

IDENTIFYING PRIORITY ENHANCEMENTS FOR HAZARD MITIGATION
PLANS IN URBANIZING-RURAL COUNTIES:
AN INVESTIGATION OF POTTAWATOMIE COUNTY, KANSAS

by

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Abstract:

Since 2005, local jurisdictions have been required to prepare hazard mitigation plans to maintain eligibility for a number of disaster-related federal grant programs. All types of communities prepare these plans, high-risk coastal communities and low-risk Great Plains communities alike. Research, both current and historic, has found hazard mitigation plans have a number of weaknesses, ranging from weak fact bases to weak mitigation actions. The purpose of this study is to explore how this research can be used to prioritize enhancements to hazard mitigation plans in growing rural counties, referred to as urbanizing rural communities, which have limited staff and resources.

Specifically, Pottawatomie County, Kansas was the focus of this study. In order to prioritize enhancements, the current issues and challenges related to hazard mitigation were explored through interviews and assessing the quality of hazard mitigation plan documents. Based on the outcome of this initial analysis, plans of comparable communities were explored to identify a range of policies and methods that could be used by Pottawatomie County. Finally, these policies and methods will be prioritized based on the level of enhancement and resource requirements.

This study found two possible directions for plan improvements: a combined response/mitigation planning process for a single county and strategies for participation within a regional planning context. The interviews with Pottawatomie County staff reveal an opportunity to combine phases of the emergency management cycle to boost interest and participation. The interviews also revealed a statewide shift to a regional planning process. This shift, while presenting new opportunities, will require Pottawatomie County staff to be more active and engaged to ensure the resulting regional plan will be beneficial to the county.

Identifying Priority Enhancements for Hazard Mitigation Plans in Urbanizing-Rural Counties



An Analysis of Pottawatomie County, Kansas' Hazard Mitigation Plan

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Regional and Community Planning
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Note

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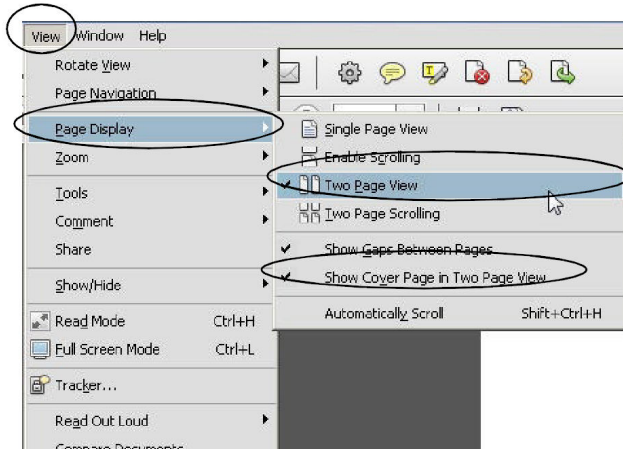


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Nomenclature

Asset- any man-made or natural feature that has value, including but not limited to, people; buildings; infrastructure, like bridges, roads, and sewer and water systems; lifelines like electricity and communication resources; or environmental cultural, or recreational features like parks, dunes, wetlands, or landmarks (Schwab, Brower, and Eschelbac 2007)

Comprehensive Emergency Management- approach used to deal with natural hazards and human-caused hazards and their potential to cause disasters in a community (Schwab, Brower, and Eschelbac 2007)

Disaster- the result when a natural hazard takes place where humans have situated themselves (Schwab, Brower, and Eschelbac 2007)

Disaster Mitigation Act of 2000- Amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988; streamlines the administration of federal disaster relief and mitigation programs and places emphasis on pre-disaster mitigation planning to reduce the Nation's disaster losses (Schwab, Brower, and Eschelbac 2007)

Emergency Operations Plan- Contains procedures that can be detailed and coordinated for emergency responders; developed and maintained by local emergency managers (Schwab, Brower, and Eschelbac 2007)

Hazard Identification- a step of the business risk assessment that defines the magnitudes and associated probabilities of hazards that may pose threats to the business and community (Schwab, Brower, and Eschelbac 2007)

Hazard Mitigation Plan- A document that presents policies and strategies to reduce vulnerability to hazards when those policies and strategies are put into action. These policies and action strategies are based on a sound and thorough risk and vulnerability assessment (Schwab, Brower, and Eschelbac 2007)

Hazard Profile- a description of the physical characteristics of hazards and a determination of various descriptors including magnitude, duration, frequency, probability, and extent. In most cases, a community can most easily use these descriptors when they are documented and displayed as maps (Schwab, Brower, and Eschelbac 2007)

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Loss Estimate- A calculation in dollar amounts of the potential damage to structures and content, interruptions of services, and displacement of residents and businesses caused by a hazard (Schwab, Brower, and Eschelbac 2007)

Mitigation- any sustained action to reduce or eliminate long-term risk to people and property from hazards and their effects (Schwab, Brower, and Eschelbac 2007)

Natural Hazards- inevitable and uncontrollable occurrences such as floods, hurricanes, winter storms, and earthquakes (Schwab, Brower, and Eschelbac 2007)

Planning Realities- the political, community, and resource factors that directly impact the preparation of plans and policy actions in a community

Risk- the potential losses associated with a hazard defined in terms of expected probability and frequency, exposure, and consequences (Schwab, Brower, and Eschelbac 2007)

Urbanizing Rural Community- a metro or metro adjacent community that is experiencing strong growth and is transitioning from a rural community to a more suburban or urban community. This growth changes the geography of the community and the types of issues it faces.

Vulnerability- the extent to which people will experience harm, and property will be damaged from a hazard vulnerability; involves who and what is at risk now; future vulnerability indicates who and what may be at risk in the future under projected development and population trends (Schwab, Brower, and Eschelbac 2007)

Vulnerability Assessment- A step of the business risk assessment that characterizes exposed populations and property, and the extent of injury and damage that may result from a hazard event of a given intensity in a given area (Schwab, Brower, and Eschelbac 2007)

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Chapter 1

Introduction

At least one natural disaster, such as a tornado, a hurricane, a major flood, or perhaps some combination of these, has affected many communities. Each time a natural disaster strikes, private and public property are damaged, and lives may be lost. Immediately after a disaster, life in these communities is often dramatically changed. Residents may lack adequate shelter, power may be out, and roads may be blocked.

Because of this common experience with natural disasters, communities frequently employ emergency management protocols. Emergency management protocols break preparing for disaster down into four key phases: preparation, response, recovery, and mitigation (Schwab, Brower, and Eschelbac 2007). Preparation focuses on readiness before a disaster hits. Response focuses on the actions a community will take immediately after a disaster, while recovery focuses on what will happen in the days and weeks following a disaster. Mitigation actions focus on identifying ways to reduce vulnerability to future disasters, and thereby reduce potential devastation.

The mitigation phase of emergency management is important because it looks to reduce long-term risk to future disasters. In order to plan for mitigation actions, it is imperative to understand the relationship between natural hazards and disasters. Schwab, et al. describes a natural hazard as a natural

event, such as a flood, earthquake or winter storm (2007). A natural hazard only becomes a disaster when it interacts with the built environment, when it affects our communities and homes (Schwab, Brower, and Eschelbac 2007; Godschalk et al. 1999). With this relationship in mind, mitigation actions are the actions a community identifies to reduce the likelihood that a natural hazard will interact their community. In order to identify beneficial mitigation actions, the community needs to systematically analyze the types of natural hazards that may affect the community and analyze the potential impacts of these events.

This systematic analysis is a key component in the preparation of what is referred to as a hazard mitigation plan (Schwab, Brower, and Eschelbac 2007; Cutter 2001; Hill and Cutter 1998; Deyle et al. 1998). A hazard mitigation plan also contains a list of goals and actions aimed at reducing vulnerability to disasters. Because of the systematic analysis contained in these plans, the federal government has established rules that require the preparation of hazard mitigation plans as an eligibility requirement for a number of grant programs related to disaster funding. The current requirement states these plans must be updated every five years.

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Dilemma

Current research indicates the overall quality of hazard mitigation plans to be weak. Researchers have identified many different factors that affect the outcome of the hazard mitigation planning process, as well as some factors that improve plan quality. Generally, communities need additional time and resources to improve these plans. As a result, communities with limited staff and resources may find it difficult to enhance the quality of their hazard mitigation plan. Additionally, some communities are not particularly vulnerable to major disasters and have limited incentive to dedicate additional resources to this type of planning. Rural counties that have recently began to experience strong growth are examples of communities with limited resources to dedicate to hazard mitigation planning, but are still interested in completing hazard mitigation plans to ensure federal funding eligibility. Enhancing the quality of plans produced by these urbanizing-rural communities may prove to be a challenge.

Key Questions

This study focuses on how contemporary planning research on hazard mitigation can be successfully used to enhance the hazard mitigation plans prepared by low-risk, urbanizing-rural counties with limited resources. Through this investigation, I will explore the following sub-questions:

What are the general strengths and weakness of these plans?

What are the key limiting factors that are affecting the creation of these plans?

How is each factor affecting the process?

How should improvements to these plans be prioritized?

How can the development of a new tool or methodology enhance the quality of these plans?

Each phase of the methodology designed for this study seeks to provide answers for one or more of these questions. This study will focus on the enhancement of a single county's plan, but will also explore a number of different plans in the process of identifying and prioritizing possible enhancements.

Relevance to Contemporary Planning

Contemporary planning research has focused on defining what constitutes a quality hazard mitigation plan and exploring the forces that impact this type of planning. This project translates this knowledge into workable solutions that can be used to enhance the quality of hazard mitigation plans in growing communities. It will offer priorities for growing communities with limited resources. Additionally, local jurisdictions have faced the planning eligibility requirement for the last eight years. As a result, many jurisdictions will have already updated their plans and will have newly created institutional knowledge related to hazard mitigation planning. Now is a good time to explore enhancements.

Findings and Priorities

During the course of this project, I have identified priorities and strategies for Pottawatomie County, KS, an urbanizing-rural county in Northeast Kansas. The county is located within the Manhattan, KS Metropolitan Statistical Area (MSA) and is experiencing growth due to the expansion of the city of Manhattan, KS. Strategies were identified using an analysis of the county's existing hazard mitigation plan and interviews with key county officials. A comparable analysis of nine counties located in the central United States was used to explore the current state of mitigation planning and to identify additional strategies for Pottawatomie County.

As a result of this analysis, I suggest hazard mitigation planning alone is not enough to incentivize full participation in a planning process. Interviews with Pottawatomie County Staff reveal an opportunity to combine the response phase of emergency management with mitigation. I believe this combination will increase the quality of the planning process and provide more meaningful data for incorporation into a hazard mitigation plan.

The interviews also revealed ongoing changes to state level hazard mitigation funding mechanisms and organizational structures. These changes present an obstacle to the combining of planning efforts previously described. As a result of these changes, Kansas counties must take on more responsibility as they participate in a regional planning process. While a regional planning process provides opportunities for greater collaboration and problem solving, the larger number of participants and financial constraints pose challenges to this new process.

Structure of Paper

Chapter 2 contains information on the purpose and structure of hazard mitigation plans and tools, along with the history of federal mitigation policy. The chapter also contains information regarding the theory of plan making, plan evaluation, and the results of a number of studies related to hazard mitigation planning.

Chapter 3 contain an overview of the methods used throughout this study. This includes methods for the selection of the target and comparable counties, the analysis of the target and comparable counties, and the prioritization of strategies for the target county.

Chapter 4 contains the analysis of Pottawatomie County's hazard mitigation plan and the interviews with county staff.

Chapter 5 contains the analysis of comparable counties. This analysis includes general overview of each plan and a general quality assessment.

Chapter 6 contains my recommendations for priority improvements. These recommendations include those aimed at a combine mitigation/response planning process and for the regional planning process.

Changes During Project

During the course of this project, new information came to light concerning state funding for hazard mitigation planning in Kansas. The planning process was shifting from single county plans to regional plans. Information gained during the comparable analysis portion of this study led me to alter my methods in response to the transition to regional plans. The methods described in Chapter 3 represent the original goals for this

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project. Deviations from these original methods are evident in the final phase of planned methods and in Chapter 6 Prioritizations and Conclusions.

Chapter 2

Background

Mitigation is an important component of the emergency management cycle. The goal of mitigation is to reduce or eliminate risk. Mitigation planning is a process communities use to identify the most appropriate actions to mitigate risk. Natural hazard mitigation planning reduces risks from natural hazards, such as tornadoes, floods, or drought. Throughout this chapter, literature focusing on hazard mitigation plans and the evaluation of these plans will be explored. A literature map of the resources used in this chapter is located in Appendix A

Defining Hazard Mitigation Planning

In order to better understand the purpose and content of a natural hazard mitigation plan, research on these plans and legal requirements will be briefly covered. It is important to understand the theoretical foundations of each element of a mitigation plan. This understanding allows for accurate and practical analysis of existing plans. Since these plans are required for participation in a number of federal funding programs, the federal role in mitigation planning will be described. Finally, common mitigation and planning tools will also be explored.

Hazard Mitigation Plans

Preparing a hazard mitigation plan provides a community with the opportunity to choose individualized mitigation actions (Schwab, Brower, and Eschelbac 2007). Communities are often exposed to a range of natural hazards, so they must identify and prioritize different mitigation activities. In order to do this, a community must understand its risk and vulnerability. The evaluation process a community follows is very important (Schwab, Brower, and Eschelbac 2007; Hill and Cutter 1998; Deyle et al. 1998). The hazard mitigation plan is built upon risk analysis. Once a community identifies its most critical hazards, it can select actions to reduce its risk, which together are known as its mitigation strategy. However, a capability assessment should be completed before actions are chosen (Schwab, Brower, and Eschelbac 2007).

Risk Assessment and Vulnerability Assessment

The processes of understanding the hazards faced by a community are commonly referred to as risk assessment and vulnerability assessment (Schwab, Brower, and Eschelbac 2007; Hill and Cutter 1998). The risk assessment process provides information about the hazard itself, while vulnerability analysis provides a discussion of the people and the built environment impacted by these hazards. In order to complete a risk assessment, the community must review

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historical records to understand the frequency, severity, magnitude, and location of past hazard events. During the vulnerability assessment, the community must inventory its population and the buildings within its boundaries. It must also identify its assets, such as key buildings, infrastructure, public utilities, and historic landmarks. This inventory allows a community to estimate the loss, both in terms of dollars and lives, a community might experience if a given disaster occurred. These loss estimates are also projected into the future based on existing growth patterns. All this information allows a community to prioritize its hazards (Schwab, Brower, and Eschelbac 2007; Hill and Cutter 1998).

Some communities have capitalized on existing funding opportunities and completed vulnerability and risk assessments which are able to guide future development. While not directly associated with the completion of a hazard mitigation plan, the City of Manhattan, Kansas recently completed a watershed management plan for the Wildcat Creek basin. Wildcat Creek has experienced extreme flooding over the last four years. To create flood maps illustrating the size of the floodplain at future build-out conditions and to implement flood prediction systems, the City of Manhattan capitalized on the following: existing public support, the then current remapping of FEMA floodplains, the Army Corps of Engineer's Silver Jacket Program, and existing future land use information. While this effort was made possible by a series of overlapping events, the project demonstrates a concerted effort to understand how the risk and impact of flooding would change over time and create a base of knowledge for future city policy. While not every community will be able to

capitalize on these same funding opportunities, every community can work toward a risk and vulnerability analysis that provides useful and meaningful information.

Capability Assessment

Schwab, et al. (2007), describe the capability assessment as a means of providing information about the community's ability to implement mitigation actions. The capability assessment allows a community to understand, in terms of its ability to implement mitigation actions, the strengths and weaknesses of different government departments and local community organizations. The community learns the expertise and funding capabilities of each department and organization within its boundaries. Also, existing policies, laws, and programs are analyzed for their impact on the current state of risk and vulnerability in the community. For example, the community learns if existing policies or programs are encouraging risky development or practices, or if policies are helping to protect the community. Schwab, et al. (2007) note it is important to consider the community's political ideologies and feelings towards government actions, as these can have a large impact on the capability of a community to implement mitigation actions, as discussed later.

It is important the capability assessment results in a meaningful understanding of the resources the community can use for hazard mitigation. While more sophisticated than most plans, the City of Boulder, Colorado's hazard mitigation plan contains a strong capability analysis (City of Boulder Department of Public Works 2012). The City of Boulder has addressed a number of flooding risks it faces. As a result, the City of Boulder has a number of capabilities

to list. Beyond quantity, the capabilities listed in the Boulder plan are described clearly and provide a strong picture of the community. It is important that readers of this assessment come away with a clear understanding of the capabilities the community does or does not have.

Mitigation Strategy

The final and most important component of the plan is the mitigation strategy (Schwab, Brower, and Eschelbac 2007). It is the roadmap the community will follow as it works to make itself safer. The mitigation strategy contains a list of actions the community has decided to implement, as well as a series of goals and objectives developed by the community. The goals represent broad statements addressing the risks and vulnerabilities outlined earlier. The objectives are more specific statements that address how the goals will be met. The mitigation actions chosen by the community should relate back to the established goals and objectives. The community must also carefully consider how to prioritize actions to implement. This prioritization can occur in a variety of ways (guidebook). For each action, it is important that the mitigation strategy contain the following: the responsible party (or parties), a timetable, a priority level, and funding source.

Federal Role in Disasters and Mitigation Efforts

The federal role in major disasters has grown substantially since the late 1800s. This historical evolution has dramatically affected the current structure of federal policies. Today, federal mitigation policy is structured on current

research and requires many of the hazard mitigation plan elements previously discussed.

Historical Involvement

The federal government historically played a small role when disasters occurred. The large-scale disasters that impacted the United States before the early 1900s, such as the 1871 Great Chicago Fire, the 1900 Galveston Hurricane, or the 1906 San Francisco Earthquake received minimal federal aid and attention. The federal government did not play a direct role in disaster response and recovery until the Great Mississippi Floods of 1927 (Federal Emergency Management Agency 2010).

However, it was not until 1950, that legislation authorizing the federal government to respond to major disasters passed. The Federal Disaster Assistance Program gave the president the power to respond to disasters and other crises. This legislation was amended and expanded in 1970 to include funding for private individuals and public facilities impacted by disasters. The 1970 amendments were the first to include specific references to mitigation efforts. In 1974, the law was again amended to establish the Presidential Disaster Declaration process (Federal Emergency Management Agency 2010).

The next key expansion of the federal disaster role came with the passage of the Robert T. Stafford Disaster Relief and Emergency Assistance Act in 1988. This act established the first legislation focusing on all four disaster management phases (Schwab 2010). The Stafford Act established the current Individual and Public Assistance Programs and the Hazard Mitigation Grant Program (HMGP). This act also required states to prepare hazard mitigation plans to be eligible for HMGP. These state

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level plans could be prepared before a disaster struck or it could be created immediately after a disaster in an effort to reduce the likelihood of a repeated disaster in the future (Federal Emergency Management Agency 2010).

During the turn of the current century, federal officials and policy makers began to realize that the Stafford Act primarily encouraged mitigation efforts after a disaster had occurred (Schwab 2010). Congress again amended federal disaster legislation and the Stafford Act with the passage of the Disaster Mitigation Act of 2000 (DMA). The DMA requires that a community prepare and adopt a hazard mitigation plan in order to be eligible for mitigation grants. This new requirement shifts the focus of mitigation to pre-disaster efforts (Federal Emergency Management Agency 2010).

Current FEMA Standards

Current standards set forth by the DMA are strongly centered on current hazard mitigation planning research. Federal policy makers have been responsive to new developments in planning literature over the past 30 or 40 years (Mileti 1999; Godschalk et al. 1999). As shown in Table 2-1, FEMA reviewers are looking for public involvement, risk assessments, and mitigation strategies. However, FEMA has structured current mitigation policy to serve as performance guides, not prescriptive requirements (Federal Emergency Management Agency 2011). Policy makers understand some communities have limited resources, while others have access to sophisticated technology. Therefore, reviewers are encouraged to review for intent as well as actual compliance with policy requirements (Federal Emergency Management Agency 2011). FEMA also

recognizes that some communities will only strive to meet minimum requirements, while others will work to truly mitigate long term risk (Federal Emergency Management Agency 2011).

Hazard Mitigation Policies and Tools

Given the flexibility FEMA has designed into current policy, there is a range of mitigation activities a community can include in their mitigation strategy. Historically, popular mitigation methods focused on warning and protection (Burby 1998a). More recently, these methods have been recognized to have unintended consequences on new developments (Burby 2006). There is a large push to incorporate preventative mitigation methods, such as land-use controls (Burby 1998b; Mileti 1999; Cutter 2001). However, there is a range of other actions that can be incorporated in a mitigation plan.

Mitigation actions can range from public education to regulatory controls. Schwab, et al. (2007) suggest some types of mitigation actions are best suited to protecting existing development, while others are better suited to preventing new problems by regulating future development. A community must consider its current needs, its access to technical resources needed to implement a given strategy, and its overall cost. Table 2-2, adapted from Schwab, et al. (2007), contains a list of broad categories of mitigation actions and examples of each category.

Burby (1998a) highlights warning and structural protection alone is insufficient to mitigate disasters. As described later, people tend to discount the likelihood of future disasters, and if they do experience disaster, they assume it will never happen again. Often

Table 2-1: Regulatory Checklist

Element	Description
Planning Process	The planning process must contain a public involvement component. Citizens, business leaders, academics, local and non-profit agencies, and surrounding jurisdictions must be given an opportunity to comment on the plan throughout the development, maintenance, and updating of the plan. Additionally, comments should be incorporated in the plan, when appropriate. Finally, the plan must contain a meaningful description of this public process.
Hazard Identification and Risk Assessment	The plan must describe the type, location and extent of natural hazards that can affect the community. This description should contain a listing of current and future buildings, infrastructure, and critical assets that may be impacted in the hazardous areas, including, if possible, cost estimates. The plans should also describe future growth so mitigation strategies can be properly structured. Areas of unique risk throughout the community must also be highlighted.
Mitigation Strategy	The plan must contain a mitigation strategy that outlines how the community will employ existing and new policies to reduce vulnerability and potential losses. The plan must contain a comprehensive range of actions as part of the mitigation strategy. Additionally, the plan should describe how the community would incorporate these actions into its other policies. If the plan is multi-jurisdictional, each participating community must have a mitigation action included in the overall strategy.
Plan Review, Evaluation, and Implementation (Plan Updates Only)	The plan must be revised within five years in order to reflect subsequent growth, progress on mitigation actions, and new priorities.
Plan Adoption	The plan must contain documentation that each participating jurisdiction has formally adopted the plan.

Source: Federal Emergency Management Agency. 2011. "Local Mitigation Plan Review Guide." http://www.fema.gov/media-library-data/20130726-1809-25045-7498/plan_review_guide_final_9_30_11.pdf.

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Table 2-2: Mitigation Strategies

Strategy	Example
Structural Engineered Project	Dams, Levees, Floodwalls, Beach Nourishment, Storm Sewers, Diversions, Vegetative Buffers
Prevention	Land Use Planning, Floodplain Regulations, Acquisition and Relocation, Capital Improvement Programs, Zoning, Subdivision Regulations
Property Protection	Building Codes, Building Elevation, Safe Rooms, Seismic Retrofits,
Natural Resource Protection	Floodplain Protection, Beach/Dune Preservation, Fire Resistant Landscaping, Slope Stabilization, Riparian Buffers
Public Information	Outreach Programs, Hazard Maps, Warning Systems, Real Estate Disclosures

Adapted from Schwab, Anna K, David J Brower, and Katherine Eschelbac. 2007. *Hazard Mitigation and Preparedness: Building Resilient Communities*. Hoboken, NJ: J. Wiley. p 406.

people choose to ignore warnings because the advantages of locating in these hazardous areas, whether economic, scenic, or otherwise, outweigh the perceived riskiness of living in the area (Burby 1998b; Burby 2006). Because of these ignored warnings, governments were forced to build structural protections, such as levees and dams (Burby 2006). The hazardous area became seemingly safe, and new developments occurred. Thus more development is potentially exposed to the natural hazard. Burby (2006) describes this phenomenon as the “safe development paradox”.

In partial response to this previously recognized problem, a series of important books on hazard mitigation were published in the late 1990s and early 2000s that outlined the

importance of preventative mitigation measures, many of which are referenced throughout this paper. These authors recognized that despite the opposition often facing preventative strategies, they are the only policies that will limit development in hazardous, albeit attractive, areas (Mileti 1999; Burby 1998b; May and Deyle 1998; Godschalk, Kaiser, and Berke 1998; Olshansky and Kartex 1998). These authors believe if a community wants to be sustainable over the long-term, the community must look for ways to reduce the opportunity for a natural hazard to interact with the built environment and thus reduce disasters.

Evaluating and Understanding Plan Quality

While communities have used hazard mitigation plans for many years, the quality of these plans is not well understood (Berke and Godschalk 2009; W. Lyles, Burke, and Smith 2012; Frazier et al. 2013). Before the literature evaluating hazard mitigation plans is covered, it is important to begin with a basic discussion of why communities generally make plans and how these reasons for making plans affect how those plans could be evaluated. The work of Hopkins (2001) will form the basis of this discussion. From this overview, a more focused discussion will explore the literature aimed at evaluating hazard mitigation plans. Researchers are working towards creating methods for rating and comparing hazard mitigation and other types of plans. Recent studies evaluating the quality of hazard mitigation plans have revealed lower than desired plan quality.

Purpose of Plans

Hopkins (2001, 257) discusses the work of several authors who have attempted to understand the fundamental purpose of community plans, including Kent (1964), Kaiser, et al. (1995), and Garvin (1996). Kent (1964) states the purpose of community plans includes policy determination, conveyance of advice, communication, and education. Similarly, Kaiser, et al. (1995) describes a community plan as an opportunity for the generation and debate of policy; an opportunity to share this policy with property owners, elected officials, developers, and other interested parties; and tool for implementing these policies. In an effort to classify the policies and visions contained in community plans, Garvin (1996) divides plans

into visions created by and advocated by a single individual; visions created by a community; and plans that contain strategies for moving forward.

Hopkins adds communities will freely choose to make a plan if the benefit of the plan exceeds the benefits of not making a plan and the costs of making the plan (2001). Simply, communities only have incentive to plan if there is something to be gained. He believes communities have incentive to plan if the plan focuses on situations and decisions that are interdependent, irreversible, indivisible, and are subject to imperfect insight. If a decision is dependent on others (i.e. interdependent), must be made all at once (i.e. indivisible), and is costly to alter once made (i.e. irreversible), only then will a community have incentive to make a plan on its own. This idea will be useful to the analysis of Pottawatomie County and other counties who are making plans in response to government mandates (Hopkins 2001).

Evaluation of Plans

Plans can be evaluated in a number of different ways, whether they are implemented and based on the quality of data and analysis used to create the plan. The works of Talen (1996), Connerly and Muller (1993), and Baer (1997) are reviewed by Hopkins as he builds his logic of plans (2001, 47). Talen (1996) argues that plans should be evaluated based on the number of completed objectives. Connerly and Muller (1993) suggest a plan should be evaluated based on how frequently it is consulted by decision makers. Baer (1997) believes plans should be evaluated by creating a list of techniques and elements that should be used to create ideal plans and then determining the number of these techniques or elements which are found within a specific

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plan. Within this frame of understanding, Hopkins (2001) argues plans be evaluated based on the five ways that plans function and result in change: agendas, policies, visions, designs, and strategies. Hopkins believes plans can affect change by acting as an unifying list of actions (an agenda) or by containing description of what the community might be like in the future (a vision), among other ways.

Hazard Mitigation Plan Evaluation Literature

Much of the work aimed at evaluating hazard mitigation plans is based upon content analysis, similar to the work of Baer (1997). Researchers have identified key characteristics of hazard mitigation plans and developed ways to compare existing mitigation plans to these ideal standards. The results of these studies have shown plans are generally weak (Berke and Godschalk 2009; W. Lyles, Burke, and Smith 2012).

Defining Evaluation Criteria

In order to evaluate quality, a set of criteria must exist. Berke and Godschalk (2009) established a series of criteria useful to quality evaluations of a wide range of planning documents. This listing is the result of a meta-analysis of 16 studies completed from 1995 to 2007. From this analysis, they aggregated ten key evaluation criteria. These criteria were divided into two categories: internal characteristics, which represent steps in the plan-making process, and external characteristics, which represent overall characteristics of the plan. The criteria are described in Table 2-3.

Results of Studies

The results of the studies focusing on hazard mitigation plans evaluated by Berke and Godschalk (2009), with the addition of a recent study by Lyles, et al. (2012), indicate these plans tend to have a number of weaknesses. The average scores, standardized on a scale of zero to one, reveal these plans contained fewer than 30% of the possible issue, fact base, goal, policy, and monitoring components looked for by researchers, as shown in Tables 2-4, containing internal characteristics, and Table 2-5, containing external characteristics. For example, Burby and May (1997, cited in Berke and Godschalk 2009) found mandated plans had 26% of study criteria pertaining to issue identification and only 13% of criteria pertaining to goals. A comparison of these two tables indicates hazard mitigation plans have better addressed external characteristics of quality than internal characteristics. The most recent and exhaustive study found similar results, though it found much higher scores of the quality of the goals. Another study, not included in Table 2-4 or Table 2-5, investigated the difference between urban and rural communities and found rural communities better addressed the quality characteristics of implementation, monitoring, and inter-organizational coordination than urban communities (Horney et al. 2012).

Challenges to Successful Planning

The underlying causes of this overall weakness in hazard mitigation plans have been investigated. This research found the ways individuals react to risk, how trust impacts the planning process, how politics influences the process, and how the types of professionals involved in the process impacts the quality of

Table 2-3: Evaluation Criteria

Criteria	Description
Internal Characteristics	
Issue Identification and Vision	The plan contains a description of major vulnerabilities, needs, and trends related to natural hazards. Additionally, the plan outlines the community's vision for a less vulnerable future.
Fact Base	The plan contains a strong mix of data on current vulnerabilities and risk, and on how these will change over time based on current trends. This data includes a listing of vulnerable properties, peoples, and critical community assets; estimates of the value of exposed properties; and description of future growth.
Goals	The plan contains goals that represent the community's vision of a less vulnerable future.
Policies	The plan contains policies specific enough to guide future actions taken by the community in its efforts to achieve the plan's goals.
Implementation	The plan contains commitments to implement the policies and actions outlined. This includes timelines, responsible parties and funding sources.
Monitoring and Evaluation	The goals and policies are based on measureable objectives, which allow the community to monitor and evaluate progress towards meeting these goals and policies.
Internal Consistency	The goals and policies address the issues described in the plan.
External Characteristics	
Organization and Presentation	The plan contains features to enhance the readability of the document, such as a table of contents, glossary, and executive summary, and also contains clear visuals and references to issues, goals, and policies.
Inter-Organizational Coordination	The plan is integrated with the community's other policies and plans.
Compliance	The plan contains all the statutory elements and these elements fit together.

*Table adapted from Berke, Philip, and David Godschalk. 2009. "Searching for the Good Plan A Meta-Analysis of Plan Quality Studies." *Journal of Planning Literature* 23 (3): 227–240.

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Table 2-4: Results of Previous Studies, Internal Characteristics

Investigators/ Plan Type Studied	Internal Characteristics						Monitor and Evaluate	Sample Size
	Issue	Fact Base	Goal	Policy	Internal Consistency	Implementation		
Burby and May 1997								
Mandated Plans	0.26	0.34	0.13	-	-	-	-	90
Nonmandated Plans	0.05	0.09	0.03	-	-	-	-	90
Berke et al. 1997								
New Zealand Regional Plans	-	0.13	0.68	0.11	-	-	-	16
Florida Regional Plans	-	0.45	0.53	0.23	-	-	-	7
Deyle and Smith 1998								
Florida Local Plans	-	-	-	-	-	-	-	18
Berke et al. 1999								
Local Plans	0.47	0.06	-	-	0.66	-	0.39	34
Regional Plans	0.61	0.12	-	-	0.62	-	0.21	16
Godschalk et al. 1999								
State Plans	-	0.24	0.33	0.24	-	0.24	0.24	44
Nelson and French 2002								
California Local Plans	-	0.21	0.18	-	-	-	-	19
Brody 2003								
CA and FL Local Plans 1991	-	0.09	0.10	0.05	-	-	-	59
CA and FL Local Plans 1999	-	0.12	0.13	0.12	-	-	-	59
Lyles, Burke, Gavin, 2012**								
Coastal Local Plans	-	.35	.52	0.27	-	0.59	0.29	175
Overall Mean***								
	0.23	0.26	0.27	0.20	0.65	0.52	0.29	627

*Table adapted from Berke, Philip, and David Godschalk. 2009. "Searching for the Good Plan A Meta-Analysis of Plan Quality Studies." *Journal of Planning Literature* 23 (3): 227–240.

** Not included in Berke and Godschalk, 2009

***Overall means weighted based on sample size

Table 2-5: Results of Previous Studies, External Characteristics

Investigators/ Plan Type Studied	External Characteristics			Sample Size
	Organization and Presentation	Coordination	Compliance	
Burby and May 1997				
MandatedPlans	-	-	-	90
Nonmandated Plans	-	-	-	90
Berke et al. 1997				
New Zealand Regional Plans	-	-	-	16
Florida Regional Plans	-	-	-	7
Deyle and Smith 1998				
Florida Local Plans	-	-	0.44	18
Berke et al. 1999				
Local Plans	0.48	0.43	0.35	34
Regional Plans	0.37	0.46	0.65	16
Godschalk et al. 1999				
State Plans	-	0.23	-	44
Nelson and French 2002				
California Local Plans	-	-	-	19
Brody 2003				
CA and FL Local Plans 1991	-	-	-	59
CA and FL Local Plans 1999	-	-	-	59
Lyles, Burke, Gavin, 2012**				
Coastal Local Plans	-	0.18	-	175
Overall Mean ***				
	0.44	0.24	0.44	627

*Table adapted from Berke, Philip, and David Godschalk. 2009. "Searching for the Good Plan A Meta-Analysis of Plan Quality Studies." *Journal of Planning Literature* 23 (3): 227–240.

** Not included in Berke and Godschalk, 2009

***Overall means weighted based on sample size

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planning efforts (Mileti 1999; Alesch and Petak 2002; Paton 2008; L. W. Lyles 2012). A successful planning process specifically addresses these areas to achieve high quality hazard mitigation plans.

An individual's natural tendencies can influence the degree to which new policies are enacted. It is nearly impossible for individuals to fully understand the complex world he or she lives in, therefore they do not have the necessary information to make an "informed" decision (Tierney 1989; Mileti 1999). As a result, individuals tend to discount the possibility that a disaster will happen to them and make decisions based on their past experiences instead (Cortner et al. 1984; Mileti 1999). This lack of information also prevents people from taking advantage of existing programs which might reduce their risk. People constantly face problems and issues they must address and resolve. They often do not have time or resources to also find solutions to low probability events that are represented by disasters (Mileti 1999).

The political environment in which hazard mitigation plans are created also hinders the creation of high quality plans (Prater and Lindell 2000; Alesch and Petak 2002). In order to navigate this political environment, local governments need to exhibit a high level of technical and political sophistication (Prater and Lindell 2000). Hazard mitigation efforts must be considered important by a majority of stakeholder groups and be supported by a few dedicated individuals to be implemented (Prater and Lindell 2000; L. W. Lyles 2012; Alesch and Petak 2002). It is a challenge to frame hazard mitigation efforts to make it relevant to the diverse range of groups that must support a measure. There may be push back by some

groups because of environmental impacts or because of issues concerning private property rights (Mileti 1999). The political environment is also complicated by the diverse range of federal and state policies and the complicated relationships that exist between jurisdictions within a given region (May and Deyle 1998).

Chapter 3

Methods

In order to explore how existing research can be used to enhance hazard mitigation plans of low-risk urbanizing-rural counties, the issues faced by these counties and the quality of these plans must be identified. Existing literature has found a range of factors that may affect the preparation and overall quality of hazard mitigation plans, and other plans in general. First, the plan and planning process of a particular county must be analyzed. Through this process, the planning realities of the county can be understood. These realities consist of the plan's strengths and weaknesses, the level of political and community support, and possible impacts of limited staff. Once the planning realities of the target county are understood, this study explores the plans and policies of comparable counties to identify actions, policies, or planning methods that might benefit the target community. These comparable counties consist of similar urbanizing-rural counties, rural counties, and more urbanized counties. Finally, this study seeks to prioritize enhancements to the target plan. This prioritization will be limitedly generalizable to other urbanizing-rural counties, whether included in this study or not.

Profile and Analysis of Target County

The first phase of this study consists of two actions. The first action is the identification of the target community and the exploration of the hazard mitigation plan and planning realities of this community. This exploration consists of a number of interviews and an analysis of the community's hazard mitigation plan.

Profile of Target Community

Urbanizing-Rural counties are the focus of this study. The selection and profiling of the target community are important for a number of reasons. First, the size and level of sophistication of the target community directly influences the selection of comparable communities. A target county that just recently began expanding from a small population requires the selection of a different set of comparable counties than a target county that started with a larger population which had been developing for some time. Second, these same characteristics influence the policies and methods that are ultimately prioritized. Third, the location of the target community influences the ease of collecting data and interviewing individuals.

Selection of Target Community

The target community of this study is Pottawatomie County, Kansas. This community was chosen because of its proximity to Kansas

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State University, its recent growth, and my existing professional connection to county staff. Pottawatomie County is one of three counties of the Manhattan, KS Metropolitan Statistical Area (MSA), home of Kansas State University. The western edge of the county is experiencing strong growth pressures as the City of Manhattan expands out of Riley County into Pottawatomie County. The county's population in 2010 was 21,604, which is 19% larger than its 2000 population. Physiographically, Pottawatomie County contains the hilly terrain associated with the Flint Hills and the floodplains associated with the Kansas, Big Blue, and many smaller rivers and streams.

Analysis of Target County

Two different methods were used to collect information about the target community: plan analysis and interviews. The data collected from these methods were used to help draw some basic conclusions about the strengths and weaknesses of the target county's hazard mitigation plan and the planning process. These conclusions were used in phase two and three of this study.

Plan Analysis

The strengths and weaknesses of the Pottawatomie County Hazard Mitigation Plan were evaluated through additional interview questions and a protocol adapted from the works of W. Lyles, Burke, and Smith 2012; Philip Berke and Godschalk 2009 and Frazier et al. 2013. According to Lyles, Burke, and Smith (2012), researchers have identified two key sets of principles that determine the quality of a plan: direction setting principles (fact base, goals, policies) and action-oriented

principles (participation, inter-organizational coordination, implementation, and monitoring). This evaluation process involves searching the hazard mitigation plan for key components of these principles of quality and indicating their presence or absence. Some components are measured in a binary process: present or not present; and some are measured using an ordinal variable: not present; present, but not detailed; present, and detailed. This analysis resulted in a score that measured the number of key components included in the plan and the level of detail included. This protocol can be found in Appendix B. In order to supplement this analysis, the Emergency Management Director, the individual who currently seems to have led the Pottawatomie County hazard mitigation planning process, was asked a few questions focusing on the planning process during the interview. These additional questions can also be found in Appendix C.

Interviews

The planning realities of Pottawatomie County, Kansas were explored using a number of interviews that adhered to protocols approved by the KSU Institutional Review Board (45 CFR 46). The interview process was designed to explore challenges that influence the planning process as identified in a review of existing literature. Questions focused on identifying the level of political and community support of hazard mitigation planning, the attitudes towards mitigation planning held by staff, and any effects that limited staff and resources had on the planning process. Mitigation is an important component of the emergency management cycle (A. K. Schwab, Brower, and Eschelbac 2007). As a result, the Emergency

Management Director of Pottawatomie County was interviewed. Additionally, research has identified the involvement of a planner as an important determinate of plan quality (L. W. Lyles 2012). Therefore, the Director of Pottawatomie County Zoning was also interviewed. A list of interview questions that were used is found in Appendix A.

Validity, Reliability, and Generalizability

An important test for the validity of this phase is the appropriateness of Pottawatomie County as a urbanizing-rural community. I think the economic and residential growth that is occurring in western Pottawatomie County is evidence that Pottawatomie County is experiencing some urbanization. Economic engines such as the presence of Walmart and an industrial park, and construction of the Heritage Square South development offer economic support for this urbanization trend. The collaborative planning effort between Manhattan, Riley County, and Pottawatomie County focusing on Hwy 24 between Manhattan and Wamego also suggests a continued growth of the Manhattan urbanized area into Pottawatomie County.

Another important test for this phase concerns the plan evaluation process. The validity of the evaluation process can be assumed based on the general acceptance of the process in current research. The protocol used has been directly adapted from current research. However, there are a few challenges to the reliability and generalizability of results generated by the protocol. The use of the plan evaluation protocol is ideally suited for a study with more than one member. Lyles, Burke, and Smith designed their study so random pairs of

researchers evaluated each plan and reconciled any differences in scoring. Krippendorff (1980) notes one person is able to conduct this type of analysis by re-scoring each plan, although this is the weakest method to ensure generalizability. As a result of these challenges, Pottawatomie County's plan will be reviewed twice to ensure the conclusions drawn are accurate and can be generalized to the rest of this study.

Analysis of Comparable Plans

In order to better understand how the hazard mitigation plan of Pottawatomie County compares to other growing counties, a number of comparable county-level plans were evaluated. The selection of comparable counties was centered on the identification of similar urbanizing-rural counties. This phase resulted in the identification of policies and methodologies that might enhance Pottawatomie County's plan.

Comparable Counties

Three types of counties were selected for this comparison: rural, urbanizing-rural, and urbanized. This range of counties was included to illustrate the spectrum of possible policies and methodologies found in hazard mitigation plans. As described in the Introduction, this study focused on counties that do not appear to be located in high-risk areas, representing the "average" county in the United States. Therefore, this study focuses on non-coastal states: Kansas, Nebraska, Missouri, Oklahoma, Arkansas, Iowa, Illinois, Indiana, Kentucky, and Tennessee. Within these states, counties within a Metropolitan Statistical Area (MSA) area were targeted.

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Selection Criteria

The criteria used to select counties for this study were informed by characteristics of Pottawatomie County. The identification of similar counties determined from which metropolitan areas the rural and urbanized communities would be chosen. Additionally, characteristics of Pottawatomie County informed the definitions of county types used in this study.

Urbanizing-Rural Counties

Broadly, an urbanizing-rural county is a community, which previously would have been considered rural with a small, stable population until recent changes caused strong growth. Rural subdivisions are becoming common, transforming segments of the county. In order to identify urbanizing-rural counties comparable with Pottawatomie County, three key characteristics of Pottawatomie were used as selection criteria: a small population, a strong growth rate and, a metropolitan county.

The specific criteria levels follow directly from Pottawatomie County. The county had a population of only 21,604 in 2010. The county experienced 19% growth since 2000. The maximum population for comparable urbanizing- rural counties was set at 36,250 in order to find a large enough sample of counties in the target states. In order to highlight communities with strong growth, the minimum growth rate from 2000 to 2010 was set at 15%. Additionally, this search focused on counties designated as part of a Metropolitan Statistical Area. If the population threshold was set below 36,250, the process would not have identified any comparable counties.

Rural Counties

Broadly, a rural county is considered rural for this study if it has a small population that is relatively stable or experiencing decline. Additionally, these counties should be located on the fringe of a metropolitan area. The rural counties included in this study were chosen from the same metropolitan area as the urbanizing-rural counties, where possible. Rural counties were selected based on populations of less than 15,000 and growth rates of less than 10%.

These criteria ensured the rural communities included in this study were representative of Pottawatomie County before recent growth. The inclusion of these counties served as indicators if Pottawatomie County included new policies or methodologies in its hazard mitigation plan that account for the new population growth and new risks associated with this growth.

Urbanized Counties

Broadly, an urbanized county, for the purposes of this study, is a county that experienced sustained population growth yet retained some rural character. These counties are home to a number of small- to mid-sized towns and the rural area of the county are home to many rural subdivisions. These counties are still growing, but at a much lower rate than they did as they were urbanizing. These counties may contain the urban core of a metropolitan area or may only contain the suburban centers that surround the core. For purposes of this study, an urbanized county has a population of less than 250,000 people. It must also have a growth rate of less than 10%. It must also be located within the same metro area as the urbanized-rural counties included in this study.

These criteria ensure the urbanized communities included in this study are representative of a possible future Pottawatomie County. Although Pottawatomie County will likely not grow to the size of the urbanized counties, their inclusion may illustrate policies and methods Pottawatomie County could emulate in its hazard mitigation plan.

Selection Process

Professional judgment was used to make the final selection of counties. The selection criteria provides a listing of counties that meet key criteria, but the criteria do not address the overall development patterns, location within, and overall relationship to the larger metropolitan area. Professional judgment ensures the counties selected bear some relationship to a past, present, or future state of Pottawatomie County. Additionally, this process ensures that selected metro areas have the most appropriate mix of rural, urbanizing rural, and urbanized counties. A purely random selection process could result in a less than desirable mix of communities.

Plan and Process Evaluation

The plan analysis that occurred during this phase not only focused on the overall quality of the plan, but also focused on the particular methods mapping techniques, and policies employed by these jurisdictions. The goal of this phase was to identify a range of actions that might be appropriate for Pottawatomie County to employ. Through this process, the goal was to identify different levels of plan sophistication demonstrated by these comparable plans. The listing of policies and techniques collected

during this phase was visually presented based on its associated level of sophistication.

Plan Evaluation

The same evaluation protocol employed for this phase of the study was used in the previous phase (Appendix B). The overall score was of interest for this phase because it helped establish how Pottawatomie County's Plan compared to other communities. Comparisons were made based on the scores received for each principle included in the protocol and based on the overall scores.

Process Evaluation

The process evaluation step of this phase was a key step in this project. This step moved beyond the presence or absence of a particular policy, but instead focused on specific methods and techniques employed during the creation of these plans. Particular emphasis was given to the techniques used for the development of the fact base. Because these communities are growing, it is particularly important to ensure that these plans are incorporating this growth and change into the fact base. As previously stated, these policies and techniques were sorted based on its level of sophistication. The range of sophistication identified was an important outcome of this study. The level of sophistication influenced how applicable the technique is to Pottawatomie County, the likelihood of implementation, and the overall importance of the technique.

Validity, Reliability, and Generalizability

This phase was structured to ensure validity, reliability, and generalizability. The selection criteria and process, and the plan evaluation

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process was structured to ensure the counties chosen accurately compared to Pottawatomie County and revealed meaningful information about these different plans. Additional selection criteria could have been included, but simplicity demanded only key criteria. Overall population size, recent growth, and geographic considerations are key characteristics of Pottawatomie County that distinguish its current situation. Therefore, using these characteristics ensured that comparable communities were identified as being similar. The validity of the evaluation process can be assumed based on the general acceptance of the process in current research. The same issues of reliability are present in this phase as in the previous phase. Since I was the only researcher to evaluate these plans, my biases may have caused me to focus on some policies and methodologies while overlooking others. If another researcher reviews these same plans, he or she may identify a different set of policies. I believe, however, the general conclusions reached by other researchers would be similar to those I have made. Despite this issue, the results of this phase should be generalizable to other urbanizing rural counties because of the care used during the selection process and range of counties from which the data is drawn. The identified policies and methodologies represent a range of policies currently used by communities similar to Pottawatomie County.

Prioritization

This final phase resulted in a prioritized list of enhancements for Pottawatomie County to consider. Additionally, a tool was developed that will assist Pottawatomie County in

implementing the proposed enhancements. The prioritization was based on the needs of the county and resource requirements of each enhancement and overall impact of each enhancement.

Implementation and Plan Enhancement

Since Pottawatomie County has limited resources to dedicate toward the enhancement of its hazard mitigation plan, the policies and methods identified during the previous stage must be prioritized. The visual listing of policies and techniques based on sophistication created in the previous phase served as the structure for this prioritization. The prioritization was based on the ease of implementation and the level of plan enhancement achieved from implementation of this technique. Pottawatomie County will only be able to implement a limited number of new policies. These recommendations were grouped by implementation time frame: before next update, during next update, and future updates.

Chapter 4

Pottawatomie County

Analysis

The Pottawatomie County Hazard Mitigation plan was explored using two methods, plan analysis and interviews. The plan analysis portion revealed a plan of average quality. The plan addresses all the key components of a mitigation plan. There are opportunities for improvement, but there are no fundamental flaws in the plan. Through the interviews, I found Pottawatomie County employs dedicated individuals who are working hard to protect the lives and property of Pottawatomie County citizens. I spoke with the county's Emergency Management Director, the individual responsible for implementing and updating the mitigation plan, and Zoning Administrator, the individual responsible for helping to implement many of the regulatory elements.

Review of Plan

An initial review of the Table of Contents and various headings of the Pottawatomie County Mitigation Plan revealed the county's consultant had developed a strong framework for the plan. The framework appeared to contain a suitable capability analysis, including regulatory, fiscal and political capabilities. It also appeared to detail the growth each participating jurisdiction

is likely to experience in the next few decades and contained a strong selection of maps. However, a more detailed read-through of the plan revealed the framework had not been developed to its full potential. Each section of the plan contains a large amount of standardized text and limited local information. Furthermore, the included growth projections did not seem to be taken from the most appropriate source. Overall, the plan appears to be of average quality.

Planning Process

The planning process used to develop the Pottawatomie County Mitigation Plan was weak. First, the hazard analysis used for this planning effort was conducted in 2007 as a separate project. The Mitigation Planning Committee (MPC) met for the first time on January 27, 2009 to review and approve the natural hazards and vulnerability prioritizations completed during the earlier process. This separation of the analysis and the planning effort is undesirable. Any key findings of the hazard analysis likely faded from participants' minds during this extended delay. Additionally, the next meeting of the MPC was not held until a draft was presented to the public on February 9, 2010. The Documentation of the Planning Process section

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states the MPC spent the time between the initial meeting and the public hearing reviewing and offering comments. Although some members of the MPC may have reviewed the plan as it was developed, this planning process gave little opportunity to members of the MPC to influence the development of the plan. The lack of formal meetings also excluded the MPC from the opportunity to learn about this type of analysis and how to apply this type of process in their own communities. This process is beneficial for the consultant, as it requires fewer meetings, but the process does not help the community grow stronger and more capable.

Capability Assessment

The framework of the capability assessment appeared strong in the initial analysis. It seemed

to fully explore Pottawatomie County's capability to implement mitigation actions, including the capability of staff, technical capabilities, political willpower, and usefulness of existing policies for mitigation action. The content of these sections, however, is often filled with standardized text that reveals little useful information about the true capability of each community. Many of the issues identified below are not representative of fundamental flaws, but rather represent improvements that would make this plan more useful.

Quotes 4-1 and 4-2 from the City Ordinances section of Legal and Regulatory Capability are illustrative of the standardized nature of the text. The standardized descriptions contained in this, and other sections, obscure any differences that may exist between the ordinances of St.

“St. George has enacted and enforces regulatory ordinances designed to promote the public health, safety and general welfare of its citizenry. These ordinances include building codes, zoning ordinances, subdivision regulations, a comprehensive land plan, and floodplain management (NFIP membership).” (Pottawatomie County Hazard Mitigation Plan, Page 46)

Quote 4-1: Description of St. George's Legal and Regulatory Capacity

“St. Marys has enacted and enforces regulatory ordinances designed to promote the public health, safety and general welfare of its citizenry. These ordinances include building codes, zoning ordinances, subdivision regulations, a comprehensive land plan, and floodplain management (NFIP membership).” (Pottawatomie County Hazard Mitigation Plan, Page 46)

Quote 4-2: Description of St. Marys' Legal and Regulatory Capacity

“Belvue has reported that they have limited fiscal capability to implement hazard mitigation strategies due to the general economic, environment, and budget pressures in the city. For fiscal year 2008, Belvue’s adopted budgeted expenditures were \$214,804. The majority of these funds are obligated to basic support services and human services. Belvue reported that it could provide the local match for the current hazard mitigation grant program.” (Pottawatomie County Hazard Mitigation Plan, Page 55)

Quote 4-3: Description of Belvue’s Fiscal Capacity

George, a town of 639, and St. Marys, a town of 2,627. While it would be difficult to individualize the description of each community, the consistent use of identical descriptions reduces the legitimacy of the plan.

The assessment also explored the size of the jurisdiction’s current budget and the current fiscal capability to allocate matching funds for federal grants, as seen in Quote 4-3. However, this assessment does not address how Belvue’s fiscal capability has changed over the last decade, nor does it include an estimate of how it might change over the next decade. This information would be useful for accurately gauging the capability of Belvue, or any other community, to implement mitigation actions. This would be an easy change to make.

Throughout this capability assessment, the authors clearly recognize the importance of the Hazard Mitigation Grant Program for implementing mitigation projects. The plan contains a description of the county treasurer who “is responsible for the oversight and management of the County’s budget and fiscal programs, including the administration of state and federal grants” (page 45), however there is no discussion concerning the treasurer’s capability to handle additional grant responsibilities. This is an important capability to understand as community considers the feasibility of applying for new grants.

A review of the Political Willpower section of the capability analysis also reveals some interesting details. The thoughts, opinions and political ideologies of a community’s citizens

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“Many Pottawatomie County residents are becoming more knowledgeable about the potential hazards that their jurisdiction faces, and in recent years, they have become more familiar with the practices and principles of mitigation. The county participation in the National Flood Insurance Program, along with the adoption of Unified Development Resolutions, the Highway 24 Corridor Plan, and other mitigation ordinances, in addition to steps taken to update emergency operations programs in the county provide some insight into the communities desire to comply with mitigation policy and procedure. It is strongly believed that such tangible changes within the community have created a greater sense of awareness among local residents, and that hazard mitigation is a concept that they are beginning to readily accept and support.

Because of this fact, coupled with Pottawatomie County’s history with natural disasters, it is expected that the current and future political climates are favorable for supporting and advancing future hazard mitigation strategies.” (Pottawatomie County Hazard Mitigation Plan, page 57)

Quote 4-4: Description of Pottawatomie County’s Political Willpower

are important details to understand about a community (Schwab, Brower, and Eschelbac 2007). The analysis of the political environment of Pottawatomie County, shown as a whole in Quote 4-4, seemed very optimistic. While I wish to leave most analysis of comparable counties to later sections, the Miami County, KS mitigation plan was prepared by the same consultant and

contains a similar statement, shown in Quote 4-5. The similarity of these two texts calls into question the accuracy of this analysis. It is vitally important for a community to understand its people.

“Many Miami County residents are becoming more knowledgeable about the potential hazards that their jurisdiction faces, and in recent years, they have become more familiar with the practices and principles of mitigation. Although the county has a sparse population density with a small tax base, its adoption of the National Flood Insurance Program, development of a Comprehensive Land Use Plan, implementation of codes and regulations, and the steps taken to update its emergency operations programs, provide some insight into the county’s desire to comply with mitigation policy and procedure. It is strongly believed that such tangible changes within the county have created a greater sense of awareness among local residents, and that hazard mitigation is a concept that they are beginning to readily accept and support.

Because of this belief, coupled with Miami County’s history with natural disasters, it is expected that the current and future political climates are and will be favorable to supporting and advancing future hazard mitigation strategies.” (Miami County Hazard Mitigation Plan, page 49)

Quote 4-5: Description of Miami County’s Political Willpower

Risk and Vulnerability Assessment

Overall, the risk and vulnerability assessments in the Pottawatomie County plan are thorough. The analyses illustrate the ways natural hazards may affect the county, but there are opportunities to improve or expand the analysis. I found an overabundance of standardized text and a few missed opportunities for analyzing

mapped risks. I also found a limited analysis of wildfires, a hazard I learned was important to the county during the interview phase of this analysis. Similar to the observations made in the Capability Analysis section, these items do not represent fundamental flaws, but are merely opportunities for future improvement. The plan does include some basic modeling to predict the

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‘St. George’s residential and commercial development is projected to experience a gradual increase in population growth over the next 32 years of 1.38% annually (KWO). Projections are based on Kansas Water Office data using Compound Annual Growth Rate as the means to develop projected growth (KWO). Land use includes commercial, industrial, and residential development in St. George, and has been largely regulated by zoning and construction codes.

While difficult to forecast, St. George’s future development trend through 2040 is assumed to increase proportionate to the increase in population and will need to monitor and update mitigation initiatives as the process unfolds. The property valuation rate, for the foreseeable future, is also expected to parallel the city population growth pattern, and will remain at 1.38% annual growth for purposes of mitigation planning until future data is available.” (Pottawatomie County Hazard Mitigation Plan, page 189)

[Quote 4-6: Description of St. George’s Growth](#)

number of exposed structures to the flooding hazard, which is a strength of the plan.

The issues related to standardized text are also present in the risk and vulnerability assessments. Similar to the instances in the capability assessment, the standardized text

displaces local information, and it also makes the assessment longer than necessary. The Flood Profile sections for each community in the Pottawatomie County plan contain the same standardized descriptions of floods. As a result, three quarters of the profile is the same for each

‘St. George’s residential and commercial development is projected to experience a gradual increase in population growth over the next 32 years of 1.38% annually (KWO). Projections are based on Kansas Water Office data using Compound Annual Growth Rate as the means to develop projected growth (KWO). Land use includes commercial, industrial, and residential development in St. George, and has been largely regulated by zoning and construction codes.

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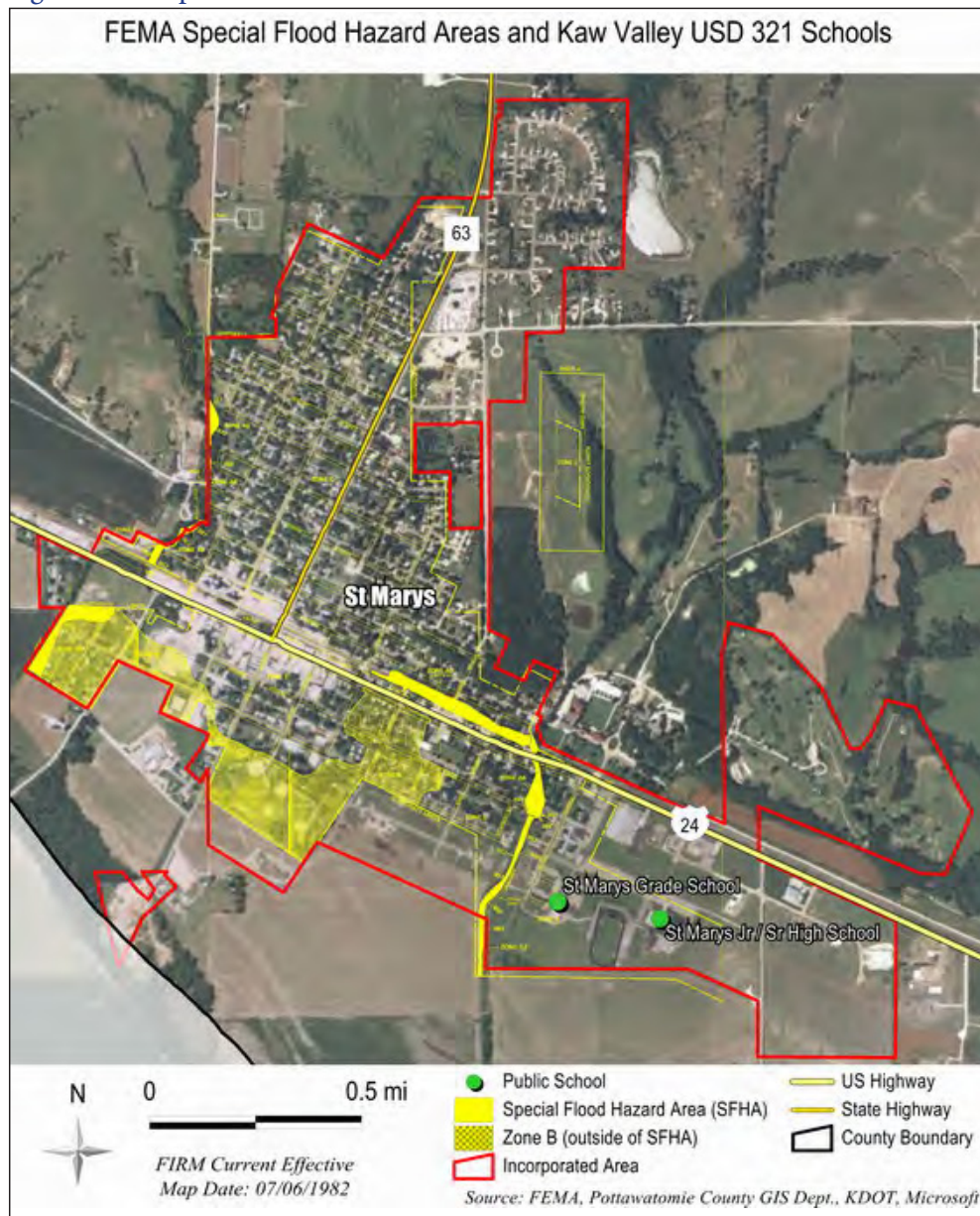
Quote 4-7: Description of St. Marys’ Growth

community. The section Development Trends and Implications is particularly affected by standardized text. The descriptions of St. George and St. Marys contained in Quotes 4-6 and 4-7 are illustrative of the issue. These descriptions reveal nothing about the development of

these communities, nor do they describe how the vulnerability of these communities may change with this development. A more useful description would more directly state whether change is forecasted to occur and where that change will likely happen.

Identifying Priority Enhancements

Figure 4-1: Map of USD 321 Flood Hazard Areas

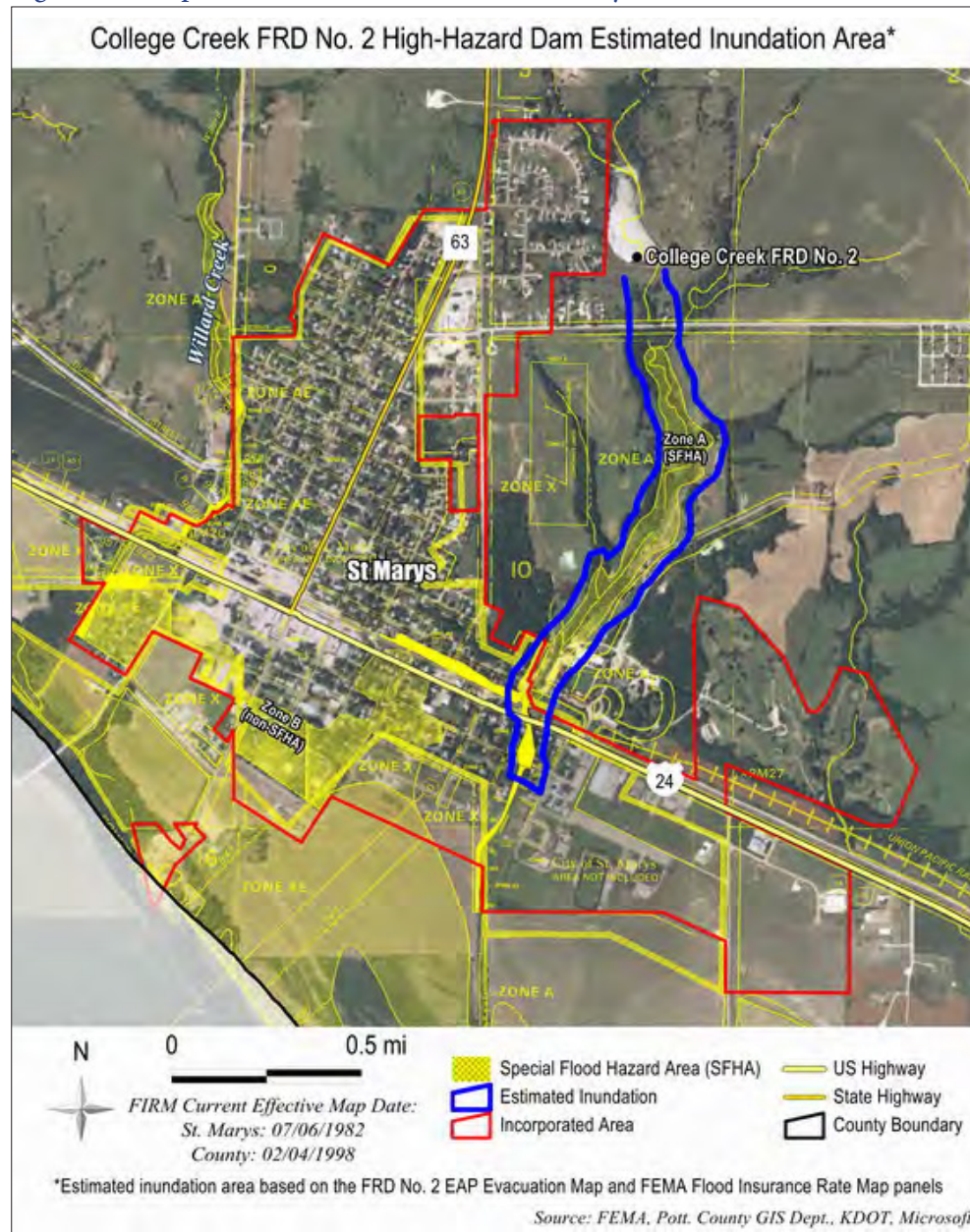


Source: Pottawatomie Hazard Mitigation Plan, Page 143

The mapping included in a hazard mitigation plan is very important. Maps that combine multiple sources of data, such as the ones shown in Figures 4-1 and 4-2, can reveal risk or patterns that might otherwise be missed. For example, as I reviewed the maps of St. Marys,

specifically maps shown in Figure 4-1 and 4-2, I found an indirect risk to St. Marys Grade School that is not mentioned. The flood hazard map for USD 321 shows the floodplains and floodways relationship to the district's two schools. The College Creek Dam inundation map shows the

Figure 4-2: Map of Dam Inundation Area in St. Marys



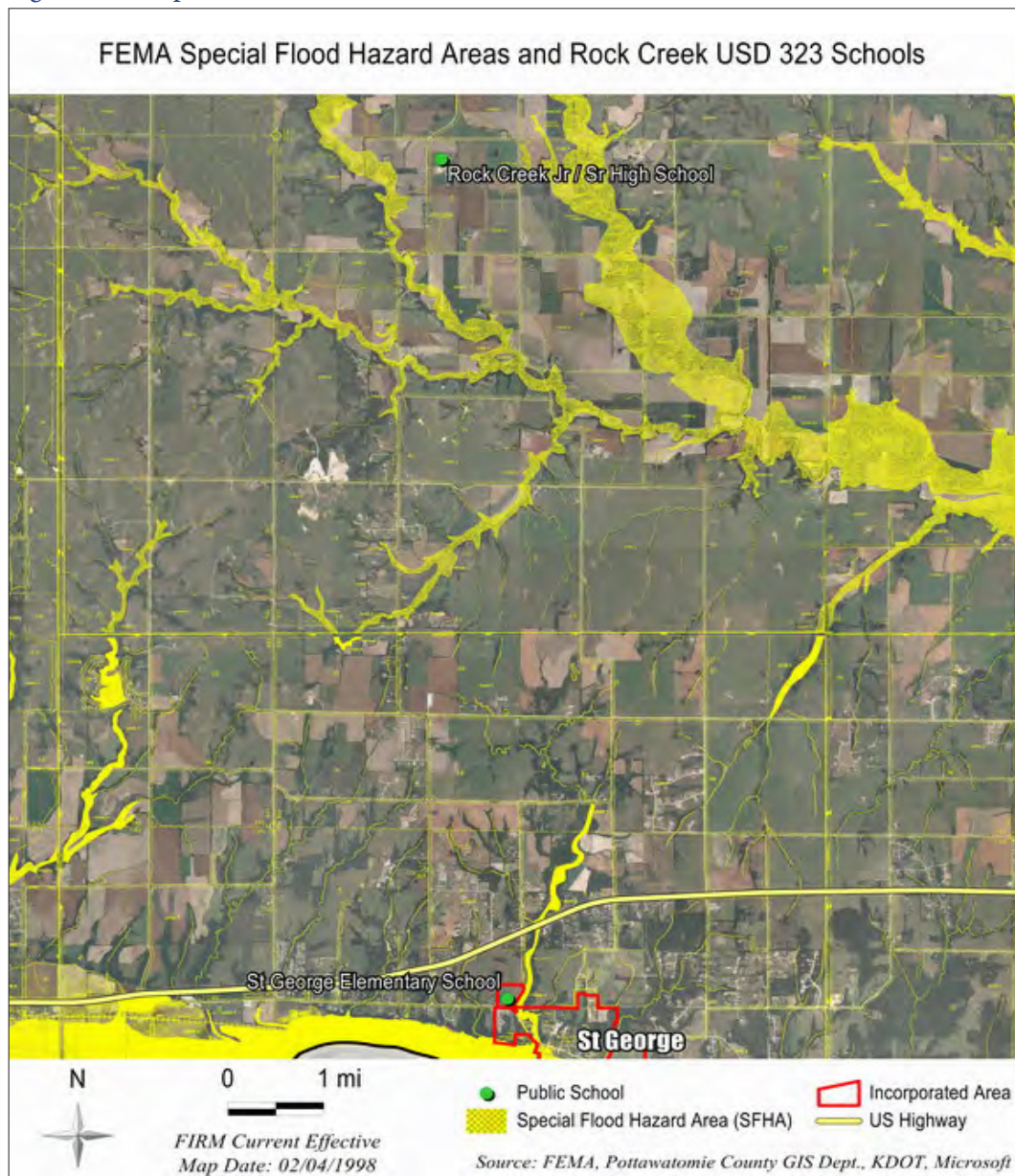
Source: Pottawatomie County Hazard Mitigation Plan, Page 150

estimated inundation area and its relationship to the floodplains and floodways. However, there is no map showing the relation of USD 321 to the dam inundation area. A dam failure would likely have an indirect impact on USD 321, especially if school was releasing or if it

occurred during a period of high water. The inundation area extends across the town's major road and across side streets in the school. This potential impact is not mentioned in the text, nor would it be revealed by a quick review of the plan's maps. Another relationship missed

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Figure 4-3: Map of USD 323 Flood Hazard Area

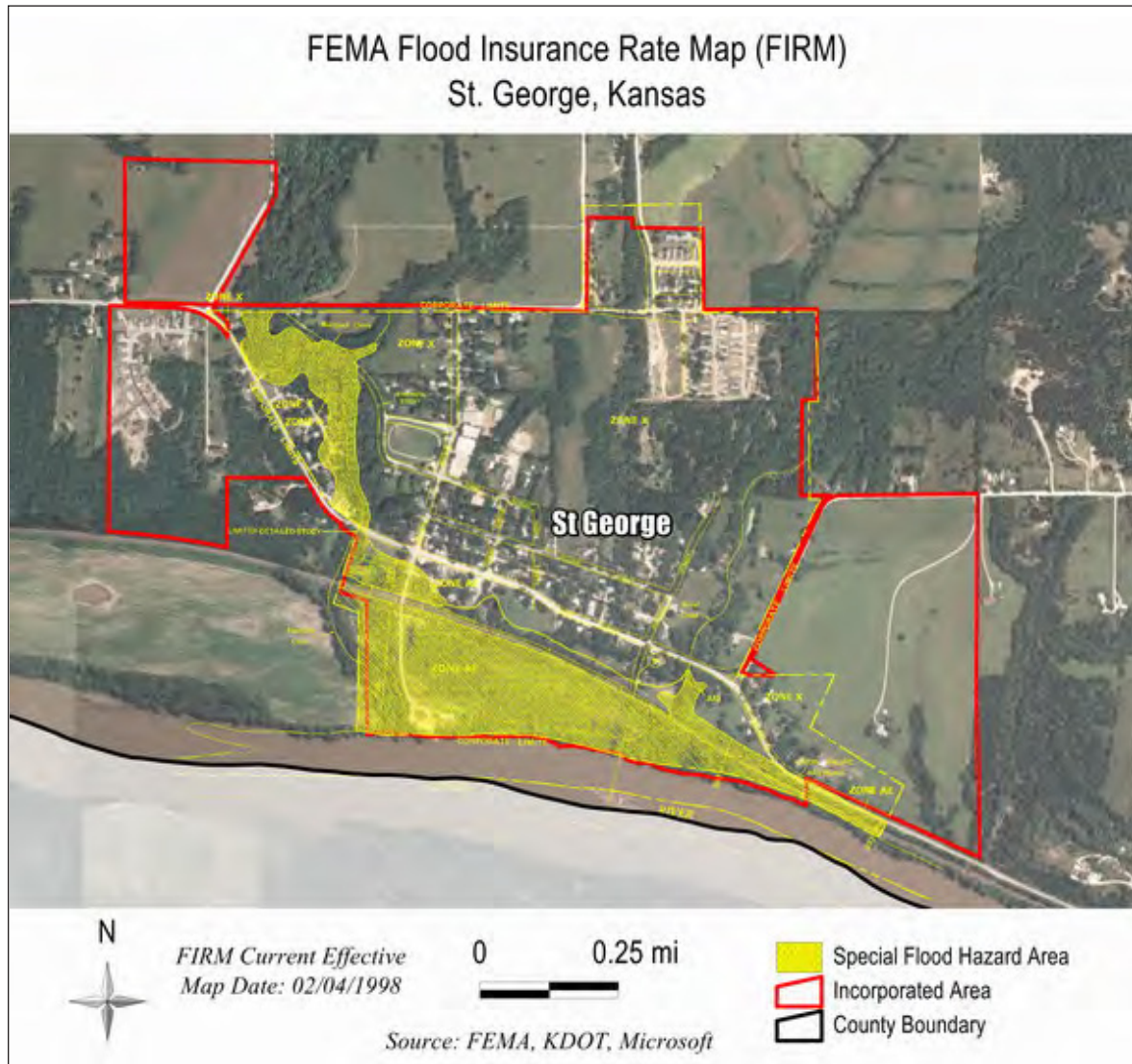


Source: Pottawatomie County Hazard Mitigation Plan, Page 145

in the mapping is the one between St. George Elementary School (SGES) and Blackjack Creek. The flood hazard map for USD 323, shown in Figure 4-3, includes a marker for the location of the school, near the bottom of the map, but the scale of the map is so small it is difficult to

understand the relationship of the building to the nearby flood area. The map of St. George, shown in Figure 4-4, would provide a reader with a better view of this relationship, but the aerial photo in this map was taken before the school was built 2008. While a current aerial

Figure 4-4: Map of St. George Flood Hazard Area



Source: Pottawatomie County Hazard Mitigation Plan, Page 143

would not have been available to the makers of this plan during 2009, a symbol could have been included to illustrate the location. There also appear to be inconsistencies between the size of the flood zones shown in these two maps. The floodplain appears to extend much

farther north in Figure 4-3 than in Figure 4-4. Again, a potentially important relationship between St. George Elementary School and the floodplain is not clearly illustrated and could easily be overlooked. Future development in this watershed could impact the size of this

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floodplain and impact the school. Locals might be aware of these two relationships, but those unfamiliar with the community could benefit from a clearer representation.

A positive feature of the risk and vulnerability assessments was the inclusion of some technical modeling. This type of analysis helps community members understand the potential magnitude of a major disaster. Information about flood hazard areas and structures within the county was combined within a geographic information system and analyzed. The analysis, found on page 157, contains estimates for the numbers of people and structures exposed to flooding and an estimated dollar value for associated damages. This type of analysis was also done for tornadoes, based on the percent of a community destroyed by a tornado. The tornado analysis is a very simplistic analysis, with its assumption that 90% of many communities would be 100% destroyed. An opportunity to map and analyze the impact of wildfires is missing from this plan. The Urban-Wildland Interface (SILVIS Lab, University of Wisconsin-Madison) offers an excellent method for highlighting areas vulnerable to wildfires. A technical analysis could have quantified the potential impact of wildfires and revealed overlooked risks.

Mitigation Strategy

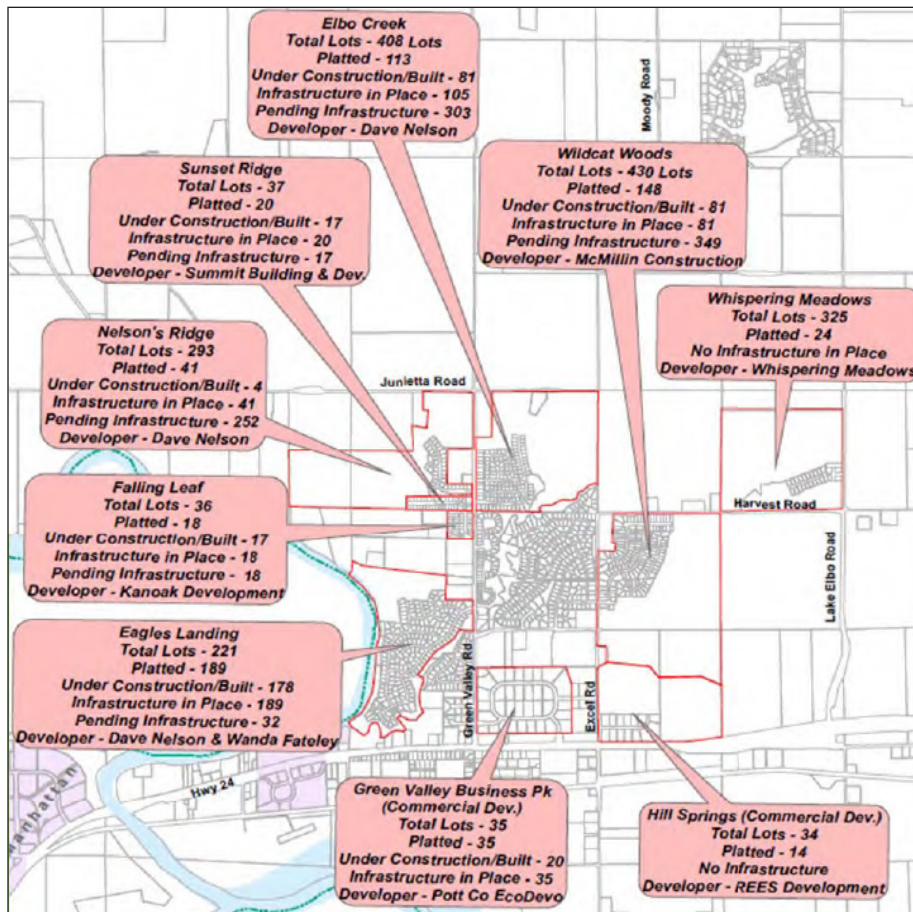
The mitigation strategy in this plan contains a good range of actions, including regulations, actions to increase local awareness and knowledge of risk, preparedness and response actions, and one action related the acquisition of properties. The strategy is skewed toward awareness and knowledge related actions, but it does include typical mitigation actions, as described by Schwab, et al. (2007). The

relationship between the plan's goals and objectives and its mitigation actions could be stronger. Instead of creating actions to achieve each objective, it appears a list of actions was created separately and then linked to related goals and objectives. By providing the strategy with a stronger structure, it would be easier to evaluate the plan and determine whether the goals have been met.

Overall Inclusion of the Concept of Growth

Pottawatomie County was chosen as the focus of this study because of the growth and development occurring in the county, especially from the influence of the City of Manhattan. However, the Pottawatomie County plan does not acknowledge this growth and influence. Quote 8 describes the growth occurring in unincorporated portions of Pottawatomie County. This passage does not include a reference to the City of Manhattan or the growth that is occurring on the western edge of the county. The plan instead focuses on growth influenced by internal forces, such as growth near Wamego and St. Marys. Figure 4-5 is illustrative of the growth and development occurring in western Pottawatomie County. While this figure post-dates the plan, much of the development represented was likely in place, or in the planning phase, during the development of this plan. There were 495 homes built or under construction, with a total of 1,255 additional lots planned in these developments. The 2010 Census lists 1,882 housing units in the City of Wamego, only 7.5% more units than what is planned for in western Pottawatomie County.

Figure 4-5: Map New and Proposed Developments in Western Pottawatomie County



Source: Marlatt/ Junietta Extension Conceptual Route Study, September 2012, Page 4

As the Pottawatomie County Mitigation Plan addresses growth throughout the county, the population projections come from sources external to the county instead of local plans. While not all communities have current plans, the cities of Wamego and St. George, and portions of Pottawatomie County along Hwy. 24 are subjects of recent planning efforts. These plans contain more detailed and individualized growth projections than could be provided by the Kansas Water Office. The projections in this plan also address a planning horizon of 32 years. It is difficult to accurately predict growth

that far into the future, nor is it necessary for a mitigation plan.

Interviews

The Pottawatomie County Emergency Management Director and Zoning Administrator were interviewed for this study. I chose these individuals because of their involvement with the development and implementation of county's mitigation plan, and I wanted to learn their opinions concerning the plan and its impact on the county. I found

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Pottawatomie County has dedicated individuals working in its Emergency Management and Planning and Zoning departments. These individuals seem to have the county's best interests at heart, and many of the actions they have taken in relation to the county's mitigation plan have been very positive. It appears they have a strong desire to ensure the plan is influential on the county and its jurisdictions. The emergency management director has a very broad definition of mitigation that includes actions normally classified as response. This broader definition may be appropriate for the risks and needs of Pottawatomie County. Both the Emergency Manager and the Zoning Administrator appear well-suited to handle the risks that currently face the county, however they may be overlooking the possibility of growth through the next decade and the associated impact.

Emergency Management Director

The Pottawatomie County Emergency Management Director (EMD) came to his position during the development of the county's current mitigation plan in 2008, having served as a firefighter in Pottawatomie County and the surrounding communities for 28 years. As a result, he came to the position with a good understanding of the hazards the county faced. However, he was not familiar with the mitigation planning efforts that were occurring. He was forced to learn on the job, though the previous director stayed on for part of the plan's development. In fact, the county had to rush the development of the plan so it would be eligible for funding for recovery efforts after an ice storm. While the consultant was responsible for the development of much of the plan, it was the

EMD's responsibility to get local jurisdictions to attend the two public meetings. As he planned and prepared for those meetings, the EMD was impressed with the consultant's use of NOAA's historical weather information. He was also impressed with the analysis that revealed the county was not as prepared as it should be to handle wildfires. Since then, he has purchased more tankers and placed them more strategically throughout the county. This knowledge allows him to more accurately prepare the county's Emergency Operations Plan. Proactive response and preparedness activities are the gauge with which he judges the success of the county's mitigation plan.

Zoning Administrator

The county's Zoning Administrator, who also serves as the floodplain manager, has been with Pottawatomie County through much of the growth occurring in the western portions. He worked with the consultant for the development of the mitigation plan's flood analysis and attempted to ensure not only the FEMA floodplains were included in the mitigation plan, but also areas known by locals to be hazardous. While he reviews new subdivisions, he includes this type of local knowledge in his decision-making process. According to the Zoning Administrator, the county has no major problems in its developed areas, for example no homes that regularly flood. Pottawatomie County is on the high side of the major rivers. The Zoning Administrator recognizes the role zoning and the subdivision review process has in continuing to protect investments made in Pottawatomie County. While he is mindful of the importance of mitigation-type activities, he does not regularly review the mitigation plan.

Political and Departmental Support

It appears both the EMD and the hazard mitigation plan are well-supported by County Commissioners and other county departments. The EMD said the commissioners typically defer to his judgment on matters related to emergency management or the hazard mitigation plan. This deference is partially due to the lack of subject-matter knowledge, according to the EMD. It appears neither the EMD nor County Commissioners are interested in addressing this lack of knowledge. The divided roles seem to be accepted as a good solution. The commissioner who participated in the development of the mitigation plan is no longer serving. The connection of the Emergency Management Department to the rest of the county government structure seems to be more collaborative. The EMD and the Zoning Administrator consult together on the approval of new subdivisions, and the only problems the EMD faces when working with other departments are logistical.

Impacts of Growth

When questioned about the impact of growth in western Pottawatomie County on the county's risk profile, the Zoning Administrator seemed to recognize the most potential for change. He spoke of the potential development of the Marlatt/Junietta extension and current work by the City of Manhattan to update its comprehensive plan. When speaking of the limited spatial opportunities for Manhattan's growth and ease of growth into Pottawatomie County, the Zoning Administrator indicated he may be underestimating the potential for growth. He, like the EMD, has been in the county for a long time and is used to the rural

character of the county. He admitted his office does not know where the potential new residents will be coming from. He does not know if they will be locals who understand Pottawatomie County's risks, or if these new residents will be unprepared and unaware of the risks they may face in the county.

Future Changes

During the interview, the EMD revealed the next update will integrate Pottawatomie County into a regional plan due to a lack of state funding to support the preparation of individual plans. This change could have a dramatic impact on Pottawatomie County's ability to have a meaningful and useful mitigation plan. A regional plan may result in further challenges to increasing the amount of local data and analysis included in future versions of the plan. According to the EMD, the region will likely contain six counties. It would be nearly impossible to localize a plan covering all jurisdictions in six counties. While a regional planning process several advantages, the success of the process will depend on the available and the scope of services created by the State of Kansas, which will be discussed in Chapter 6.

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Chapter 5

Comparable Analysis

An analysis of hazard mitigation plans comparable to Pottawatomie County was completed to identify policies, techniques, or structural features which may benefit Pottawatomie County. More broadly, the analysis was completed to offer a meaningful critique of the selected counties' plans and identify strong components. Three counties were selected for each of the three categories of comparable counties: urbanizing-rural, rural, and urbanized.

The selected counties are identified and a brief description of each is provided in the first section of this component. Then, each category of county is analyzed and generalized comparisons are made with Pottawatomie County. These comparisons will focus on the inclusion of local information, the possible effects of regionalization, and the overall quality of the narrative. Also contained in this final section is a summary classification that highlights the components and elements of mitigation planning most important for creating a quality plan, from which meaningful mitigation actions can be crafted.

Description of Comparable Counties

To gain a better understanding of the overall quality of Pottawatomie County's hazard

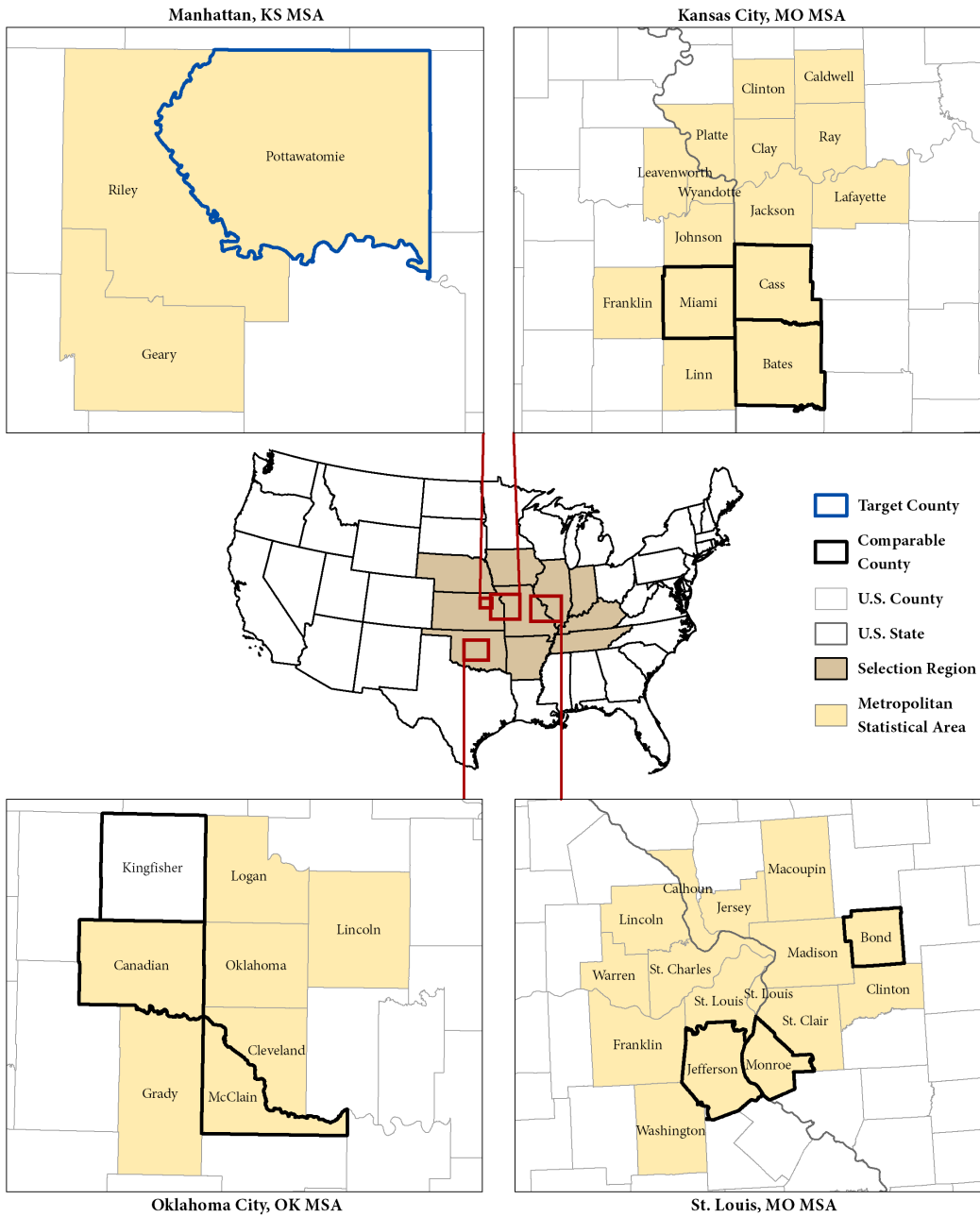
mitigation plan, it must be compared to the plans of similar counties. Pottawatomie County's plan was compared to three types of counties: Rural, Urbanizing Rural, and Urbanized. These counties were selected from metropolitan areas in the central United States, based on the presence of an urbanizing-rural community. (For a listing of the states, please review the methodology section.) Urbanizing-rural counties in the Kansas City, MO/KS, the St. Louis, MO, and the Oklahoma City, OK metropolitan areas were identified, and rural and urbanized counties were selected from these metro areas. The following sections contain a brief description of the counties included. Appendix D contains a more detail profile of each county.

Urbanizing-Rural Counties

The urbanizing-rural counties of McClain County, OK, Miami County, KS, and Monroe County, IL offer many similarities to Pottawatomie County. McClain County, OK directly abuts Oklahoma City, a similar spatial relationship to Pottawatomie County and the city of Manhattan. Monroe County, IL is experiencing spillover suburban and rural style growth from the St. Louis metro area while remaining largely rural, which is similar to the overall character of Pottawatomie County.

Figure 5-1: Map of Selected Counties

Pottawatomie and Comparable Counties



Finally, Miami County, KS shares a geographic proximity and a common legal environment to Pottawatomie County.

The comparable counties included in this sample offer an approximate, but not exact, comparison to Pottawatomie County. Basic population and growth information is contained in Table 5-1. It must be noted these counties are larger than Pottawatomie County, however this difference in population should not have a significant impact on the comparison of hazard mitigation plans. The comparable counties also appear to be less rural in character than Pottawatomie County, as indicated by the percent of county population living in unincorporated areas. However, this statistic hides important characteristics of each county's growth. For example, growth occurring in Pottawatomie County near Manhattan is not located within the city's boundaries, but

is at urban densities. In McClain County, smaller jurisdictions have incorporated large amounts of surrounding land in response to the encroachment of Oklahoma City and other larger suburbs. A large amount of land in Monroe County is floodplain for the Mississippi River; therefore it is not available for unincorporated development. A closer analysis of growth patterns reveals common issues and struggles between Pottawatomie County and the comparable counties.

Rural Counties

Rural counties offer a gauge to determine how mitigation-planning efforts in urbanizing- rural communities have evolved and changed in response to growth. Bates County, MO, Bond County, IL, and Kingfisher County, OK have small populations, low growth and are somewhat connected to their respective metropolitan

Table 5-1: Population Characteristics of Pottawatomie and Comparable Counties

County	2000 Population	2010 Population	Percent Growth	Percent of Population in Unincorporated Areas
Urbanizing Rural Counties				
Pottawatomie, KS	18,209	21,604	18%	52%
McClain, OK	27,740	34,506	24%	47%
Miami, KS	28,351	32,787	16%	33%
Monroe, IL	27,619	32,957	19%	36%
Rural Counties				
Bates, MO	16,653	17,049	2%	48%
Bond, IL	17,633	17,768	1%	43%
Kingfisher, OK	13,926	15,034	8%	41%
Urbanized Counties				
Canadian, OK	87,697	115,541	32%	5%
Cass, MO	82,092	99,478	21%	28%
Jefferson, MO	198,099	218,733	10%	60%

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area. Bond County, IL and Bates County, MO are both a part of their respective metropolitan areas, while Kingfisher County is just outside the designated metro area. Bates County, MO and Bond County, IL are connected to the core of the metro area via key transportation routes. Kingfisher County, OK, while not on a key route, is geographically closer to the core. It should be noted the 2010 populations of the rural counties are more similar to Pottawatomie County's population than many of the urbanized-rural counties, but Pottawatomie County is facing growth pressures that are much different from these rural counties. The population of Bond and Bates counties are effectively stable. Kingfisher County's geographic proximity has made it appealing to individuals who are willing to make the long commutes, but has not introduced large growth pressures.

Urbanized Counties

The term urbanized is used very loosely in the context of this study. Counties included in this category are Canadian County, OK, Cass County, MO and Jefferson County, MO, which have been experiencing strong growth pressures for multiple censal periods. Cass County, MO and Canadian County, OK have experienced strong growth and urban development is encroaching on their rural characters. Oklahoma City has expanded into Canadian County, OK, while Cass County, MO contains the growing suburbs on the south side of the Kansas City metro area. On the other hand, Jefferson County, MO has a large population, over 200,000, but it has maintained a rural character. The hilly/mountainous terrain of Jefferson County has limited the extent of large suburban developments.

Review of Comparable County Hazard Mitigation Plans

The comparison of Pottawatomie County to the selected comparable counties revealed Pottawatomie County's hazard mitigation plan is above average in overall quality. Comparatively, Pottawatomie County included more information on the participating jurisdictions and their capabilities and better incorporated the general idea of growth than some counties. However, there are weaknesses in the Pottawatomie County Plan's overall narrative quality, planning process, and inclusion of specific local information detailing the nature of the growth that is occurring. This section contains a review of each category of county included in this study. The category of the county did not appear to be associated with the overall quality of plans, as each category contained a wide variation in quality. Appendix E contains a detailed breakdown of plan quality scores. This section also contains comparisons and identifies plan elements pertinent to Pottawatomie County. Finally, a summary table describing and categorizing the overall quality of plans included in this study is provided. This summary table is designed to illustrate how different plan elements affect the overall quality of the document.

Rural

The Rural category exhibited significant variation in overall quality. Kingfisher County, OK received one of the highest scores in the analysis while Bates County, MO produced one of the more simplistic plans. While these counties were small and were assumed to have limited resources, the use of consultants allowed these counties to have more sophisticated plans

than initially expected. The overall scores of each plan are shown in Table 5-2, while all scores are contained in Appendix E.

Kingfisher County, OK was a standout among, not only within the rural category, but also the entire sample. Both the selected consultant and the historical development of mitigation planning in this county greatly impacted the overall quality. Kingfisher employed an engineering firm as its consultant. While I was initially skeptical of this choice, the firm produced a strong plan. The plan contained a strong technical component, including a modeling and hydrology/hydraulic report, and a strong narrative. After reading this plan, I felt I had a reasonable understanding of the challenges faced in Kingfisher County and the efforts that had been made to address these challenges. The first time mitigation plans were

prepared in Kingfisher County, the county and its jurisdictions prepared independent plans, providing the consultant details about each community with which to weave a strong narrative about the county as a whole while preparing this update.

Bates County, MO produced a relatively simplistic plan. The analysis was not technically sophisticated, nor did the display of data exhibit strong planning capacity. Bates County employed one of Missouri's regional planning councils as a consultant. Much of the census and economic data contained in the plan was not directly taken from government websites, but was taken from far less reliable third party sources instead. The maps included in many sections of the plan were also taken from these third party sources. Additionally, the consultant failed to change a few county references from the name of the last community for which he or she had worked to Bates County. Though the plan contained evidence of strong effort on behalf of the community to include information and details about risk and vulnerability only a local resident would know, the lack of awareness of federal data sources, mapping capability, and basic mistakes detract from the overall quality of the plan. The consultant used is not sophisticated.

The Rural category provides a strong baseline for Pottawatomie and other comparable counties. Kingfisher County and Bond County, which was not profiled above, both contained strong technical analysis components. Kingfisher County sets a strong standard for the overall quality of the plan's narrative and Bates County illustrates how a simplistic plan can still tell a story about its community.

Table 5-2: Scoring of Hazard Mitigation Plans

County	Protocol Scores
Urbanizing Rural Counties	
Pottawatomie, KS	57%
McClain, OK	49%
Miami, KS	57%
Monroe, IL	57%
Rural Counties	
Bates, MO	51%
Bond, IL	53%
Kingfisher, OK	71%
Urbanized Counties	
Canadian, OK	64%
Cass, MO	57%
Jefferson, MO	53%

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Urbanized

Generally, the Urbanized Counties performed poorly. The plans for Jefferson County, MO and Cass County, MO were both poor quality in terms of overall usefulness to decision makers and community leaders within these counties. This low quality was partially due to the two counties' participation in regional mitigation planning efforts and the structure of the resultant plans. The Canadian County plan was the only strong plan in the group. Canadian County did not participate in a regional plan, and it was structured to be useful to its participating jurisdictions.

The overall structure of the St. Louis and Kansas City metro area regional plans played an important role in the overall usefulness of the plans to the counties and cities participating in the plan. The aggregated nature of a regional plan hides the challenges and capabilities of the small cities and communities that participate, and it can even obscure details about the counties themselves. The regional plan for the Kansas City area, in which Cass County, MO participated, is an excellent example of the challenges associated with aggregation. The risk assessment and community profile, amongst other elements of the mitigation plan, only contained a single geographic extent, the region as a whole. For example, the flood hazard profile contained data tables covering all involved counties and regions while the historical narrative only focused on key floods affecting Kansas City. Leaders in Cass County are forced to search the tables for local flood events and then independently research the event to find a narrative about the impacts. On the other hand, the St. Louis metro regional plan was divided into chapters based on participant counties,

making it user-friendly. However, the Jefferson County chapter contained little information directly related to events occurring only in Jefferson County, and even less information about the municipalities within the county.

The mitigation plan prepared for Canadian County, OK represents a plan near the opposite end of the aggregation spectrum. The main body of the plan focuses on Canadian County and its unincorporated areas, while each municipality contains its own, nearly complete, mitigation plan in the appendix of the document. The only element missing from the municipality plans are the mitigation actions. These "mini" plans contain photos of each municipality's representative along with the common county participants.. They also contain localized information, including maps of particular subdivisions exposed to flood hazards. The broader county-wide portion of the plan also contains a brief description of the challenges faced by communities that recently annexed large portions of land in response to encroachment by Oklahoma City and other larger municipalities. These small communities wanted to have land to grow, but are now faced with providing services to these areas. Canadian County included information about Oklahoma City and other large jurisdictions affecting the county, even though these jurisdictions are not participating members of this plan. Canadian County wanted to include all relevant forces affecting the county.

Overall, the urbanized county category highlighted the different ways a county and its communities can respond to growth. Cass and Jefferson Counties recognized they were a part of a larger region and decided to join a larger planning effort. This larger effort resulted in

a loss of good, local information. Canadian County is also a part of a larger region, but it has chosen to plan locally and attempted to include some information about the regional influences. The response of Canadian County is a good example for Pottawatomie County to follow.

Urbanizing-Rural

The counties included in the Urbanizing-Rural category generally exhibited average quality, with McClain County as an underperforming outlier. These counties did not build a strong narrative describing the communities within the county and the growth that is occurring. The plan representing Monroe County, IL contains a strong technical analysis component. Within this category, the usage of common consultants becomes a part of the discussion. Monroe County, IL employed the same consultant as Bond County, IL, while Miami County and Pottawatomie County used the same consultant and have many of the same issues.

The McClain County, OK plan is a simplistic plan, much like Bates County, MO, but it lacks the local information and community profile information Bates County included. While not a FEMA requirement, it is common for hazard mitigation plans to contain a profile of the community, covering such things as demography, economics, and geography. The McClain County plan does not contain this profile. By providing no profile, the plan is unable even to offer a partially complete narrative about the community and its actions. I was uncertain of which jurisdictions were participating in the plan and unsure of the county's relationship to the larger metro area. Additionally, the plan contained simplistic tables and mapping, similar to Bates County. The map

of growth areas simply indicated the northern two-thirds of the county as a growth area and the symbolization used for the growth area completely obscured the roads and jurisdiction boundaries contained in the map. The plan also contained no modeling or technical analysis component. Similar to Bates County, MO, McClain employed a council of governments as its consultant.

The Monroe County, IL mitigation plan included a strong technical component. Its narrative was of average quality. The technical analysis was a strength of this plan. Monroe County included a model assessing the effects of the worst-case scenario tornado, the impacts of an earthquake, and impact of a chemical spill in two separate locations, including one occurring in an adjacent county. Like many plans included in this study, the Monroe County plan was weak in its inclusion of growth and assessment of capabilities. The authors attempted to incorporate growth by including a subsection in each hazard profile titled Suggestions for Community Development Trends, however, many of the statements included in this subsection are generalities.

As discussed in the previous chapter, there are some strong similarities between descriptions contained in the Miami and Pottawatomie County plans. The political willpower sections are nearly identical, and the goals and objectives of these two plans are completely identical. There is also a high level of similarity between the mitigation actions contained in these plans, with the multi-jurisdictional actions being nearly identical. While these two communities may likely share similar hazard profiles, the similarities of these two plans suggests

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the consultant is overly dependent upon standardized forms.

Overall, it appears that Pottawatomie County is completing similar mitigation planning efforts as other urbanizing rural jurisdictions. While these communities are all experiencing growth, it appears that leaders who have not recognized this growth may affect the risk and vulnerability of their respective counties.

Summary Evaluation of Comparable Counties

It is difficult to state a strong plan must have a specific set of features or elements. This analysis has identified a comparatively strong plan with little technical analysis, Canadian County, OK, and two plans with a strong technical analysis of only average quality, Bond County, IL and Monroe County, IL. Additionally, the Miami County, KS plan seemed to have engaged the participating jurisdiction based on data included, but in reality, held only one planning committee meeting. Other plans held many planning committee meetings, but the participating jurisdiction data is lost in the plan, Cass County, MO for example. Any categorization effort must balance the strengths and weaknesses of each plan.

It is possible on a more theoretical level to begin to distinguish between the different degrees of quality represented by these plans. The degree to which a plan, and the associated planning process, engages all participants is a crucial feature. Successful mitigation of natural hazards requires cooperation. Hopkins (2001) suggests this type of interdependence is a key feature plans should address. A mitigation plan can only address this interdependence if all participants are engaged. Another key

feature was the incorporation of the concept of growth. The urbanizing-rural communities included in this study were chosen because available data suggested they were experiencing strong population growth. This continued growth will have an effect on long-term risks to natural hazards and therefore should be a part of mitigation plan. These counties could increase the integration of growth into these plans in many ways. The ease with which the hazard profile and vulnerability analysis could be included in any decision-making process was also important. The technical nature of the analysis was less important than the overall ability to use the analysis. For example, Bates County and its consultant included an earthquake analysis taken from the Missouri State Mitigation Plan. However, it appeared the significance of the analysis was not understood. The inclusion of the technical component only benefits a county if it is understood. However, the Bates County plan did offer basic guidance and, given the stagnant growth, it seemed adequate.

Overall, Table 5-3 describes the variation of plan quality identified during this comparable analysis. The Minimum Category represents plans that contain all the elements necessary to satisfy FEMA's standards, but lack elements that further localize, or personalize, the plan. The addition of localizing elements, such as the inclusion of local knowledge or descriptions of local challenges, represent an improvement in the overall quality of a plan and represents plans in the Improving Category. An Improving plan also contains a stronger technical analysis element that influencing the planning process in a meaningful way. Finally, a Good plan contains enough local information to create a

Table 5-3: Plan Quality Matrix

Plan Element	Category of Hazard Mitigation Plan			
	Pottawatomie	Comparable Communities		
		Minimum	Improving	Good
Participating Jurisdiction Information				
References Communities				
Describes Challenges				
Projects Needs				
Quality of Plan Narrative				
Cohesiveness of Narrative				
Fact Base				
Weather Data				
Demographic Data				
Local Knowledge				
Projections				
Technical Component				
Comprehension of Analysis				
Integration				
Generalized Simulation				
Engineered Modeling				
Risk and Vulnerability Analysis				
County Level Issues				
Community Level Issues				
Planning Process				
Committee Involvement				
Process Relevant to Communities				
New Capabilities Developed				
Examples		Jefferson, MO Cass, MO McClain, OK	Monroe, IL Bond, IL Bates, MO Miami, KS	Kingfisher, OK Canadian, OK
Hardly Addressed-		Partially Addressed-	Thoroughly Addressed-	

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cohesive narrative describing the community. Additionally, a Good plan results in new capabilities a community can use beyond the scope of its hazard mitigation planning efforts.

The categorization of each comparable plan was based on the analysis conducted in this chapter. The plans of Jefferson and Cass Counties were classified as Minimum because of the lack of local description and knowledge found in each plan. McClain County's plan was classified as Minimum because of its lack of demographic and economic profile, and of local knowledge. The Monroe and Bond County plans contained a strong technical component and planning process that facilitated the inclusion of local data, so they were classified as Improving. While Bates County did not demonstrate a complete understanding of its limited technical component, the plan represented a relatively successful plan prepared by a small county. It is an Improving Plan.

After review, the Pottawatomie County plan was most similar to the Improving Category of plans. The strong similarities between descriptions in the Pottawatomie County and Miami County plans suggests only limited inclusion of local knowledge. However, the Pottawatomie County plan does include financial and other capability-related information not found in other plans. The plan also contains a number of hazard event simulations and an array of demographic information. Although the planning process was weak, the Pottawatomie County planning is an Improving Plan.

Chapter 6

Prioritizations and Conclusions

The plan analysis and interviews revealed many positive features of the Pottawatomie County Hazard Mitigation Plan and its usage. When the Pottawatomie County plan was compared to the plans of similar counties, a number of important distinctions were identified. This chapter contains a final synthesis of the preceding analysis and identifies priority enhancements for Pottawatomie County. There are priorities for moving forward with an individual county plan, and for moving forward under the new regional planning model funded by the State of Kansas. Within the framework of this study, the individual county plan is the preferred outcome. This chapter also contains a brief discussion about the applicability of these results to other urbanizing-rural counties, the limitations of this study, and directions for future research.

Prioritizations for Pottawatomie County

Pottawatomie County is taking many of the steps necessary to mitigate its natural hazard risks. While the current mitigation plan is of average quality, the emergency management and planning and zoning offices are actively pursuing

actions to ensure the safety of county residents. A big challenge to the continuation of these efforts will be the implementation of the State of Kansas' regional planning model for hazard mitigation plans. While a regional planning process offers opportunities for collaboration not found in single county plan, a regional process can potentially disengage Pottawatomie County from the planning efforts and can make it more difficult for the county to build local knowledge and capacity. If Pottawatomie County were able to retain a single county planning model, this study has identified a number of plan elements and processes appropriate for Pottawatomie County. However, the most important recommendations will focus on identifying ways for Pottawatomie County to get the most from the regional planning efforts.

Assessment of Pottawatomie County

Interviews with Pottawatomie County officials revealed a county engaged in activities designed to improve the long-term safety of county residents. These actions include having development regulations, regularly evaluating the distribution of firefighting equipment, and participating in studies of key rivers. There are few actions that would qualify as mitigation

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actions, but perhaps this is appropriate for Pottawatomie County. Existing development has been kept away from hazardous locations and current regulations appear adequate in the near term. The county's Emergency Management Director (EMD) is interested in working with jurisdictions to plan and prepare for future events.

The inconsistencies between the analysis contained in the mitigation plan and the results of the interview reveal an opportunity to better utilize and tailor the plan to the needs of the county. The EMD stated the county learned of important vulnerabilities to wildfire hazards because of this plan. The biggest vulnerability, he said, was a lack of firefighting resources located throughout the county. However, a careful review of the mitigation plan's risk and vulnerability analysis found little to support this important conclusion. This is not to say the county is not vulnerable to wildfire, the plan simply should have contained a more meaningful analysis of this hazard. In addition, if this hazard was identified as important, it should have had more actions directly aimed at addressing it. There is only one action directly addressing wildfire (Unincorporated Pottawatomie County Action 7, page 217) and one that relates to the realized solution to this issue (Unincorporated Pottawatomie County Action 4, page 214). There are also inconsistencies related to the county's vulnerability to flooding. The mitigation strategy contains an action for acquiring land subject to repetitive flooding, a typical hazard mitigation action (Unincorporated Pottawatomie County Action 1, page 211). The Zoning Administrator revealed Pottawatomie County was lucky to currently have no properties subject to regular floods or consistently at risk. While it may be

appropriate to include the acquisition action, the Zoning Administrator's statement suggests the mitigation strategy should be reevaluated based on actions most beneficial to the county.

This study has also shown Pottawatomie County is less prepared for the changes in risk and vulnerability that may accompany the growth and development of the city of Manhattan. The risk profile of the county may not change, but it is important that the possibility is given due consideration. Officials are not ignoring the City of Manhattan; they are underestimating the potential for change. Both officials interviewed for this project are longtime residents of Pottawatomie County and have experienced a county that is stable and predominately rural. The development associated with the growth of Manhattan is unprecedented for the county, especially given the number of residential lots planned in western Pottawatomie County nearly exceeds the number of housing units within the City of Wamego. Additionally, the City of Manhattan has predicted its population could nearly double over the next 20 years; this potential for growth would greatly affect Pottawatomie County (Manhattan Area 2035 2014).

Single County Process Priorities

In an ideal scenario, Pottawatomie County should continue to plan for mitigation as a single county and use this planning process to develop new skills and capabilities. The hazard mitigation plan represents an opportunity to better understand the forces and issues shaping the county. The mitigation plan itself is merely a representation of the work completed by the mitigation planning committee. Members of this committee learn about the challenges facing

other communities and they learn about the future of the county. Through this collaborative process, a plan containing this new knowledge is constructed. The resulting analysis provides guidance for future decision-making and the mitigation strategy contains actions appropriate for the county's jurisdictions. In order for Pottawatomie County to achieve these results, the mitigation planning process must be more comprehensive. It must be combined with the development of response plans and the rest of the emergency management process.

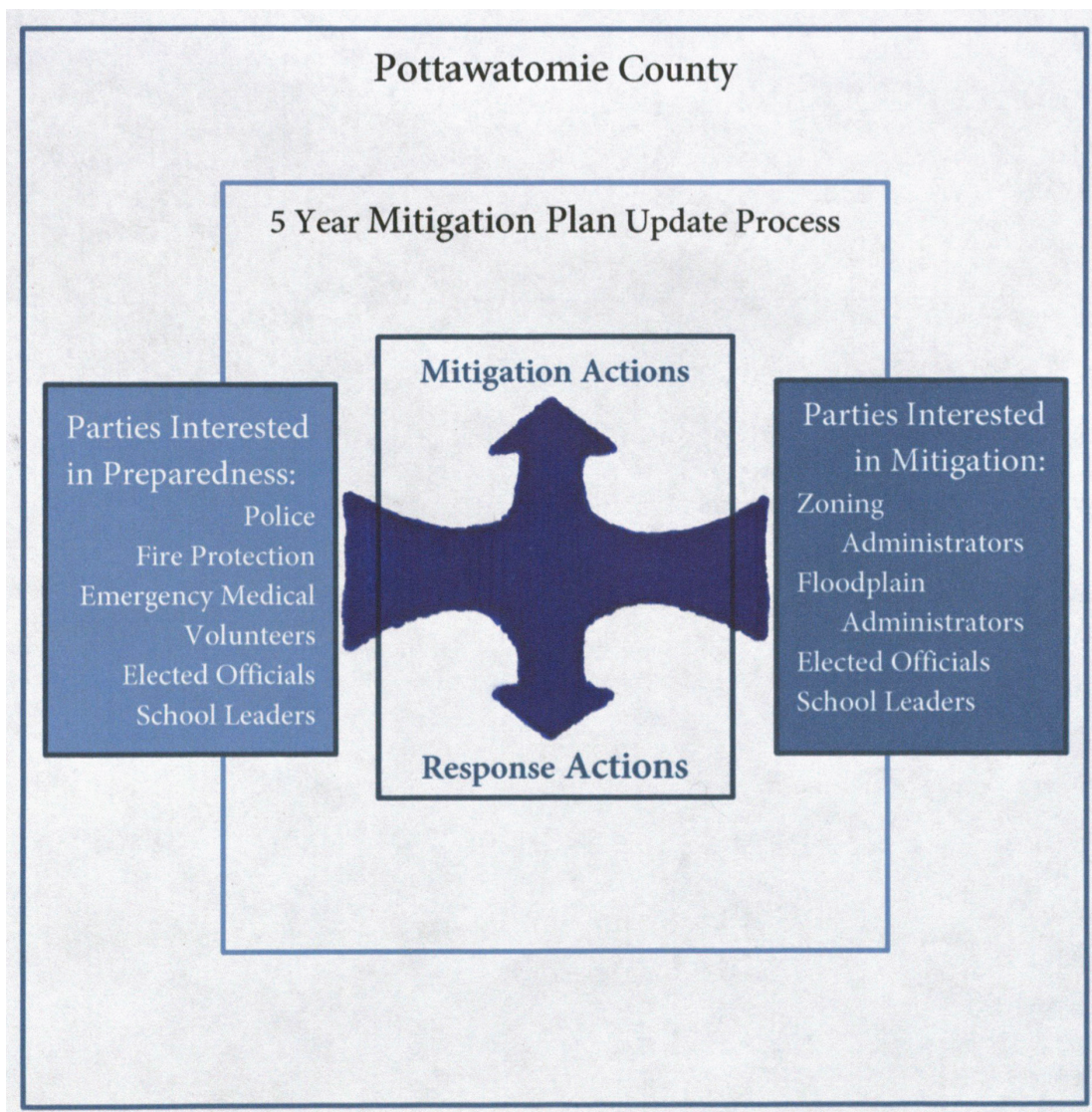
In jurisdictions such as Pottawatomie County, the benefits of mitigation planning alone are not enough to incentivize whole-hearted participation in the process. However, the benefits of combining mitigation with the rest of the emergency management cycle will be enough to get people to participate. Community leaders and members are interested in protecting their communities from the next big disaster. If a discussion of mitigating long-term risks can be combined with protecting families from disaster, the mitigation plan can contain a much richer range of information. The Pottawatomie County EMD stated he would like to be able to do more response planning and response mapping. The mitigation planning process the county must participate in every five years presents an opportunity to do these activities. The EMD stated it was difficult to bring people out to the meetings during the development of the current mitigation plan. A combined process would make it easier to get participation and provide a tangible reason to participate. The county's mitigation planning process would have to expand from the existing process of one committee meeting and two public meetings to make this new process work. However, a

more typical mitigation planning process, such as those employed by comparable counties included in this study, contained five committee meetings. It would take extra work to coordinate these activities with the county's consultant, but increased participation would offset the required effort.

This combined process, illustrated in Figure 6-1, would provide a better opportunity to participants to gain new skills and increase capacity. The goal of response planning activities is to increase understanding of what to do during a disaster and what response activities the community can direct. The goal of mitigation planning is extremely similar. By combining these processes and the different groups interested in each process, the discussion about response activities with the EMD can naturally transition to a discussion of reducing long-term risks and mitigation with the consultant. This new discussion can identify ways to reduce the need for future responses. The conversation between these two groups can move towards how a community's regulations might change, how a community's finances might affect the situation, or how residents of the community might feel about certain actions. Response planning provides a meaningful context in which mitigation discussions can occur, rather than merely focusing on mitigation. As a result, the community would have better information to include in the mitigation plan's capability and vulnerability analyses, as well. The vulnerability analysis might not be the result of technical computer analysis, but it would be the result of meaningful conversation, as presented in Figure 6-1 by the merged arrows. New skills and capabilities can develop if Pottawatomie County

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Figure 6-1: Combined Planning Process



Source: Thomason, 2014

can get people engaged and talking through this combined process.

The county's mitigation plan would be expanded and improved because of this new combined process. The merging of viewpoints would provide useful information. The county's consultant would have information to add to a "Suggestions for Future Community Development" section of each hazard profile,

such as contained in the mitigation plans of Bond and Monroe counties in Illinois. This section would describe how future development efforts should be tailored to each hazard profile. Pottawatomie County would also be able to define a worst-case scenario for flooding and other hazards, similar to Canadian County, OK. (Likely the flood of 1993, which is missing from the Pottawatomie County Plan.) The response

planning efforts would reveal characteristics of a disaster that would be challenging for a community. Pottawatomie County would also be able to include better information about its larger neighbor to the west, the city of Manhattan, such as Canadian County was able to add information about Oklahoma City. While the county has no influence of development within the City of Manhattan, it is affected by it. Overall, this additional information would combine to provide a rich narrative for the mitigation plan, which describes the realities on the ground, such as the narrative contained in Kingfisher County, OK's plan.

Priorities for Regional Scenario

In reality, Pottawatomie County will have limited freedom to customize its next mitigation planning process. The county must work within a regional context, as defined by the State of Kansas, and with a consultant who is responsible to a higher level of government. Additionally, the county will have little input on the overall content and structure of the plan produced, as many of these details will be defined in the scope of services created by the state. Instead, the county must focus on maximizing the opportunities with which it is presented. The EMD, and the rest of county staff, must strive to be engaged and fight for Pottawatomie County. Appendix F contains a more optimistic discussion of how the regional planning process can be structured to overcome the challenges outlined in the following sections. Appendix G contains a listing of the key actions and ideas that will help ensure Pottawatomie County can successfully participate in the regional planning process, regardless of how the process is structured. A few of these actions will be

described below. However, I will first discuss the regional planning process from the perspective of regional participants in general terms before I outline the prioritizes for Pottawatomie County.

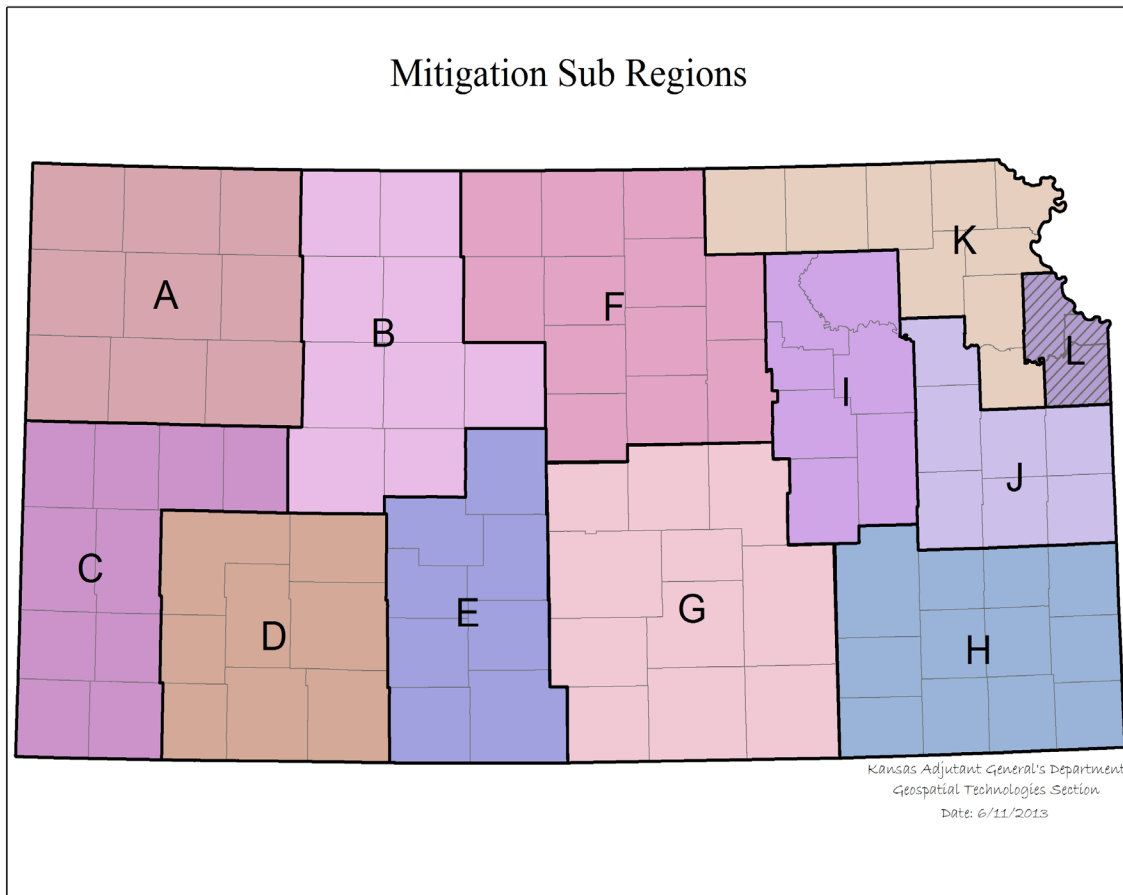
Discussion of Regional Planning Process

The regional planning process presents an opportunity to combine resources, to address larger scale issues, and to share solutions to common issues facing communities in the region. Along with these opportunities, the large number of participants in the regional planning process presents the risk of needs, comments, and other input getting lost in the process. This discussion of the regional planning process will draw from the Draft State of Kansas Homeland Security Region H Multi-Hazard, Multi Jurisdictional Mitigation Plan, an early implementor of the state's regional planning process.

A regional planning process provides the opportunity to address problems that impact an area larger than a single county, such as flood risk or earthquake vulnerability. Policies for addressing these regional issues need to be supported and implemented by communities throughout a watershed or along a fault line. The spatial characteristic of a region's dominant hazard should influence the communities included in a regional plan. This recognition of a key regional hazard would strengthen the overall effectiveness of a regional hazard mitigation plan. It does not appear the new regional process utilizes this type of consideration in selecting regions. The plans appear to be divided based on Homeland Security regions, shown in Figure 6-2. The Region H plan covers portions of three large watersheds, the Marais des Cygnes

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Figure 6-2: Kansas Hazard Mitigation Planning Regions



Map Courtesy of Andrew Foster, Lead Planner, Kansas Division of Emergency Management

River, the Neosho River, and the Verdigris River watersheds.

The overall number of participating jurisdictions, along with the spatial character of the dominant hazard, is another important factor in establishing a planning region. Watersheds or fault lines may cover many counties or even states. A region with a very large number of communities may become difficult to manage. It may be challenging to involve representatives from all the different

jurisdictions, manage data, and produce a document usable to each jurisdiction. The Region H plan includes 11 counties in Southeast Kansas. There are a total of 159 participating jurisdictions, including the counties, cities, schools, colleges, water districts, and fire districts. This high number of participants would make it nearly impossible to meaningfully identify capabilities and address risks associated with each. While I find it difficult to justify a specific cutoff point, I would suggest a region

includes no more than six counties to ensure the project remains manageable.

Once a region is determined, it is important to create a planning process that will adequately engage the participating jurisdictions. Meetings will have to be held throughout the region to make participation convenient. Planning processes employed for the regional plans in which Cass County, MO and Jefferson County, MO participated, included multiple meetings in each participating county. These meetings allowed for the opportunity of participation. However, the planning process for the Region H plan only included meetings in three of the 11 participating counties. The process included three sets of meetings, and only the first and third set included multiple locations. It is important to note a robust planning process is dependent on available funding. It appears the plans for Cass and Jefferson Counties had more available funding. In my opinion, if a region contains three or fewer counties, meetings must be held in each county. If the region contains four to six counties, it might be possible to justify holding meetings in only a portion of the counties. The bare minimum would be to include meetings in half the region's counties.

In addition to the planning process, a strategy for collecting information from participants must be developed. It was common in communities included in my comparable analysis to have short questionnaires sent out to participants. However, many of the questionnaires were returned with short two and three word responses. I have a feeling city clerks were often responsible for filling the questionnaires out, and these clerks are not familiar with hazard mitigation planning. While the consultant likely was hoping for meaningful

responses, the data collection process had limited success. A successful data collection process will likely rely on information provided by the county's EMD. While it will be challenge to organize questionnaires from all of a region's participants, it will be a more consequential challenge to ensure the questionnaires contain useful information.

A regional planning effort also presents an opportunity to establish a more permanent data collection process. If a regional organization is established to lead this process, the regional organization can act as a collector and clearing house of data for the region. Data can be regularly collected for weather events; information that would be able to supplement the data contained in the National Climatic Data Center (NCDC). However, the structure of the NCDC has recently changed. The new structure contains stronger connections between related weather events. Additionally, such a supplemental database would require regular maintenance, a large commitment of time. It does not appear the Region H plan is resulting in the establishment of such a regional organization, nor do I think there is funding available to justify a database that so closely matches existing federal resources.

Priorities for Pottawatomie County

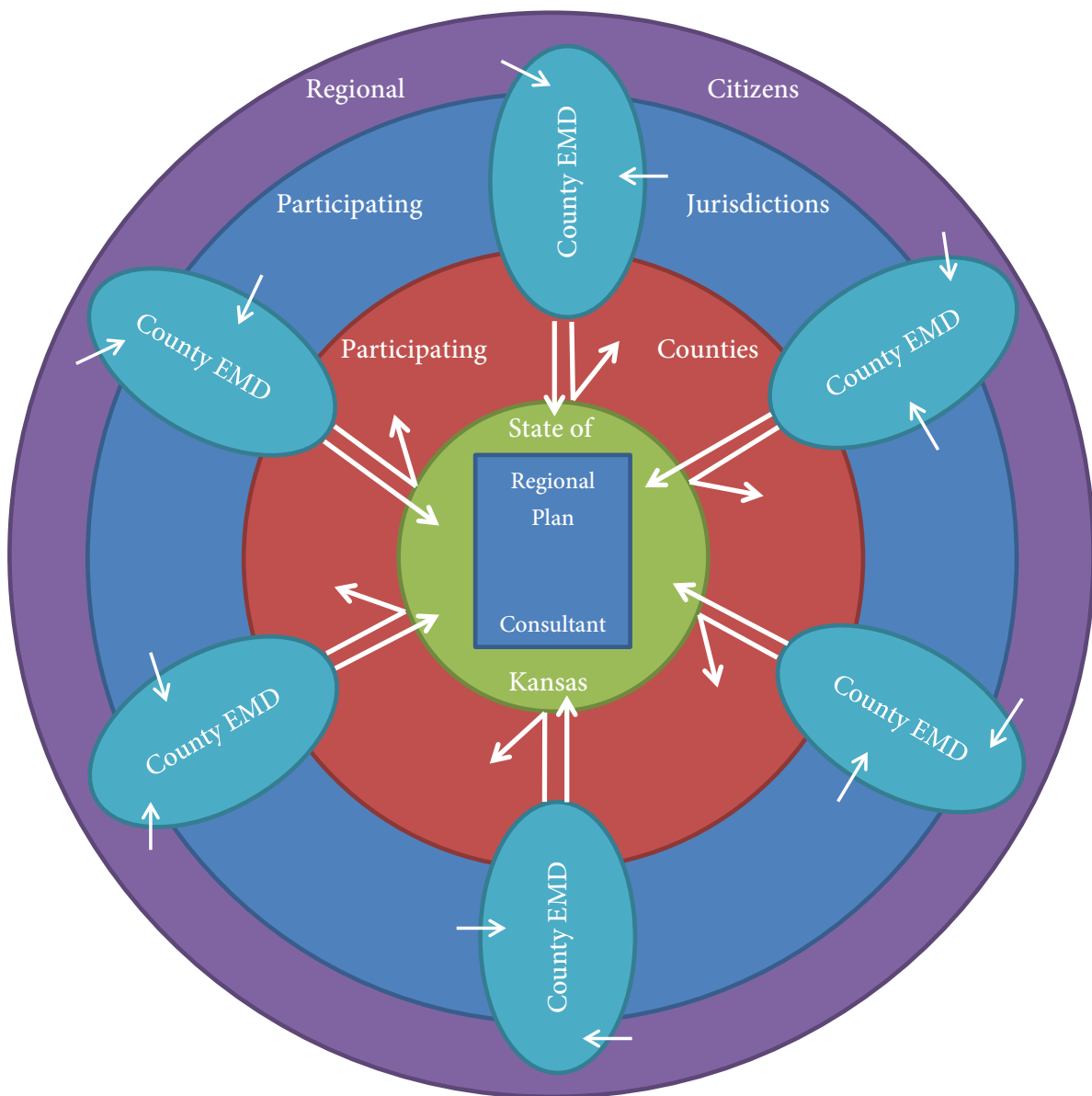
Pottawatomie County will be participating in a regional process for its next hazard mitigation plan. While the previous section provided a general discussion of the overall structure of a regional process, I will now discuss priorities for Pottawatomie county as they operate within a regional process. There are a different set of realities of which the county must be aware.

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As stated by Pottawatomie's EMD, the consultant of the regional plan will not be working for the regional participants, but rather of the State of Kansas. This separation of authority and participants will be a dramatic change over previous mitigation planning efforts. Individual counties will have less

flexibility to alter the planning process or the overall content of the plan document. The consultant will come to the table with a process and document format already in mind. The Consultant will also have less time to dedicate to the needs of a single county; the consultant is responsible for creating a plan that represents

Figure 6-3: Realities of Regional Planning Process



Source: Thomason, 2014

the region as a whole. This means the consultant is responsible for analyzing many more jurisdictions and working with a more diverse pool of data.

The diagram shown in Figure 6-2 illustrates the nature of the regional planning process. At the center of the diagram are the State of Kansas and the consultant; this central location represents the high level of influence they have on the planning process. The State of Kansas established this new process and the consultant dictates the content of the planning process. The region's counties, jurisdictions, and citizens lie outward from the center. This outward location represents the increasing disconnect from the planning process. The six ovals symbolize the EMDs of the six counties included in this hypothetical region. It is through these six EMDs each county, jurisdiction, or citizen gains access to the planning process. These individuals play an important role in the planning process. They ensure their respective county is represented in the process and they ensure their constituents are involved and aware of the process. The arrows deflecting away from the center circle indicates the realities and challenges the EMDs may face as they work to ensure the planning process meets the needs of their respective challenges. This deflection does not indicate the process is hostile, merely the process may not be able to meet the expectations of all involved, as previously described.

In order to better the odds of a successful planning process it is important for Pottawatomie County officials to research and familiarize themselves with the work of the consultant hired for the regional plan. The comparable analysis portion of this project revealed consultants tend to produce similar

plans. The same consultants produced the plans of Pottawatomie and Miami counties, and Bond and Monroe counties. These pairs of plans offered many similarities, especially Pottawatomie and Miami Counties. By reviewing the work of the consultant, Pottawatomie County will be aware of plan components the consultant thoroughly addresses and components that receive less attention. This knowledge will help the county know where to focus its efforts preparing for and while participating in the process.

The Pottawatomie County EMD, and other county officials, must also educate themselves on the mitigation planning process to successfully navigate the regional scenario. The Pottawatomie County EMD had to learn about mitigation and its associated planning process very quickly as he took responsibility for finishing the development of the existing mitigation plan. Before the regional process starts, the EMD should refresh himself on the purposes, processes, and theory behind mitigation planning. The report *Hazard Mitigation: Integrating Best Practices into Planning*, edited by James C. Schwab, would be a good starting point. This report offers an overview of the purpose of mitigation, the involved parties, and offers case studies of mitigation activities of different sized jurisdictions. The textbook *Hazard Mitigation and Preparedness*, by Anna K. Schwab, Katherine Eschelbach, and David J. Brower, is a great resource about the components of mitigation planning. FEMA also produces a great resource in the series titled *Mitigation Planning How-To* for communities going through the mitigation planning process. By being familiar with the theory behind the process, Pottawatomie County

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officials will be better able to navigate the process.

Pottawatomie County officials must also be involved in the regional plan process and have expectations about what they will get from this process. The EMD must actively participate in all meetings and provide comments when appropriate. He will only be able to ensure the planning process is benefiting Pottawatomie County if he is aware of what is going on and speaks out. Similarly, he will only be able to ensure the process is helping the county if he knows what the county wants out of the process. The EMD must work with other county officials to decide what the county needs most from the regional process. They could decide they are most interested in addressing risks to critical facilities or to adding regulatory actions to their mitigation strategy.

Pottawatomie County must be prepared to adapt to this new regional planning paradigm. The county will not simply be able to address the weakness of its current plans while updating the strong components. It must work through a new process and strive to insure its planning needs are met.

Project Conclusions and General Application

Hopkins (2001) suggests communities will only participate in the planning process if the benefits of making a plan exceeds its costs. Before the passage of the DMA of 2000, communities did not make mitigation plans. Tying grant funding eligibility to mitigation plans created enough incentive to induce communities to participate. However, this connection did not create enough of an incentive

to excite communities about the process. The goal of the combined meeting process proposed in this study is to increase the incentive for excitement. This connection is designed to make the strategies included in mitigation more relevant to participants.

Two of the ways Hopkins (2001) suggests plans function are as agendas (a list of agreed upon actions) and as strategies (actions contingent on future decisions). The current lack of excitement for mitigation plans means there is little community support for the agenda contained in the mitigation strategy. The lack of information about growth in these plans makes it difficult to develop meaningful strategies about how to adapt to the future. The recommendations of this study are also designed to address these theoretical weaknesses of mitigation plans.

Application to Urbanizing-Rural Communities

The conclusions of this study are very relevant to other urbanizing-rural communities. I believe Pottawatomie is not unique in its dedicated staff and average plan. The challenge for Pottawatomie and other urbanizing-rural communities is to convey this dedication through the content of the mitigation plan. Similarly, this study's comparable analysis revealed many counties, including Pottawatomie County, have limited success encouraging participation. Focusing on mitigation efforts alone is not enough to encourage participation. In these cases, a more meaningful planning process must be created. Aligning mitigation and response activities will result in a relevant process in which communities can participate. Finally, I have identified challenges urbanizing-

rural counties may face as they become more integrated into their respective regions. The regional mitigation plan may represent a more efficient scale to address natural hazards, but information relevant to local jurisdictions can easily be lost within this type of plan. It is important for participating counties to be proactive during the preparation of these regional plans.

Limitations

The limited number of comparable counties included in the study prevents me from making any specific claims concerning the representativeness of my sample or statistical significance of my conclusions. However, I believe the sample is large enough to draw meaningful conclusions. Additionally, I had a small sample of interviews, as I only interviewed employees of Pottawatomie County. This limits my project in two ways: understanding of jurisdictions within Pottawatomie County and understanding of the planning realities within the comparable counties. Additional interviews with Pottawatomie County citizens and emergency responders would have allowed me to better understand the appropriateness of the proposed combined meeting process. Interviews with personnel of the comparable counties could have allowed me to identify more strategies for structuring the mitigation planning process.

It should also be noted the scoring protocol used in this study did not reveal meaningful differences between the different plans. As I employed the scoring protocol, I was often left unsatisfied with my ability to translate the variation in plan quality I saw to the protocol. The protocol was not well-suited for capturing the degree to which the participating

jurisdictions were included and woven into the plan, and the degree to which a community engaged with the concept of growth. The protocol ultimately revealed differences between the strongest and the weakest, but professional judgment was relied upon to distinguish amongst the middle.

Future Work

There are two major directions for future research: exploration of the combined meeting process and the investigation of the regional hazard mitigation planning process. By participating in the update of a single county mitigation plan, future researchers could identify the best structure for a combined mitigation and preparedness planning process. This research could provide insight into participants' perceptions and appropriate techniques for transitioning the preparedness planning conversation to mitigation. For the regional planning process, research should focus on identifying strategies that ensure participating jurisdictions are a meaningful part of the planning process and resulting mitigation plan. Natural hazards are both regional and local phenomenon, and must be treated as such.

Final Thoughts

I believe the hazard mitigation plan is a very important document for urbanizing-rural communities. The planning process provides an opportunity for community leaders and citizens to think about how they are vulnerable to natural disasters and how that vulnerability might change over time. Hazard mitigation planning presents a community with the opportunity to think comprehensively about its present and its future. Any ideas or solutions

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that result from this process can be recorded in the plan and preserved for future decisions.

I believe changes should be made to the process that will make the hazard mitigation plan more appealing. Researchers must identify ways to demonstrate the importance of this comprehensive level of thinking and ways to engage urbanizing rural communities. I believe combining response planning and mitigation planning might provide such a change.

Pottawatomie County should be well positioned as it enters the next hazard mitigation plan update process. County staff is active and will likely respond to suggestions found in this report.

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Identifying Priority Enhancements

Appendix A

Literature Map

Source	Hazard Mitigation Plans	Federal Role	Policies and Tool	Purpose of Plans	Evaluation of Plans	Challenges to Successful Planning
(Alesch and Petak 2002)						
(Baer 1997)						
(Berke and Godschalk 2009)						
(Burby 1998a)						
(Burby 1998b)						
(Burby 2006)						
(Connerly and Muller 1993)						
(Cortner et al. 1984)						
(Cutter 2001)						
(Deyle et al. 1998)						
(Federal Emergency Management Agency 2010)						
(Federal Emergency Management Agency 2011)						
(Frazier et al. 2013)						
(Garvin 1996)						
(Godschalk et al. 1999)						
(Godschalk, Kaiser, and Berke 1998)						

Identifying Priority Enhancements

Source	Hazard Mitigation Plans	Federal Role	Policies and Tool	Purpose of Plans	Evaluation of Plans	Challenges to Successful Planning
(Hill and Cutter 1998)						
(Hopkins 2001)						
(Horney et al. 2012)						
(Kaiser, Godschalk, and Chapin 1995)						
(Kent 1964)						
(Krippendorf 1980)						
(Lyles, Burke, and Smith 2012)						
(L. W. Lyles 2012)						
(May and Deyle 1998)						
(Mileti 1999)						
(Olshansky and Kartex 1998)						
(Paton 2008)						
(Prater and Lindell 2000)						
(Schwab, Brower, and Eschelbac 2007)						
(Schwab 2010)						
(Talen 1996)						
(Tierney 1989)						

Appendix B

Scoring Protocol

Identifying Priority Enhancements

Plan Evaluation Protocol

County: _____

Coding Item	Code 0= not mentioned 1=mentioned *2=mentioned, some details *3= mentioned, many details	Notes
Plan Basics		
Date		
Is it Multi-Jurisdictional?		
Is this an Update?		
Participation		
Public Engagement Techniques*		
Did they have a Citizen Advisory Committee?		
Did they distribute Information?		
Did they have open meetings/ workshops?		
Did they have Public Notices?		Were they more than basic legal requirement?
Did they target any groups?		
Develop & Update*		
What was the planning process like?		
Organizational Roles*		
Who was involved?		
How did they support the plan's development?		
Inter-Organizational Coordination		
Organizational Involvement		
County Departments?		
County Elected Officials?		
City Departments?		
City Elected Officials?		
State Agencies?		
Federal Organizations		
Citizen/Neighborhood Groups?		
Utilities?		
Surrounding Jurisdictions		

Coding Item		Code 0= not mentioned 1=mentioned *2=mentioned, some details *3= mentioned, many details	Notes
Plan Integration*			
	With other County Plans?		
	With Emergency Operations Plan?		
	Floodplain Management Plans?		
	With City/Township Plans?		
Hazard Identification/ Risk Assessment			
Hazard ID			
	Dam Failure		
	Drought		
	Earthquakes		
	Extreme Temps (Hot and Cold)		
	Fire		
	Floods		
	Landslides		
	Man Made/Technological		
	Levee Failure		
	Severe Storms		
	Tornadoes		
	Winter Storms		
	Hail		
Hazard Prioritization			
	How where they prioritized?		
Hazard Assessment (Each Hazard)*			
	Likelihood/ Probability		
	Location and Boundaries		
	Magnitude and Severity		
	Separate Characteristics		
	Historical Information		
Risk Assessment*			
	Loss Estimations for Private Property		
	Loss Estimations for Public		
	Multi-hazard Risk Assessment		
Vulnerability Assessment*			
	Critical Facilities		
	Environmental Assets		

Identifying Priority Enhancements

Coding Item		Code 0= not mentioned 1=mentioned *2=mentioned, some details *3= mentioned, many details	Notes
	Vulnerable Populations		
	Land Use Trends		
	Population		
	Private Property		
Jurisdiction Specific Information*			
	Does this plan detail city specific information?		
Capability Assessment			
Federal			
	Does the plan discuss available Federal programs/funding sources?		
General*			
	Does the plan identify local policies that increase risk/ encourage risky development?		
	Does the plan describe those policies that might be changed?		
Local*			
	Does the plan describe the authority and capability of major departments and agencies?		
	Does the plan describe any development regulations or controls?		
	Does the plan describe the local emergency response and preparedness procedures?		
	Does the plan describe the local political climate?		
State*			
	Does the plan discuss available state programs/funding sources?		
Goals			
General			
	Structure of goals and objectives (Linked)		

Scoring Protocol

Coding Item		Code 0= not mentioned 1=mentioned *2=mentioned, some details *3= mentioned, many details	Notes			
	Inclusion of goal for each jurisdiction					
Coordination						
	Increase information availability					
	Local-Local Coordination					
	State-Local Coordination					
Hazard Loss						
	Distributes Hazard Management Costs					
	Minimize Fiscal Impacts					
	Protect Public Safety					
	Reduce General Property Damage					
	Reduce Public Property Damage					
	Reduce Private Property Damage					
	Reduce Impact to Environment and Natural Resources					
Overarching Vision						
	Increase Resilience					
Proposed Actions						
		Present	Cost	Responsible Agency	Spatial Specificity	Timetable
	General Coordination					
	Awareness/Knowledge					
	Development Incentives					
	Development Regulations					
	Financial Assistance					
	Preparedness/Response					
	Protection of Public Facilities and Infrastructure					
	Recovery Measures					
	Structural Controls					
	Acquisition					

Identifying Priority Enhancements

Monitoring			
Monitoring and Implementation*			
	Conflict Management/Dispute Resolution		
	Identifies Obstacles		
	Tracking Losses Post Disaster Event		
	Tracking Use of Post-Disaster Funds		
Monitoring Plan			
	Identifies Parties		
	Indicators		
	Public Involvement		

Appendix C

Interview Questions

Emergency Management Director

Did you play a role in the development of Pottawatomie County's current hazard mitigation plan? Past Plans?

How would you rate Pottawatomie County's hazard mitigation plan?*

How does this mitigation plan fit in with your overall strategy for managing and preparing for disasters?

Are there other organizations in the county that are interested in the development of the county's hazard mitigation plan? Such are organizations seeking FEMA grants?

How important are mitigation actions for protecting Pottawatomie County?

How does the recent growth trend affect the county's overall vulnerability to natural hazards?

How important are land-use/zoning policies as mitigation actions?

What level of support does your office have when it comes to implementing mitigation actions? How does it compare to the preparedness, response and recovery actions completed by this office?

How would you describe the level of community awareness concerning Pottawatomie County's hazard mitigation plan and the actions in proposes?

When it comes to mitigation related policy and communication, what types of activities, policies, actions, mapping, etc. are you unable to complete because of limited staff time or resources?*

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If you used a Consultant, how comfortable are you with judging the quality of the work completed by the Consultants you hired?*

Are there areas of the plan they you feel need improvement?*

Zoning Administrator

How familiar are you with Pottawatomie's current hazard mitigation plan?

Did you play a role in the development of the current plan? Past Plans?

How familiar do you feel the general public is with the county's mitigation plan?

Do you feel that zoning and land-use regulations can be effective mitigation policies? Do you feel they are important?

Are there land-use/ zoning policies that could be enacted that you feel could make Pottawatomie County safer from disasters over the long term?

How closely do you work with the emergency management office?

Note: Interviews followed the research protocols established by the Institutional Review Board (IRB) of Kansas State University for conformance with Human Subjects Research (45 CFR 46). A compliance review, administered by the Kansas State University Research Compliance Office, was approved on February 8, 2014.

Appendix D

County Profiles

Identifying Priority Enhancements

Profile of Target County- Pottawatomie County, KS

County Population

- 1990: 16,128
- 2000: 18,209
- 2010: 21,604
- Current Estimate: 22,302

Number of Jurisdictions (2010 pop) (City, Village, CDP; Whole or Part)

- Under 500: 7
- 501-1000: 3
- 1001-5000: 2
- 5000- 10,000: 0
- 10,000+: 0
- Total Population: 10,295

Number of Staff (Fulltime/parttime)

- Emergency Management: 2
- Zoning: 2

County Comprehensive Plan: Yes/No

County Zoning Regulations: Yes/No

Subdivision Regulations: Yes/No

Type of County Government: Board of Commissioners

MSA Population

- 2000: N/A
- 2010: 127,081

Description of Recent Growth: Recent growth in Pottawatomie County is occurring along the Hwy 24 corridor, from the county's western edge to the city of Wamego. Suburban density developments are located on the western end of the corridor, near the city of Manhattan, while rural residential developments are being built along the rest of the corridor. Outside of this corridor, the county's population is stable.

Profile of Comparable Counties- Bates County, MO

County Population

- 1990: 15,025
- 2000: 16,653
- 2010: 17,049
- Current Estimate: 16,709

Number of Jurisdictions (2010 pop) (City, Village, CDP; Whole or Part)

- Under 500: 8
- 501-1000: 0
- 1001-5000: 3
- 5000- 10,000: 0
- 10,000+: 0
- Total Population: 8,544

Number of Staff

- Emergency Management: 2 part time
- Zoning: 0

County Comprehensive Plan: Yes/No

County Zoning Regulations: Yes/No

Subdivision Regulations: Yes/No

Type of County Government: Board of Commissioners

MSA Population

- 2000: N/A
- 2010: 2,035,334

Description of Recent Growth: Bates County, MO has had minimal recent growth. The I-49/US-71 corridor is central to any growth that has occurred.

Identifying Priority Enhancements

Profile of Comparable Counties: Bond County, IL

County Population

- 1990: 14,991
- 2000: 17,733
- 2010: 17,768
- Current Estimate: 17,644

Number of Jurisdictions (2010 pop) (City, Village, CDP; Whole or Part)

- Under 500: 6
- 501-1000: 3
- 1001-5000: 0
- 5000-10,000: 1
- 10,000+: 0
- Total Population: 10,106

Number of Staff (Full time/ part time)

- Emergency Management: 1 part time
- Zoning: 1

County Comprehensive Plan: Yes/No

County Zoning Regulations: Yes/No

Subdivision Regulations: Yes/No

Type of County Government: Board of Commissioners

MSA Population

- 2000: 2,603,607
- 2010: 2,812,896

Description of Recent Growth: Bond County has experienced no meaningful growth over the last decade.

The largest city, Greenville, has been stable over the last 20 years.

Profile of Comparable Counties- Canadian County, OK

County Population

- 1990: 74,409
- 2000: 87,697
- 2010: 115,541
- Current Estimate: 122,560

Number of Jurisdictions (2010 pop) (City, Village, CDP; Whole or Part)

- Under 500: 2
- 501-1000: 1
- 1001-5000: 1
- 5000- 10,000: 1
- 10,000+: 4
- Total Population: 110,006

Number of Staff (Full time/ part time)

- Emergency Management: 2
- Zoning: 0

County Comprehensive Plan: No

County Zoning Regulations: No

Subdivision Regulations: No

Type of County Government: Board of County Commissioners

MSA Population

- 2000: 1,083,346
- 2010: 1,252,987

Description of Recent Growth: Growth in Canadian County is the result of the growth of the City of Oklahoma City into the county and growth of the smaller jurisdictions in the eastern portions of the county. The western portion of the county has experienced very little growth. The jurisdictions in Canadian County have incorporated large portions of the surrounding rural areas, thus skewing the population distribution numbers.

Identifying Priority Enhancements

Profile of Comparable Counties- Cass County, MO

County Population

- 1990: 63,808
- 2000: 82,092
- 2010: 99,478
- Current Estimate: 100,376

Number of Jurisdictions (2010 pop) (City, Village, CDP; Whole or Part)

- Under 500: 10
- 501-1000: 3
- 1001-5000: 5
- 5000- 10,000: 1
- 10,000+: 3
- Total Population: 71,994

Number of Staff (Full time/ part time)

- Emergency Management: 1 full time and 3 volunteers
- Zoning: 2

Current County Comprehensive Plan: No

County Zoning Regulations: Yes

Subdivision Regulations: Yes

Type of County Government: Board of Commissioners

MSA Population

- 2000: 1,776,062
- 2010: 2,035,334

Description of Recent Growth: Growth in Cass County has primarily occurred in the northern portions of the county and around the City of Harrisonville. Additionally, growth has occurred along I-49/US-71 and MO-7. Much growth has occurred as suburban residential development around the county's largest cities, with rural residential growth along the periphery.

Profile of Comparable Counties- Jefferson County, MO

County Population

- 1990: 171,380
- 2000: 198,099
- 2010: 218,733
- Current Estimate: 220,209

Number of Jurisdictions (2010 pop) (City, Village, CDP; Whole or Part)

- Under 500: 6
- 501-1000: 3
- 1001-5000: 7
- 5000- 10,000: 4
- 10,000+: 2
- Total Population: 87,528

Number of Staff (Fulltime/parttime)

- Emergency Management: 3
- Zoning: 6

Current County Comprehensive Plan: No

County Zoning Regulations: Yes

Subdivision Regulations: Yes

Type of County Government: Council and Executive

MSA Population

- 2000: 2,603,607
- 2010: 2,812,896

Description of Growth: Growth in Jefferson County has primarily occurred in the northern 1/3 of the county. The I-55 corridor, the US 21 corridor, and the US 30 corridor are key growth areas. Given the population distribution, rural residential and rural suburban developments have dominated. The rugged terrain has a large impact on the size and overall shape of new developments. Historically, development has occurred along the eastern edge of the county, along the Mississippi River.

Identifying Priority Enhancements

Profile of Comparable Counties- Kingfisher County, OK

County Population

- 1990: 13,212
- 2000: 13,929
- 2010: 15,034
- Current Estimate: 15,005

Number of Jurisdictions (2010 pop) (City, Village, CDP; Whole or Part)

- Under 500: 3
- 501-1000: 2
- 1001-5000: 2
- 5000- 10,000: 0
- 10,000+: 0
- Total Population: 8,805

Number of Staff (Full time/ part time)

- Emergency Management: 1
- Zoning: 0

County Comprehensive Plan: No

County Zoning Regulations: No

Subdivision Regulations: No

Type of County Government: Board of Commissioners

MSA Population

- 2000: 1,083,346
- 2010: 1,252,987

Description of Recent Growth: Growth in Kingfisher county has centered near the cities of Hennessey and Kingfisher. The US-81 corridor connects these growth areas.

Profile of Comparable Counties- McClain County, OK

County Population

- 1990: 22,795
- 2000: 27,740
- 2010: 34,506
- Current Estimate: 35,613

Number of Jurisdictions (2010 pop) (City, Village, CDP; Whole or Part)

- Under 500: 3
- 501-1000: 4
- 1001-5000: 1
- 5000- 10,000: 3
- 10,000+: 0
- Total Population: 23,704

Number of Staff (Full time/ part time)

- Emergency Management: 2
- Zoning: 0

County Comprehensive PlanNo

County Zoning Regulations: No

Subdivision Regulations: No

Type of County Government: Board of Commissioners

MSA Population

- 2000: 1,083,346
- 2010: 1,252,987

Description of Recent Growth: Growth in McClain County is driven by suburban development in the northern portions of the county and rural residential in the central portions of the county. Jurisdictions in the county have annexed large portions of rural developments, thus skewing the apparent distribution of rural and incorporated developments. The southwest portions of the county are dominated by oil development.

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Profile of Comparable Counties- Miami County, KS

County Population

- 1990: 23,466
- 2000: 28,351
- 2010: 32,787
- Current Estimate: 32,612

Number of Jurisdictions (2010 pop) (City, Village, CDP; Whole or Part)

- Under 500: 3
- 501-1000: 0
- 1001-5000: 3
- 5000- 10,000: 1
- 10,000+: 0
- Total Population: 17,347

Number of Staff (Full time/ part time)

- Emergency Management: 1
- Zoning: 2

County Comprehensive Plan: Yes

County Zoning Regulations: Yes

Subdivision Regulations: Yes

Type of County Government: Board of Commissioners

MSA Population

- 2000: 1,776,062
- 2010: 2,035,334

Description of Recent Growth: Miami County does not contain the high levels of suburban developments that are common in the Kansas City Metro Area. Areas north of K-68 highway are experiencing the largest growth pressures, primarily rural residential. Hillsdale Lake is another driver of development north of K-68. The county's largest city, Paola is located south of K-68. Miami County sees itself as a community in transition.

Profile of Comparable Counties- Monroe County, IL

County Population

- 1990: 22,422
- 2000: 27,619
- 2010: 32,957
- Current Estimate: 33,357

Number of Jurisdictions (2010 pop) (City, Village, CDP; Whole or Part)

- Under 500: 3
- 501-1000: 0
- 1001-5000: 1
- 5000- 10,000: 2
- 10,000+: 0
- Total Population: 21,410

Number of Staff (Full time/ part time)

- Emergency Management: 2 part time
- Zoning: 1

Current County Comprehensive Plan: Yes/No

County Zoning Regulations: Yes/No

Subdivision Regulations: Yes/No

Type of County Government: Board of Commissioners

MSA Population

- 2000: 2,603,607
- 2010: 2,812,896

Description of Recent Growth: Growth is primarily occurring in the northern portions of the county, closest to the St. Louis Metro Area. Over half of the county's population lives in the county's two largest cities, Waterloo and Columbia. Rural residential developments are common in the north.

Identifying Priority Enhancements

Appendix E

Hazard Mitigation Plan Scores

County	Plan Basics	Participation	Inter-Organizational Coordination	Hazard Identification/ Risk Assessment	Capability Assessment	Goals	Proposed Actions	Monitoring	Total
Urbanizing Rural									
Pottawatomie, KS	2/3	6/11	11/13	31/45	11/20	7/15	11/20	0/11	79/138, 57%
McClain, OK	1/3	9/11	7/12	26/45	5/20	4/15	12/20	3/11	67/137, 49%
Miami, KS	2/3	5/11	9/13	30/45	12/20	7/15	13/20	1/11	79/138, 57%
Monroe, IL	3/3	8/11	10/13	32/45	7/20	6/15	12/20	1/11	79/138, 57%
Rural									
Bates, MO	2/3	5/12	4/13	27/45	12/20	9/15	12/20	3/11	74/139, 51%
Bond, IL	2/3	10/12	7/13	29/46	7/20	7/15	10/20	0/11	72/140, 53%
Kingfisher, OK	3/3	10/12	10/12	37/45	14/20	7/15	13/20	3/11	97/138, 71%
Urbanized									
Canadian, OK	3/3	9/11	11/13	35/46	8/20	10/15	11/20	2/11	89/139, 64%
Cass, MO	3/3	9/11	10/13	20/45	7/20	12/25	16/20	2/11	79/138, 57%
Jefferson, MO	3/3	6/11	7/13	29/45	9/20	7/15	10/20	2/11	73/138, 53%

*Total scores vary because some criteria are not applicable to every county.

Identifying Priority Enhancements

Appendix F

Key Ideas for the Regional Process

As the State of Kansas works to implement a regional planning process for hazard mitigation planning, it is important for the state to understand the roles of each key player. I believe there are three sets of key players: state mitigation planners, county EMDs and consultants. These groups share some overlapping responsibilities, but each has its own important role.

Each key player has roles and responsibilities beyond the scope of hazard mitigation planning. The six employees of the Mitigation and Planning Branch of the Kansas Division of Emergency Management are responsible for assisting with the development of local emergency operations and continuity planning, preparation of the State Mitigation Plan, review of regional hazard mitigation plans, and administration of hazard mitigation grant programs. The Emergency Management Directors of each county work to ensure their respective counties are prepared to respond to natural and man-made disasters and that governmental functions can be continued throughout a disaster or quickly restored. These individuals also work to reduce the potential impact of future disasters through identifying mitigation actions. Finally, consultants are

skilled planning professionals with experience guiding communities through a process and identifying a meaningful set of goals and actions.

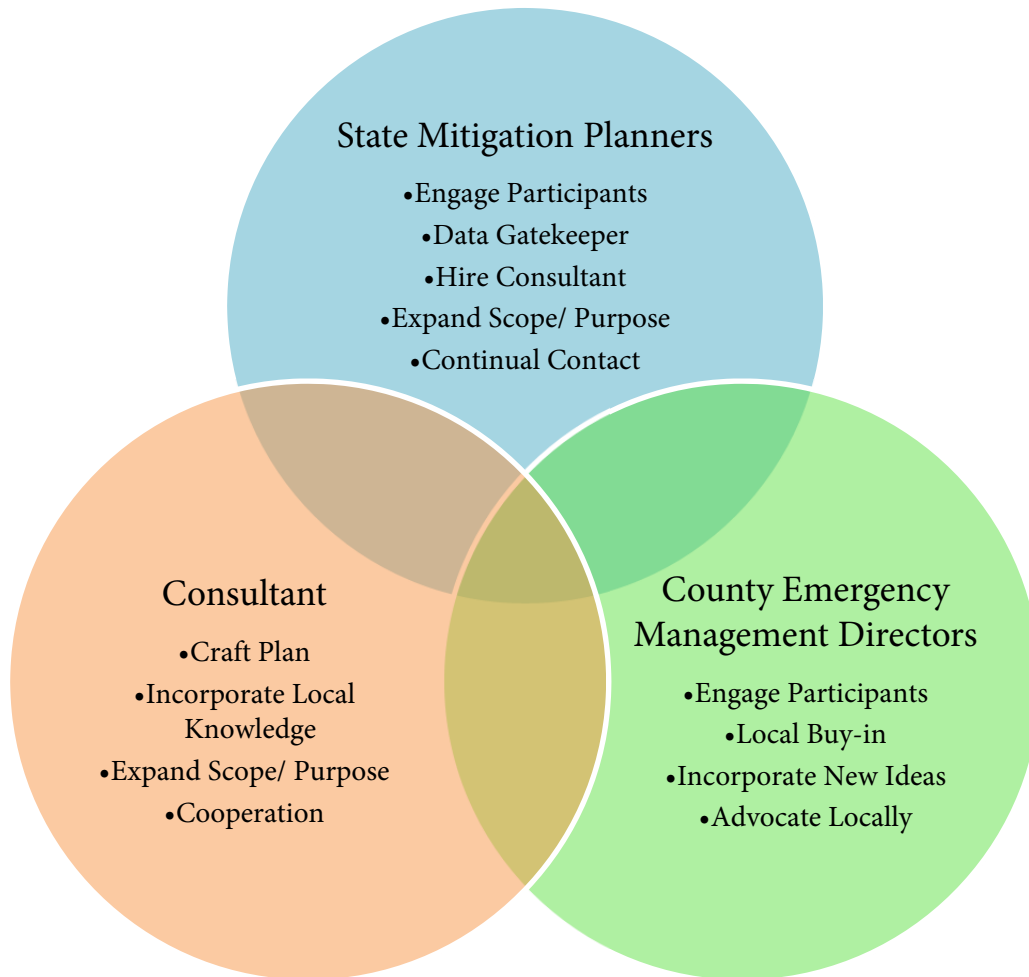
State Mitigation Planners

While the shift toward a regional planning process has reduced the number of mitigation plans for which state planners are responsible, I do not believe it has dramatically reduced the work load of these individuals. The workload associated with the technical analysis portion of these plans will be reduced, but I feel workload associated with engaging participants throughout the regions will increase.

As my research has shown, mitigation plans can be technically competent, yet lack engagement and usability by individual participants. I believe it will be the responsibility of state planners to assist local EMDs to find feasible ways to engage participants in each county. State mitigation planners will be responsible for helping to identify ways to expand the scope of mitigation plans and, as I have suggested, identify ways to give mitigation plans more purpose. State planners are aware of the typical scope of each of the four phases of the emergency management cycle: preparedness,

Identifying Priority Enhancements

Figure F-1: Roles of Key Players



Source: Thomason, 2014

response, recovery, and mitigation. Planners should think creatively and work to find ways to capitalize on any overlap between these phases. I have suggested a broad definition of mitigation actions is appropriate for Urbanizing-Rural counties. If communities are engaged in meaningful and specific conversations, small achievable mitigation related activities will be identified. Funding limitations have affected the feasibility of having consultant led meetings in the majority of a region's counties (based on the number of meetings held for the Region H

plan). As a result, it will be the responsibility of state planners to facilitate this conversation and advocate for mitigation planning outside of the formal mitigation planning process.

I also believe it will be the responsibility of state mitigation planners to help ensure the regions, and individual counties, have access to the vast resource available from state and federal sources. The US Army Corps of Engineers regularly publishes reports that would be of interest for mitigation planning. The state's colleges and universities also regularly publish

research from which communities could benefit, such as Kansas State University Geography Professor Dr. Bimal K. Paul's work on "*Flash Flooding in Kansas: Respondents Satisfaction with Emergency Response Measures and Disaster Aid (2002)*" and "*Exploring Probable Reasons for Record Fatalities: The Case of 2011 Joplin, Missouri, Tornado (2012)*." Beyond publications, it should be an important responsibility of state mitigation planners to help communities understand the vast amount of GIS data available from state and federal sources, and understand how to incorporate this information into their regular activities. State planners act as the gate keepers to a vast array of important information.

The creation of the scope of services and hiring of a consultant is an important responsibility of state mitigation planners. Planners should look for a consultant who is willing to work with them to expand the scope of these hazard mitigation plans. Planners should also carefully review the work of each applicant for the quality of the narrative created and for incorporation of local knowledge. Over the course of this project, I have found the choice of a consultant to have a significant impact on the plan's overall quality. Additionally, state planners should strive to create a scope of services that includes adequate opportunity to engage local participants. In my opinion, hazard mitigation planning offers little incentive for participation; state planners and the consultant must work to overcome this shortcoming.

County Emergency Management Directors

As stated in Chapter 6 and in Appendix G, the Emergency Management Directors for each county play a very important role in hazard mitigation planning. These individuals plan for their counties and directly and regularly interact with emergency response officials and county commissioners. The Pottawatomie County EMD stated county commissioners rely on his judgment when it comes to evaluating and enacting policy. It is important for these individuals to capitalize on this trust and work to advance hazard mitigation planning. As state hazard mitigation planners work to identify ways to expand the scope of hazard mitigation planning, EMDs should use their local knowledge to help structure specific strategies for their respective counties. It should also play an active role in the running of local meetings to help ensure legitimacy and local buy-in. Each EMD must work to generate conversation the consultant can incorporate into the narratives of the plans they create.

It is also the responsibility of the EMD to be open to the ideas and new data provided by state mitigation planners. While EMDs know their respective counties very well, state mitigation planners are equally knowledgeable of the broader fields of hazard mitigation planning and emergency management. The EMD must recognize the state planners have his or her county's best interests at heart. These new ideas may add responsibilities to the EMDs' already limited schedule, but over the long term, these additions will benefit the safety and security of each county.

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Consultant

It is the consultant's responsibility to assemble the region's hazard mitigation plan and ensure it contains a cohesive narrative. It is also the consultant's responsibility to cooperate with state mitigation planners to craft a process that will add purpose to the regional hazard mitigation plans. The consultant must engage in the state's new process and listen to conversations the locals are having. This conversation will provide a large amount of meaningful information that will add depth and substance to the plan's narrative.

It is vitally important the consultant agrees to participate and engage in an expanded planning process. The consultant hired for the regional planning process should be willing to use his or her experiences with mitigation plans to help state planners identify meaningful ways to increase involvement and expand the scope of these plans. The consultant should also help local EMDs to identify ways to engage local communities. This engagement and cooperation will include identifying and implementing appropriate technical analysis and mapping methods as well.

Finally, it is the consultants responsibility to incorporate information gained during the planning process in the plan document they create. I have identified hazard mitigation plans that contain meaningful descriptions of communities and have structured the plan document in ways that enhance the plan's usability. It is the consultant's responsibility to educate themselves on the best ways to organize and structure a document. A planning process that contains engaged state mitigation planners and engaged EMDs should provide a large

amount of rich data to include in the plan's narrative.

References

- Paul, B. K., and M. Stimers. 2012. "Exploring Probable Reasons for Record Fatalities: The Case of 2011 Joplin, Missouri, Tornado." *Natural Hazards* 64 (2): 1511–26.
- Paul, B. K. 2002. "Flash Flooding in Kansas: Respondents Satisfaction with Emergency Response Measures and Disaster Aid." *Great Plains Research* 12 (2): 295–322.

Appendix G

Key Ideas for Regional Participants

1. Educate Yourself

County officials must also educate themselves on the mitigation planning process to navigate successfully the regional scenario. Any participant should be familiar with the purposes, processes, and theory behind hazard mitigation planning. This familiarity will help officials know what to expect and understand the significance of the process. The following resources are very useful for this purpose:

Hazard Mitigation: Integrating Best Practices into Planning, edited by James C. Schwab

This report offers an overview of the purpose of mitigation, the involved parties, and offers case studies of mitigation activities of different sized jurisdictions.

Hazard Mitigation and Preparedness, by Anna K. Schwab, Katherine Eschelbach, and David J. Brower,

This textbook is a great resource about the components of mitigation planning. FEMA also produces a great resource titled insert title for communities going through the mitigation planning process.

2. Learn the Consultant

The comparable analysis portion of this project revealed consultants tend to produce similar plans. The same consultants produced the plans of Pottawatomie and Miami counties, and Bond and Monroe counties and each pair shared many similarities. By reviewing the work of the consultant, county officials will be aware of plan components the consultant thoroughly addresses and components that receive less attention. This knowledge will help the county

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know where to focus its efforts preparing for and while participating in the regional planning process.

3. Learn the Region

It is important for county officials to learn about the counties assigned to their region. It is very likely these partner regions will have similar risk and vulnerability profiles. These similarities mean the consultant will likely adequately cover these risks. However, it is possible their county may have unique hazards. If this is the case, officials know to focus attention on these profiles.

4. Be Involved

Since the consultant does not represent any single county, it is important for officials to be involved in the planning process. This participation will ensure the wants and needs of their county are heard and addressed. Someone must be at all the meetings and respond to all project emails.

5. Have Expectations

Simple involvement is not enough. Officials must decide ahead of time what they expect to gain from the regional planning process. There are likely a handful of issues or needs of which the emergency manager or other officials are aware, whether its a need for additional regulations, or an outside opinion on a hazardous area. It is important to share these needs within the county, so everyone is on the same page and working towards the same goal.

6. Use Your Resources

While the emergency manager will likely be the lead official for the regional planning process, it is important he or she involves other county officials. The zoning administrator, sheriff, or treasure may have more direct knowledge,

planning experience, or political expertise that could benefit the county in the regional planning process.

7. Demand of the Consultant

By being involved, being educated, and using the county's resources, the EMD will be able to present the consultant with cogent arguments for making changes to the planning process or making additions to the plan document. The consultant will only know to focus on a particular issue if the issue is brought to his or her attention.

8. Do Your Homework

The consultant will ask each county to provide information for inclusion into the plan. It is important for the county to promptly provide this information. The consultant will be much more responsive to the county's unique needs if the county has cooperated in the broader, more basic aspects of the planning process.

9. Use Your Old Mitigation Plan

The county is not entering into this process blind. The county's existing mitigation plan can serve as an important guide. It should have identified needs and actions appropriate to the county. These actions will be useful for the development of new actions

10. Build on Your Weaknesses

After working with the existing plan for five years, the county has likely identified areas of the plan that could be more useful if they had more/ different information. The existing mitigation plan be used to identify needs and set expectations

11. Look Forward

The preparation of a hazard mitigation plan provides an opportunity to think about the future, to think about how risks might change. It does not require a lot of time or technical skill to do this. It simply requires taking a step back and reviewing the county's surroundings. The resulting mitigation plan will be

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more useful to the county if it provides more than just a snapshot in time, but provides a little guidance for moving forward.

12. Make Meetings About More than Mitigation

While the county will have little control over structure of the region wide meetings, it will have some control over the meetings held within the county. It is important to think about the interests of the target audience within the county and structure the meetings accordingly. As suggested in this paper, it might be appropriate to make these meetings more directly about response activities. Finding a way to bring people to the table is very important.

