

# SHOW ME THE MONEY

## Disaster Recovery Cost Reduction



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# About this Report

This report is one of seven reports produced as part of a semester-long, innovative problem solving engagement between FEMA Region 8 and North Dakota State University's Emergency Management Academic Program. Each report in this series addresses a specific problem statement presented by FEMA Region 8 problem sponsors. These problem statements represent challenges that have been identified across the emergency management practice spectrum.



NDSU offered the model interdisciplinary course focused on innovative problem solving for FEMA in partnership with Daniel Green, Resilience Analyst in National Preparedness from FEMA Region 8. The goal was to bring the perspectives and insights of next generation leaders to current challenges facing emergency management practice from a federal perspective. Student teams worked with their problem sponsors and subject matter experts to understand and contextualize the problems. The data collected from interviews, coupled with an understanding of the existing literature, allowed the teams to develop and test solutions within a systems thinking framework, and offer specific insights and recommendations.


The teams approached problem solving from a research and development approach, similar to the approach used by the Pentagon's Defense Advanced Research Projects Agency (DARPA). Using a Pasteur's Quadrant perspective (a use-inspired basic research approach) allowed the teams to seek a fundamental understanding of the problems they were addressing with a focus on dynamic solutions. This approach required a grounded understanding of the problem, and the context and systems within which it exists. The solutions offered often pushed beyond existing programs and workflows.

NDSU's evaluation of this model course's development and delivery is supported, in part, by a research award from FEMA's Higher Education Program. NDSU faculty, Drs. Carol Cwiak and Caroline Hackerott, will supply the entirety of the materials used in the model course as part of the evaluation to encourage other emergency management higher education institutions to engage in similar partnerships. It is envisioned that this model course can be used with partners at all government levels and across a variety of sectors to bring new perspectives to enduring challenges.

NDSU would like to thank the FEMA Region 8 problem sponsors, as well as all the emergency management and partner agency subject matter experts who graciously shared their time, energy, expertise, and guidance. In particular, the team thanks Daniel Green, who brought this opportunity to NDSU and fueled the faculty, students, and problem sponsors with a level of vision, commitment, and enthusiasm that set the tone for the entirety of the experience.




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# Executive Summary



The Show Me the Money problem statement focuses on gaining insight into the ways in which local policy in rural areas affects disaster recovery costs. Early in the interview process, the NDSU team recognized that the scope of the problem was intertwined with more complex dynamics that exist within the context of emergency management practice. A gap between federal expectations and rural realities was identified. This report focused on that gap.

Limited capacity and capability, recovery planning issues, and challenges with mitigation opportunities emerged as key topics interfering with the recovery focus and process in rural areas. A series of recommendations to remedy these issues was provided, the most significant of which focused on capacity and capability development. An important conclusion from this effort is that the local government is not investing appropriately in emergency management practice in rural areas (often due to a lack of resources) and that lack of investment is costing all levels of government (and residents) increased recovery expenditures.

# Problem Statement

EMGT 491/690  
INNOVATIVE PROBLEM SOLVING FOR FEMA

## SHOW ME THE MONEY!

### CHALLENGE

FEMA Region 8 wants to better understand how local policy might affect disaster recovery costs in order to share best practices for pre-disaster recovery planning with communities in Region 8.

### BACKGROUND

The increasing frequency and severity of disaster impacts results in escalating challenges during disaster recovery. This holds especially true in rural areas, which tend to have limited capacity and fewer resources to address these compounding issues. Rising recovery costs in particular are proving to be a barrier to local recovery efforts. The Regional FEMA offices seek to understand the factors driving these rising costs, and any best practices that may be shared with local partners during recovery planning outreach.



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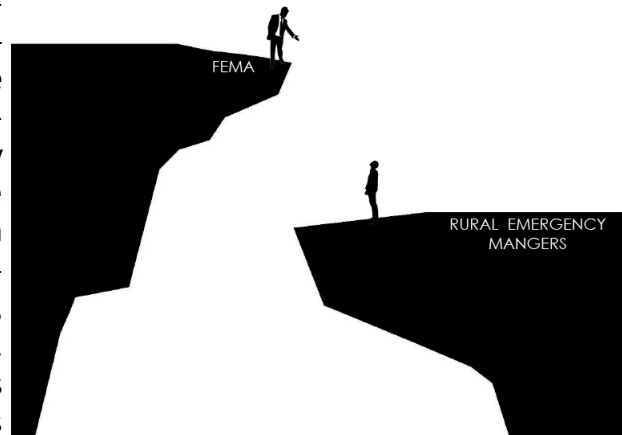
Problem Sponsors: Tyler Barton, PhD, Recovery Program Analyst; Madeleine Bright, Recovery Program Specialist; Sarah Peplowski, Recovery Policy Analyst  
Senior Leader: Ryan Pietramali, Recovery Division Director

# Introduction

The Show Me the Money problem statement focuses on gaining insight into the ways in which local policy in rural areas affects disaster recovery costs. This information is sought in order to share best practices for pre-disaster recovery planning and other efforts that can reduce costs in the region. This problem is particularly salient as the frequency and severity of disasters is increasing and driving up disaster expenditures.

Disasters are disruptive to communities and residents are anxious to recover post-disaster to some level of normalcy; but recovery processes are not quite that simple. Recovery processes, which can continue for many years, are challenging for residents and communities to endure—socially, mentally, and economically. Even after recovery would appear to be complete in residents' eyes, the work involved in the community's recovery and the enduring financial impacts can linger on for a decade or more.

The NDSU team conducted extensive interviews with a wide variety of subject matter experts and conducted additional research to be able to provide an well informed response to the problem statement. The team learned early on in the interview process that there was a significant disconnect between local level emergency managers in rural areas and the structures, intent, and expectations at the federal level. This gap between federal expectations and rural realities is what informs this report and its recommendations. Of note, the issues covered in this report are not new; in fact, many of these issues are endemic in the practice of emergency management in rural areas.



Three main areas emerged as focal points for further investigation during this effort: rural capacity and capability, recovery planning issues, and challenges with mitigation opportunities. The understanding and contextualization segment of this report seeks to create awareness about the current state of emergency management in rural areas. The recommendations provided focus on bridging the identified gap and informing stronger emergency management practice.



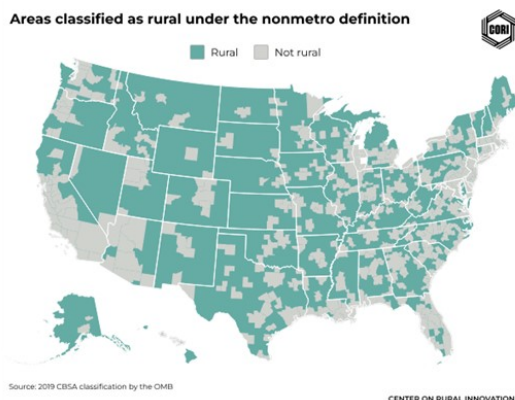
# Understanding and Contextualizing the Problem

During the interview process, the NDSU team recognized that the scope of the problem presented by FEMA Region 8—the influence of local policy on disaster recovery costs—was intertwined with more complex dynamics that exist within the context of emergency management practice. This forced a shift in analysis as the core premise assumed a level of local recovery aforethought and engagement that the team found from its interviews to be mostly absent. It became clear that a number of significant roadblocks exist that have created a gap between expectations of practice at the federal level and the realities of emergency management practice in rural areas.

This gap between federal expectations and rural realities regarding recovery processes requires a discussion about a number of factors. At the core of this discussion is emergency management capacity and capability in rural areas. Region 8 is comprised of six states and 29 federally recognized tribes, which are largely rural. Rural practice areas face challenges that strain the implementation of national level directives.

## Capacity and Capability in Rural Communities

There are many ways to define rural areas. The two most frequently used definitions are from the U.S. Census Bureau and the Office of Management and Budget. The U.S. Census Bureau defines rural as “what is not urban” using a population density metric (2024). The Office of Management and Budget (OMB) defines rural as “nonmetro areas” and uses economic and social relationships as delineation factors (Center on Rural Innovation, 2022). OMB’s “nonmetro” definition aligns more succinctly with emergency management practice (Cwiak & Butterfass, 2024) and is used in this report to characterize the rural nature of Region 8. The distribution of rural areas using this definition can be seen in the map below (Center on Rural Innovation, 2022).

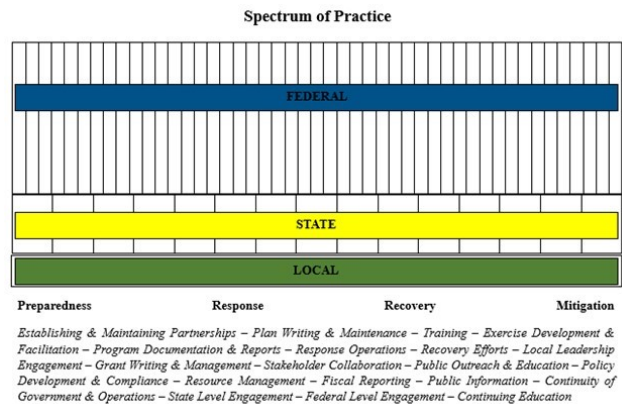


A central theme that emerged across the interviews was the lack of capacity and capability that exists in rural areas at the local emergency management level. Capacity refers to the personnel, equipment, and resources needed, while capability refers to the knowledge and skill required; combined, they comprise what is necessary to meet the obligations of a local level emergency manager (Cwiak & Butterfass, 2024). Some jurisdictions do not have the financial ability to

hire a dedicated emergency manager. In other jurisdictions, the emergency manager wears so many proverbial hats that the time relegated to emergency management tasks is extremely limited (Cwiak & Butterfass, 2024; Jensen et al., 2014). Both of these scenarios are problematic, but all too typical in rural areas.

Securing adequate funding for rural emergency management positions is challenging. The Emergency Management Performance Grant (EMPG) is intended to help support the emergency management function at state, local, tribal, and territorial (SLTT) level (FEMA, 2023), but funding distribution from the state level varies based on the state and number of other factors and has proven to be inadequate to maintain the needed capacity and capability in rural areas in particular (Cwiak & Butterfass, 2024; Gerber-Chavez, et al., 2023; Jensen, 2011). A lack of funding for at least a single full-time position, results in less time available to complete the many obligations local emergency managers are tasked with; this creates an even greater capacity gap between the varying levels of government.

The *Spectrum of Practice*, shown here, illustrates the reality of the capacity and capability disparities across emergency management practice at the local, state, and federal levels (Cwiak & Butterfass, 2024). The local emergency manager, regardless of the number of dedicated hours allotted to the position, solely bears responsibility for the entirety of the obligations across the spectrum of practice.



In comparison, the state and federal government parcels those obligations out to teams, departments, and divisions of people. The expansive level of expectation at the local level ensures that a one-person emergency management office will not be able to successfully meet the full obligations of the position based on lack of capacity.

The interviews also revealed areas where capability was lacking. The recovery process was the area where capability deficiencies were most noted. While this is not true for all emergency managers, it is not uncommon for emergency managers to lack knowledge or skills in some areas of practice they address infrequently (e.g., disaster declarations) (Rubin 1985). Given that some individuals (particularly those in rural areas), enter the field with limited, or no, emergency management education (or training), the ongoing development of capability in key areas of practice should be a priority.

To further emphasize the concern regarding capability deficits, there are an insufficient number of local rural emergency managers equipped to adequately address the needs and challenges within the community (Cwiak & Butterfass, 2024). This is more than just a need for people in positions, this is a need for experienced and educated emergency management practitioners who understand the scope of the work and are able to perform it. Part-time positions in rural areas that cannot pay comparable wages, are not likely to secure individuals fully prepared to practice. The current shortage of experienced and educated emergency management practitioners in rural areas poses significant limitations on emergency preparedness, response, recovery, and mitigation efforts at the local level, which in turn affects state and federal initiatives being implemented locally. Putting an unprepared individual into such an important role puts both the community's and the individual's wellbeing at risk.



## Recovery Planning

Defining recovery is difficult as it is (ideally) defined specific to an individual, household, or community (Jensen et al., 2014). “Recovery includes those capabilities necessary to assist communities affected by an incident in development, coordination, and execution of service- and site-restoration plans” (FEMA, 2016). The National Disaster Recovery Framework (NDRF), developed in 2011 and updated in 2016, was designed as a resource to assist all levels of emergency management meet the recovery mission. It is a robust document that contains detailed information, however, with the lack of capacity and capability, local emergency managers don’t have time to prioritize recovery (or mitigation) as much as planning and response (Jensen et al., 2014).

FEMA has successfully advanced mitigation plan development with funding incentives. The lack of recovery plans, particularly for rural communities, is an issue that needs to be addressed with the same level of commitment that mitigation planning received (Mileti, 1999). It is important for local emergency managers to develop a comprehensive recovery plan tailored to the unique needs and challenges of the community. Having a recovery plan promotes both short and long term recovery by facilitating effective recovery tasks and additionally aids in mitigating the impacts of disasters on the community (Jensen et al., 2014; Mileti, 1999).

## Prioritization in Recovery

Another theme that emerged across the interviews and research was the prioritization of activities and tasks by emergency managers in the aftermath of a disaster. Emergency managers tend to focus on addressing challenges that impede the community's progress in rebuilding. Tasks often revolve around addressing immediate threats to public safety, ensuring access to essential services, and building back infrastructure within the community. Emergency managers are expected to prioritize activities aimed at overcoming obstacles that hinder the community's ability to establish a new normal and advance toward long-term recovery (Mitchell, 2006).

The initiation and completion of the recovery process are not bound by a fixed timeframe. This phase is an on-going process and is difficult to measure (FEMA, 2024; Rubin, 1985). This is because the trajectory of recovery for an individual, household, or community is inherently tied to the severity of the hazard impacts and damages experienced. The extent of damage, disruption, and trauma resulting from the disaster significantly influences the duration and complexity of the recovery journey (Abramovitz, 2001; Mitchell, 2006).



Emergency managers can find themselves still addressing the lingering effects of a previous disaster, which draws their time and attention away from the most recent disaster. This interferes with prioritizing and managing recovery efforts. The prioritization of post-disaster recovery tasks (due to various factors that include adherence

to policies, demanding paperwork, extensive damage assessments, and notably, the requirement to await specific events before proceeding to following tasks) contribute to the delay in shifting focus from past disaster recovery tasks to addressing more immediate community needs. Additionally, the alignment of priorities between federal, state, and local governments and the needs of the community appears to be lacking. Instead, the focus seems to predominantly be on fulfilling regulatory and other immediate requirements.

### **Utilization of FEMA Resources**

FEMA provides a range of toolkits intended for use by emergency managers during post-disaster recovery efforts. However, these resources do not always align with the specific needs or preferences of emergency managers, resulting in limited utilization. FEMA also offers additional resources, including the development of emergency management frameworks, guidance materials, and training programs aimed at enhancing capabilities and fostering improved outcomes across all levels of government (Cwiak & Butterfass, 2024). The underutilization of FEMA resources by emergency managers can contribute to a significant variance in understanding at the local level of federal expectations and outcomes.

### **Vertical Integration**

Vertical integration remains an ongoing challenge in emergency management practice (Jensen et al., 2014). It refers to the coordination and collaboration among federal, state, and local emergency management agencies. This strategic approach is meant to provide communication, coordination, and resource allocation across the different levels of government, thereby unifying effort and providing consistent service. By establishing effective partnerships, vertical integration enhances communication and the overall capacity and capability to prepare for, respond to, and recover from a wide range of threats and hazards (Jensen et al., 2014).

### **Mitigation**

The primary challenge with attempting to complete mitigative measures during the recovery process is the time constraints. While the recovery phase is one of the best times to implement large-scale changes, mitigation can slow down rebuilding efforts which can be hard to overcome. There is community pressure to see physical progress and see it quickly; hence, it is imperative to include mitigation measures within local recovery plans (Mileti, 1999).

The need to change the recovery mindset is an important aspect to highlight. Speed and efficiency are vital aspects of recovery, but attempting to bring a community “back to normal” is the incorrect way of going about rebuilding (Jensen et al., 2014). Normal is too vague of a concept and is based on an individual’s definition of what “normal” looks like. Developing and encouraging a build back better approach with the intent of constructing a stronger community post-disaster, enhances community engagement in mitigation efforts (Mileti, 1999; Witt, 1997).

Interviewees noted that funding is typically phase specific, which increases the challenge for rural emergency managers to complete various responsibilities post-

disaster. Recovery funds are task and phase specific, which causes impediments in regard to implementation of mitigation actions during the recovery process. Recovery funds are designed to aid in restoring buildings to their original condition, not improving the structure. In rebuilding communities, it's important to consider reshaping opportunities — socially, structurally, economically and environmentally (Abramovitz, 2001; Mileti, 1999).

There is also room for a rethinking of the over reliance of structural mitigation and the benefits to rural areas to build partnerships with subject matter experts who bring different views to the table (and additional capacity and capability). The shift in the way structural mitigation for flood control has waned in lieu of floodplain restoration and management is a good example of a shift in approach. Increasingly, mitigation efforts are more holistic (i.e., managing the river as a whole ecosystem) and more in alignment with sustainable measures (Abramovitz, 2001). These types of projects approached in collaboration with a team of subject matter experts such as ecologists, landscape architects, structural engineers, and historical preservationists, help to ensure that mitigation designs work with the environment (Abramovitz, 2001; Jensen et al., 2014). Utilizing the natural ecological systems that exist is not only effective mitigation it is also in alignment with rural identity and landscapes.

The growth in human activity is a contributing factor to climate change and changes in climate can cause an increase in disaster frequency, severity, and damages. Climate change also increases recovery spending (as well as spending for tasks in other phases) (Mileti, 1999; Pew Charitable Trusts, 2019; Rubin & Cutter, 2020; Watson & Yu, 2021). This level of spending imposes a significant financial burden on the communities affected and serves as a point of emphasis regarding the urgent need for mitigation measures that eliminate or reduce impacts and the associated costs of disasters (Mileti, 1999). Rural communities are not as able as their urban counterparts to bear the disruptive nature and economic burdens of more frequent disasters.

Local communities have not historically been proactive in reducing risk through regulations and ordinances that are under their control. Recent changes to mitigation plan expectations are focused on increasing the commitment from communities to more actively reduce risk with the powers available in local governance and laws (FEMA, 2022). Changes at the local level that have been proven to reduce recovery spending include: re-evaluation of zoning and buyouts in communities are developing in hazardous areas (Cutter et al., 2008; Douglas et al. 2008; Easterling et al. 2000; Godschalk et al., 1998; Watson & Yu, 2021); updating building codes (Pew Charitable Trusts, 2019), and proper land use (Mileti, 1999). Advancing knowledge and action about the importance of these types of changes in reducing disaster impacts requires robust engagement from the local emergency manager. That level of capacity does not currently exist in many rural areas.

# Discussion and Recommendations

As was noted at the outset of this report, the NDSU team's interviews and research uncovered a series of blockages that changed the focus of this effort. The previous section of this report provided an overview of some of the complexities that are interfering either directly or indirectly with reducing recovery costs. The NDSU team views the solutions to recovery cost reduction as a series of strategies that will bolster the foundational elements necessary to support robust recovery at the local emergency management level in rural areas. The front-end investment on these strategies should be viewed from a mitigation lens. Each dollar spent in result in savings that far exceed the initial expenditure.

Without strategic investments in rural emergency management, there will be catastrophic failures in rural areas that put lives, livelihoods, and quality of life at risk. These rural communities are an important part of our country's DNA and support essential economic drivers. If the mission to bolster rural emergency management is not achieved, the whole of America will experience the impact.

The following recommendations are offered to enhance rural capacity and capability, mitigation efforts, and recovery planning.

- **Enhance Rural Emergency Management Capacity and Capability**

A recent white paper called for changes in EMPG funding requirements related to rural areas (Cwiak & Butterfass, 2024). The recommendations from that paper are supported by the NDSU team and incorporated here (in large part):

- Mandate 100% allocation of EMPG grant awards to areas designated as rural without any indirect deductions.
- Increase the EMPG funding equation to rural areas to a flat figure that equates with 75% of the national median wage estimate for emergency management directors (\$79,180 in 2022 per the U.S. Bureau of Labor Statistics, 2023).
- Add constraints and requirements designed to further capacity and capability development goals, to include: rural areas must match the 75% EMPG funding with a 25% local match and must fill a full-time emergency management position to receive the rural EMPG funding; emergency management personnel who are funded by rural EMPG funding must meet current national EMPG training expectations, plus additional requirements that include: the completion of the National Emergency Management Basic Academy offered by the Emergency Management Professional Program within 24 months of hiring; and, completion of four emergency management courses annually that advance and expand the individual's capability.

It is important to emphasize the role of the National Emergency Management Basic Academy (NEMBA) in developing capability in rural areas. The NEMBA, as part of the Emergency Management Institute's Emergency Management Professional Program (EMPP), is designed to provide broad-based training to new emergency managers (FEMA, 2024a). Many local emergency managers in rural areas have not had the benefit of years of emergency management training, education, or experience. The NEMBA provides, in a relatively condensed time period of approximately three weeks, both a foundation upon which to build additional knowledge and an emergency management cohort upon which a support network can be built. Additionally, the NEMBA is the first of three academies (Basic, Advanced, and Executive) in the EMPP. All of the academies focus on different levels of career development and serve to further emergency managers knowledge and abilities. Once emergency managers have completed the NEMBA, they are situated to move to the higher level academies as they move through their careers.

This level of integration into the larger emergency management community, will change the way the emergency manager views, understands, and operates in the jurisdiction. It changes the mindset from a job to a career and that is necessary to ensure higher levels of practice. The most significant challenge with the NEMBA is the time commitment, as local emergency managers in rural areas do not typically have the luxury of being out of the office for an extended period of time. State and regional course deliveries of the NEMBA can keep emergency managers closer to home to assuage those concerns.

- **Bring Back Project Impact**

Project Impact, initiated under former FEMA Administrator James Lee Witt from 1997-2001, was a federally funded initiative that focused on building disaster-resistant communities. This project encouraged and empowered communities to build partnerships, identify and examine potential risks, align financial resources to support prioritized risk reduction actions, and undertake the identified actions designed to reduce risk in their community (Witt, 1997). From their engagement in Project Impact, communities came to understand their own power in identifying and reducing risk. The program established a mitigation mindset based on local knowledge and engagement (although they did not call it mitigation, they used the term disaster-resistant instead).

The Building Resilient Infrastructure and Communities (BRIC) program has some similar tenets to Project Impact, but accessing BRIC funding is significantly more onerous. The beauty of Project Impact was the simplicity of it. It had a “design your own disaster-resistant community” feel that enhanced community-based engagement. This type of engagement in rural areas could be powerful and help increase residents' understanding of the risk they face from local hazards as well as the mitigation strategies they could undertake to address them.

The NDSU team is aware that managing a program award like this requires local emergency management capacity, but because the program is an avenue for community engagement, education about risks, and buy-in for risk reduction in a rural area that is lacking resources, it seems like a wise investment of time.



- **Invest in Recovery Planning and Local Disaster Recovery Managers**

In order to promote improved recovery outcomes, there needs to be a shift from being reactive to being proactive. FEMA needs to establish a federal competitive grant program specifically for rural areas that provides support for the development of long-term recovery plans. The development of these plans would provide communities with a proactive framework that would anticipate and address a wide range of potential hazards and outcomes. By integrating forward thinking strategies and supporting mitigation measures into the plans, the impacts of disasters can be better managed and costs reduced.


Incorporating requirements for regular plan reviews and updates would ensure that they remain relevant and responsive to the evolving risks and circumstances. This allows communities to adapt and refine their strategies over time to meet community needs and post-disaster mitigation strategies.

It is once again noted that capacity may be an issue, and additionally, capability as well. Completing comprehensive plans can be quite challenging (particularly the first time). This planning process should not be contracted out, as recovery plans are very specific to community identity and goals and are best completed by local emergency managers in conjunction with stakeholders that reside in, or serve the community. The initial plan creation would require a 36 month development window to allow for the requisite research and engagement. Approved plans could then be updated every five to seven years.

In the absence of sufficient capacity or capability, additional funding could be made available to support a Local Disaster Recovery Manager (LDRM) during the development period to assist the local emergency manager. A strong recovery plan can provide the structure and direction that helps support a lack in local emergency management capability. Ideally, the recovery plan is a roadmap that helps guide the recovery journey.



# Summary



The problem statement the NDSU team sought information on the ways in which local policy in rural areas affects disaster recovery costs. The NDSU team recognized that the scope of the problem was intertwined with more complex dynamics that exist within the context of emergency management practice in rural areas. A gap between federal expectations and rural realities was identified.

Limited capacity and capability, recovery planning issues, and challenges with mitigation opportunities emerged as key topics interfering with the recovery focus and process in rural areas. The ways in which capacity and capability is interwoven into all the points of limitation is eye-opening. A series of recommendations to remedy these issues was provided.

Early in the interview process, the NDSU team believed it would not be able to respond to the problem statement as presented. However, at the end of the day, a response did actually emerge. Local policy in rural areas is affecting disaster costs (negatively) because too often the emergency managers at the local level in rural areas do not have the personnel, equipment, resources, knowledge, or skill (i.e., capacity and capability) to complete the recovery functions as envisioned by the federal government. The local government is not investing appropriately in emergency management practice in rural areas (often due to a lack of resources) and that lack of investment is costing all levels of government (and residents) increased recovery expenditures. Filling this gap will reduce recovery expenditures and improve local emergency management practice in rural areas. This is an investment that delivers dividends.

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