

Pervasive Readiness: Pipedream or Possible?

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Abstract

Government organizations at all levels are facing intense pressure to establish and measure readiness: the ability to prepare for, respond to, and recover from crises and natural disasters. Readiness as a concept is easy to grasp in principle, yet exceedingly difficult to implement due to the fragmentation of processes within the public safety sector and a fundamental failure to understand the difference between capacity and capability building to achieve Readiness. A strategy is required that will enable heterogeneous public safety communities to achieve operational agility before, during and after a crisis while optimizing their allocation of funding to arrive at a balanced readiness posture.

No single individual, department, agency or organization has all of the information necessary to continuously measure readiness within its geographic boundary. Participation in standardized measurement is often stymied by disparate data storage, fragmented processes, budgets, politics, culture and resistance to change. Yet it is recognized that readiness saves lives; therefore a practical approach is required to establish a framework for effectively measuring readiness against a government's prioritized Hazard/Threat Identification and Risk Assessment. The Indiana Department of Homeland Security has made significant progress in uniting all of the major stakeholders into a cohesive public safety ecosystem. Indiana is taking an innovative approach to achieving, measuring, and optimizing readiness. We outline significant lessons learned, best practices, and feasible approaches towards achieving a sustainable state of **pervasive readiness** which is the concept of readiness as an integral part of the very fabric of a nation.

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Overview

The art of war teaches us to rely not on the likelihood of the enemy's not coming, but on our own readiness to receive him; not on the chance of his not attacking, but rather on the fact that we have made our position unassailable. -- Sun Tzu, The Art of War

Over the past decade, there has been a significant increase in catastrophic events worldwide. Since 2001, our nation has responded to a wide spectrum of critical incidents both natural and manmade.¹ The combined impact of these events has contributed to a growing sense of urgency, and with it a renewed call for our nation to increase its *resilience*: a term defined by the Obama Administration as "the ability to adapt to changing conditions and withstand, and rapidly recover from disruption due to emergencies."²

As our nation watches the aftermath of the triple calamities of earthquake, tsunami and atomic reactor meltdowns which struck Japan, the flood waters rising along the Mississippi River, or the poignant images of citizens from Texas to Florida rummaging through the rubble of homes and businesses devastated by an historic tornado outbreak,³ there is a growing concern that despite the rhetoric, studies, and billions invested, there is as yet little consensus on what constitutes "resilience,"⁴ let alone how it can be achieved in actual practice. A few courageous and rational voices have been raised in a reasoned attempt to call on policy makers to craft "a shared – and actionable – vision for a resilient America..." and a well defined path toward an operational approach to achieving it.⁵

While policy makers, academia and the private sector agree that resilience is a highly desirable goal, it is also recognized that resilience itself needs to be defined, planned for and developed in advance, that is, before communities, infrastructure or systems are compromised.⁶ Thus,

¹ These have ranged widely in severity and scope from acts of man such as terrorist attacks, the catastrophic BP oil spill, technological events including power grid crashes, the nuclear meltdown in Japan and cyber security breaches, to severe weather incidents with massive earthquakes, tsunamis, volcano eruptions, hurricanes, tornadoes, winter storms and flooding, all occurring within short spans of time.

² *Presidential Policy Directive-8 (PPD-8), National Preparedness* (Washington, DC: The White House, March 30, 2011). Available at http://www.dhs.gov/xabout/laws/gc_1215444247124.shtm

³ Among many severe weather events as of May 23rd, 2011 a total of 1,170 tornadoes were reported in the United States. To date, 2011 has produced the most tornado-related deaths in the United States since 1936. http://en.wikipedia.org/wiki/Tornadoes_of_2011

⁴ Some say resilience is a function of resources and adaptability while others argue that it can be engineered into systems. It is our view that in practice, national resilience amounts to a sum of its parts, and can only be achieved at a micro-level. National resilience stems directly from the ability of individuals, families, organizations, corporations and communities to adapt to the new conditions a crisis imposes while minimizing casualties, securing basic quality of life and preserving their core values and identity.

⁵ *Interim Task Force Report on Resilience* (The George Washington University Homeland Security Policy Institute, May 16th, 2011). Available at http://www.gwumc.edu/hspi/policy/report_Resilience1.pdf

⁶ Concept Development: An Operational Framework for Resilience (Homeland Security Studies and Analysis Institute, August 27th, 2009)

achieving resilience is largely a function of our ability to establish, maintain and measure readiness⁷ at all levels: individual, community, state and national.

The inherently unpredictable nature of emergencies makes it difficult to determine a perfect response⁸ to a particular incident or disaster in advance. In addition, because response organizations typically operate with constrained resources, it is rarely possible to achieve ideal preparedness. What is needed are practical ways to proactively assess our readiness, so that government leaders as well as the public know what they can and cannot expect during a crisis.

Efforts to address every shortfall that has been identified in advance will either create unsustainable demands for increased expenditures, or focus limited resources on shortfalls that may not in fact be the most vital readiness issues that we need to solve. Within the complex landscape of public safety, it remains very difficult to answer fundamental questions such as “Are we ready?” or “What do we need in order to become ready?” And yet, answers to questions like these are vital for making effective decisions about how to allocate our resources.

Capacity vs. Capability

There have been several attempts to gauge readiness. Some have focused on evaluating the resources and activities easiest to quantify, using them as predictors of what our response systems should be able to accomplish. For instance, we know that having the proper equipment is important, so if that equipment is not available, response operations are unlikely to go well. However, these simplistic approaches often do not differentiate between the purely quantitative measure of *capacity* (individual response assets such as vehicles, radios or equipment), and qualitative measurement of response *capability* (which includes factors such as the personnel, skills, training and the coordination required to respond).

As an example, if a jurisdiction has 10 fire engines (capacity), but only has qualified drivers for two of them (capability), then the actual deployable response resources for a disaster are two fire engines. This relationship between capacity and capability is represented as:

$$\text{maxCapacity} \cap \text{maxCapability} = \text{Ready Resources}$$

While an understanding of the capacity needed during a crisis or disaster is important, it is crucial to distinguish the capabilities required to support that capacity. The prevailing inability to differentiate and accurately measure *both* capacity and capability can have the effect of misleading decision makers into making poor investment decisions, and may cause still more

⁷ In this context, readiness implies the state of being fully prepared for something, including mitigation efforts (attempts to reduce the effects of disasters or to prevent hazards from developing into disasters altogether).

⁸ By this we mean the entire Ready → Respond → Recover continuum as our public safety community has a shared mission to (1) mitigate known risks where possible, (2) maintain a state of readiness to contain the effects of forecasted disastrous events to minimize loss of life, injury, and damage to property, (3) provide rescue, relief, rehabilitation, and other services as necessary in the aftermath of the disaster, and (4) maintain a capability and resources to continue to sustain essential functions.

harm by fostering a false sense of security regarding a given jurisdiction's overall readiness level.

The Readiness Gap

With towns, cities and states across America facing severe budget deficits, an eroding tax base, higher demands for services and escalating costs, funding for public safety has been drastically reduced.⁹ First responder personnel are being furloughed or laid off, and vital equipment upgrades are being delayed as most communities struggle just to maintain basic services. At the same time, both the cost of public safety and the public's expectations continue to rise. The long-term effect of these trends is to create a widening readiness gap which is rapidly eroding the ability of many communities to prepare for, respond to and recover from critical incidents.



Figure 1 – Readiness Gap

Indiana faces these same headwinds, and yet over the last few years it has succeeded in making significant strides towards the implementation of a pervasive readiness strategy, a strategy which not only evolved to address these trends, but also to galvanize people, processes and technology to counteract them.

Before Governor Daniels took office in 2005, he called a meeting of the many disparate organizations which held a public safety function, including: the Department of Health, Indiana National Guard, State Police, State Fire Marshal, and others. He asked the assembled participants which of them had control over multi-disciplinary dispatch of response personnel and assets. The consensus was that they all had “a good working relationship” and would respond to requests for support as needed. The Governor concluded that this patchwork approach to command-and-control would severely limit operational agility by slowing down the decision cycle during a

⁹ Over the last seven years, Homeland Security Grant Program funding for the Indiana Department of Homeland Security has diminished over 89% from over \$55 million to just over \$5.6 million in 2011.

crisis, potentially causing higher casualties and increased economic damage, while perpetuating duplicative costs and inefficiencies.

This insight provided the impetus to centralize, and in 2005 Indiana consolidated all of its emergency management and homeland security efforts into a single department, creating the Indiana Department of Homeland Security (IDHS) with a central mission: To safeguard the lives and property of the citizens of Indiana.



This paper outlines some of the key principles and practical applications which have been pioneered in the State of Indiana.

This approach has led to a reduction of fragmentation by two means: first, by implementing a unified regional structure called the “District Model,” and second, by the evolution of a practical, data-driven approach to public safety which creates a foundation for effective measurement of readiness against a state’s prioritized Hazard/Threat Identification and Risk Assessment (HIRA). Finally, we will discuss some concepts essential to the future development of a measurable framework to support state- and nation-wide **pervasive readiness**¹⁰.

¹⁰ The term Pervasive can be defined as: existing in or spreading through every part of something. Thus Pervasive Readiness is the idea of readiness as an integral part of the very fabric of our nation.

A Framework for Pervasive Readiness

It's not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change. -- Charles Darwin, On the Origin of Species, 1859

Disasters, having no geographical, economic or social boundaries, frequently impact multiple jurisdictions. Over the last few years, Indiana has experienced five federally declared disasters or emergencies that spanned large regions of the state. During these disasters, many local communities were overwhelmed and required help from beyond their jurisdictional boundaries. Requests by the impacted communities often exceeded the state's ability to effectively provide the needed resources. As a result, Indiana relied on mutual aid agreements¹¹ with other states and the federal government to support the response efforts.¹²

Indiana learned many lessons during these disasters, including that readiness is a responsibility shared by all layers of society. In other words, to achieve resilience on any scale will require a culture of **pervasive readiness** that permeates our governments, local communities, organizations, businesses and includes individual citizens.¹³

The Federal Emergency Management Agency (FEMA) outlined this concept in its recent strategic plan, calling for innovation and collaboration to support community-wide disaster preparedness:

...it takes all aspects of a community (Volunteer, Faith and Community-based organizations, the private sector, and the public including survivors themselves) – not just the government – to effectively prepare for, protect against, respond to, recover from, and mitigate against any disaster. It is therefore critical that we work together to enable communities to develop collective, mutually supporting local capabilities to withstand the potential initial impacts of these events, respond quickly, and recover in a way that sustains or improves the community's overall well-being. How communities achieve this collective capacity calls for innovative approaches from across the full spectrum of community actors, including emergency management, to expand and enhance existing practices, institutions, and organizations that help make local

¹¹ Many state, tribal, and local governments and private nonprofit organizations enter into mutual aid agreements to provide emergency assistance to each other in the event of disasters or emergencies. These agreements often are written, but occasionally are arranged verbally after a disaster or emergency occurs. *Federal Emergency Management Agency, Disaster Assistance Policy 9523.6*

¹² Enabling Government Efficiency, Implementation of the State of Indiana Homeland Security District Concept, *Indiana Department of Homeland Security, December 2010*

¹³ We can likewise take examples from other countries such as Switzerland or Israel which have endured, or continue to endure, significant and prolonged disruptions to their societies. During World War II, Switzerland (a small but industrialized country with virtually no raw materials and limited agricultural capacity due to the alpine nature of the topography) was completely surrounded by Germany and had to find innovative ways to increase food production. Every available green space was cultivated with bread grain, vegetables or potatoes. This approach enabled the Swiss to achieve a remarkably high level of self-sufficiency (resilience) during a prolonged crisis.

*communities successful every day, under normal conditions, and leverage this social infrastructure to help meet community needs when an incident occurs.*¹⁴

To further our nation’s resilience, the Obama Administration has called for the establishment of a “national preparedness goal” which “will be informed by the risk of specific threats and vulnerabilities and include concrete, *measurable*, and *prioritized* objectives to mitigate that risk.”¹⁵ (emphasis added)

Achieving this goal will require a rethinking of the structure of public safety, and a standardized process for assessing risks and optimizing readiness. Without a disciplined approach, we are like a pilot with no instrumentation: unlikely to reach our destination, and unlikely to know it even if we do.

The Critical Importance of Structure

“You can't manage what you don't measure.” This well known adage from the business world applies equally public safety. Without being able to measure something, we cannot tell if it is getting better or worse. Without this information, managers cannot systematically improve it. To measure, we must collect data (inputs and outputs), determine how those will be expressed as a standard (metric), and compare the measurement to a benchmark to evaluate progress (outcomes). In addition, it is important to ascertain the most practical level of granularity, i.e. level of detail, for each measurement. For example, a theoretical hierarchy used to measure the country’s readiness level might be the following:

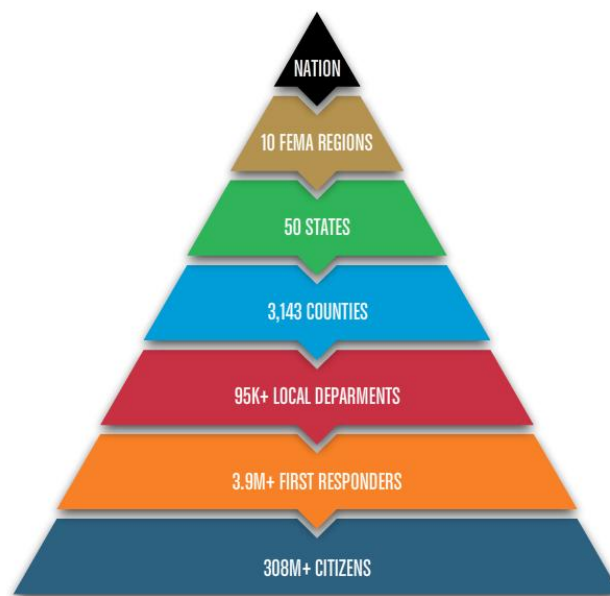


Figure 2 – National Hierarchy

¹⁴ FEMA Strategic Plan 2011-2014

¹⁵ Presidential Policy Directive-8 (PPD-8), The White House, March 30, 2011 p.2

The further one travels toward the base of the triangle, the more complex and fragmented the information sources become. Achieving optimal granularity for measurement will often entail a tradeoff between accuracy and cost.

Beginning in 2005, Indiana began to seriously rethink both public safety policies and structure. Governor Daniels challenged the state to seek increased efficiencies, consolidate duplicative services, and reduce waste. To measure progress, agencies were asked to develop key performance indicators (KPIs)¹⁶ for core “citizen-facing” services.¹⁷

For public safety, the result was the creation of an Indiana Department of Homeland Security (IDHS), which was made responsible for administering State and Federal grant programs, setting standards, managing compliance and coordinating activities across the entire continuum of readiness, response and recovery.

For measurement, the IDHS quickly helped to alleviate the vexing problem of fragmentation. It did this, first, by creating a regionalized approach to capability aggregation and readiness measurement (*the District concept*); and second, by consolidating its disparate information sources into an automated enterprise system,¹⁸ which serves as a focal point for capturing and harmonizing state-wide compliance and readiness data.

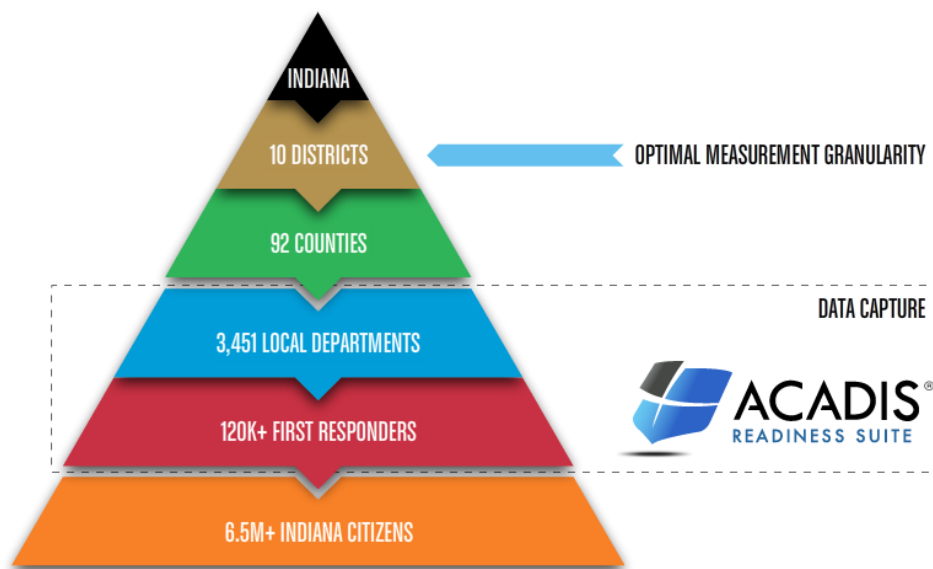


Figure 3 – Indiana State Hierarchy

¹⁶ KPIs are performance measures commonly used by an organization to evaluate its success or the success of a particular activity in which it is engaged. (For more, see: http://en.wikipedia.org/wiki/Performance_indicator)

¹⁷ For example, at the Bureau of Motor Vehicles (BMV), Daniels said, time was money: “Cut wait times and Hoosiers (Indiana citizens) have more time to run their businesses or work at their jobs.” As a result, the Indiana BMV won an international award for customer service for cutting wait times at license branches and they achieved this while at the same time instituting federal-required steps to ensure IDs were secure (RealID)

¹⁸ IDHS uses the *Acadis Readiness Suite* software to manage real-time tracking of personnel, training and response resources. <http://www.envisagenow.com/acadis>

At the national level, FEMA implemented a similar concept through the establishment of ten regions designed to provide advice, training and funding to sustain and improve capabilities and coordination for disaster preparedness, protection, response, recovery and mitigation between states, tribal and the federal government. Regional offices act as a liaison and coordination hub between member states and the Department of Homeland Security on specific risks and matters relevant to their region.



Figure 5 – FEMA Regions²²

Quantifying Risk – Beyond basic Risk Analysis

Managing risk is fundamentally looking ahead to the possibility of a disaster that is yet to happen and then to make cost-benefit driven plans to prevent disaster or to reduce our vulnerability to the disaster or mitigate the effects of disaster. --Michael Chertoff, former Secretary for Homeland Security, October-2008

A critical tool for public safety is a Hazard/Threat Identification and Risk Assessment which is the essential foundation for the readiness cycle as well as any public planning process. A risk assessment is the process of measuring the potential loss of life, personal injury, economic injury and property damage resulting from potential hazards and man-made threats. A simple formula for identifying and evaluating a hazard-specific risk (R_h) combines a hazard's probability of occurrence and its impact. For example, the equation below illustrates that the hazard (H) multiplied by a populations' vulnerability to that hazard (V_h) produces a quantifiable hazard-specific risk.²³

²² Image source: www.fema.gov

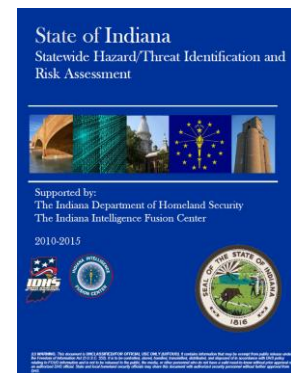
²³ Another typical formulation is: Risk = (T, V, C) where T=Threat, V=Vulnerability and C=Consequence)

$$R_h = H \times V_h$$

Based on this analysis we should be able to conclude that the higher the risk the more urgent it is that the vulnerabilities to the hazard be reduced by mitigation and readiness efforts. If, however, no vulnerability exists then there will be no risk. An example of this would be a flood occurring in an unpopulated area. While this formula does attempt to adjust for vulnerability, IDHS was dissatisfied with this and other basic risk assessment techniques available as they lacked sufficient granularity to assist policy makers and emergency managers in making key decisions about asset allocation.

In order to gain a deeper understanding of the possible threats across the state, the Indiana Department of Homeland Security, in partnership with the Indiana Intelligence Fusion Center, developed a comprehensive, statewide analysis of potential natural, technological, and human-caused hazards. This analysis is data driven and derived from information surrounding actual events and experiences over the past 50 years. The IDHS evaluated and ranked each hazard and threat based on a Calculated Priority Risk Index (CPRI) scoring mechanism.

The CPRI allowed a hazard, once identified, to be evaluated individually based on probability of occurrence, severity and impact, warning time, and duration. Each of the assessment criteria was assigned a weighted numerical value based on a modified version of the Calculated Priority Risk Index (CPRI). The Magnitude/Severity element of the CPRI was modified to capture not only the extent of damage, but also the degree to which the hazard could impact response operations. Each hazard was scored based on the criteria outlined in the modified CPRI (See Appendix A, Table 1). The hazards were then assigned a **Risk Rating** based on the weighted CPRI Score.²⁴



Modified Calculated Priority Risk Index Categories and Definitions:

- **Probability:** The chance that a particular hazard/threat will occur, causing serious injuries and deaths, damage to property and critical infrastructure, disruption of essential systems and services, and degradation of emergency response capabilities.
- **Magnitude/Severity:** The relative size and overall impact a hazard/threat will have should it occur.
- **Warning Time:** The amount of time between the initial warning and the onset of hazardous conditions.
- **Duration:** The length of time the direct effects of a particular hazard/threat will remain active.

²⁴ Indiana State Hazard/Threat Identification and Risk Assessment, 2010

Risk Rating	CPRI Score
4 - Severe Risk	4.0
3 - High Risk	3.0 – 3.99
2 - Moderate Risk	2.0 – 2.99
1 - Low Risk	1.0 – 1.99

Figure 6 – Risk Rating Table

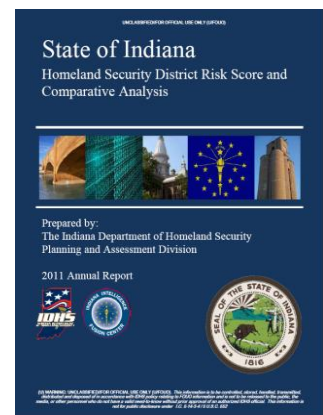
It is important to note, that an effective risk assessment is possibly the most vital pre-requisite for readiness as it is the foundation for the entire readiness cycle. Risk analysis should be the basis of most aspects of public safety and influence everything from planning and budgeting to equipping, training and exercising. Without it, policy makers and emergency managers lack the necessary tools to make informed decisions.

Unfortunately, most state-wide public safety risk assessments are blunt instruments at best; unable to accurately contextualize risks within a granular geographic boundary or to take into account the fundamental interdependencies of critical infrastructure with the potential to cause cascading hazards.²⁵

To achieve measurable readiness requires more precision than a basic statewide CPRI score is capable of delivering. As a result, in 2011 IDHS significantly expanded its approach in order to encompass a comprehensive analysis of hazards facing each district, including the economic impact of hazards, and the inherent vulnerabilities within a district (e.g. general populations, functional needs populations, and impoverished populations). Identifying individual hazards and juxtaposing them with district vulnerabilities provides quantifiable means of prioritizing risks within each district thereby increasing the effectiveness and accuracy of comprehensive emergency planning, and ultimately fostering unity of purpose among all public safety stakeholders.²⁶

Indiana’s approach to risk measurement is more precise because it utilizes a mathematical foundation to increase the accuracy of risk scoring. The Priority Risk Index (PRI) is designed to contextualize risks within a district and can rank each risk by adjusting it via quantifiable factors such as:

1. **Population Index:** Measures the consequence based on the quantity and type of people residing within a District.



²⁵ Indiana’s severe winter storm in February of 2011 created significant road hazards but also had the cascading effect of wide-area power outages in sub-zero conditions.

²⁶ *State of Indiana Homeland Security District Risk Score and Comparative Analysis*, 2011.

2. **Economic Index:** Measures the value of a District's fiscal impact on the state
3. **Special Events Index:** Quantifies the increased vulnerability and consequences of those events which prompted the mass gathering of people within a District in the previous year.
4. **National Security Index:** Scores the increased consequences from a hazard or terrorist attack which impacts a Defense Industrial Base (DIB)
5. **Critical Infrastructure Index:** Quantifies the vulnerability and consequence of a District with infrastructure identified as critical.
6. **Preparedness Index:** Adjusts risks based on previous investments in response capabilities.

A Focus on All-Hazards Readiness

Readiness is a continuous cycle of planning, organizing, training, equipping, exercising, evaluation and improvement activities designed to ensure effective coordination, cooperation and the enhancement of capabilities to prevent, protect against, respond to, recover from, and mitigate the effects of natural disasters, acts of terrorism, and other man-made disasters.²⁷



Figure 7 – The Readiness Cycle

The more prepared a state or region is for a *specific* disaster, the less impact that event is likely to cause. Having ready assets pre-positioned before a crisis occurs enables a more agile and effective response, and can limit the potential damage that a threat or hazard is able to generate.²⁸ For example, in case of pandemic, having sufficient vaccine on hand, a well planned distribution methodology (which has been exercised), and sufficient qualified personnel and volunteers to administer the vaccination program will increase the effectiveness of the response. The state of

²⁷ This process evolved out of the Homeland Security Presidential Directive-8 (HSPD-8) and is being further refined under the previously referenced PPD-8. <http://www.fema.gov/pdf/government/npg.pdf>

²⁸ The need to affect a rapid response to an emergency is why we have trained police, firefighters or emergency personnel on pre-positioned standby 24/7 and why our Nation maintains the Strategic National Stockpile (SNS) which is maintained by the Centers for Disease Control and Prevention. It consists of medicine and medical supplies that would be necessary to respond to a public health emergency. Centers for Disease Control and Prevention, Office of Public Health Preparedness and Response: *Strategic National Stockpile*, <http://www.cdc.gov/phpr/stockpile.htm>

Indiana has refined the all-hazards²⁹ approach to public safety. This means that all hazards are considered during risk assessment and prioritized on the basis of impact and likelihood of occurrence. Indiana focuses its efforts on managing the readiness cycle (Figure 7) for the following key reasons:

1. All critical facets of public safety operations are represented, as optimal readiness implies that prevention, response, and recovery operations are balanced.
2. It focuses activities on emergency management functions for which IDHS has preeminent responsibility and encourages shared responsibility for outcomes.
3. It dovetails with federal initiatives such as the National Response Framework (NRF) or the National Incident Management System (NIMS), so commonalities can be leveraged for efficiency.
4. Measuring readiness provides the necessary information to enable the highest return on investment for the State across all types of investments.
5. Tracking Readiness will enable near real-time visibility into district-specific needs, vulnerabilities and help pinpoint mitigation strategies.

Collecting Readiness Data

Measuring readiness requires the ongoing collection and consolidation of meaningful, accurate and authoritative data³⁰ relative to existing response capabilities. And therein lies the problem. The fragmented and complex nature of public safety makes this difficult, and, without automation, expensive as well. Most fire, police and EMS departments are understaffed and overworked. Few have the time, personnel or inclination to enter data into a new information system solely for the purpose of measurement, yet without these data, they will not be able to accurately assess their readiness level for an identified risk. So how can emergency response departments overcome this resistance? One way is to collect the information needed while individual first responders and departments provide routine information to their certifying authority. Public safety organizations can implement technology that simplifies mandatory reporting requirements and captures much of the data required for readiness measures as first responders execute individual phases of the readiness cycle. This solution simultaneously lowers the cost of operations and of readiness measurement for all involved.

Indiana is working to solve this problem by implementing a centralized information management platform called the Acadis Readiness Suite.³¹ This technology provides the state with a centralized, web-based system for cataloging, managing, and sharing authoritative information

²⁹ While there can be similarities in how one reacts to disasters, event-specific actions form the basis for most emergency plans.

³⁰ Prior to the establishment of the Department of Homeland Security there were six separate database systems that contained information regarding the certifications/credentials of personnel. Many of the records were duplicates, or lacked detail. Essentially, it was impossible for the State to get an accurate tally of the force strength by discipline available to respond to specific emergencies.

³¹ http://www.envisagenow.com/acadis/public_safety.aspx

regarding the location, credentials and readiness level of its personnel and assets. This includes ready capabilities across all public safety disciplines.

The Acadis system certifies personnel as “ready” based on a variety of configurable criteria, and gives IDHS the ability to verify what each first responder is authorized to do during a crisis. Response assets such as vehicles can be assigned a NIMS type³² and their readiness level for dispatch is likewise tracked.³³ Each “readiness certificate” has a pre-established timeframe for recertification, alerting personnel that it is time to check the status of that asset. This approach vastly simplifies the collection of readiness data for public safety personnel and assets.

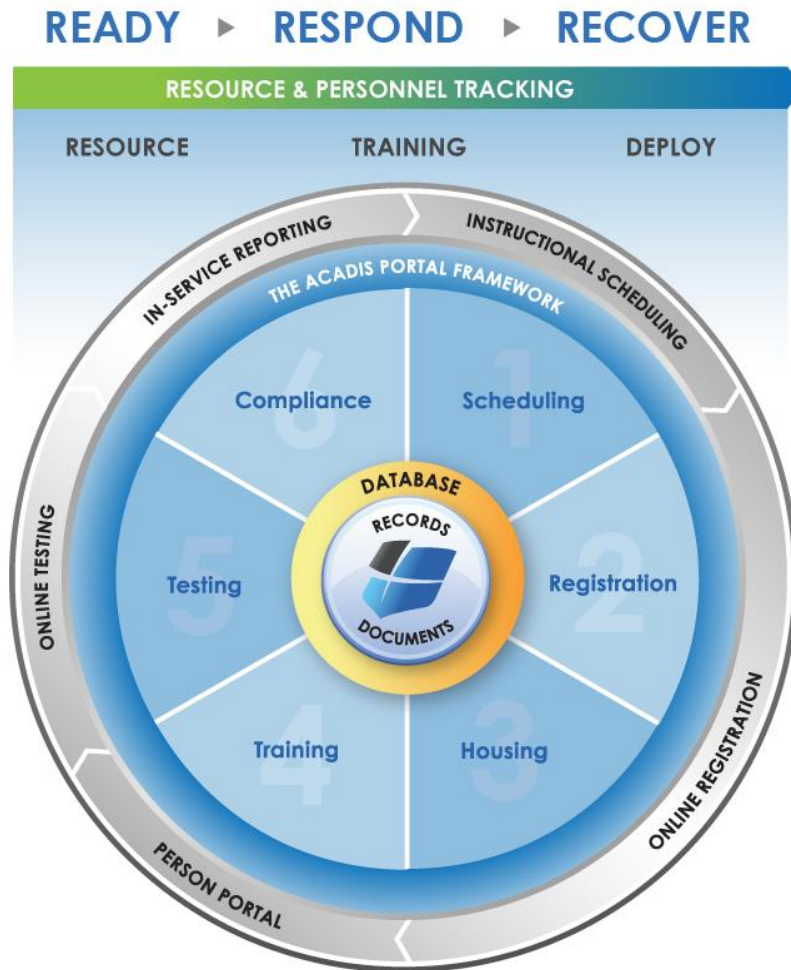


Figure 8 – Acadis Readiness Suite

³² The National Incident Management System (NIMS) provides a systematic, proactive approach to guide departments and agencies at all levels of government, nongovernmental organizations, and the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity. NIMS Resource typing is the categorization and description of response resources that are commonly exchanged in disasters through mutual aid agreements. The National Integration Center (NIC) has developed and published over 120 resource typing definitions. <http://www.fema.gov/emergency/nims/FAQ.shtm#item1a>

³³ This new capability is under development and expected to come online in 2011.

For Indiana, the solution has helped replace many mandatory processes that required lengthy paper forms which had to be entered into a database manually. For example, ambulance service providers are required to be certified along with their vehicles in order to maintain their license to operate. For an ambulance to be certified, it must be in working order, have the appropriate equipment onboard and the correct type of radio installed. Ambulance providers are audited periodically to ensure compliance. Likewise, every year police officers must report their in-service training (continuing education). By automating the compliance tracking of items such as these, IDHS has been able to simplify the aggregation of the data required to evaluate each district's readiness level.

Measuring Readiness -- Putting it all Together

Greatness, it turns out, is largely a matter of conscious choice, and discipline. --Jim Collins³⁴

We began this paper by arguing that a practical approach is required to establish a framework for **Pervasive Readiness** that can be effectively measured against a government's prioritized Hazard/Threat Identification and Risk Assessment (HIRA). All of the previously discussed elements are pre-requisites to an effective readiness measurement strategy. While each element may have independent value, public safety organizations will need to put all of the components into practice in order to measure their readiness with any accuracy.

There are five steps that are essential to measuring readiness, that are applicable at the local, regional and national level:

- 1.) Determine structure and measurement granularity
- 2.) Develop a Prioritized Risk Index (PRI)
- 3.) Collect and consolidate readiness data
- 4.) Calculate Risk-Specific Readiness (RSR) scores
- 5.) Utilize an adjusted CPRI to measure optimal readiness

Over the past few years, Indiana has excelled at implementing a disciplined approach to assessing its risks and collecting the requisite information to quantify existing capabilities. However, in order to make resource allocation decisions that have the highest probability of increasing a district's overall readiness, emergency managers need a more precise way to measure a district's readiness level relative to each specific risk. In addition, policy makers need ways to optimize risk-specific readiness in order to ensure that resources are not wasted by *over-preparing* for a specific hazard.

³⁴ Good to Great and the Social Sectors, 2005, page 31.

To accomplish this requires a Risk-Specific Readiness (RSR) scoring mechanism which assigns a readiness level to each of a district’s individual risks. The Risk Specific Readiness (RSR) score is computed on an inverse scale to the CPRI, and acts as a meta-adjustment to it.

Each readiness assessment element is based upon a phase of the readiness cycle and is assigned a weighted numerical value. Readiness elements are then scored based on the criteria outlined in the Risk-Specific Readiness Matrix (See Appendix A, Table 2). The RSR Scores can then be assigned a Readiness Rating based on the weighted RSR Score. In other words, the readiness rating for a prioritized risk within a district is a function of (1) planning for that specific risk, (2) the district’s level of organization and equipment, (3) training, and (4) risk-specific exercises conducted by a district.

District Risk-Specific Readiness

$$(D_r) RSR = fn (P_r, OE, T, E_r)$$

Where:

D_r = A prioritized risk within a district

P_r = Risk-specific planning

OE = Organization and equipment

T = Training

E_r = Risk-specific exercise

Once an RSR score has been calculated, the following ratings can be assigned to enable emergency managers to interpret the numerical value.

Readiness Rating	RSR Score
4 - Ready	4.0
3 – Mostly Ready	3.0 – 3.99
2 – Moderately Ready	2.0 – 2.99
1 – Not Ready	1.0 – 1.99

Figure 9 – Readiness Rating Table

Juxtaposing the CPRI score to the RSR score will enable emergency managers and policy makers to quickly gain a qualitative insight into a region’s readiness posture for each specific threat, and will allow managers to make informed trade-off decisions when planning readiness activities or deciding how to allocate scarce resources. By tracking these scores over time, a

district can measure changes³⁵ to its overall risk-specific readiness. These data can be valuable to emergency managers when communicating to policy makers and leaders both the positive and adverse impacts of policies, changes in budget, or staffing. Finally, a similar approach could greatly assist the federal government in measuring the impact of grant funding allocated towards increasing preparedness.

2011 District X – Readiness Summary				
Prioritized Risks	Risk Rating	CPRI Score	RSR Score	Readiness Rating
1 – Severe Winter Storm	Severe	3.40	3.20	Mostly Ready
2 – Major Flood	High	3.30	2.85	Moderately Ready
3 – Hazmat Incident - Transportation	Moderate	2.85	4.00	Ready
5 – Violent Tornado (≥ EF3)	Moderate	2.65	2.20	Moderately Ready
6 – Cyber Attack	Low	2.20	1.90	Not Ready

Figure 10 – District Readiness Summary Table

Optimizing Readiness

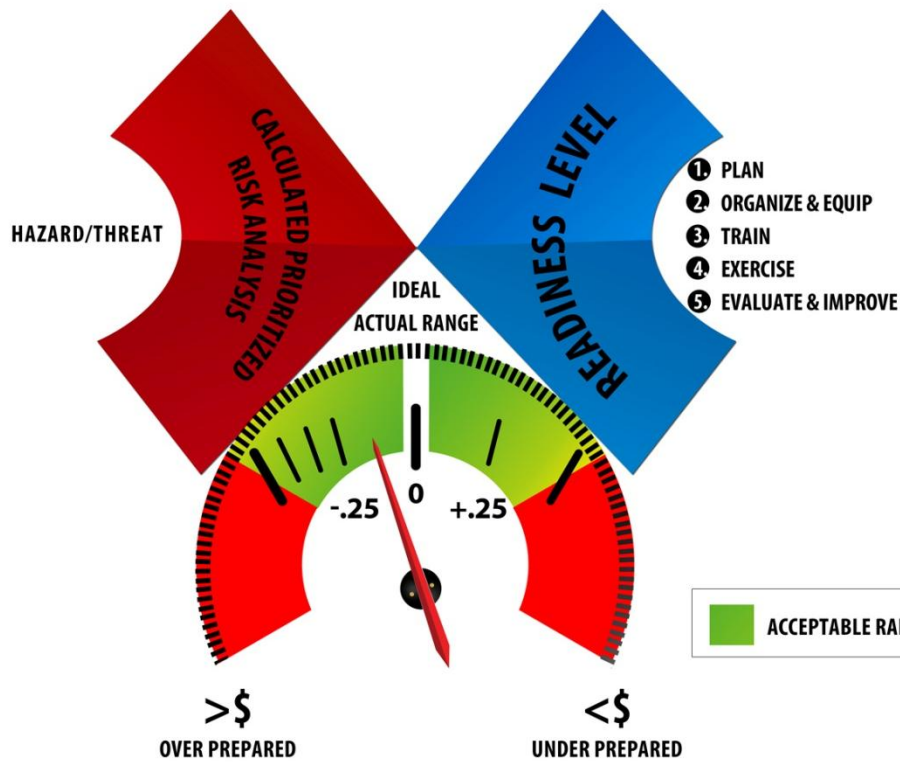
Policy makers need to know how to properly optimize readiness within resource constrained environments. The approach outlined here provides a solid framework for achieving a balance between known risks and the public safety capabilities required to effectively respond to, and recover from them. Utilizing the data in hand, it is now possible for governments to easily calculate their *optimal readiness* for a given threat by simply subtracting the Risk-Specific Readiness Score from the CPRI. The remainder provides an **Adjusted CPRI** score which represents how optimal a district’s readiness posture is for each given threat.

Adjusted CPRI Calculation:

$$D_r \text{ CPRI} - \text{RSR} = \text{Adj CPRI}$$

If the above calculation yields a *negative* score, the state or region is *over-prepared* and has likely allocated too many resources towards that risk. If a *positive* score is obtained, they are *under-prepared* and should consider additional measures to increase readiness for that particular risk. A score close to zero (0) indicates an optimal balance between Risk and Readiness. A score falling within $\pm .25$ points could be considered within an acceptable optimization threshold (Figure 11).

³⁵ Tracking changes over time will ensure that **both** improvements and/or deterioration of a district’s readiness posture can be effectively monitored.



2011 District X – Adjusted CPRI			
Prioritized Risks	Risk Rating	Adj. CPRI	Conclusion
1 – Severe Winter Storm	Severe	.20	Acceptable Readiness
2 – Major Flood	High	.45	Underprepared
3 – Hazmat Incident - Transportation	Moderate	-1.85	Overprepared
5 – Violent Tornado (≥ EF3)	Moderate	.45	Underprepared
6 – Cyber Attack - Grid	Low	.30	Underprepared

Figure 11 – District Adjusted CPRI

Driving Change - Budgets and Performance Measures

To throw our hands up and say, 'but we cannot measure performance in the social sectors the way you can in a business,' is simply a lack of discipline. --Jim Collins³⁶

Ensuring safety requires an understanding of risk and the implementation of a risk management strategy. The sector is reeling under the combined impacts of doing more with less and justifying their expenditures with demonstrable return on investment. In essence, the “new normal” for public safety will more closely mirror the private sector than at any time in the past.

³⁶ Good to Great and the Social Sectors, 2005, page 7.

However, the way leaders and public safety professionals act to manage risk is often limited by funding, staffing, bureaucracy, and competing priorities. Public safety domains³⁷ are fragmented and locked into programmatic and funding silos. Failure to strategically align these domains and focus them towards a common set of goals has often resulted in poor allocation of public funding.

Utilizing a disciplined Hazard/Threat Identification and Risk Analysis process and the corresponding Readiness Measurement provides policy makers with a clear roadmap for achieving readiness. However, policy makers must find ways to institutionalize the approach. There are two ways change is most likely to happen: reactive public policy to an adverse event or proactive leadership which aligns budgets and performance measures to increase return on investment for tax payers.

Budgets - Resource problem or priority setting/planning problem?

When setting priorities for 2012 and beyond, governments must accept the resource constrained environments they now operate within; status quo is no longer an option. Confronted with lower budgets, leaders have to be disciplined, prioritizing spending on the most essential facets of their public safety mission.

Further, the current economic climate is producing additional benefits such as broader cross-agency planning and a better understanding of the impacts of decisions on the entire public safety ecosystem. This realization is beginning to result in the sharing of resources, reduction of duplication, better and more routine information sharing and most importantly casting off the silo mentality of the past.

Government at all levels have seen many concepts familiar to private sector make their way into daily practice such as cost benefit analysis, return on investment and value add. Even agencies who provide essential services are now having to compete for priority among policy makers as well as demonstrating continued improvement and efficiency. This new culture of discipline within government has made those charged with oversight of governmental services look to *evidence based practices, data driven strategies* and *technology* to innovate and reduce costs. As James Taylor put it: "The greatest ROI becomes possible when automating and improving operational decisions across the enterprise."³⁸

³⁷ Law Enforcement, Fire, Emergency Medical, Homeland Security, Emergency Management and Public Health to name a few.

³⁸ Business Rule Revolution: Running Business the Right Way, October, 2006.

Performance measures - The importance of asking the right questions first.

Performance measures are discussed more often than they are understood by those who require them and by those who will succeed or fail by them. Until recently performance measures were not all that much of a concern to government service providers as they were only required to measure pure inputs (budgets, staff, resources) and outputs (clients served, services rendered).

However, the measuring of outcomes, based on performance measures, creates a greater level of accountability. To understand performance measures it is crucial to understand business processes and how to align them towards achieving an agency's vision and mission. Performance measures document continued improvement as well as progress towards the desired future for the organization. Failing to clearly articulate outcome-based performance measures reflects a lack of vision for an organization's future constituency needs, budget realities, and leadership objectives.

Performance measures typically align to either justify investment of tax payer dollars or to measure progress towards stated goals. To support the business case for governmental entities, it is essential that agencies and domains across the entire ecosystem agree upon key performance indicator (KPI) measures that reflect the needs of the collectivity. The challenge lies in overcoming fragmentation in state and federal guidance, policies, strategies and funding as well as disconnected performance measures.

This was most recently discussed in the report entitled *Perspective on Preparedness: Taking Stock Since 9/11*.³⁹ The report concluded that we still have a long way to go:

*We uniformly believe that our Nation is significantly better prepared than it was on September 11, 2001 - each of us has significant anecdotal data, unique to our jurisdictions, to support this premise. Yet we acknowledge that while stakeholders across the Nation have been working to improve preparedness, specific, measureable outcomes for these efforts have yet to be defined and assessed.... Federal policy-makers have an admittedly mixed record in integrating local, State, Tribal, and Territorial perspectives into federally developed policy and guidance. There is no consistent, standardized way for local, State, Tribal, and Territorial governments to meaningfully influence the preparedness policy process.*⁴⁰

The diagram below provides an example which shows how key performance indicators shared between traditional law enforcement, homeland security and emergency management domains would strengthen and unify public safety while beginning to address the concerns raised by the cited report.

³⁹ See Conference Report accompanying Public Law 111-83, the Homeland Security Act of 2010.

⁴⁰ Report to Congress of the Local, State, Tribal and Federal Preparedness Task Force, September 2010, page X.



Figure 12 – Key Performance Indicators

This example illustrates how key performance indicators can begin to align funding, guidance, strategies, vision and unity of effort between all levels of government while still respecting our federalist form of government. As shown above the process begins with state-level key performance indicators driving the funding decisions of state administrative agencies and then, aligning guidance, strategies and vision with well-defined performance measures (output and outcome).

Clearly this is no small challenge. However, it is not only possible but worthy of the efforts of well informed policy makers to act boldly and effect positive change. Recently, President Obama's Homeland Security and Counterterrorism advisor, John Brennan, raised a call to action:

*But rather than a reason to fear, this must be a catalyst for action. Instead of simply resigning ourselves to what appears to some to be inevitable, we must improve our preparedness and plan for all contingencies. Instead of simply building defensive walls, we bolster our ability at all levels, federal, state, local and the private sector to withstand disruptions, maintain operations and recover quickly.*⁴¹

⁴¹ Remarks by John Brennan, Assistant to the President for Homeland Security and Counterterrorism, at the Center for Strategic and International Studies (CSIS), May 26, 2010.

Public Safety Ecosystems

We need to move away from the mindset that Federal and State governments are always in the lead, and build upon the strengths of our local communities and, more importantly, our citizens. We must treat individuals and communities as key assets rather than liabilities. --W. Craig Fugate, FEMA Administrator

It is clear that today the public, and those charged with its safety, live in a different and more complex world than existed a decade ago. Some threats have remained static, but much has changed with new threats and risks emerging daily that continue to highlight the fragmentation of our public safety community. As long as fragmentation is the norm, public safety response structures will remain brittle and emergency response agencies will continually be forced to resort to heroic efforts to respond to and recover from disasters.

Achieving “Resilience” will necessitate a rapid evolution which will eventually lead to the extinction of fragmented legacy structures that create barriers between public safety organizations and the communities and citizens they serve. It is imperative that we begin viewing public safety as an ecosystem of inter-dependant organizations, communities, people and processes. Like its namesake, a public safety ecosystem is a highly symbiotic community whose scope encompasses the entire “Ready-Respond-Recover” lifecycle. This collectivity is more than the sum of its parts because it focuses individual behavior towards a common set of goals and achieves resilience through increased levels of individual self-sufficiency, collaboration, and resource sharing among all stakeholders.

The economic reality facing local, state and federal governments⁴² is also becoming a catalyst for the active involvement of both the private sector and citizens. As former Secretary of Homeland Security Michael Chertoff pointed out in 2008, readiness is too big a job for government alone:

The partnership model also acknowledges the reality that it is simply impossible and impossibly expensive for the government to handle 100 percent of the homeland security preparedness, prevention, response, and recovery responsibilities in the 21st century. There are too many places, too many things, and too many people for the government to take on the job of doing everything itself.⁴³

Public safety ecosystems will break down the traditional barriers that separate us because readiness concerns everyone. It is not the sole purview of governments, emergency managers, or

⁴² The United States House of Representatives recently passed an appropriations bill for the Department of Homeland Security (DHS) in fiscal 2012 that cuts about \$1 billion from the department's budget in 2011, largely by cutting grants for local first responders.

⁴³ Remarks by Michael Chertoff, Secretary of the US Department of Homeland Security, *The Future of Homeland Security*, The Brookings Institution, September 5, 2008.. <http://www.hstoday.us/briefings/today-s-news-analysis/single-article/house-dhs-spending-bill-sets-up-fight-over-grants-funding-for-2012/1742de01e117309261d52aad155e52df.html>

first responders, but also in the interest of communities, private organizations and citizens who all have to work together as a unified team. Each has a vital role to play within the context of readiness, incident response and recovery. Citizens are quite capable and willing to take responsibility for their own safety and security and that of their families. By quantifying risk and our readiness to meet that risk, we can more accurately set expectations and inform the public of the appropriate steps they should take to increase their readiness level.

Developing a pervasive readiness framework and measuring our readiness, provides all stakeholders with the information needed to assess the risks we face and make informed trade-off decisions.

Conclusion

Much work remains to be done to further evolve the concepts and refine the metrics for readiness measurement outlined here. However, a basic and practical framework for readiness measurement is a vast improvement over the *status quo* and has allowed Indiana to prioritize its investments, achieve significant cost savings, reduce redundancy, increase cross-jurisdictional coordination and materially reduce the overall fragmentation of the public safety system across the state. The authors continue to conduct basic research into readiness measurement, and, together with the Indiana Department of Homeland security, we are expanding upon the concepts we have outlined.⁴⁴

⁴⁴ The authors in collaboration with other scholars are working on a “Readiness Maturity Model” concept which will provide a “meta-view” of readiness and resilience.

Table 1: Modified Calculated Priority Risk Index

0.45 Probability	0.3 Magnitude / Severity	0.15 Warning Time	0.1 Duration
<p>4 - Highly Likely</p> <ul style="list-style-type: none"> <input type="checkbox"/> Event is probable within the calendar year. <input type="checkbox"/> Event has up to 1 in 1 year chance of occurring (1/1 = 100%) <input type="checkbox"/> Chance of event is greater than 33% likely per year. <input type="checkbox"/> Event is “highly likely” to occur 	<p>4 – Catastrophic</p> <ul style="list-style-type: none"> <input type="checkbox"/> Local jurisdiction is overwhelmed and unable to effectively respond to the hazard. Local resources are inadequate or non-existent. Complete loss of communications. Massive regional, state, EMAC and federal response is required. Federal disaster declaration. <input type="checkbox"/> Local and regional medical services are unable to manage the volume of injuries and fatalities. Mass evacuation, sheltering, and care of displaced residents, medical patients, high risk and vulnerable populations are required. <input type="checkbox"/> Loss of public utilities, government and essential services for more than 1 month. Widespread destruction of critical infrastructure, public and private property. More than 50% of critical and non-critical facilities and infrastructure damaged or destroyed. Extended emergency response operations lasting more than 1 month may be required. 	<p>4 – Minimal</p> <ul style="list-style-type: none"> <input type="checkbox"/> No-notice up to 6 Hours 	<p>4 – Prolonged</p> <ul style="list-style-type: none"> <input type="checkbox"/> More Than 1 Week
<p>3 – Likely</p> <ul style="list-style-type: none"> <input type="checkbox"/> Event is probable within the next three years. <input type="checkbox"/> Event has up to 1 in 3 years chance of occurring (1/3 = 33%) <input type="checkbox"/> Chance of event is greater than 20% but less than or equal to 33% per year. <input type="checkbox"/> Event is “likely” to occur. 	<p>3 – Critical</p> <ul style="list-style-type: none"> <input type="checkbox"/> Local jurisdiction is unable to effectively respond without District-level mutual aid support and significant state assistance. Local resources have been expended and local agencies have reached the limits of their capabilities. Communications seriously degraded with significant impact on operations. State disaster declaration. <input type="checkbox"/> Local medical services are unable to manage number of injuries and fatalities. Patients require transportation to regional medical facilities outside of the affected areas. Local area evacuations, sheltering, and care of displaced residents, medical patients, high risk and vulnerable populations are required. <input type="checkbox"/> Loss of public utilities, government and essential services for up to 1 month. Significant damage to critical infrastructure, public and private property over a large area. Up to 50% of critical and non-critical facilities and infrastructure damaged. Emergency response operations lasting up to 1 month may be required. 	<p>3 – Marginal</p> <ul style="list-style-type: none"> <input type="checkbox"/> 6 to 12 Hours 	<p>3 – Extended</p> <ul style="list-style-type: none"> <input type="checkbox"/> Up to 1 Week
<p>2 – Possible</p> <ul style="list-style-type: none"> <input type="checkbox"/> Event is probable within the next five years. <input type="checkbox"/> Event has up to 1 in 5 year chance of occurring (1/5 = 20%). <input type="checkbox"/> Chance of event is greater than 10% but less than or equal to 20% per year. <input type="checkbox"/> Event could “possibly” occur. 	<p>2 – Moderate</p> <ul style="list-style-type: none"> <input type="checkbox"/> Local jurisdiction is able to effectively respond with significant inter-local mutual aid support and limited state assistance. Local and mutual aid resources are adequate to support response. Communications systems operating near capacity. Local medical services are able to manage volume of injuries and fatalities but are near the limits of their capabilities. Only critically injured patients are diverted to facilities outside of the affected areas. Limited evacuations and sheltering required. <input type="checkbox"/> Loss of public utilities, government and essential services for up to 1 week. Significant damage to critical infrastructure, public and private property over a localized area. Up to 25% of critical and non-critical facilities and infrastructure damaged. Response operations lasting up to 1 week may be required. 	<p>2 – Limited</p> <ul style="list-style-type: none"> <input type="checkbox"/> 12-24 Hours 	<p>2 – Intermediate</p> <ul style="list-style-type: none"> <input type="checkbox"/> Up to 1 Day
<p>1 – Unlikely</p> <ul style="list-style-type: none"> <input type="checkbox"/> Event is probable within the next 10 years. <input type="checkbox"/> Event has an up to 1 to 10 years chance of occurring (1/10 = 10%). <input type="checkbox"/> Chance of event occurrence is less than or equal to 10% <input type="checkbox"/> Event is “unlikely” to occur. 	<p>1 - Negligible</p> <ul style="list-style-type: none"> <input type="checkbox"/> Local jurisdiction is able to manage incident with standard mutual aid and little or no state assistance. Local resources are adequate to support response. Communications system operating normally. Local emergency. <input type="checkbox"/> Local medical services are able to manage number of injuries and fatalities with on hand personnel and resources. <input type="checkbox"/> Loss of public utilities, government and essential services for up to 24 hours. Damage contained to a single incident scene and immediate area. Up to 5% of critical and non-critical facilities and infrastructure damaged. <input type="checkbox"/> Response operations lasting up to 72 hours may be required. 	<p>1 – Optimal</p> <ul style="list-style-type: none"> <input type="checkbox"/> 24+ Hours 	<p>1 – Brief</p> <ul style="list-style-type: none"> <input type="checkbox"/> Up to 6 Hours

Table 2: Calculated Risk Specific Readiness

0.25 Plan	0.30 Organize/Equip	0.30 Train	0.15 Exercise
<p>4 - Comprehensive</p> <ul style="list-style-type: none"> <input type="checkbox"/> Plan is connected to real time resource and capability databases <input type="checkbox"/> Modeling allows leaders to simulate risks against actual capabilities and resources and see shortfalls <input type="checkbox"/> Trending <input type="checkbox"/> Changes to readiness levels are monitored and advanced planning occurs when possible 	<p>4 – Capabilities based Organization</p> <ul style="list-style-type: none"> <input type="checkbox"/> Capability and Resource information is shared with other organizations easily through connected systems and interoperable equipment <input type="checkbox"/> Large scale emergency response coordination with private industry and other governmental agencies <input type="checkbox"/> Certifications for equipment and resources are monitored for readiness <input type="checkbox"/> Gap analysis is regularly updated 	<p>4 – Constant</p> <ul style="list-style-type: none"> <input type="checkbox"/> Daily practices reinforce best practices <input type="checkbox"/> Mentoring and apprenticeship opportunities for complex skills <input type="checkbox"/> Job rotation and cross functional teams used to spread knowledge <input type="checkbox"/> Adequate sustainment for current and future training needs 	<p>4 – Comprehensive</p> <ul style="list-style-type: none"> <input type="checkbox"/> Feedback from simulations is incorporated into revised plans (AARs and CAPs) <input type="checkbox"/> Live simulations occur routinely on a variety of hazards <input type="checkbox"/> Simulation of recovery, not just the event <input type="checkbox"/> Community involvement <input type="checkbox"/> Participation in state and federal level full scale exercises
<p>3 – Moderate</p> <ul style="list-style-type: none"> <input type="checkbox"/> Historical situations are examined; needs for capabilities including training and equipment reflect best practices in Incidence response <input type="checkbox"/> Plans are updated within one month as changes in resource availability occur <input type="checkbox"/> Plans demonstrate an all hazards approach <input type="checkbox"/> Plans are vetted with stakeholders 	<p>3 – Asset based Organization</p> <ul style="list-style-type: none"> <input type="checkbox"/> Existing equipment is certified as ready <input type="checkbox"/> Sufficient equipment to deal with occasional medium scale emergencies <input type="checkbox"/> Mutual aid plans in place to deal with large scale emergencies <input type="checkbox"/> Sustainment plan in place for current and future capacity and capabilities 	<p>3 – Routine</p> <ul style="list-style-type: none"> <input type="checkbox"/> Knowledge/skills/abilities are being taught <input type="checkbox"/> New employee orientation prepares employees for expected disasters <input type="checkbox"/> Training environments are similar enough to hazard conditions to develop muscle memory <input type="checkbox"/> Current sustainment for training documented 	<p>3 – Moderate</p> <ul style="list-style-type: none"> <input type="checkbox"/> Evaluation of simulations occurs (AARs and CAPs) <input type="checkbox"/> Simulations of the highest probability risks occur at least annually <input type="checkbox"/> Actual resource counts are used in exercise <input type="checkbox"/> Interagency involvement (state and local) and future funding sustainment plan
<p>2 – Limited</p> <ul style="list-style-type: none"> <input type="checkbox"/> Hazards are prioritized based on probability <input type="checkbox"/> Plan exists but information is stale after years <input type="checkbox"/> Plans exist but do not follow the National Response Framework and/or FEMA's CPG 101 Guide Version 2.0 (2010) 	<p>2 – Moderate</p> <ul style="list-style-type: none"> <input type="checkbox"/> New equipment purchases support national interoperability standards (NIMS) <input type="checkbox"/> Sufficient personnel and equipment to deal with routine local emergencies <input type="checkbox"/> All hazard incident training for some first responders 	<p>2 – Limited</p> <ul style="list-style-type: none"> <input type="checkbox"/> Annual classroom and simulation training for the highest probability risks <input type="checkbox"/> Annual classroom training for other hazards <input type="checkbox"/> Received local, state and federal training 	<p>2 – Limited</p> <ul style="list-style-type: none"> <input type="checkbox"/> Table top Simulation of the highest probability risk occurs annually <input type="checkbox"/> Limited functional exercises and Local level exercises <input type="checkbox"/> Sustainment plan for exercises for immediate needs
<p>1 – Minimal</p> <ul style="list-style-type: none"> <input type="checkbox"/> Lacks knowledge of the threats and risks <input type="checkbox"/> Required capacity and capabilities not understood <input type="checkbox"/> No documented plans exists 	<p>1 - Minimal</p> <ul style="list-style-type: none"> <input type="checkbox"/> Shortage in capacity exists to deal with local emergencies <input type="checkbox"/> Shortage in capability exists to deal with local emergencies <input type="checkbox"/> No continued funding mechanism for current sustainment 	<p>1 – Minimal</p> <ul style="list-style-type: none"> <input type="checkbox"/> Annual classroom training for the highest probability risks <input type="checkbox"/> Required basic level training completed <input type="checkbox"/> No identified sustainment plan for training for immediate future 	<p>1 – Minimal</p> <ul style="list-style-type: none"> <input type="checkbox"/> Response plans do not exist or are updated only after actual disasters based on lessons learned <input type="checkbox"/> No sustainment plan <input type="checkbox"/> Local jurisdiction exercise only