’t meet implementation, training, compliance requirements” (NEMA, 2008). Many rural areas of the country appear not to have the ability or feel the need to be part of the national preparedness community. The National Incident Management System sets preparedness standards for the federal government, the states, tribes, and all local jurisdictions in aggregate and as individual entities, regardless of their size or location, urban or rural. Efforts to meet preparedness requirements such as the use of standardized methodologies, integration, coordination, planning, and interoperation with other communities are problematic for the smallest units of government due to many factors, including the costs, time and personnel involved, and a lack of operational and administrative capacity.

The lack of resources exacerbates the problem of meeting the 28 annual NIMS compliance requirements. A great deal of time and effort is needed to become NIMS compliant and to meet the national preparedness goal. It is speculated that many small

jurisdictions and communities do not attempt these activities. This results in a preparedness disparity between small and large jurisdictions. The disparity between large and rural communities creates major problems when NIMS-compliant jurisdictions attempt to interoperate with those who are not during events, incidents, or disasters. Agencies are working from different standard operating procedures, causing ineffective, inefficient, and sometimes costly command and control problems. Examples of this issue can be found during the response to the largest commercial fire in Wisconsin history on July 5, 2009, in Cudahy, just south of Milwaukee. Over 400 firefighters from 64 different fire departments responded over the four days of active fire fighting, evacuation, and security. This was an example of small jurisdictions and larger jurisdictions supporting one another during a major incident. Many on-scene command and control functions worked well, including Unified Command, due to a prior commitment to the institutionalization of ICS by the fire services. However some of the deeper components of the ICS were problematic as they are rarely used. The ordering of some fire resources did not follow standardized NIMS typing requirements and on one occasion, the wrong piece of fire apparatus was dispatched to the scene from many miles away in a neighboring municipality. It had to be sent back and the correct piece dispatched because the requestor and the receiver were not speaking the same language. The impact was that a critical piece of equipment that was needed on scene did not respond where and when it was needed.

This topic merits further research because there is a lack of common understanding of the scope and scale of the problem and the lack of potential solutions in homeland security literature. We have only an anecdotal grasp of the reasons why smaller agencies and rural jurisdictions in less populated areas do not feel that they have the ability or need to be part of the national preparedness community. This thesis researches the problems and offers possible solutions. These solutions can be used as a national model to increase overall preparedness across jurisdictional boundaries, no matter the size, through a wider distribution of customized response and recovery capability regardless of the population base. Achieving the national preparedness goal by following

the national preparedness guidelines to meet NIMS requirements will lead to improved preparedness and operations with and among all jurisdictions.

E. RESEARCH QUESTIONS

Research Question #1: How do asymmetries in NIMS adoption impact inter-local cooperation in times of crisis?

Research Question #2: For those small jurisdictions that are not meeting the standards and objectives as defined by NIMS, what are the reasons?

Research Question #3: If there are impacts to inter-local cooperation due to asymmetric NIMS adoption, what are the systemic and long-term solutions?

F. BENEFITS/SIGNIFICANCE OF THE RESEARCH

This research explores the reasons for the problem, leading to the development of potential solutions to fill the gap that has been identified between rural and urban preparedness levels. The goal is for rural inclusion in the greater homeland security project. This research develops the knowledge needed to set a clear path forward to develop new rural/small-town guidance on aligning strategies with the national preparedness goal.

This thesis serves to fill a void in the research and literature on the difficulties experienced by the smallest units of government in this demographic and the reasons why they are struggling to meet the national preparedness goal. As will be discussed in the literature review, much has been written about the federal NIMS requirements to reach the NPG, but there has been little research into the fundamental difficulties encountered by small towns and rural communities to reach that goal (Clovis, 2006b). Furthermore, there does not appear to be a body of literature comparing and contrasting, or even recognizing, the different preparedness levels between large, urbanized areas and their small and rural counterparts. This hole in the research must be filled if we are to understand the problem and then build true preparedness across the entire government spectrum, no matter the size of the jurisdiction.

The research is beneficial to states around the country experiencing the same disparity in distribution of preparedness between their largest urban areas and smallest rural areas, and it opens up the topic for future academic examination. The immediate consumers of this research will be the State of Wisconsin's Governor's Homeland Security Council, the Federal Emergency Management Agency, and the National Integration Center (NIC) Incident Management Systems Integration (IMSI) Division.

G. LITERATURE REVIEW

The literature addressing the struggle by the smallest units of government—unincorporated towns, villages, and rural counties in less populated areas of the country, in meeting national preparedness standards and objectives as defined by the National Incident Management System (NIMS) is spotty and anecdotal. The NIMS standards themselves have evolved from the National Strategy for Homeland Security in 2002 and 2007, as well as Homeland Security Presidential Directives (HSPD) 5 and 8; however, research on the compliance efforts and failures of these small units of government is lacking.

The literature supporting this research is diverse and can be broken down into a number of sub-sections:

- Parallel and historical efforts (national, regional, and state levels);
- Federal publications detailing the requirements;
- State and local efforts at meeting those requirements;
- Academia and subject-matter expert analysis on compliance; and
- After-action reports (AAR) detailing the consequences of compliance failures.

1. Parallel and Historical Efforts

Systems to organize national preparedness are not new. A historical perspective on the development of these systems is important because we can learn from past successes and failures. Similar systems and attendant literature have been examined, including the fire service's Mutual Aid Box Alarm System (MABAS) of Wisconsin and

Illinois. The system's main tenets call for standardized credentialing of personnel and developing standardized mutual-aid response protocols much like NIMS (MABAS, 2008). Law enforcement's Suburban Mutual Aid Response Taskforce (S.M.A.R.T.) of southeast Wisconsin is also another example that was explored because it parallels NIMS ideals as well. Both systems provide a track record of proven usefulness of concepts parallel to the NIMS ideals.

A historical perspective can be found in the comparative literature of past attempts at national-level preparedness as in President Franklin D. Roosevelt's executive order in May 1941, when he established the Office of Civilian Defense, the precursor of FEMA, after reestablishing the Council of National Defense the year before. The National Security Act of 1947 was signed by President Truman. It realigned and reorganized the U.S. Armed Forces, foreign policy, and intelligence community in order to better coordinate civil-military affairs. The act merged the Department of War and the Department of the Navy into the National Military Establishment, supervised by the Secretary of Defense. It also created a separate Department of the Air Force from the existing Army Air Forces, created the Central Intelligence Agency and the National Security Agency, and mandated a major reorganization of the foreign-policy and military establishments of the U.S. government (National Security Act of 1947, 50 U.S.C. § 401 et seq.). This major realignment of the government was as dramatic then as was the establishment of the Department of Homeland Security in 2002.

Each of these examples agrees on the desired end state—better national preparedness—but each takes a different track to get there, with varied success. The MABAS has grown from a concept in the state of Illinois and developed into a regional effort including several neighboring states. Wisconsin's fire service saw firsthand the applicability and practicality of the system. Through the efforts of Oak Creek Fire Chief Brian Satula and the Wisconsin Fire Chief's Association, the MABAS system was adopted for statewide implementation. This state- and regional-driven mutual-aid pact has direct relevance to NIMS and is an example of what can be achieved without federal requirements.

Literature establishing a historical perspective of past efforts to nationalize preparedness efforts from the top levels of the federal government down to the local levels was examined, including materials regarding the Council for the National Defense, which was first established in 1916 with the passage of a bill in Congress to facilitate national efforts for the First World War. The council was a presidential advisory board that included responsibilities for “coordinating resources and industries for national defense” and “stimulating civilian morale” (USHDS, Homeland Security National Preparedness Taskforce, 2006). In May 1940, as World War II exploded across Europe, President Roosevelt reestablished the Council of National Defense (Executive Order 6443A, 1933). From that board, the Office of Civilian Defense (OCD) was established to meet civil population needs in war time, including the protection of the civilian population, the maintenance of morale, and the promotion of volunteer involvement in defense. The OCD was also charged with ensuring that federal agencies responded to community needs resulting from the war. (Office of Civilian Defense website, n.d.). The Council of National Defense, the OCD and the National Security Act established a historical track that the Department of Homeland Security and NIMS would follow 60 years later when war again forced the nation to prepare to defend itself, this time from terrorists.

2. Federal Publications

These federal documents are mainly official orders and guidance from the federal government since the beginning of NIMS in 2003. The documents detail the preparedness requirements but fail to address a variety of implementation issues, including the inflexibility of the dictated singular model and design approach of the Incident Command System. Homeland Security Presidential Directive (HSPD)-5, Management of Domestic Incidents, directed the development and administration of the National Incident Management System (NIMS) (USDHS, FEMA, 2008b). Originally issued on March 1, 2004, by the Department of Homeland Security (DHS), these documents set standards for the federal government, the states, tribes, and all local jurisdictions in aggregate and as individual entities, no matter their size or location. As defined in the Homeland Security

Act of 2002, the term “state” means any state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any possession of the United States (6 U.S.C. §101 (14)). Citizens, private sector, and non-governmental organizations are also included as part of a prepared nation in the guidelines and in NIMS.

Homeland Security Presidential Directive 8: National Preparedness, March 31, 2005, defines national preparedness as “the existence of plans, procedures, policies, training, and equipment necessary at the Federal, State, and local level to maximize the ability to prevent, respond to, and recover from major events. The term ‘readiness,’ is used interchangeably with preparedness in this document.” HSPD-8 refers to preparedness for major events as “all-hazards preparedness.” It defines major events as “domestic terrorist attacks, major disasters, and other emergencies.” Two years later, in September of 2007, the statement was further refined in the National Preparedness Guidelines as a preparedness vision for the nation: “A NATION PREPARED with coordinated capabilities to prevent, protect against, respond to, and recover from all hazards in a way that balances risk with resources and need.”

All of the HSPDs and NIMS guidance documents are designed to work hand in hand with the National Response Framework (NRF). NIMS provides the templates for the management of incidents, while the NRF provides the structure and mechanisms for national-level policy for incident management (USDHS, FEMA, 2008b). NIMSCAST is the standard tool now in use by agencies and jurisdictions around the country to measure and track their level of NIMS compliance. The Federal Emergency Management Agency’s National Integration Center—Incident Management Systems Division developed NIMSCAST to help state, territorial, tribal, and local jurisdictions maintain their national baseline compliance, as established in FYs 2005–2006 (USDHA, FEMA, 2009a). The web-based document consists of more than 300 pages of questions that must be answered in the affirmative to meet compliance standards. It is very thorough but does not designate what level of government is to complete the document or identify a passing score, resulting in no accountability to the standards.

An example of a regional approach to collaboration at the local level can be found in the Fiscal Year (FY) 2003 Omnibus Appropriations Act, which provided state and local governments with the funding required for participation in the national effort to combat terrorism by creating the Urban Area Security Initiative (UASI) program (Omnibus Appropriations Act of 2003). This financial assistance is provided to major urban centers to address the unique equipment, training, planning, and exercise needs of large, high-threat urban areas and to assist them in building an enhanced and sustainable capacity to prevent, respond to, and recover from threats or acts of terrorism (United States Office of Justice Programs [USOJP], 2003). This funding was and is meant to address the needs of large urban areas, not just one large city but the metropolitan area surrounding it collectively; that can include up to five adjacent counties. This system addresses the needs of major urban areas but is deficient in bringing small or rural jurisdictions into the preparedness picture. Since little funding is provided for small or rural areas outside the UASI, the apparent assumption is that urban areas need greater protection and a greater level of preparedness than rural areas, due to a greater threat. But this threat matrix only takes into account the risk faced from attack, not all hazards.

3. State and Local Efforts

The Department of Homeland Security, through the Federal Emergency Management Association (FEMA), has recognized that there is a problem in obtaining NIMS compliance and has asked the states to identify compliance barriers. The National Emergency Management Association was requested by FEMA to compile remarks from its members across the nation regarding barriers to NIMS compliance. Many different problems were cataloged and discussed. This offered a rare glimpse into the true state of national preparedness. This document, titled *State Responses—Barriers to NIMS Compliance* (NEMA, 2008), was very useful as it gave an unvarnished look at the state of NIMS compliance from the viewpoint of the states. The respondents collectively stated that compliance is not a static state but is constantly shifting and changing. They noted that “cookie-cutter” requirements do not work for different types and sizes of jurisdictions. Another identified barrier was the inability of poorer,

rural states to meet implementation, training, and compliance requirements. NEMA suggested that the regional approach to compliance should be incorporated to bring greater preparedness across jurisdictional levels, regardless of their size or location.

Looking more specifically at a smaller section of the country, the author's home state of Wisconsin was examined. In 2005, the state of Wisconsin Department of Military Affairs issued "A Review of Wisconsin's Emergency Preparedness Plans," which identified strengths and weaknesses in the state's emergency preparedness and response capabilities (WOJA, 2008, p. 4). The report identified the need for stronger mutual aid on a regional and statewide basis and discussed the barriers that Wisconsin has experienced in implementing NIMS and some of the solutions in progress to address them. It identified the main challenge as confusion regarding the requirements for NIMS (WOJA, 2008, p. 5). Even the state of Wisconsin recognized that, given the amount of time necessary to fully implement NIMS requirements, additional funding and additional personnel are needed to monitor and administer current and future NIMS requirements (WOJA, 2008, p.9). The state recognizes this need; the smaller units of government will certainly have the same needs as well. This document was more political and tempered in its assessments than necessary and does not attempt to give an accurate picture of local preparedness.

In 2005, in response to the mandates required in the annual objectives in NIMS, and to further the development and implementation of NIMS compliant strategies and preparedness policies and protocols, the Waukesha County NIMS Working Group (WCNWG) in southeastern Wisconsin was formed. This voluntary effort to build a network of emergency management, public health, public works, transportation, communications, law enforcement, and fire service leaders was needed to ensure a consistent, NIMS-compliant approach to preparedness strategies regardless of the hazard, threat, or discipline. The goal is to create a collaborative network that will move preparedness throughout the county from the concept stage to direct action.

The WCNWG consists of 58 different agency leaders from across the county from every public sector discipline, most jurisdictions, and public safety or public works agencies. They all share the same vision of a collaborative network not only to meet

NIMS standards and follow the tenets of NIMS, but to gain a greater capability to respond to and recover from terrorist events or man-made or natural disasters or events. It was mutually agreed that all information gained, developed, or written would be shared with the entire group and all of their agencies. The literature on this effort consists of a county-wide common communications plan, an implementation plan, and an incident action planning process, as well as a mission statement and objectives. These documents and this system are an excellent example of a possible solution to the problems confronting small jurisdictions attempting to meet NIMS requirements.

4. Academia and Subject-Matter Expert Analysis

This subsection explores the central theme of collaboration between the federal, state, and local levels of government. Partly as fallout from the lack of preparedness and the uncoordinated emergency response to the disastrous events on September 11, 2001, the federal government reacted quickly by enacting sweeping changes to increase the nation's preparedness capabilities. Academia and subject-matter experts followed soon after with analysis of the failures before 9/11 and the problems found in upgrading preparedness after it. Dr. Sam Clovis noted in his 2006 *Homeland Security Affairs* article on federalism that these changes were the "largest reorganization efforts since the passing of the National Security Act of 1947. In a single piece of legislation, twenty-two separate organizations were brought together to form the Department of Homeland Security (DHS). Given the depth of the changes envisioned, the time allotted for professional comment and the short debate, the resulting policies were disjointed and sometimes ill conceived" (Clovis, 2006a, p.1). This literature focuses on the role of the federal government in relation to preparedness in state and substate jurisdictions and the federal homeland security public policy environment and its impact on local preparedness efforts, specifically, the need for "coercive federalism" (Clovis, 2006a, p. 10).

In his paper "Applying Contemporary IGM Models to Emergency Management," Clovis describes the relationship of the federal government to local entities. He speaks of the theory of coercive federalism and its antithesis to cooperative federalism. In cooperative federalism no level of government may coerce any other to action, and the

Congress may act in facilitation and leadership roles only (Clovis, 2006b, p. 7). Under the tenets of coercive federalism, the federal government looks to nationalize issues and gain compliance to federal standards through the use of federal grant funding with stronger and tighter conditions and more preemption of state prerogatives (Clovis, 2006b, p. 8). Competitive federalism is characterized by the decentralization of power to that level where the tax base equals the geography of services provided, leading to the most efficient use of resources in the public domain (the principle of subsidiary) as state and local governments are closest to the people (Clovis, 2006b, p. 8). Clovis presents a new compound theory of federalism that he calls “collaborative federalism.” He believes that because of the systemic problems of the current model being used by the Department of Homeland Security (DHS), the answer lies in a new “spirit of collaboration, which incorporates the positive notion of cooperation, eliminates most of the negative aspects of coercion, and takes advantage of organizational models which encourage competitive spirits while building aggregate capabilities.” (Clovis, 2006b, p. 17). This paper presents an alternative approach for ensuring NIMS compliance and understanding the models available.

In another paper, “Building Collaborative Capacity,” Susan Hocevar and Gail Thomas of the Naval Postgraduate School explore success factors in developing interagency collaboration. They assert that the establishment of a collaborative environment may require the selection of individuals or leaders who utilize the team approach to problem solving. They offer reasonable solutions to one part of a multifaceted problem (Hocevar & Thomas, 2006, p. 14).

In the study “A Critical Evaluation of the Incident Command System and NIMS” the authors contend that the Incident Command System and NIMS do not create a universally acceptable system for responders; rather this is a mechanism designed to impose order on certain dimensions of the chaotic organizational environments of disasters (Buck, Trainor, & Aguirre, 2006, p. 4). The report concludes that current efforts of the National Incident Management System (NIMS) to use ICS will probably not succeed. The reasons are varied but concentrate on a lack of understanding and applied knowledge of the systems during large-scale disasters engendering major agency

responses. If this is the case for large disasters utilizing major response assets, it can certainly be extrapolated that small agencies in rural areas will find the challenges even greater, given their limited resources and manpower.

5. After-Action Reports

The Lesson Learned Information Sharing (LLIS.gov) website is a clearinghouse of after-action reports (AAR) and lessons learned from exercises, events, incidents, and disasters across all disciplines, all hazards, and all levels of government. It is the national network of best practices for emergency-response personnel and homeland security officials (USDHS, FEMA, n.d.1). It is designed to facilitate preparedness efforts across all disciplines and communities, regardless of their size or location. This website is one of the most beneficial sources of first-hand anecdotal information on the success or failure of NIMS at all levels of government. Many different events, incidents, and disasters are documented, and each offers a first-hand description of how the responders succeeded or failed, in the real world, in meeting NIMS standards. The scope of the event and the size and location of the jurisdiction handling it provide relevant information about the struggles that smaller jurisdictions face during these incidents. All hazards and all disciplines are included in the after-action reports, which readily demonstrate the problems faced when jurisdictions do not follow NIMS tenets.

6. Literature Review Conclusion

In summary, the literature identified provides an unbalanced perspective, with the federal government providing the most relevant information and local literature the least information on the issue. More research needs to be conducted in order to better understand just how local units of government can meet NIMS requirements. Although the federal publications, orders, and other official guidance documents continue to evolve, they provide only an outflow of information. The literature on this topic in academia is very spotty and lacks direct applicability to the problems facing small and rural jurisdictions in meeting NIMS standards.

The literature also falls short in clarifying the problems and developing future solutions. The literature on this topic is not timely due to the continued evolution of the NIMS system. Much remains unknown about the extent to which the smallest units of government—towns, villages, small cities and counties in less populated areas of the country—are meeting national preparedness standards and objectives as defined by NIMS. Currently only states are required to report on NIMS compliance to the DHS, and some of them require counties to report only if they are compliant. Many local governmental entities are not mandated to report any of their efforts, successes or failures.

The usefulness and validity of these literary sources varies; however, the first-hand accounts described in the LLIS website and the National Emergency Management Association survey appear to be most meaningful and perspicacious.

H. HYPOTHESES OR TENTATIVE SOLUTIONS

In order for the smallest units of government—unincorporated towns, villages, and rural counties in the least populated areas of the country—to successfully meet national preparedness, response, recovery, and interoperability goals as expected in the National Preparedness Guidelines (NPG), they must adhere to the compliance metrics of the National Incident Management System (NIMS) (White House, 2003, p. 3). The hypothesis is that efforts by small towns and rural areas to meet compliance standards in the five components of NIMS have been problematic (USDHS, 2007b). Some units of government in the state of Wisconsin are not meeting these requirements and are therefore not able to quickly and effectively respond to and recover from major disasters or catastrophes or coordinate with outside resources or agencies.

It is critical that these units of government train and exercise to meet these requirements because they must have the ability to seamlessly integrate with other response entities when requested under mutual aid and to accept mutual aid when they have the need. The National Emergency Response structure, of which NIMS is an integral part, is built around the concept that all units of government and all disciplines, from the federal to the local level, must not only understand their role in managing an

event but have the ability to interoperate with each other to successfully manage the incident. The research examines why some small towns and rural areas are not able to meet these preparedness standards and determines whether it is because of inadequate resources, time, and funding. The research findings drive the proposed solution.

NIMS establishes preparedness standards for the federal government, the states, tribes, and all local jurisdictions (USDHS, FEMA, 2008b) as a whole and as individual entities, no matter their size or location. These standards support five major components (USDHS, FEMA, 2008b, p. 7):

1. Preparedness;
2. Communications and information management;
3. Resource management;
4. Command and management; and
5. Ongoing management and maintenance.

The NPG helps to focus policy, planning, and investments at all levels of government and the private sector (Chertoff, 2007). The guidelines are meant to strengthen collective capabilities and prepare all jurisdictions for major incidents or disasters. There are four critical elements to the National Preparedness Guidelines (USDHS, 2007b):

1. The national preparedness vision;
2. The fifteen national planning scenarios;
3. Universal task list (UTL)
4. Target capabilities list (TCL).

There is evidence that some small towns and rural areas are not meeting the standards: first hand accounts described in the LLIS website, the National Emergency Management Association survey on state responses and barriers to NIMS compliance, and the Wisconsin E-Sponder summary statistics for 2009. Literature detailing the consequences of noncompliance for small towns and rural areas is documented in after-action reports (AAR). Parallel and historical efforts (national, regional, and state levels) give perspective on the development of these types of systems and their significance and

provide an opportunity to learn from past successes and failures. Federal publications detailing the requirements, state and local efforts at meeting those requirements, academia, and subject-matter expert analysis on compliance also give evidence bolstering this claim.

The research shows that small towns and rural areas are not able or willing to meet the standards as required by NIMS. The proposed solution is a detailed, scaled, regional approach to preparedness for the less densely populated counties, cities, villages, and townships in the country. It is impractical to expect smaller municipal forms of government with small public safety agencies and budgets, some of them volunteers or part-timers, to adopt and utilize large-scale preparedness and response structures meant for hundreds or thousands of responders. Developing regional preparedness capabilities through collaboration and regional meta-leadership teams with representatives from all disciplines and most jurisdictions may have the greatest probability of positively affecting groups of entities within a region. The trickle-down preparedness effect from these teams on their home agencies and jurisdictions will bring the country closer to the desired end-state of a truly prepared nation.

II. METHOD

Case studies, interviews, and qualitative analysis were conducted for this research. These methods were chosen because of the lack of prior academic research directly applicable to this topic, the lack of quantitative data available, and the importance of identifying the causal process. These methods seek to gain an objective understanding of the problem and a sound basis for drawing conclusions and making recommendations for solutions. The state of Wisconsin was the primary geographic area for the research due to its diversity of population centers (rural, urban, small, and large) and availability of information to the researcher.

Research Question #1: How do asymmetries in NIMS adoption impact inter-local cooperation in times of crisis?

Method: Case studies.

Two cases were examined that:

- Occurred in the past six years.
- Involved both large and small jurisdictions working together in a large-scale disaster.
- Involved event impacts that crossed jurisdictional boundaries.
- Were critically analyzed through the after-action review (AAR) process, and
- Have suggested corrective actions that can be taken to resolve the issues that were identified.

A. CASE STUDIES

For each case that was studied, after-action reports and commentary were examined to provide the basis of study. The analysis identified patterns, variables, causes, and correlative factors from the failures related to the ability of the responders to use all components of NIMS related to preparedness and response. The research did not examine training records or plans for the agencies involved but instead focused on their response

only. Preparedness was judged based upon performance during the study of the incident. Focus was placed on the ability of small and rural communities to effectively interoperate with and incorporate assistance from other jurisdictions using the methods and requirements in NIMS.

A list of questions was developed to provide structure and focus to the research revolving around adoption and institutionalization of the National Incident Management System (NIMS). Each case was organized to answer the first research question. In the final chapter, a comparative analysis was conducted, looking for themes across the cases and drawing conclusions from them.

Case Study Focus Questions

- 1) Did the actions of the response organizations indicate that they preplanned, trained, and exercised for the event that occurred?
- 2) Did the response organizations have the capacity to interoperate successfully in a crisis environment?
- 3) Did the entities involved in the response to the emergency institutionalize the use of the Incident Command System?
- 4) Did all response entities and structures successfully utilize NIMS-compliant public information systems and protocols?
- 5) Did all response entities display a mutual ability to utilize the incident action planning process?

These case studies were examined by comparing 11 of the NIMS implementation objectives related to response, including the requirement to manage all incidents and planned events in accordance with ICS organizational structures, doctrine, and procedures to after-action reports from the field that the objectives were designed to facilitate. These objectives clearly require the incorporation of NIMS concepts and principles into all appropriate state, territorial, and tribal training and exercises to ensure easy adoption during actual events (USDHS, FEMA, 2009d, #16). This study compared the NIMS standards against actual facts from these events to observe how their inconsistent application affected multiagency responses. All agencies involved in these

case studies knew that, since 2004, NIMS required that ICS implementation must include the consistent application of incident action planning (IAP), common communications plans, and the implementation of unified command (UC) in multi-jurisdictional or multiagency incident management (USDHS, FEMA, 2009d, #25).

Research Question #2: For those small and rural jurisdictions that are not meeting the standards and objectives as defined by NIMS, what are the reasons?

Method: Conduct interviews and compare responses to the expectations in the NIMS objectives.

B. INTERVIEWS

The interview methodology was designed to assist in answering the second research question: “For those small and rural jurisdictions that are not meeting the standards and objectives as defined by NIMS, what are the reasons?” To answer that question confidential interviews of informed professionals in the target demographic were conducted, in order to catalog and compare their responses to the federal NIMS requirements.

Interviews were conducted of selected county-level emergency managers (EM) from Wisconsin counties that have mainly small or rural jurisdictions. These EM’s were selected because of their experience with small jurisdictions that may not be utilizing or following the tenets of NIMS. They were also selected based upon the demographic and geographic locations of their counties in Wisconsin. An attempt was made to interview disparately located counties so as not gather too much information from one area of the state. Another criteria for selection was each county’s involvement in other preparedness activities, such as Wisconsin’s virtual Emergency Operations Center (EOC) called *E-sponder* (see Appendix B). These counties were tracked in Wisconsin E-Sponder and found to be minimally involved, compared to other larger or more urban areas. These anonymous and confidential interviews were focused on examining the reasons why these jurisdictions have not followed these standards.

The voluntary participants in the interviews were asked specific questions in an attempt to answer the second research question. They were interviewed for about an hour each and were asked open-ended questions in order to flesh out the pertinent factors involved in NIMS compliance. The data collected were analyzed quantitatively to identify themes. Specific questions were asked:

1. How would you describe the current status of NIMS implementation or adoption in small and rural communities in your county (law enforcement/fire /EMS/public health, public works/emergency management)?
2. What are the factors either impeding or facilitating NIMS adoption?
3. What are the different levels of preparedness in the various communities in your county?
4. Do these differences affect or impact the ability to respond to interagency emergencies where resources are pulled in from a wide area?
5. If so, what problems have you seen or observed that affected multijurisdictional emergency response to large disasters?
6. Would law enforcement, fire, EMS, public health, public works, or emergency management personnel in your county have the necessary knowledge to be able to deploy to other areas and the state and successfully interoperate in a NIMS-compliant environment?
7. What potential solutions to these problems might you offer, based upon your experiences, that would be of assistance?

The data collected was analyzed qualitatively to identify themes. The following items were coded in the analysis of the transcripts:

1. Knowledge of the requirements of NIMS;
2. Perception of the need to follow NIMS;
3. Degree of NIMS compliance;
4. Incentives or disincentives to meet the national preparedness goal;
5. Roadblocks to meeting the national preparedness goal; and
6. Solutions to upgrade rural preparedness.

Research Question #3: If there are impacts to interlocal cooperation due to asymmetric NIMS adoption, what are the systemic and long-term solutions?

Method: Identify problems; leverage findings from literature review, case studies, interviews, and examination of existing systems to develop solutions.

C. ANALYSIS

An analysis was conducted of the findings from the case studies, literature review, and interviews. Successful systems in Wisconsin that currently utilize the tenets of NIMS were also examined as to how they have been used to organize small or rural jurisdictions to meet the national preparedness goal. These interagency systems were deemed successful over time and through field experience in responding to disasters and major incidents, utilizing resources from the target demographic. These similar systems and attendant literature include the fire service's Mutual Aid Box Alarm System (MABAS) of Wisconsin and Illinois and the Waukesha County NIMS Working Group of southeastern Wisconsin.

The analysis of similar successful systems that have been used to organize national preparedness also assists in fleshing out potential solutions. The process that was used can be summarized in the following steps:

1. Close reading of the data;
2. Identification of initial segments of data or codes;
3. Development of coherent, consistent, and distinctive themes;
4. Creation of a thematic map; and
5. Writing up of the analysis.

A strategy canvas was developed for implementation of the new rural preparedness doctrine for DHS in answer to the third research question. A strategy canvas is used as the main tool in *Blue Ocean Strategy* (Kim & Mauborgne, 2005, p. 25) and is designed to plot the difference between the old method and the new method. The canvas is a subjective interpretation of facts learned in the research and their definition.

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III. CASE STUDIES

These cases were selected because each represents a different point in time (four years apart) and a different demographic; a congested urban area and a small-town rural area. Both contain examples of how the asymmetries in NIMS adoption impacted interlocal cooperation in times of crisis. The 2009 fire case study occurred after four years of lessons learned from disasters across the country and a multitude of steps taken to fully implement NIMS.

A. CASE STUDY # 1—GRANITEVILLE TRAIN DERAILMENT

The Graniteville train derailment was chosen because it is an example from five years ago that illustrates how asymmetries in NIMS adoption actually impacted interlocal cooperation. This is directly linked to the first research question: whether asymmetries in NIMS adoption impact interlocal cooperation in times of crisis. On January 6, 2005, in the early morning hours, the unincorporated community of Graniteville, South Carolina (population of about 7,000) was shaken awake when one train collided with a parked train that was carrying toxic chemicals, including chlorine gas, sodium hydroxide, and cresol. The crash between the moving train and the parked train derailed both trains' locomotives, as well as 18 freight cars. Four hazardous materials tank cars derailed, three containing chlorine and one containing sodium hydroxide. One tank car loaded with chlorine gas ruptured, sending more than 40 tons of lethal gas into the air and causing the deaths of nine people. Another 250 people required treatment for chlorine exposure. A large-scale evacuation of over 1,400 homes was ordered for the surrounding area, moving more than 5,000 residents out of harm's way for more than two weeks (Transportation Research Record, 2007, p. 130).

1. Background

The disaster engendered a massive intergovernmental, multidiscipline response including local, state, regional, and federal elements to mitigate the problem, including fire service hazardous materials teams, search and rescue, emergency management,

Environmental Protection Agency (EPA), and forensic investigation by law enforcement. Local aid was summoned from rural and small-town fire and law enforcement agencies from around the region, requiring them to communicate, interoperate and be accountable to the tenets of NIMS. The local fire department and its hazmat team were staffed by volunteers with little practical knowledge or proclivity to use NIMS-compliant practices and procedures. The fire chief, who worked for the same railroad involved in the disaster, also headed the local fire department. Some state and federal agencies immediately attempted to use the Incident Command System (ICS) but ran into trouble when trying to work with smaller agencies that did not.

Graniteville lost lives, jobs, infrastructure, time, and resources in the aftermath of the train wreck. The chlorine gas corroded everything it touched. It damaged wiring, paint, and plastics in buildings, ruined all electronics it touched, and killed trees, plants, shrubbery, birds, and insects. For months, the town was silent with no signs of nature.

2. Findings

First responders from the local volunteer fire department and police department initially reacted by driving into the hot zone without donning personal protective gear. The Department of Homeland Security had earlier supplied, through grants, complete Level C personal protective equipment (PPE) to protect against just such a threat, but local responders had not completed required fit-testing before the disaster struck. This lack of preplanning, training, and exercising, as required by NIMS, resulted in the compromised health and safety of those personnel whose purpose was to help the injured when the chlorine blistered in their lungs. Command and control was ineffective, as was noted in the evacuation, when no clear instructions were given to those civilians evacuating the area. When they tried to drive away, many of their car engines would not start due to the effect of the chlorine gas (Brittle, n.d., points 1–7).

Effective communication, a major requirement of NIMS, was severely hampered during the incident due to a lack of training, exercising systems, and NIMS-compliant processes. Cell phones would not work because of the effect of combined humidity and chlorine gas on the electronics. Radio interoperability was a problem due to a lack of

common operating frequencies and channels. Multiple levels of communication had not been pre-established, as required by the NIMS common communications plan. The community had a reverse 911 system, but the database was out of date. It was not used initially because trained personnel could not be reached to operate it. When the system was initially utilized, the message given was to shelter in place, which caused more injuries. It was used again later to evacuate the same areas (Brittle, n.d., points 8–13).

Another after-action report on this incident, *Train Wreck and Chlorine Spill in Graniteville, South Carolina: Transportation Effects and Lessons in Small-Town Capacity for No-Notice Evacuation*, recognized that the type of chaos experienced in Graniteville is not unusual, given the responders' lack of training or exercising in NIMS-compliant ICS. This failure engenders a multitude of problems when attempting to interoperate with agencies that do follow NIMS since they are working under incongruent processes. Poor communication between the responding agencies and their lack of clear decision-making authority exacerbated this disaster. The local volunteer fire chief was the initial incident commander and approached within 1000 feet of the crash site without PPE. Because of a lack of preparedness planning, responders disagreed over how to evacuate the town. This disagreement resulted in inaction and then the wrong actions. As stated above, the reverse 911 system worked, but the timing and decision making of the evacuation actions rendered the system only marginally effective because of ineffective command and control. Responders also could not quickly and positively identify the hazardous material or the proper response procedure, due to a lack of the preparedness required by NIMS (Dunning & Oswalt, 2007, p. 131).

Objective # 20 on the FY 2009 NIMS implementation objectives chart—titled “communications”—clearly states that all agencies must utilize systems, tools, and processes to give accurate information, resulting in a common operating picture during an incident or planned event. Agencies involved in the Graniteville disaster did not meet this requirement: as callers reported people dying, 911 could do nothing but advise callers to stay inside. In the most extreme example, one mill worker stayed on hold with a 911 operator for 28 minutes. The operator advised him to stay inside and wait for help while the caller labored to breathe and screamed in agony. After those 28 minutes, the call was

disconnected. The caller followed instructions and waited for help in the mill for four hours before he dragged himself out of the plant and drove himself to evacuate. Automated reverse 911 called people and advised them to stay in their homes and turn off their air circulation; however, this system did not start until four hours after the incident. Callers reported that they were stuck where they could not walk either way because they would “choke to death.” The 911 operator advised them to “go indoors.” (Transportation Research Record, 2007, p. 132).

This same lack of situational awareness, a common operating picture, and critical information by the emergency dispatchers, resulting in the deaths of victims, was also found on 9/11 in New York City almost four years earlier. Victims inside the twin towers were also instructed by dispatchers to shelter in place and wait for help to come to them, only to later die (National Commission on Terrorist Attacks upon the United States [National Commission], 2004, p. 295).

The Graniteville-Vaucluse-Warrenville volunteer fire department’s own after-action report of the incident indicates that there were major problems due to asymmetries in NIMS adoption and utilization that impacted inter-local cooperation. One of the keystones of NIMS is the institutionalization and use of the Incident Command System. The after-action report states that the Incident Command System (ICS) process was not followed by all responding agencies, leading to a lack of coordination between the various volunteer fire departments and emergency medical system responders from around the region during the initial incident response. Some of the EMS units responding from around the region drove directly into the hot zone, not following standard ICS command and control protocols. No initial staging areas or safe routes of ingress and egress were established (Graniteville-Vaucluse-Warrenville Fire Department [GVWFD], 2006, Objective 3, Criteria 4).

For this case study we compared 2009 NIMS standards against this earlier incident. The purpose was not to write a new after-action report for the event but to examine how following the latest NIMS standards might have changed or impacted the outcome. FY2009 NIMS implementation objective #8 requires the development of interagency mutual aid and assistance agreements (United States Department of

Homeland Security, Federal Emergency Management Agency [USDHS, FEMA, 2009b). This disaster brought to light the fact that no formal mutual aid agreements existed between Aiken County and Richmond County, the county adjacent to the site of the disaster. Such a lack directly affected inter-local cooperation during this major incident when assets were pulled from multiple agencies and multiple jurisdictions and placed in harm's way. Some first responders incurred severe medical problems from exposure to the chlorine gas, leading to workers' compensation claims. Some equipment, trucks, turnout gear, and ambulances were also damaged due to the corrosive effects of the gas. Without formal mutual aid agreements in place, the liability for both the workers and the equipment claims was significant (GVWFD, 2006, Objective 3, Criteria 5).

GVWFD personnel displayed a lack of knowledge of the county emergency operations plans and procedures, resulting in a lack of coordination between agencies and levels of government. Entry teams from other agencies did not coordinate their actions with the fire department's incident commander during the early hours of incident. Buses used for the transport of evacuees were also not coordinated with incident command. A lack of preparedness, planning, training, and exercising ICS resulted in a lack of integration of law enforcement and EMS personnel into the fire department's incident command system. Initial fire department accountability was weak during the first 30 minutes, due to response from multiple locations by multiple jurisdictions. Lack of proper credentials caused some problems with the movement of volunteer responders. The county produced generic badges with names but no photos, resulting in no method for authentication (GVWFD, 2006, Objective 3, Criteria 5).

Had those local agencies adopted and integrated NIMS into their processes, they would not have had the credentialing problems they subsequently experienced. NIMS implementation objective #24 requires agencies to initiate the development of a state/territory/tribal-wide system (that incorporates local jurisdictions) to credential emergency management and response personnel in order to ensure proper authorization and access to an incident, including those involving mutual aid agreements or assistance agreements.

The Aiken County government's after-action report points out many of the same deficiencies noted in other reports of this disaster. (Aiken County South Carolina [ACSC], 2005, objectives 1–7, pp. 1–13) The NIMS requirements for preplanning, training, and exercising plans before an incident directly impacted this event. The AAR recommends in its conclusions that joint training between EOC personnel and command post responders is needed, as is required by NIMS (USDHS, 2009b, objective #16–18). Agencies need to understand each other's roles and capabilities preincident, in order to adequately respond to crisis. Many of those points that could have been mitigated and worked out prior to this derailment—points that are directly related to answering the first research question—are examined further here.

The safety of first responders was an issue. The first Aiken County EMS (ACEMS) units responded directly to the scene and had to leave the area due to fumes. Entry should have been coordinated with the incident commander. The safety officer was not designated for EMS operations. The safety officer's responsibilities defaulted to the ACEMS shift manager. These issues would have been averted had the basic principals of ICS been followed: the designation of a safety officer, who establishes safe avenues of approach and hot zones, is one of the first items addressed when arriving on the scene (USDHS, FEMA, 2009b, objective #25). EMS entry into the hot zone was coordinated through Aiken County sheriff's dispatch, who contacted the EMS supervisor at USCA. There was no coordination with GVWFD. ACEMS access was restricted after first entry because of lack of PPE availability and incomplete fit testing on equipment received from the Department of Homeland Security. The accountability system (hazmat wristbands) implemented by the fire department was not communicated to all responding agencies. Responding EOC staff were not provided with specific safe routes of travel. ACEMD should consider adding safe route determination to EOC procedures. ACEMS attempted to medically monitor other responders, but they were entering the incident area without EMS coordination. Triage tags were not utilized, although they were available; this resulted in a lack of accountability for injured victims. The on-duty EMS supervisor must relinquish control of outside incidents and focus on the major incident at hand.

Communications with the public and between responders was an issue. The reverse 911 system was not activated in a timely manner because access was available only by emergency management personnel. The system should have been activated through direction from the dispatch supervisor and by authorization from the incident commander. The reverse 911 database used to initiate public calls was five years old, and the public was unaware that unlisted phone numbers are not listed on 911 call lists, resulting in no communications to a large segment of the community. No procedure to confirm dissemination of public protective action notifications was in place at the time of the disaster. The Web EOC communication and tracking system was not utilized due to the time-consuming effort to set up basic needs in EOC (ACSC, 2005, objectives 1–7, pp. 1–13).

The Aiken County Emergency Department had to contact the South Carolina Emergency Management Division (SCEMD) to initiate the emergency alerting system (EAS), which only works if the radio station is in auto position. ACEMD did not have EAS monitoring capability to determine whether the EAS message had been transmitted to citizens. Federal Environmental Protection Agency personnel were initially unaware that the Aiken County EOC was operational. Unmanned radio stations possessed limited ability to broadcast local emergency alerts. Initial notification did not go out through the NOAA weather radio, although that system was utilized later in the day. Not all ACEMS personnel had county-issued pagers, and there was no process in place for callback other than a landline, which resulted in response by approximately 25% of key personnel.

The mass-casualty plan was not implemented initially due to communication difficulties. Citizens in shelters had no official information source. 211, the Aiken County help line, received calls immediately but initially had no information to provide. 211 received updated information via television news report. As a result, 211 personnel did not learn key information, such as the shelter-in-place message that had been transmitted to residents. Nor was 211 accessible via cell phone. Additional numbers needed to be provided and entered into the database. The EOC was receiving updated information via television news reports, not from the command post (CP). The EOC did not have press releases prior to distribution at CP. Hard copies of press releases were not initially

distributed at press conferences. The EOC public information officer (PIO) could not get a response from the PIOs at CP to coordinate messages for the media at the EOC.

Command and control was another issue that came to light during the event. The credibility of the EOC was hampered by the lack of a dedicated, adequate facility. The lack of coordination between the EOC and the CP affected logistics, food deliveries, and housing, for example, and caused the duplication of effort because information was not being shared effectively. Formal status briefings needed to be conducted for EOC staff on a regular basis. The ACEMS supervisor was not present at the initial command post. The local and national Red Cross points of contact were needed at the CP to coordinate food for personnel in outlying areas. The national Red Cross position was also needed in the EOC.

The coordination of logistics and outside resources was compromised due to the failure to follow NIMS tenets (USDHS, FEMA, 2009b, objective #26). Aiken County Geographic Information Services (GIS) resources were not involved in the unified command post planning meetings. ACEMS observed additional EMS support arrive from outside Aiken County, but the additional units were not coordinated with ACEMS. A great numbers of individuals at the CP had no reason to be there. Better identification of key command staff would have helped. Shelter staffing issues arose when a shelter was opened without EOC coordination or the knowledge of the Department of Social Services (DSS) or the Red Cross, even though there is potential county liability and financial responsibility if the Red Cross has not been involved with shelter opening. A predetermined accountability system was needed for Aiken County emergency response agencies. Agency accountability was maintained but was not being shared with other agencies. Communication of patient status at decontamination was not well coordinated with Red Cross shelter representatives. Persons at shelters were registered, but if they were sent to the hospital or left with friends or family, their status was unknown. Field charging capabilities were also needed for portable radios and cell phone batteries.

Recovery and post-event actions were also examined and it was found that no support agencies (Salvation Army, Red Cross, DSS, for example) were kept informed of recovery status. Although daily status meetings were held at the UCP, the information

was not communicated with the EOC. After-action reviews noted that pre-event coordination of consistent GIS data was needed. The media staging area was located too close to CP, resulting in a lack of separation between functions. To summarize the findings from this case study:

- 1) Scene control was compromised, putting responders in danger;
- 2) There was no preplanning or training in DHS-supplied PPE;
- 3) Command and control was an issue due to a lack of ICS knowledge;
- 4) Communication was an issue due to a lack of planning and training, resulting in the lack of a common operating picture among responders, the EOC, and the communications center;
- 5) Situational awareness was not widespread among agencies and dispatch;
- 6) The lack of EOC–ICS interface knowledge led to a lack of resource coordination;
- 7) Public-information coordination and joint-information protocols were not used, causing confusion in the public.

3. Analysis

The EPA’s after-action report accurately summed up the main points of the many AARs completed on this event. First responders were generally unfamiliar with the application of NIMS unified command or incident command (ICS) principles for use during major incidents, including the incident action planning process. Responders to this disaster lacked an understanding of the chain of command principles utilized in ICS. Early operations lacked unified command objectives as required by NIMS under the ICS principal of management by objectives. There was a general lack of coordination and information sharing during the response and recovery phases of the incident. One of the major components of NIMS is communications and information management, the failure of which in Graniteville was recognized by the after-action report that stated, “The need for information and communication cannot be overstated” (Transportation Research Record, 2007, p. 132).

The different agencies represented in the unified command did not share a common workspace and instead hunkered down in their own mobile command posts.

This is a common problem in all major incidents that is exacerbated by a lack of training, knowledge, and institutionalization of NIMS through training and exercises of plans.

Most of the issues encountered during the response and recovery to this event could have been addressed prior to the event had the local agencies conducted prior planning, training, and exercising and had they initiated corrective-action plans based on what they learned. Had they followed this well-established principle of NIMS, the loss of life, damage to property, and injury to personnel may have been lessened. The NIMS objective of preparedness that directly relates to this disaster and the asymmetries that were caused by agencies not following NIMS is found in NIMS documents, which require jurisdictions to incorporate NIMS concepts and principles into all appropriate state, territorial, and tribal training and exercises and to plan for and participate in an all-hazards exercise program, including the Homeland Security Exercise and Evaluation Program, that involves emergency management and response personnel from multiple disciplines and multiple jurisdictions. Jurisdictions are to also incorporate corrective actions into preparedness and response plans and procedures (USDHS, FEMA, 2009c, pp. 16–18).

According to NIMS Alert 008-05, issued by the NIMS Integration Center on August 17, 2005, “The requirement to adopt and implement NIMS and ICS means NIMS and ICS for incident management every day. Those who don’t are not NIMS compliant” (USDHS, FEMA, 2005b). To their credit, the Graniteville-Vaucluse-Warrenville Fire Department recognized, after this event, that ICS must be institutionalized into everyday use and that multiple agency response drills would be beneficial to future responses (GVWFD, 2006, objective 8).

B. CASE STUDY # 2—PATRICK CUDAHY PLANT FIRE

The first research question in this thesis was to examine whether asymmetries in NIMS adoption impact inter-local cooperation in times of crisis. The Patrick Cudahy plant fire was chosen because it is a recent example of how compliance with NIMS, as well as asymmetries in NIMS adoption, actually impacted inter-local cooperation in times of crisis. One telltale indicator of NIMS adoption by an agency is the effective use of all

aspects of the incident command system (ICS) during a crisis. Dozens of agencies and multiple disciplines were involved in this response over a number of days, with varying levels of utilization and implementation of ICS and the other tenets of NIMS. These varying levels were also examined. This is the precise scenario that NIMS was designed and built to help facilitate. Some agencies and disciplines had made a conscious effort to adopt NIMS before this incident and were well versed in its tenets, and some were not. This narrative addresses only those issues during this incident related to the theme of the research and directly tied to the research question above. Many positive attributes were realized during this event, including an effective deployment of MABUS and SMART resources. This narrative is not meant to minimize the heroic efforts of all the responders whose direct actions resulted in no loss of life and the saving of property from destruction; rather the purpose is to point out areas that others can learn from and use for future responses.

1. Background

On July 4–8, 2009, in the city of Cudahy, Wisconsin, one of the largest commercial fires in the state's history engulfed the 121-year-old Patrick Cudahy meat packing plant that employs 1,800 workers. The city of Cudahy is a community of about 19,000 residents, located just south of Milwaukee, in Milwaukee County, Wisconsin, and is adjacent to Lake Michigan. A fourth of July fireworks prank went awry when a military parachute flare was fired into the air by a neighbor as part of the holiday celebration. The hot-burning flare landed on the roof, quickly burning through and into flammable sub-roof materials, setting the building on fire. The plant utilizes many chemicals and flammable liquids and gases for meat processing. The plant keeps 177,000 pounds of anhydrous ammonia under pressure, according to the 2009 hazardous materials report filed with Milwaukee County emergency management. The plant also has some 800,000 pounds of lard and 250,000 pounds of brown food grease stored in several buildings, all flammable (Held, 2009).

Over 2,000 calls flooded the Cudahy communications center as residents called in for help and information. This incident quickly grew into a five-alarm fire, requiring 400

firefighting personnel and equipment from 64 different fire departments over the four-day period to keep up fire suppression efforts 24 hours a day. As the fire spread, additional materials began to burn as well, endangering surrounding residential neighborhoods. The threat of explosion from one ammonia tank turned critical as the fire approached. This necessitated a complete evacuation of a surrounding one-mile radius and the establishment of an emergency shelter in the South Milwaukee High School. A law enforcement level-8 Suburban Mutual Aid Response Team (SMART) call-up was ordered to handle perimeter and evacuation duties. This is the highest level of call-up under this system. Dozens of police officers from many jurisdictions, including small towns and rural areas, were called and worked this incident in support of the Cudahy Police Department. Many other disciplines also responded to assist in any way possible.

Elderly and frail residents began showing up at the shelter, initially overwhelming aid workers assigned there, requiring assistance from medical personnel from the Milwaukee County Department on Aging, Health Departments and nongovernmental organizations (NGOs) from surrounding areas sent staff to assist. The American Red Cross and the Salvation Army brought medications and bedding, as well as accommodations for pets. Transportation assistance was requested from the Milwaukee County Transit System to aid in the evacuation and movement of citizens away from the danger zone.

2. Findings

On July 23, 2009, an after-action review of the response to this incident was held and included representatives from all responding entities, public, private, and NGOs; it was facilitated by Milwaukee County Emergency Manager Carl Stenbol. Approximately 75 people attended and gave comment on the pros and cons of the response to the event. The author attended, looking specifically for those strategic asymmetries in NIMS adoption that impacted inter-local cooperation during this four-day event. The examples detailed below were selected based the research in an attempt to examine and analyze their relationship to preparedness; these represent problems that resulted from lack of

continuity or asymmetries between entities during a major disaster. Many positive examples of collective cooperation and use of the ICS were evident throughout the response. The principals of NIMS worked.

3. Fire Service Actions

According to fire personnel who worked the fire, the operational periods during this incident were too long, resulting in on-scene fire personnel attempting to do too much for extended periods of time. NIMS specifically speaks to this point in its Incident Command System (ICS) 200-level training. The operational period is the period of time scheduled for execution of a given set of tactical actions, as specified in the Incident Action Plan (USDHS, FEMA, 2008a, pp. 3–20). The more complex the tasks being performed, the shorter should be the time periods. Over time, the operational periods become longer in duration as fewer critical tasks are being performed. The National Wildfire Coordinating Group defines operational periods as “the period of time scheduled for execution of a given set of operation actions as specified in the incident action plan. Operational periods can be of various lengths, although usually not over 24 hours” (National Wildfire Coordinating Group). In the Fire Service, operational periods should be established for 4, 6, or 12 hours in length, depending on the type and complexity of activity. In general, an operation period during escalating structural fire incidents should not exceed four hours (Daniels, 2006). The failure of the incident commander to follow these rules for the length of operational periods as required by NIMS led to key personnel being worked beyond their limits, as described by command during the after-action review. This could have led to compromised decision-making capabilities.

A Type 3 incident management team (IMT) or incident command organization could have been summoned to the scene to assist the overworked local commanders. Two different IMTs from Wisconsin and Illinois offered their services to relieve the command team but were turned down for reasons that were not verbalized. These teams are trained to assist local agencies whose command resources are exhausted or overwhelmed. This concept is another key element in NIMS doctrine. The teams manage initial action incidents with a significant number of resources deployed during an extended attack

incident until containment/control is achieved (USDHS, FEMA, 2005c, pp. 1–5). Accountability, resource management, communications, and span of control would all have been addressed by these highly trained, NIMS-compliant personnel.

The span of control for supervisory and command level officers was greater than what was practical to manage during the duration of this event. Some spans of control ranged in the dozens for just one supervisor, resulting in a lack of command and control over that many people. Maintaining effective span of control is important to efficient incident management because safety and accountability of personnel are priorities. Within ICS, the span of control of any individual with incident management supervisory responsibility should range from three to seven subordinates in order to maintain accountability during complex, high-threat situations. If a supervisor has fewer than three people reporting, or more than seven, some adjustment to the organization should be considered. Monitoring the span of control in the ICS organization is a major responsibility of the incident commander (USDHS, FEMA, 2008a, pp. 2–32). Supervisors must be able to adequately supervise and control their subordinates, as well as communicate with and manage all resources under their supervision (USDHS, FEMA, 2005c, pp. 2–7). Failure to do so leads to accountability issues due to the large numbers of responders on-scene at any given time.

Balancing the number of personnel on-scene with the number of units still needed was a difficult job during the fire. Some mutual-aid units were requested and sent to the staging area to wait for an assignment, and they then sat there for a considerable time. Most of these units responded as requested and left their home jurisdiction short staffed. Some jurisdictions may have incurred overtime due to this deployment to the fire scene; the presence of units sitting in staging for long periods of time is not an efficient use of resources. Some agencies utilized volunteer firefighters, who were required to be away from their normal jobs and families. Sitting in staging for long periods was not what they had volunteered for. The counter to waiting in staging too long was that some personnel and teams actively working the problem did not get into rehabilitation soon enough. This resulted in crews that were overworked and without adequate rest.

The above fire response issues revolve around a central tenet of NIMS: accountability and effective scene management. In the ICS, chain of command and unity of command provide the basis for effective resource management and personnel accountability (USDHS, FEMA, 2005c, p. 3). It was very difficult to achieve accountability during this multiagency, multijurisdictional response involving hundreds of personnel. Scene control also became an issue because of the scope of the area being cordoned off. Unauthorized vehicles entered the scene behind fire trucks while law enforcement personnel were being used for other priorities including evacuation.

4. Communications and Resource Management

Accountability became an issue for the dispatch center when it became overwhelmed initially and had to call in for mutual aid from the Telecommunicator's Emergency Response Taskforce (TERT). The Red Cross was summoned but was confused as to its role in the incident. The local, level-one trauma center was not notified of the incident so that they could put their resources on standby in case of a mass casualty event. The regional hospital communication tool called the Wisconsin Tracking, Resources, Alerts and Communication (WITRAC) was not used to advise all hospitals in the region that a hospital in the danger zone might need to be evacuated or of the scope of the disaster so that those hospitals could prepare. The liaison officer needed much more assistance to manage the number of requests and actions taking place.

The NIMS description of resource management includes processes for categorizing, ordering, dispatching, tracking, and recovering resources. It also includes processes for reimbursement for resources, as appropriate. Resources include personnel, teams, equipment, supplies, and facilities available or potentially available for assignment or allocation in support of incident management and emergency response activities (USDHS, FEMA, 2005c, pp. 2–6). NIMS provides for standardized mechanisms and establishes requirements for processes to describe, inventory, mobilize, dispatch, track, and recover resources over the life cycle of an incident (USDHS, FEMA, 2005c, pp. 2–10).

Resource request communications between different elements working this incident were inadequate; many different people were requesting similar resources, resulting in multiple redundant requests for the same equipment and personnel. Many different elements, units, and agencies working the scene ordered their own resources by themselves. They did not use the single-point resource ordering process and did not effectively track resources requested. The concept of single-point resource ordering is that the burden of finding the requested resources is placed on the responsible jurisdiction/agency dispatch/ordering center and not on the incident organization (USDHS, FEMA, 2005c, pp. 6–19). In this case, however, the local dispatch/ordering center became overloaded with other activity and was unable to handle new requests in a timely manner. Assisting agencies at the incident also had their own policies that required their own resource orders to be made through their respective dispatch/ordering centers.

In this case, multipoint ordering was utilized but without tracking and accountability. This resulted in resources being ordered from several different ordering points and/or the private sector. Multipoint off-incident resource ordering is very difficult to manage and should only be done when necessary because multipoint ordering places a heavier load on incident personnel by requiring them to place orders through two or more ordering points. This method of ordering also requires tremendous coordination between and among ordering points and increases the chances of lost or duplicated orders (USDHS, FEMA, 2005c, pp. 6–20).

For example, during this fire many buses were requested multiple times for the same task by personnel unaware that others had already requested them. One of the basics of ICS is that resource requests must be communicated up the chain of command and as the incident organization grows to meet the needs of the incident. Care must be taken to ensure that information transfer is handled effectively. This formal communication during an incident requires that orders, directives, resource requests, and status changes must follow the hierarchy of command unless otherwise directed (USDHS, FEMA, 2005c, pp. 2–17). The ICS position that could have been utilized to handle resource management would have been the resource unit leader in the planning section.

Due to the issues described above, another documented issue that led to an asymmetry in response (i.e., lack of a common communications plan), was the fact that the Milwaukee County Communications Center was not utilized to the fullest extent to assist the local communications center handling the incident. Lack of training and exercising together beforehand, as NIMS requires, led to this issue (USDHS, FEMA, 2009b, objective #16). The local center was attempting to make emergency notifications to the county on the county center's administrative phone lines. These lines are the last to be answered during large volume times, as was the case during this fire. Consequently, notifications were not made in a timely fashion because no one would answer the phones in the county center. A virtual EOC platform called "Wisconsin E-sponder" was not utilized during this event and could have resolved many of the communications problems. Even though a TERT was called in, it also did not use the system. That secure system could have linked the EOC with the on-scene incident command post and staging, as well as shelter operations.

Communications with the public was an issue as well, due to the lack of a non-emergency phone line or lines. Because of this lack of alternate phone numbers to call, citizens called the 911 lines and tied them up with administrative questions that could have been handled by clerical staff with a well-composed message. The mass communications tool, "A Child is Missing," was used to send out a public evacuation notification. This tool is not designed for such an incident but was used after convincing the operators of the system. Other public notification systems can be purchased and utilized many times during a prolonged incident like this one, but they must be set up before the event.

Radio interoperability between mutual aid law enforcement units, the Emergency Operations Center and Incident Command, and various emergency shelters was nonexistent. This was due to a lack of interoperable radios since many agencies used different radio bands, and there was a lack of additional radios to hand out to key personnel. Police officers were sent out in small groups to evacuate hot zones without direct radio communications with their on-scene supervisor, while only one cell phone number was given to contact the 45 mutual aid officers who worked under him. The

responders on-scene were unaware that the Milwaukee County Sheriff's Department had 60 cache portable radios that could have been deployed to bridge the various radio communication deficiencies that were experienced. The use of an on-scene communications unit leader (COML) in the service branch of the logistics section would have solved most of these interoperability and communications problems. Had the NIMS-compliant ICS processes for communications and resources ordering been employed, a request for additional radios could have been made to the resource unit leader (RUL) that would have been filled within a short period of time. The RUL could also have deployed citizen emergency response teams (CERT) to augment the four days of perimeter, staging, and shelter operations, 24 hours a day. They were neither requested nor utilized, although trained teams and trained COMLs exist in the area.

The circumstance of 45 officers reporting to one supervisor also creates an obvious span-of-control issue. According to NIMS-compliant ICS, a small span of control is the key to effective and efficient incident management. Within ICS, the span of control of any individual with incident management supervisory responsibility should range from three to seven subordinates only (USDHS, FEMA, 2005c, pp. 2–6). This lack of effective span of control led to problems as the threat picture changed to include ammonia gas. Some of the officers had level-C personal protective equipment (PPE) in their squads that could have been utilized had the need arisen. But without constant, effective communications via radio with a team leader who could assist them, the officers were left in danger and out of touch. Some officers from NIMS-compliant agencies arrived on-scene in response to the SMART call-up, expecting to be formed into strike teams with common communications and specific orders and safety plans. When that did not happen, several officers were sent to evacuate neighborhoods that had already been contacted by other officers.

To summarize the results found in the research of this incident:

- 1) For some responders NIMS had a significant positive impact due to prior training and exercise in using the system, but others had limited knowledge;

- 2) There was excellent use of regional mutual aid through MABUS and SMART;
- 3) Basic ICS knowledge and use was good, but knowledge of the deeper portions was not;
- 4) Detailed incident action planning knowledge was not systemic;
- 5) Situational awareness suffered due to a lack of coordination between the IC, the communications center, and the EOC;
- 6) Resource management suffered due to the lack of a coordinating structure;
- 7) Additional command personnel were not used because of a lack of understanding of what they could have brought to the scene.
- 8) Communications suffered due to the lack of a communications unit leader.

5. Analysis - Patrick Cudahy Plant Fire

Although portions of the incident command system were successfully used, this case study exemplified how asymmetries in NIMS adoption impacted inter-local cooperation in this time of crisis. The lack of consistent NIMS adoption—and specifically the full application and utilization of ICS by all of the various agencies—negatively affected this event. Dozens of agencies and multiple disciplines were involved in this response over a number of days, with each applying varying levels of utilization and implementation of ICS and the other tenets of NIMS, resulting in inefficiency in several areas. Some agencies and disciplines had made a conscious effort to adopt NIMS before this incident and were well versed in its tenets, yet some were not. This resulted in confusion at times among responders from the differing agencies because of the lack of consistency in methods, terminology, and standard operating procedures that full NIMS adoption and institutionalization across the board would have brought.

Applicable NIMS Objectives	Case Study #1	Case Study #2
	Did they meet the objective during the event?	Did they meet the objective during the event?
7) Revise EOPs, SOPs, to include NIMS	No	Yes
8) Develop mutual aid agreements	No	Yes
20) Systems and tools: common operating picture	No	No
21) Inventory assets by kind and type	Unknown	Yes
22) Interoperable communications, equipment, and systems	No	Yes
23) Mutual aid agreements (EMAC)	No	Yes
24) Credentialing personnel	No	No
25) All incidents must use ICS, IAP, UC	No	Partial
26) Multiagency coordination: use MACS	No	No
27) Public information: use PIO, JIC, JIS	No	No
28) Ensure public information is accurate and can be disseminated during events	No	No

Figure 3. Objective Related to Response

IV. INTERVIEWS

A. OVERVIEW

These interviews were designed to assist in answering the second research question: For those small and rural jurisdictions that are not meeting the standards and objectives as defined by NIMS, what are the reasons? Confidential interviews of selected professionals in the target demographic were conducted, and the results were cataloged and compared to see whether common themes developed in the process.

County-level emergency managers (EM) were interviewed from selected Wisconsin counties that have mainly small or rural jurisdictions. These EMs were selected because of their experience with small jurisdictions that might not be utilizing or following the tenets of NIMS. They were also selected based upon the rural demographic and remote geographic locations of their counties in Wisconsin. An attempt was made to interview disparately located counties so as not gather too much information from one area of the state. These anonymous and confidential interviews were focused on examining why these jurisdictions have had difficulties conforming to these standards.

One of the counties selected to be part of this research is typical of the others chosen: it has a population of less than 15,000 people, with fewer than 13 people per square mile, as compared to a major urban area like Milwaukee with more than 6,200 people per square mile. The example county is poor by comparative economic standards and has been loosing population at a rate of about 10 percent over the last ten years (United States Census Bureau, 2009).

The specific questions are detailed in Appendix A with short bullet points outlining the compilation of some answers. The answers from various counties naturally contradict one another since each has its own unique perspective on the issue, comes from different parts of the state, and faces unique preparedness challenges. The narrative addressing the major themes discovered during the research is outlined in the analysis section.

B. THEMATIC ANALYSIS

The voluntary participants in the interviews were asked specific questions tied to the second research question. They were interviewed for approximately an hour each and were asked open-ended questions in order to flesh out their thoughts and identify pertinent factors involved in NIMS compliance. The data collected was analyzed qualitatively to identify themes. The following themes were coded in the analysis of the transcripts:

1. Knowledge of the Requirements of NIMS

Although the interviewees displayed differing levels of knowledge of the requirements of NIMS, most were not confident that the small towns, villages, and rural counties themselves had a thorough knowledge. The interviewees did not equate NIMS “adoption” (USDHS, FEMA, 2009b, objective #1) with “implementation” (USDHS, FEMA, 2009b, objective #2). They instead offered differing ideas as to how the smaller governmental units within their counties viewed the actual NIMS requirements. Some viewed adherence to NIMS requirements as simply signing the annual state-supplied form stating that the local jurisdiction was NIMS-compliant. Others went a bit further and added that it was also necessary to have key personnel pass the online courses administered by the Department of Homeland Security (USDHS, FEMA, 2009b, objectives #10, 11, 12). Most interviewees advised that the jurisdictions within their counties have formally adopted NIMS; the State of Wisconsin Emergency Management has supplied a resolution template for locals to have their local governments adopt and sign. This resolution is what most considered when asked whether they have met the requirement to have formally “adopted” NIMS. Once the governments of most of the jurisdictions within a county had passed the resolution and turned in the annual form, that county considered itself NIMS-compliant.

Most counties equated the use of the incident command system (ICS) by law enforcement, fire, or emergency medical services (EMS) as evidence of being NIMS-compliant without regard to the other 27 NIMS requirements. The use of an incident action plan (IAP) or ICS forms was almost nonexistent except as required by hazmat

teams. Hazmat and public health's bio-terrorism consortiums have implemented a form of ICS, but that implementation is regional, not locally based. The IAP process includes management by objectives and a deliberative process for running major or long-term incidents. The small-town and rural fire services were credited as being the discipline that actually uses ICS, at least in the most rudimentary form, that is, simply calling command when arriving on scene. This is credited to being part of their discipline's basic and advanced training. Law enforcement and other disciplines such as public works or public health in rural areas have not institutionalized the use of the ICS, the IAP process, or unified command (UC) as required by NIMS (USDHS, FEMA, 2009b, objective #25). As one emergency manager put it, "Although NIMS/ICS has been adopted, implementation lags far behind." Adoption is simply the act of passing a municipal resolution stating that the community will follow NIMS and use ICS. Implementation requires actually institutionalizing its use.

In some cases, plans are NIMS-compliant due to the efforts of a small number of individuals, but small counties are not capable of full compliance. One county emergency manager stated that in his county, it is his job to write all of the emergency operations plans for the local jurisdictions. He writes them all so that they are NIMS-compliant, but he recognized that even with those plans, the smaller the community the harder it is to complete the remaining NIMS requirements. Full compliance will always be a stretch for small communities. They may have the plan sitting on a shelf, but without the remaining parts of NIMS—preparedness through exercising and updates—the plan is not worth much.

Another county's experience was much bleaker. The municipal police departments in that county do not want anything to do with NIMS implementation and refuse to use any of the tenets of NIMS. They told the interviewee, "We know what we know, why should we change?" This attitude is prevalent across that county and is evidenced by the fact that none of the emergency response entities in the county call command at incidents.

2. Perception of the Need to Follow NIMS

Many jurisdictions perceive that their need to follow NIMS only extends as far as potential preparedness grant funding or the municipality's resolution to adopt and implement NIMS. Their perception is that ICS is all of NIMS, and if they take the required online ICS courses, they are NIMS-compliant, regardless of whether they actually use ICS, the IAP, or UC. Other jurisdictions feel that they will not apply for or ever need preparedness funding from the federal government and therefore need not follow NIMS. One EM felt that the higher level of NIMS training disenfranchises the smaller communities and their responders. Once they see the scenarios in the ICS 300–400 training, they realize they will never see such events in their lifetime nor will they ever have the personnel to fill out a full ICS structure.

Many of the interviewees advised that they question the need for small communities and rural areas to follow NIMS since most of their volunteer and paid-on-call responders and accompanying assets would not deploy away from their home area in times of disaster. If there is no need to deploy, then there is no need to interoperate with diverse elements from other regions or states. They often do assist other local communities in need of mutual, short-term aid, but they would not be able to deploy intrastate or interstate under an Emergency Mutual Assistant Compact (EMAC). They work with their local partners on a regular basis and know them by name as they all live in the same area. They do not need to learn new terminology, methods, processes, and systems since what they have has worked for them. Also, most rural areas have very few assets that they could afford to send away to assist another region or state because those assets are critical to the public safety of their home area. Therefore, they feel they do not need to understand, know, or follow the tenets of NIMS.s

All of the interviewees advised that law enforcement in the rural areas and small towns in their areas do not take the basic, first step in utilizing the incident command system, which is “calling command.” The phrase “calling command” refers to the requirement that the first units, be they police or fire, arriving on the scene of an incident that will engender a response of four or more units must come over the radio and

announce that they have command. This notifies all responding units that ICS is being utilized, and they know who is in charge. Since these rural agencies do not take command at a scene, following even the basic ICS steps is not possible. Accounting for all personnel on scene, maintaining a unity of command, and evolving into a unified command—all of which are NIMS requirements—cannot take place. Most law enforcement agencies have a built-in command structure by rank so that calling command is not always needed when an agency is working with its own personnel. However, when mutual aid and multiple agencies get involved, the ICS is really needed; at that point, since it is never used or practiced, it can not be implemented. One EM from a very rural county with a low population gave an interesting take on local law enforcement and its relationship with emergency management: “Law enforcement does not have to comply with anything from the emergency management office; they are the authority around here.” This attitude and lack of understanding or buy-in from local law enforcement will lead to the ultimate failure of the NIMS system in that county and in other parts of the country.

Many see preparing each agency, jurisdiction, and responder for a disaster that may never occur as failing the cost-benefit analysis; better to prepare for the real life threats they face every day is the thought. One county EM advised that it is up to the locals to complete the 28 NIMS requirements, not the county. This attitude has resulted in the failure of most local agencies to attempt to follow NIMS at all. Situational awareness and resiliency has suffered in these areas, and many expect the county emergency manager to assist them in time of need.

3. Degree of NIMS Compliance

The extent that rural areas and small communities are following the tenets of NIMS appears to depend largely on whether they have full-time staff or volunteers and whether they have local leadership in the transition to NIMS. Rural counties that have paid first responders on staff are more likely to have had NIMS training, although that training alone does not equate to NIMS indoctrination and institutionalization. If a county community has a paid staff of responders, they are more likely to have had the training.

Some interviewees from more populous but still rural counties responded that they have experienced great difficulties in their county in leading local rural communities down the path to NIMS compliance. Some of their communities have no understanding and will not follow NIMS. Their responders do not use ICS and do not work well together at scenes or incidents under unified command. One county does not have any municipalities that use the statewide virtual EOC system called E-sponder because they do not take preparedness seriously (see Appendix B). Those municipalities feel that they do not have the time to take NIMS training, and since most are volunteers, they will not take time off from their regular job to do it because it costs them money. Law enforcement agencies in particular do not feel that they need to learn NIMS, since they just direct traffic at scenes.

Many rural communities do not have the resources necessary to respond to regional interagency emergencies where the ICS would come into play. None of the interviewees talked about the other focuses of NIMS, such as credentialing responders, upgrading plans, and exercising those plans. Because of the limited number of resources available, local mutual aid is the norm, but it is organizational, not operational. As one emergency manager put it, “ICS, although adopted, is seldom used below the incident command. This lack of implementation below the IC level severely impacts a rural department’s ability to manage assets from a wide area in a scenario of an expanding incident.”

Another reason why the greater NIMS philosophy is not being pursued in small towns and rural communities is that there is a lack of real situations where NIMS would apply. This view equates NIMS with ICS only, not the greater picture of preparedness and planning. One fire chief advised a rural emergency manager during ICS 300 training (Intermediate ICS) that he did not have the staff to implement a full ICS organization, either in trained or available staff, and he could not envision an event where he would have the need to use the skills introduced in the course.

There is a disconnect between the knowledge and training of rural responders and their ability to interoperate in a real-world situation and to deploy to other areas of the state and work side by side with agencies who are well schooled and follow NIMS. The

completion of online courses or even classroom instruction does not imply competence. Further exercises, after-action reports, and corrective action plans would allow rural responders to gain much-needed experience, but that again raises the issue that they do not have the time or funding to pay responders to gain that experience. The smaller the agency or jurisdiction, the less likely it is to have the ability to interoperate in a large-scale multiagency event outside of the home area.

One EM from a relatively poor county with a very small population remarked that the current status of NIMS implementation is poor. Personnel have been through the training, but almost none of those who have had the training would feel comfortable or be proficient in the detailed workings of NIMS. It was felt that the training is generally completed just to “check the box” in order to be NIMS compliant. This one-time training does not help anyone at the county level. Compliance to the basic ICS training requirement alone does not give county and municipal employees or volunteers the skills needed to be proficient in times of disaster, or even to assist them on a relatively simple emergency call. The problem with NIMS “adoption” is in trying to get rural volunteers and public officials to buy in to the system. There is a lack of support due to the lack of belief that the NIMS system has any applicability to a rural area.

4. Incentives or Disincentives to Meet the National Preparedness Goal

The “carrot” of preparedness grants funding, if one qualifies, represents the current incentive to meet the national preparedness goal, through implementation of the 28 NIMS objectives. The “stick” is the denial of preparedness funding if a jurisdiction is not NIMS-compliant. The majority of jurisdictions have taken the simple steps necessary to say they have formally adopted NIMS, as most have passed a local resolution to that effect. But the institutionalization of NIMS or ICS across their world is lacking. Most have never seen or heard from any federal governmental entity that has actually checked or verified that a rural agency has developed plans, SOPs, processes, and exercises or completed ongoing training or institutionalized the use of the incident command system, including IAP or unified command. This lack of verification at the federal level has discredited the NIMS program as a whole, and specifically the local proponents who deliver the training.

The disincentives to following NIMS and becoming an active participant in meeting the national preparedness goal are many for small-town and rural responders. The larger full-time or professionally staffed departments can afford to send their personnel to training on duty-time, while volunteer responders from rural areas must attend on their own time, many having to take off from their paid jobs to do so. This represents a great sacrifice that larger urban responders do not have to make in order to commit to NIMS. That fact alone is the largest disincentive to following NIMS. According to one emergency manager, if this funding were to have been implemented, “rural volunteer agencies would have been trained at the level enjoyed by their paid contemporaries.”

5. Roadblocks to Meeting the National Preparedness Goal

Time, dollars, and training are all impediments to full implementation of the NIMS objectives. The online training courses through FEMA’s Emergency Management Institute (EMI) are not as effective as the classroom courses and are subject to fraudulent results when the test results are passed on from one student to another as was identified by interviewees and the personal experiences of the author. The interactive learning environment of a classroom course facilitates true understanding of the complexities of NIMS. One emergency manager stated when speaking of the online classes, “This delivery has severe problems; learning is secondary to meeting a requirement.” Classroom delivery of the ICS-100 or 200 classes contains 16 student contact hours, with online classes being completed in fewer than 4 hours for most students. The gap between the two methods of delivery is representative of the difficulty in conveying a true understanding of the fundamentals of ICS.

For small-town and rural agencies, the time and funding needed to attend the required training in the classroom (ICS-300 and 400) is prohibitive given that most responders who need the training are volunteers. Most rural communities cannot pay their responders to attend training courses out of their area or pay to back-fill their workplace vacancy. Volunteer responders cannot attend NIMS training for their volunteer position

at a fire department or EMS since they hold down full-time, paying jobs. Many are not willing to take vacation time for NIMS training, even if the training costs them nothing.

One interviewee stated that “communities prepare for the exposures they face.” Most rural counties have a large geographic area to cover but have a small population base. Small towns and villages face the same problem but some have a small geographic area with few residents and even fewer responders. They utilize regional preparedness to overcome these inherent faults. Mutual aid is a fact of life in these areas. The roadblock that one EM faced was that “the size of the disaster was not as important as the duration,” because local responders are volunteers and cannot stay away from home and work for long. These volunteers are more than willing to help out a neighbor in need but would not deploy around the state helping other communities far away. If they did deploy, there would be no equipment or assets and no responders left to protect the home front while they were away. Public works preparedness is a problem because these individuals are the furthest from the public safety sector.

Another roadblock is the will to change. The responders in many rural areas see the events of 9/11 and the terrorist threat as something that big cities, not they, need to worry about. Preparedness suffers as a result. Disasters come about once in a career for many of them, so the time needed to prepare is not time well spent. They do not see themselves as being subject to deployment under EMAC or even within the state; therefore they do not need to learn “this NIMS stuff.” Additionally, most small towns and rural communities are staffed by a single full-time clerk who is the point of contact for the county emergency manager. Some clerks do not have access to the Internet in their offices. Most of the state and federal NIMS information and documentation is accessed online, including training. This roadblock is common in rural areas.

6. Solutions to Upgrade Rural Preparedness

Each of the interviewees had his own suggested solutions to the many problems described in the research. One method to correct one of the inherent deficiencies that rural responders face when attempting to fully implement NIMS is to reimburse volunteer responders when they attend training, when that training takes them away from their paid

employment. This concept of paid backfill would address one of the major roadblocks to rural preparedness as expressed in the implementation of NIMS objectives. The program must have merit to rural responders; it must be useful. The number of different courses required and the redundancy among them causes anxiety and questioning of the quality of the materials. One solution would be to combine courses and shorten the objectives to make them applicable to rural responders by using rural scenarios.

Some felt that the NIMS one-size-fits-all approach should be reexamined and a regional approach taken instead where regions establish their own priorities. Grant funds should be given to the states, allowing each region of the state to define its own priorities to meet local conditions. Abbreviated ICS classes would also help as volunteer responders can not travel and stay away from their homes for many days, especially when they do not get paid. Regionalized teams should be built, but they must come from the full-time paid departments and agencies since the volunteer agencies do not have the time or the capacity to fill this role. The Department of Natural Resources of the state of Wisconsin has incident management teams (IMTs) that are able to come in and assist local rural jurisdictions. But those teams are state assets, and Wisconsin is a home rule state.

Regionalization of NIMS compliance efforts will save time and money. Instead of each local jurisdiction's trying to meet 28 requirements by themselves, a group effort is much more plausible. Much as the incident management team concept works well to fill a gap in response capability, a regional NIMS effort would have more success. Volunteers as a whole do not have the time to go to training but are willing to be directed by NIMS trained personnel during an incident in the correct manner. For NIMS to expect every community to have the same level of knowledge and preparedness is not realistic; rural areas are much more handicapped than their urban counterparts. It has been suggested that areas defined as rural should have a different set of standards, instead of the current all-or-nothing approach of NIMS. Individualized ICS training would also assist local emergency responders in applying the tenets of NIMS to their situation. For a local fire department in a county whose population is just under 15,000 to practice an urban

scenario where thousands of responders come to assist is unrealistic and insulting. Many responders just laugh at the federally prescribed training, feeling that it does not apply to them.

Local tribal incident management teams (LTIMT) developed at the regional level would help locals to meet NIMS requirements if those teams were developed within the area and built trust with the locals. Generally, LTIMTs are designed to assist local agencies who are overwhelmed while managing an incident, but it has been suggested that they could be used to help facilitate NIMS implementation. They have the training and with some additional guidance could fit the role of regional NIMS implementation facilitators.

C. ANALYSIS

When NIMS was established in 2004, there was a national structure built to support federal NIMS implementation efforts but no state-to-local mechanism. This lack of follow-through has resulted in county emergency managers taking the brunt of the dissatisfaction of local rural communities with NIMS. The county emergency managers are asked to facilitate NIMS compliance in addition to their many other duties, but they have no legal authority or mandate to do so. As was stated in one interview, “We are not the NIMS police.” This lack of accountability to the tenets and standards of NIMS by the federal government, state government, and county government has resulted in an unequal distribution of compliant jurisdictions. Preparedness and response interoperability and capacity suffer as a result. Small towns and rural areas rely on volunteers, and they cannot stand any additional federal mandates. Local funding in rural areas for emergency management or homeland security is minimal at best and nonexistent at worst. Rural county emergency managers do not have the time or personnel to assist agencies or jurisdictions in meeting NIMS requirements.

NIMS adoption by municipal resolution is widespread, but actual implementation in rural areas is minimal. Many small towns and rural areas feel that NIMS mandates are unreachable, and they therefore do only the minimum required. Some municipal police departments in generally rural counties do not want NIMS, will not use it, and do not

want to learn it. Full NIMS compliance is a stretch for rural, small-town entities; however, implementation has been observed on regional teams. Public works implementation is lacking or nonexistent. Even though some county emergency managers write all of the emergency operations plans for their rural county, most do not. It is up to each local jurisdiction to accept the county EM as their EM because of home rule. Most jurisdictions just self-certify NIMS compliance, even when they have not met the requirements.

The federal government did not include the rural paradigm when initially assessing the unmet preparedness needs of the nation after 9/11. They looked at high-value targets and urban infrastructure when building their models and setting national preparedness goals. As the years progressed and the DHS grew, attempts were made to include small-town and rural entities in the picture through the development of the Rural Domestic Preparedness Consortium (RDPC) and the Small State and Rural Advocate Office within FEMA. However, neither has taken on the leadership role needed to ensure small-town and rural inclusion in the national preparedness discussion. The RDPC did not return research requests for information for this thesis, and the Small State and Rural Advocate position has been unfilled since 2008. A search to find personnel at FEMA who could respond to research questions on rural preparedness was fruitless. It was found that the Small State and Rural Advocate office had no dedicated staff, and when asked for all documentation on rural preparedness, only one document was produced as having been prepared since the inception of the office in 2007. That nine-page document was required to be submitted to Congress. It is the FY2010 report to Congress on disaster regulations and has little to do with the mission of a small state and rural advocate outside of reporting the percentage of approved requests for disaster assistance (Rural Domestic Preparedness Consortium, 2010).

It is apparent that the lowest jurisdictional levels in this country are in a far better state of local preparedness for emergencies than their urban counterparts despite the fact that no rural advocate exists at the highest levels in the Department of Homeland Security. The Department of Homeland Security appears to have had little strategic effect on rural preparedness since 2004, given the fact that rural responders have built some

level of resiliency without federal help. This “bottom up” approach to locally established preparedness does not fit the NIMS model or meet the national preparedness goal, but it appears to be adequate for most of the emergencies that small towns and rural communities see on a day-to-day basis. It is the catastrophic disasters that tax rural capabilities, where the NIMS model would come to the forefront.

D. FINDINGS

These interviews have shown that one of the main factors impeding NIMS implementation is a full understanding of the depth and scope of NIMS and an awareness of the extent to which NIMS can positively assist in small-town and rural preparedness. Most interviewees tied ICS directly to the definition of NIMS, and for them the two were not separate and distinct. It has been difficult to get jurisdictions to understand that NIMS is a philosophy of management including five components: 1) preparedness, 2) communications and information management, 3) resource management, 4) command and management, and 5) ongoing management and maintenance (USDHS, FEMA, 2008b, p. 7).

The Department of Homeland Security, through Federal Emergency Management Agency (FEMA) does not hold jurisdictions accountable to actually implement NIMS, even after 5 years of requirements; this is clearly another factor that impedes NIMS implementation. The National Integration Center’s Incident Management Systems Integration (IMSI) division of NIMS does not require jurisdictions to have actually complied with all 28 of the NIMS objectives; instead, they only have to have “been initiated and/or are in progress toward completion” (Finkl, 2009). The Department of Homeland Security, through FEMA, also sent out a letter to all state and territorial governors, advising them that they must implement NIMS objectives, but the agency only requires that their state is “working toward comprehensive NIMS implementation” and should address “progress” (Ward, 2009).

It is apparent from the interviews that were conducted that NIMS implementation and successful navigation towards the national preparedness goal is dependant upon leadership at the local level. If the local leader, be he a chief elected official, a police or

fire chief, or a county EM, does not make NIMS a priority, it will not happen. This leadership must extend and be supported by the state and the national governments. Unfunded mandates without local input or buy-in create hard feelings and resentment and will not further national preparedness.

A single set of standards and training for all jurisdictions at the local level is not realistic. Presently, NIMS breaks down requirements only into federal, tribal, state, and local levels. Each state is different, but more importantly, each local community is different. Rural counties are administered differently from more populous counties in urban areas with a larger tax base. A separate rural standard must be created within the NIMS paradigm to reach those areas left out of the current national preparedness picture.

Small towns and rural communities rely heavily on volunteers, cooperation, and mutual aid within their local region, to meet their public safety mission. NIMS needs to have metrics that fit within this paradigm in order to assist these communities in meeting the national preparedness goal. Working against normal conventions of everyday response for personnel who do not have the time, funding, or manpower to learn entirely new systems that may never be necessary is problematic and unrealistic.

Local funding in rural areas for Emergency Management or Homeland Security is minimal at best and nonexistent at worst. Rural county emergency managers do not have the time or trained personnel to assist agencies or jurisdictions in meeting NIMS requirements. County EMs are required to meet many other federal mandates that take a significant amount of time and energy.

Given these findings, it is apparent that waiting for the Department of Homeland Security to supply funding or some kind of leadership will not be fruitful for small communities and rural areas, given DHS's track record over the last five years. As they have done throughout time, small-town and rural residents must rely upon themselves and their neighbors to build preparedness. The tenets of NIMS are viable for rural communities, but the doctrine must be relevant to the rural demographic based on local priorities. The top-down, one-size-fits-all approach has not worked and will not work. An entirely new strategy must be developed with an allowance for local variation and

application based upon the threats and hazards faced by small towns and rural communities. These local variations, however, must be consistent with the tenets of NIMS, yet allow for some flexibility in application.

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V. INTER-LOCAL COOPERATION

A. OVERVIEW

The impact on inter-local cooperation from asymmetric NIMS adoption has been scrutinized in prior sections. Systemic and long-term solutions were examined in light of the current status of small-town and rural preparedness using the state of Wisconsin as the data set and the annual compliance metrics of the National Incident Management System (NIMS) as a measuring stick. The goal of the thesis was to develop a new strategy for upgrading preparedness in small and rural communities to meet national preparedness standards. Case studies were examined to explore the effects of asymmetric preparedness between urban and rural communities. Selected emergency managers from rural counties around the state were confidentially interviewed to gain firsthand insight into the problems that small towns and rural communities are having in meeting NIMS standards and to flesh out possible solutions. Major themes impacting the issue were developed from the case studies, interviews, and the review of relevant literature and similar systems. These themes were used as a basis for the development of conclusions and proposed solutions.

1. Themes Impacting the Issue

1. Knowledge of the requirements of NIMS;
2. Perception of the need to follow NIMS;
3. Degree of NIMS compliance;
4. Incentives or disincentives to meet the national preparedness goal;
5. Roadblocks to meeting the national preparedness goal;
6. Solutions to upgrade rural preparedness.

2. Conclusions from the Research

1. The Department of Homeland Security has not made small-town and rural preparedness a priority. Local communities must lead from the bottom-up.

2. One of the main factors impeding NIMS implementation is a full understanding of the depth and scope of NIMS and the extent to which NIMS can positively assist in small-town and rural preparedness.
3. The Federal Emergency Management Agency (FEMA) will not hold jurisdictions accountable to actually implement NIMS.
4. NIMS implementation and successful navigation towards the national preparedness goal is dependant upon leadership at the local level.
5. A single set of standards and training for all jurisdictions at the local level is not realistic. Rural preparedness needs must be defined locally.
6. Small towns and rural communities rely heavily on volunteers, cooperation, and mutual aid within their local region in order to meet their public safety mission.
7. Local funding in rural areas for emergency management or homeland security is minimal at best and nonexistent at worst. Rural county emergency managers do not have the time or trained personnel to assist agencies or jurisdictions in meeting NIMS requirements.

3. Summary of Recommendations

1. A new, flexible rural preparedness doctrine and strategy at DHS is needed.
2. Build regional preparedness groups (both rural and urban) with national funding and local control, using the Milwaukee UASI model.
3. Provide regional preparedness leadership staff funded by FEMA within each local region in each state.
4. Utilize rural preparedness block grants funded by FEMA, using the community development block grant process.

4. Method of Implementation

1. Create a collective vision for the future of small-town and rural preparedness at the DHS.
2. Provide local preparedness programs with financial support through the community development block grant funding system.
3. Build upon the natural cooperative model found in small towns and rural communities to achieve preparedness.

4. Utilize the local tribal incident management team program as a basis for the development of regional preparedness groups.

B. UNDERSTANDING THE URBAN-RURAL DIFFERENCES

The national preparedness goal and the tenets of NIMS seek to have all levels of government, nongovernmental organizations, businesses, and citizens inculcate a mindset of preparedness into all segments of their life structures so as ensure their capability to respond to and recover from all possible hazards. The desired end state for each entity is to ensure a continuity of operations, a continuity of government, and the return to a state of normalcy in the community as soon as possible. In order to see this principle through to fruition, it is incumbent upon every community, large or small, urban or rural, paid or volunteer, private or public, to take steps to plan for anticipated and unforeseen disaster. All must mitigate known hazards, train with their partners for possible emergency situations, create plans, exercise those plans, and take corrective actions to engender a cohesive and coordinated response and recovery. With this objective in mind, some communities in small towns and rural areas need both financial and experiential assistance to reach these goals. Specific doctrine, scenarios, processes, and procedures for rural and small-town communities must be established to bring those most tenuous areas into the fold of national preparedness. In order to do this, the asymmetries between urban and rural society must be recognized and embraced.

The sociology is markedly different between urban and rural regions in this country. Small-town and rural residents are more resilient out of necessity. The personal motivation of rural responders is based upon the knowledge that they must rely on their neighbors in time of need and trust that they will help, as there is little other assistance at hand. The person giving help to his neighbor today knows that tomorrow he may need assistance from that same neighbor. Rural and small-town residents know that it is not unusual for public safety entities to take up to a half an hour or more to respond to a call for help under normal circumstances, and they may not come at all during disasters. This is due to their physical remoteness and the lack of response staff waiting at a local station. On-call volunteer responders must come from home or their full-time jobs, which

may be many miles away. This situation is further exacerbated by the recent economic downturn, which has caused many to lose their jobs or to have to travel longer to get to new jobs. Rural responders are mostly volunteers who are not paid for their efforts and are subject to being victims of the same disaster they may be asked to respond to and help their community recover from. Many of these resilient citizens grow their own food, have their own back-up generators, cut firewood for their heat, hunt for meat, raise some livestock, keep months' worth of food stores in their basements, and have their own wells. They are generally not as dependant on municipal water supplies, grocery stores, or the national power grid as their urban counterparts.

The work force is also quite different between the two demographics. Urban public safety responders are mostly full-time, paid, municipal employees who are heavily unionized. The Federal Fair Labor Standards Act (FLSA) even prohibits them from volunteering for duties that they would normally be paid to perform. Jurisdictions in urban areas are very territorial by nature and interoperation under mutual aid is often difficult. DHS preparedness grant funding has been based in part upon a community's proximity to large urban areas that have been determined to be more strategically critical and valuable by national standards. Urban citizens expect an immediate response when a call for help is made, regardless of the scope of the disaster, whereas rural residents do not.

The definition of preparedness for rural areas as compared to their urban counterparts is another marked difference. Urban preparedness has been defined generally as the capacity to respond to and recover from large-scale disaster and return to a state of normalcy in a short period of time. For a utility in large urban area to be offline for more than a few hours is considered a disaster, but rural areas are not so disadvantaged. Rural areas know that when an ice storm takes down power lines across a region, for example, it could take days or even weeks to restore power. Rural residents plan their lives around this eventuality, prepare for it, and accept it as part of their chosen rural lifestyle. In a cost-benefit analysis for the public utilities, it makes much greater sense to restore power to urban areas and their condensed pool of customers before dealing with the sparsely populated rural areas. Rural customers know that they must be

individually resilient and prepared for a snowstorm, power outage, or flood, and they rely on their neighbors for help if needed. City dwellers pay high taxes for full-time public safety professionals and a government infrastructure to support them in good times and bad. Consequently, they expect a greater return for their investment during times of disaster.

C. DEPARTMENT OF HOMELAND SECURITY OUTLOOK

Rural preparedness is suffering in this country because the Department of Homeland Security (DHS) has focused policy, grants, training, and significant efforts towards preparing and protecting urban areas and high-value infrastructure. Many DHS sponsored documents and reports from 2005 and 2006 recognize the problem—even suggesting solutions—but to no avail. As a result, rural areas and small towns have been left out of the process and do not have the time, money, or resources to meet the national preparedness goal in the NIMS objectives on their own. The Department of Homeland Security recognized this gap as long ago as 2005, when it stated, “The challenge is to develop an interconnected and complementary “national” system that balances the need for flexibility with the need for accountability” (USDHS, 2005, p.1) Even five years after that statement, these rural and small-town areas are still disconnected from the greater Homeland Security project. A check of the DHS website on July 19, 2010, for the key words “rural preparedness” did not receive any hits for those two words together—a clear indication of a lack of emphasis.

DHS currently uses a standardized approach (one size fits all) to national preparedness based upon threats and hazards to large urban areas. As far back as 2005, it was reported to the NIMS at FEMA that small and/or rural jurisdictions would benefit from a regional approach. The agency recognized over five years ago that in many instances smaller communities may not have the resources to implement all the elements of NIMS on their own. However, by working together with other localities in their regions, these jurisdictions will be able to pool their resources to implement NIMS (USDHS, FEMA, NIMS, 2005). The DHS did not heed its own recommendations.

The current standardized approach to preparedness is reflected in DHS-sponsored training, grants, and exercises that are all based upon urban incidents with hundreds or even thousands of responders. In fact, the word “rural” is only mentioned once in FEMA’s document “State and Urban Area Homeland Security Strategy: Guidance on Aligning Strategies with the National Preparedness Goal”—and then only by way of example (USDHS, FEMA, 2005a).

Rural threats and vulnerabilities are unique, as are rural response capabilities, and they are not symmetrical to their urban counterparts. NIMS recognizes that prevention, protection against, response to, and recovery from major events (as represented by the national planning scenarios) will require that capabilities be drawn from a wide area. The area from which resources will be drawn may or may not expand beyond the current area served by existing regions (USDHS, FEMA, 2005a, p. 9). According to the strategy, “States and Urban Areas are asked to examine current regional collaboration efforts and explore new approaches to developing regional capabilities.” The new rural collaborative approach suggested in this thesis is one such effort.

The federal government through FEMA recognizes that the regional approach is the preferred methodology to success in the national preparedness domain. Deputy Administrator Richard Serino of FEMA acknowledged in an interview with *Homeland Security Today*, “When disaster strikes, we understand that the response is managed by the local, tribal and state officials. We get that ... each region has its own different nuances and culture” (McCarter, 2010, p.16).

Because rural and small-town threats and vulnerabilities are distinctive, preparedness grants for rural areas should be given based upon need. Under this new model, regional exercises would be cooperatively developed to reflect local hazards that rural responders may face in their regions. For example, for rural public-safety personnel to practice for a mass-casualty attack on a crowded sports stadium with 60,000 attendees is unrealistic and represents a situation they will never see. But they may experience long-term power outages or outbreaks of foot-and-mouth disease. The federal government has differing preparedness priorities from those of small towns and rural communities. In his research McCarter points out that the federal government is

preoccupied with possible catastrophes of high consequence but low probability, while state governments are concerned with catastrophes of low national consequence but high local probability. DHS officials would like to prepare and train for biological agents, while officials in a state like Iowa would like to prepare and train for massive flooding (McCarter, 2010, p. 16).

D. A PROBLEM RECOGNIZED BY OTHERS

Emergency management professionals at the state and local levels have long understood the difference between urban and rural emergency issues. In a recent article in *Homeland News*, author Dianna Bryant states that the challenges of emergency management are different for rural communities than for urban ones and can be categorized under four major themes:

1. Resource limitation;
2. Separation and remoteness;
3. Low population density;
4. Communication.

Bryant argues that the deficiencies faced by rural emergency managers can be attributed to the lack of political and financial capital that is needed to provide “equivalent resources to what’s considered essential in urban areas” (Bryant, 2009, p. 2). Her conclusions assert the same findings as found in this thesis research: “Exercise scenarios often assume equipment and manpower capabilities that are unrealistic in rural areas.... The reality is that rural emergency management faces challenges that are unfamiliar and often unknown in urban areas” (Bryant, 2009, p. 2).

The U.S. Congress recognized over four years ago that a national, top-down model of planning and preparedness is not congruent with an effective intergovernmental response. Because of the problems with response during Hurricane Katrina, FEMA was required through the 2006 Post-Katrina Emergency Management Reform Act (PKEMRA) to support operational planning in its regions. The National Academy of Public Administration (NAPA) report states that,

This engagement should be developed with the goal of building an effective partnership between the regions and headquarters that is based upon mutual cooperation, ongoing involvement and communications and supportive leadership at all level. (NAPA, 2009, p. 36)

However, even as late as December of 2009, FEMA's five-year plan still does not meet the PKEMRA's requirements in this area, and further outreach is required (NAPA, 2009, p.2).

Other emergency management professionals have recognized that, even five years after Katrina, building out regional capabilities "remains a problematic issue for FEMA and a distant ideal.... But difficulty in developing regional responses is also the result of fundamentally different approaches by federal, state and local governments" (McCarter, 2010, p. 15). In the report from the Project on National Security Reform (PNSR), FEMA is advised to take a robust approach to such planning but to use resources within each region to tailor plans for that area's concerns (PNSR, 2009, p. 5).

Chief Thomas Bauer's 2009 CHDS thesis on NIMS and law enforcement found similar lessons learned in his research regarding Wisconsin. He conducted surveys of law enforcement leaders from around the state and found that most would not even respond to the NIMS survey. Among those who did, he found that, "Some leaders, as indicated in the survey, do not embrace the idea of NIMS, as a terrorist attack is improbable in rural Wisconsin communities, but there is little appreciation that NIMS is much more apt to be used in local response of natural disasters" (Bauer, 2009, p. 8). Of the 550 NIMS surveys sent out, only 67 were answered. Of those who did answer, almost 66 percent of the agencies acknowledged that they were not proficient with NIMS and have not incorporated ICS into daily operational response. "An overall response rate of 12 percent suggests that there is little interest in NIMS-related issues" (Bauer, 2009, p. 13). Many of the responses stated that NIMS is not currently designed for small agencies or rural areas.

The National Emergency Managers Association, through their 2008 survey, has recognized challenges to NIMS compliance, as well as the seeds of the solution. They described false assumptions by the federal government concerning NIMS compliance (Bauer, 2009, p. 36):

One is the assumption that “one size fits all” which assumes that all jurisdictions have the same level of resources, risks, hazards and vulnerability ... Like all states [they] range from large metropolitan areas to rural low density jurisdictions and attempting to apply the same rules for implementation or even the same set of logical reasons for complying is not possible. (NEMA, 2008, p. 1).

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VI. RECOMMENDATIONS

A. HYPOTHESIS: A NEW RURAL PREPAREDNESS STRATEGY

Rural preparedness can be increased through a new, demographically inclusive approach to national preparedness. “The national preparedness system is, both literally and figuratively, only as strong as its weakest link” (NAPA, 2009, p. 64). This weak link is the integration of small-town and rural preparedness with national preparedness. By creating a regional, customized approach to preparedness through the addition of a rural doctrine, buy-in and participation would increase in small towns and rural areas across the country. Local emergency-management personnel in those communities would begin to participate in the greater homeland security project because they would understand its relevance to them. As already required by NIMS, rural, regional collaboration would focus on several areas, including the expansion of mutual aid and assistance compacts among contiguous state, local, and tribal entities and their private and nongovernmental partners and the extension of the scope of those compacts to include preincident preparedness activities such as planning, training, and exercising (USDHS, FEMA, 2005a, p. 9).

Congress and the Department of Homeland Security have recognized the rural gap in existing national-preparedness doctrine. They have established the rural domestic preparedness consortium (RDPC, or the Consortium) to develop and deliver relevant all-hazards training in support of rural homeland-security requirements. It is these requirements that must be modified into guidance that will allow local regions within states to build their own requirements based upon their threats and hazards. The National Infrastructure Coordinating Center (NICC) within the Department of Homeland Security, Office of Infrastructure Protection, Emergency Management and Response Information Sharing and Analysis Center (EMR-ISAC) has recognized this rural paradigm as well. Some of the rural preparedness issues can be resolved by implementing the following lessons learned:

- Build relationships with diverse sectors of the community;
- Do not rely solely on official power relationships to get things done;
- Encourage volunteerism as a rich source of personnel for emergency services;
- Reach outside the community to achieve political access and leverage additional resources;
- Develop cooperative agreements between and among the emergency services, community organizations, and local businesses to secure funding and staffing. (USDHS, National Infrastructure Coordinating Center, 2009)

These solutions offered by the government address some of the soft issues having to do with rural preparedness but do not touch the core doctrinal issues that have plagued DHS since its inception. The federal government has further attempted to begin the process of correcting this rural deficiency through the amendment of the Stafford Act and the Post-Katrina Reform Act of 2006 (Bryant, 2009, p. 3). Title II of the Robert T. Stafford Act was amended by adding Section 326, which designates within FEMA a position for a Small State and Rural Advocate:

The Small State and Rural Advocate shall be an advocate for the fair treatment of small States and rural communities in the provision of assistance under this Act.

Duties- The Small State and Rural Advocate shall—

- (1) participate in the disaster declaration process under section 401 and the emergency declaration process under section 501, to ensure that the needs of rural communities are being addressed;
- (2) assist small population States in the preparation of requests for major disaster or emergency declarations; and
- (3) conduct such other activities as the Director of the Federal Emergency Management Agency considers appropriate.

However, this Small State and Rural Advocate position, a key national level position at FEMA, has not been staffed or filled for over 18 months. This indicates a lack

of focus by the top levels of the federal government on the problem and leaves a rural advocate and leadership void. In 2010, a private advocacy organization called the Project on National Security Reform (PNSR) created a report that urged FEMA to create “regional catastrophic preparedness staffs to facilitate planning that meets the goals of both federal and state agencies” (PNSR, 2009, p. 19). If this proposal were implemented, federal direct assistance for baseline resourcing of catastrophic national preparedness regional catastrophic preparedness staffs would be paid for by the federal government, but the personnel would come from the states.

This cultural shift can be accomplished with little additional funding and could be easily added to existing structures without competing with them. This effort fits into the federal preparedness picture: the first of the seven national priorities identified in the national preparedness goal is to expand regional cooperation and capabilities (USDHS, FEMA, 2005a, p. 8). The current DHS strategy encourages local governments to be involved in the strategic planning process performed by states and urban areas but does not include their rural contemporaries. It is the hope that this new regional collaboration will allow for a multijurisdictional and multidisciplinary approach to building capabilities for all four mission areas, spreading costs, and sharing risk across geographic areas (USDHS, FEMA, 2005, p. 9).

B. METHOD OF IMPLEMENTATION

This new strategy will redefine the focus of DHS preparedness and create true national preparedness—regardless of population density—through volunteer, individualized regional preparedness groups (RPG). These groups may piggyback on the local tribal incident management team (LTIMT) program in regions where it is used. The manual for the development of these teams has been written and is being used in Wisconsin and in several other states (Knutten et al., 2009). The highly trained local personnel who make up LTIMTs can form these regional groups to support rural preparedness through the development of personal relationships and trust with response partners and by passing on best practices and lessons learned.

In Bauer's thesis research, he suggests as one solution the coordination of training with agencies that have established NIMS. One of his survey respondents stated, "Have a core group of NIMS-proficient personnel to ensure NIMS compliance in the event of a major incident" (Bauer, 2009, p. 17). This suggestion fits into the proposed solution of this thesis on the NIMS rural implementation problem. Partnerships between those who know NIMS and those who do not will create new knowledge through shared experiences with little cost and will result in significant gains towards a secure and prepared homeland. "Much like tutors assist those weighed down by complex concepts in the academic environment, a tutor or mentor might be needed to walk the student (administrator) step by step through the minefield" (Bauer, 2009, p. 44). As these regional LTIMTs develop and build nationally, they can facilitate NIMS adoption in rural areas by utilizing their expertise in national-level preparedness and response strategy, coupled with their local connectedness.

The innovation found in the development of a new rural preparedness doctrine is that it changes DHS preparedness efforts from the current standardized approach (one size fits all) based upon large urban areas and their assets to a customized approach that more closely fits both the urban and the rural paradigm. The current standardized approach to preparedness is reflected in DHS-sponsored training, grants, and exercises that are all based upon outlandish (from a rural perspective) urban incidents with hundreds or even thousands of responders. A customized approach for rural areas would see training scenarios based upon the realities of rural life with a dozen responders coming to a disaster, not great multitudes as in urban areas. Rural and small-town areas have more of a problem managing and accounting for volunteers during the response to a disaster than they do accounting for public-safety staff. Rural threats and vulnerabilities are unique, requiring grants based upon need and exercises that are developed locally to reflect hazards in their region. This customized approach to preparedness would create buy-in from local emergency-management personnel in small towns and rural communities across the country and could be accomplished with little additional federal funding and no additional local costs.

Current DHS funding is mainly targeted towards densely populated areas called urban area security initiative (UASI) areas or to critical pieces of infrastructure based upon risk. This formula leaves rural or small-town areas out of the funding for preparedness. Urban areas rely on government funding, whether local, state, or federal, whereas rural areas rely on volunteers and little federal government funding.

The value innovation of this approach is found in a cooperative, customized strategy instead of the mandatory report and compete model used in current DHS funding programs. The concept is to drop the current method of competition for grants and federal dollars that leaves rural areas out of the picture and instead use the federal government's experience to gain cooperation from rural areas that are used to working with little money and few resources everyday.

C. A STRATEGY CANVAS FOR A NEW RURAL PREPAREDNESS DOCTRINE

A strategy canvas was developed for implementation of the new rural preparedness doctrine for DHS. A strategy canvas is used as the main tool in *Blue Ocean Strategy* (Kim & Mauborgne, 2005, p. 25) and is designed to plot the differentiation between the old method and the new method. The canvas is a subjective interpretation of facts learned in the research and how they are defined. The horizontal axis captures some of the important factors that homeland security professionals might want to consider when deciding to move forward with this new strategy. The vertical axis captures a subjective value for the DHS in time, resources, funding, and the level of benefit gained from each area.

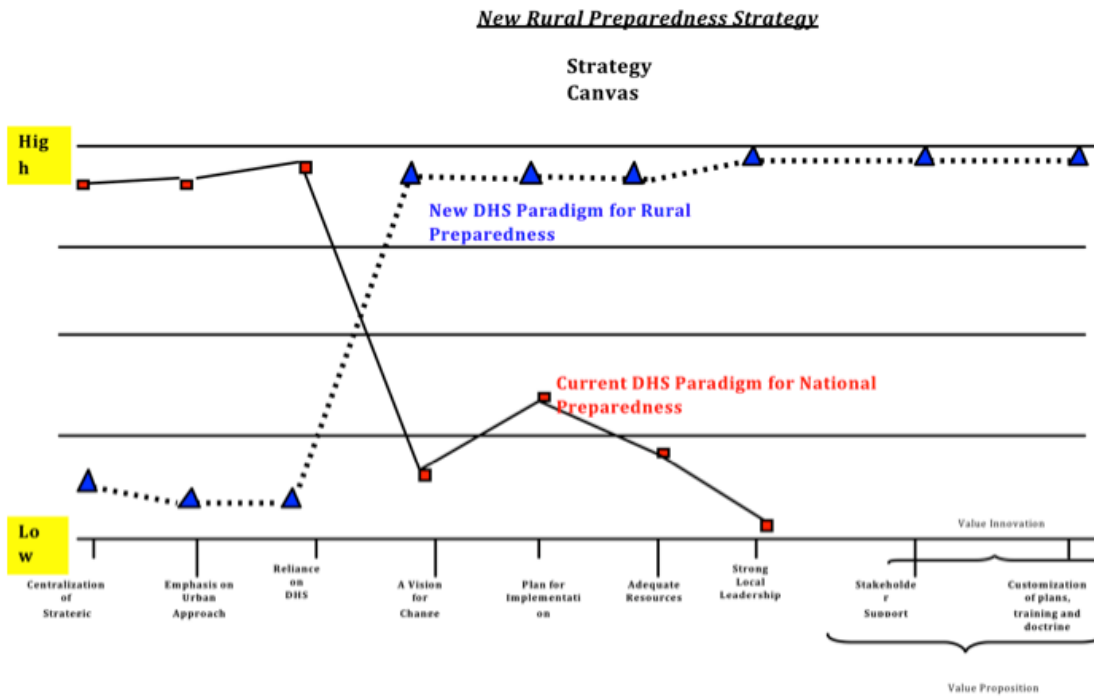


Figure 4. New Rural Preparedness Strategy

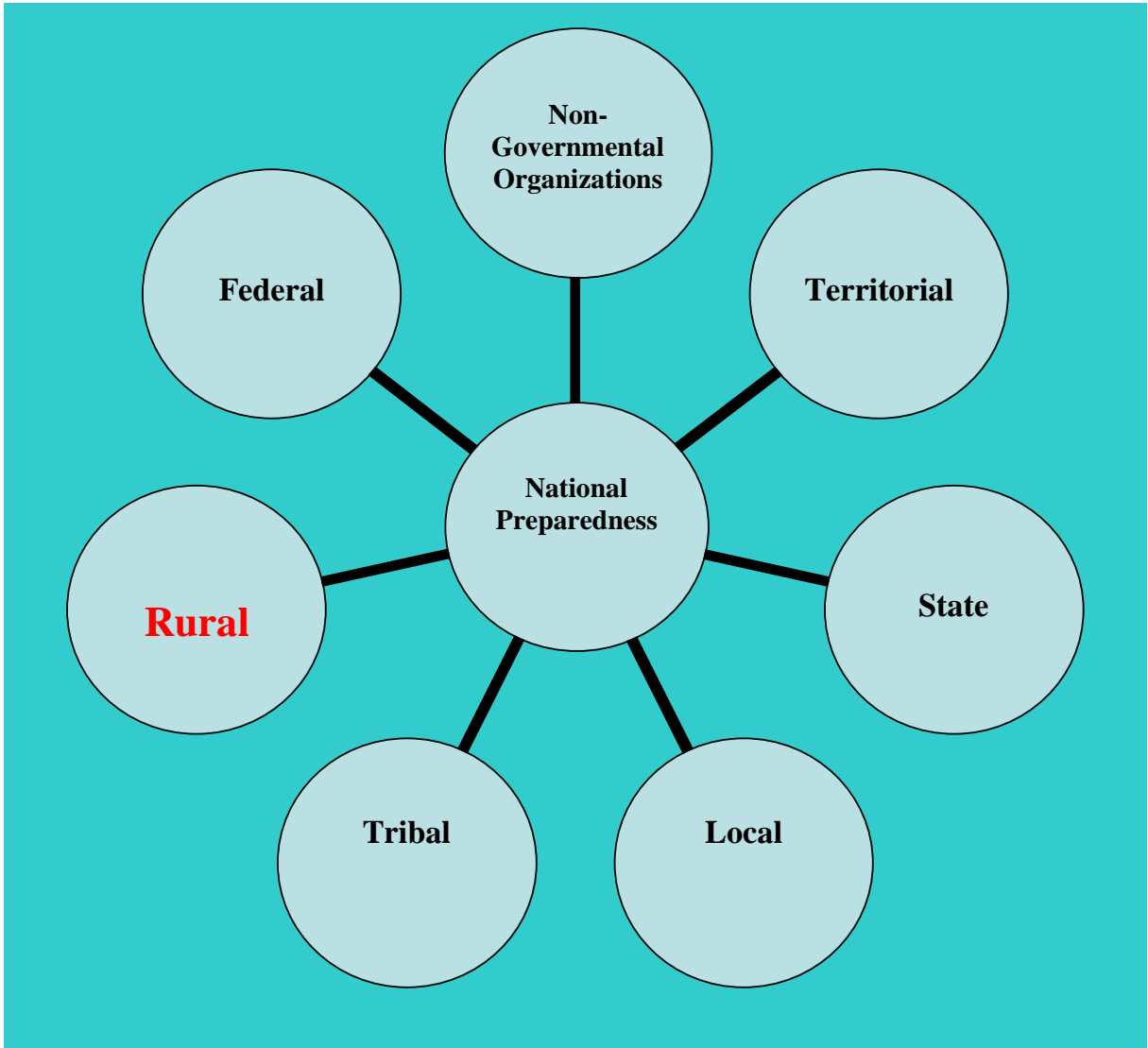


Figure 5. Multi-Doctrinal Approach to National Preparedness (with the addition of Rural Doctrine)

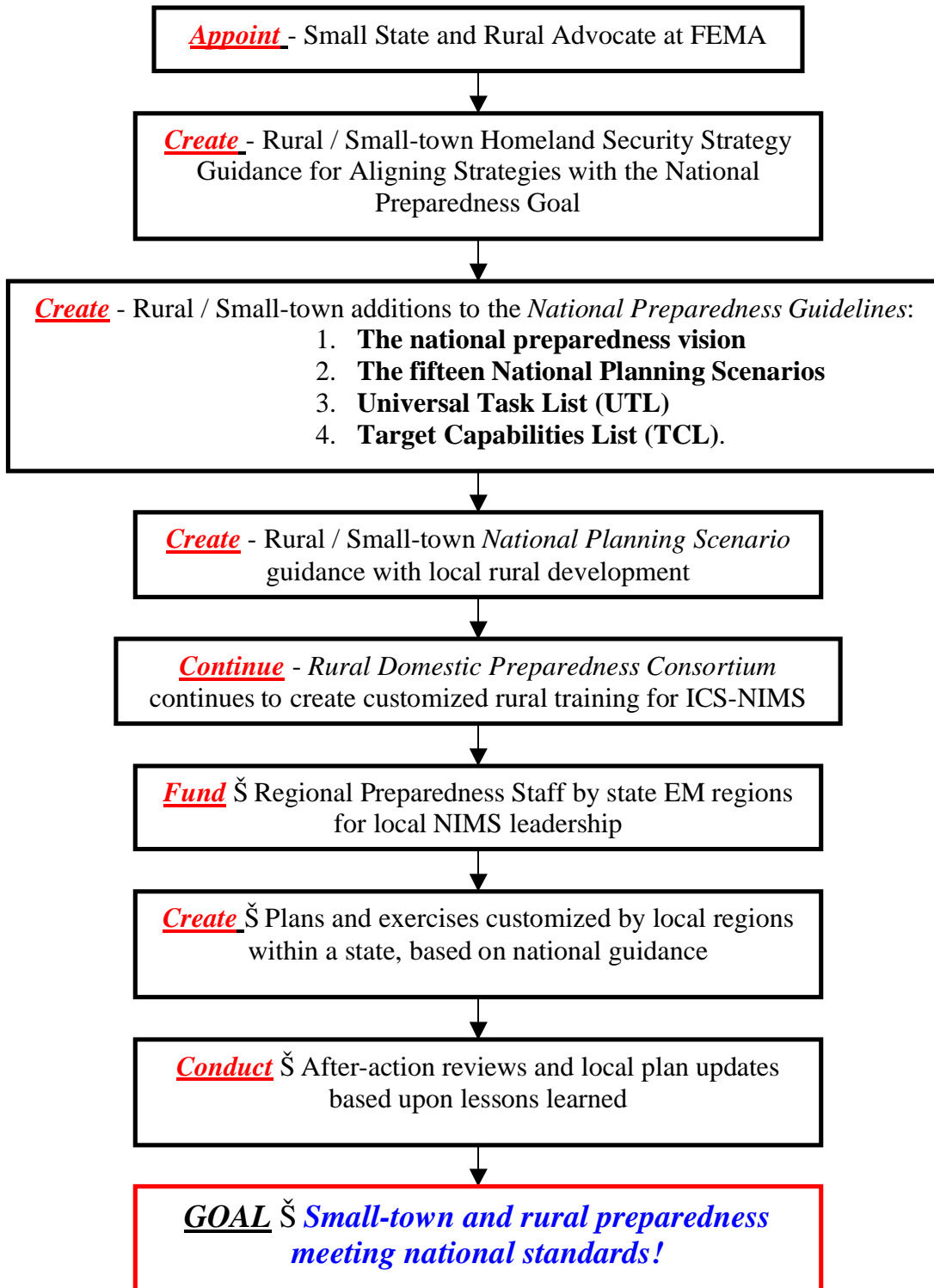


Figure 6. New Rural Preparedness Implementation Strategy: Action Items and Flow Chart

APPENDIX A—INTERVIEW RESPONSES

1. **How would you describe the current status of NIMS implementation or adoption in small and rural communities in your county (Law enforcement/fire/EMS/public health, public works/emergency management)?**

- Adoption is widespread, implementation is not.
- NIMS implementation is poor. Personnel have the training but would not be proficient in the detailed inner workings of NIMS.
- Municipal police departments do not want NIMS, won't use it and don't want to learn it.
- Full NIMS compliance is a stretch for rural, small-town entities.
- Implementation has been observed on regional teams.
- Public works implementation is lacking.
- The county emergency manager writes all of the emergency operations plans for the rural county, so they make them NIMS compliant.
- Most jurisdictions just self-certify even when they have not met the requirements.

2. **What are the factors that are either impeding or facilitating NIMS adoption?**

- Time for volunteer training impedes implementation.
- Money for paying volunteers to take off of work to attend impedes implementation.
- A lack of understanding that NIMS can be just as effective for rural areas as for large cities.

- The number of times an agency responds to an emergency can facilitate or impede NIMS adoption.
- Online classes impede implementation.
- Lack of local support due to a lack of belief in rural applicability of NIMS.
- One size does not fit all, rural communities are very different from urban metropolises.
- Lack of relevancy in the higher level classes (ICS 300-400).
- Law enforcement does not use Incident Command.
- An informal system is in place, just not verbalized.
- The size of the disaster is not as important as the duration.
- Must meet day-to-day threats, not disasters that may never occur.
- An individual municipality's refusal to take NIMS seriously.
- Small towns and rural communities are confused by NIMS.
- No time to go to training and the online training is a "joke" as most cheat and get the answers from their friends.
- The government can not ask volunteers in towns, villages and rural areas to do more.
- Turnover in the volunteer ranks.
- County EM's need more personnel and funding to make NIMS a reality.
- Border counties to other states have trouble interoperating if all are not NIMS compliant.

- NIMS is not practical for towns and small jurisdictions.
- E-grants are too hard to complete, many clerks don't have the internet.
- Equipment given out in earlier grant programs is now outdated and in need of replacement.

3. What are the differences in levels of preparedness in the various communities in your county?

- The more full-time paid staff, the better trained and prepared in NIMS.
- Local mutual aid works well with the fire service and law enforcement.
- Only a few communities are attempting to follow NIMS, the rest are not.
- The cities within the rural county act alone with no mutual situational awareness and no resiliency.
- There is no consistency or continuity between volunteer agencies.
- Full-time agencies are more likely to follow NIMS than volunteers leading to differing levels of preparedness.
- Cities have more resources and can get more funding to support preparedness.
- Some don't have the staff to utilize *E-sponder* and therefore cannot communicate with the state.
- Local jurisdictions work cooperatively all the time with each other but not with federal agencies.

4. Do these differences affect or impact their ability to respond to interagency emergencies where resources are pulled in from a wide area?

- Yes, ICS is adopted but rarely used by rural agencies.
- Cannot manage large numbers of resources.
- Yes, because of the wide disparity in implementation among responders.
- Yes, due to a lack of continuity.
- In a large inter-agency emergency, the locals would rely on the county EM to make it work.

5. If so, what are the problems that you have seen or observed that have affected multi-jurisdictional emergency response to large disasters?

- Lack of training.
- Lack of real-world experience.
- Lack of resources and personnel.
- Lack of mutual aid compacts.
- Lack of internet access to use *E-sponder*.
- An inability to speak the same language.
- Volunteer fire departments would not deploy.
- They don't deploy, nor do they want to deploy to large disasters.
- Law enforcement feels they just direct traffic at disasters, no need for NIMS.

6. Would law enforcement, fire, EMS, public health, public works or emergency management personnel in your county have the knowledge needed to be able to deploy to other areas of the state and successfully interoperate in a NIMS-compliant environment?

- No, having the training does not mean competence.
- Lack of field experience in large-scale disasters.
- They could deploy but would not be NIMS compliant.
- Some rural parts of the state have regional mutual-aid agreements and would be able to work together.
- The fire service would mesh into a larger response structure but LE and EMS would not.
- They all run their own command posts with no unified command.

7. What potential solutions to these problems might you offer based upon your experiences that would assist?

- The problem is not adoption, but implementation.
- Reimburse volunteer responders for attending training.
- Regional risk and vulnerability assessments work better than a one size fits all approach.
- Regional Local Tribal Incident Management Teams would help locals to meet NIMS requirements if they build trust with the locals.
- Reduce the required courses for rural areas.
- Make the training realistic and useful for rural responders and jurisdictions.
- Don't make unrealistic demands upon volunteers or they will leave.

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APPENDIX B—WISCONSIN E-SPONDER USERS BY COUNTY

Wisconsin Emergency Management **E•SPONDER® Users by County**

1 October 2009

For Official Use Only

ADAMS	5	MARATHON	7
ASHLAND	2	MARINETTE	4
BARRON	5	MARQUETTE	5
BAYFIELD	2	MENOMINEE	2
BROWN	294	MILWAUKEE	389
BUFFALO	4	MONROE	10
BURNETT	3	OCONTO	4
CALUMET	18	ONEIDA	5
CHIPPEWA	8	OUTAGAMIE	14
CLARK	11	OZAUKEE	58
COLUMBIA	18	PEPIN	1
CRAWFORD	3	PIERCE	3
DANE	80	POLK	3
DODGE	11	PORTAGE	11
DOOR	2	PRICE	1
DOUGLAS	3	RACINE	49
DUNN	8	RICHLAND	4
EAU CLAIRE	32	ROCK	98
FLORENCE	1	RUSK	1
FOND DU LAC	44	ST. CROIX	4
FOREST	2	SAUK	18
GRANT	5	SAWYER	7
GREEN	7	SHAWANO	5
GREEN LAKE	7	SHEBOYGAN	27
IOWA	1	TAYLOR	1
IRON	1	TREMPEALEAU	4
JACKSON	5	VERNON	4
JEFFERSON	10	VILAS	3
JUNEAU	9	WALWORTH	50
KENOSHA	17	WASHBURN	1
KEWAUNEE	10	WASHINGTON	39
LA CROSSE	12	WAUKESHA	229
LAFAYETTE	0	WAUPACA	12
LANGLADE	4	WAUSHARA	4
LINCOLN	3	WINNEBAGO	50
MANITOWOC	18	WOOD	6

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