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Homeland Security in Small Law Enforcement Jurisdictions: Preparedness, Efficacy, and Proximity to Big-City Peers

Final Report

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EXECUTIVE SUMMARY

Over the last decade, local law enforcement agencies have developed a more robust capacity to respond to homeland security incidents. This trend was initiated in response to the 9/11 terror attacks, though myriad other criminal events (shootings on college campuses) and non-criminal incidents (weather-related disasters) have contributed to this rallying cry. The main focus of the current discussion is on the need for agencies to develop an "all hazards" approach to homeland security that will increase prevention, preparedness, response, and recovery to a broad range of critical events, whether related to terrorism or not. Much of the dialog and attention has been focused on the largest agencies and metropolitan areas in the country, yet smaller jurisdictions also play a key role in developing and sustaining a homeland security network.

It is the smallest agencies that are perhaps the least understood actors in the advances of the past decade. While training and funding opportunities have been extended to departments of all sizes, far less is known about the extent to which homeland security innovations have diffused into these small organizations, which represent the majority of all American law enforcement agencies. Prior work by this study's authors in the state of Illinois suggests that smaller jurisdictions were not as prepared as their larger counterparts. This research suggested, but did not directly assess, the extent to which intragroup variation among small agencies was possibly a function of proximity. Were small agencies that were "closer" to large peers (in terms of physical distance and/or level of interaction) taking more preparatory measures and did they perceive they were more capable of an effective response to a homeland security event?

The study described in this report sought to address these and related research questions. A stratified national sampling strategy was used to identify small municipal agencies (employing 25 or fewer full-time sworn officers) positioned across a variety of metropolitan and non-metropolitan contexts. Agency respondents (typically the chief executive officer) were asked to report a number of data points for their organization: assessments of the risk the jurisdiction would experience terrorist or non-terrorist homeland

security incidents; preparedness measures taken by the agency; perceived efficacy of the agency's response capacity across various salient domains (i.e., communication networks, policies, staffing, training, etc.); extent to which the responding agency monitors and emulates peers and best practices in the field; and, level of interactions between respondents and the nearest large municipal agency (employing 250+ full-time sworn officers).

Project findings would tend to support organizational theory expectations regarding the diffusion of homeland security innovation. Agencies that perceived a greater risk of experiencing terrorism-related events reported greater levels of preparedness. Likewise, agencies that were more integrated into professional networks and paid more attention to respected peers and trends in the policing profession had engaged in more preparedness activities. Confirming the relevance of proximity to large agencies, respondents who engaged in more interactions with their closest large agency peer reported greater levels of preparedness. Agency size and position in more metropolitan areas also contributed to the level of reported preparedness. In addition, agencies that reported engaging in more preparatory measures perceived a greater level of efficacy should a homeland security incident occur.

The results confirm that, while small agencies have been found less prepared in contrast to their larger peers, intragroup variation exists. While this variation is partially a function of the proximity between small jurisdictions and their larger peers, it also is influenced by the extent to which small agencies are connected to broader trends, practices, and peers within the profession. The results hold important implications for how future homeland security innovations might effectively be diffused into the smallest agencies in America's policing system. This is a vital issue considering that over three-quarters of municipal agencies meet the definition of small used in this study.

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Homeland Security in Small Law Enforcement Jurisdictions: Preparedness, Efficacy, and Proximity to Big-City Peers

INTRODUCTION

The September 11th terrorist attacks compelled many law enforcement agencies to rethink their function, as they were now being called upon "to respond to suspicious situations, uncover terrorist networks, and work with other agencies and jurisdictions in an unprecedented way" (National Research Council, 2004, p. 209). In fact, their role expanded beyond an initial anti-terrorism function to incorporate more inclusive homeland security responsibilities (Bellavita, 2008). This shift was evident in a series of presidential directives issued in the years immediately following the 9/11 attacks. The first focused on "securing Americans from terrorist threats or attacks [as] a critical national security function" (U.S. Department of Homeland Security, 2001). Two years later, the homeland security mission expanded to include "terrorist attacks, major disasters, and other emergencies" including natural and man-made events (U.S. Department of Homeland Security, 2003). For example, local law enforcement agencies played critical roles in response to Hurricane Katrina along the Gulf Coast (Rojek & Smith, 2007) and devastating flooding in Cedar Rapids, Iowa (Boniewicz & Rouback, 2010). "The national and international threat that is terrorism, driven by the events of 9/11" and the broader homeland security focus have led some to speculate that the larger paradigm of policing has shifted into a fourth era, from one dominated by community policing-related concerns to a homeland security era (Oliver, 2006, p. 53; see, also, Stewart & Morris, 2009). Others may dispute such a paradigmatic shift (see, for example, Ortiz, Hendricks, & Sugie, 2007) but it is clear that departments are devoting considerable resources and energy to homeland security preparedness (Brown, 2007; Jiao & Rhea, 2007).

Surprisingly, this additional emphasis on homeland security preparedness has received relatively limited research attention. As agencies acknowledged and adapted to their new role, researchers tried to understand the determinants of preparedness and the outcomes of those efforts (Bailey & Cree,

2011; Bonkiewicz & Ruback, 2010; Burruss, Giblin, & Schafer, 2010; Caruson et al., 2005; Council of State Governments, 2005; Davis et al., 2006; Donnermeyer, 2002; Fricker, Jacobson, & Davis, 2002; Gerber et al., 2005; Giblin, Schafer, & Burruss, 2009; Jiao & Rhea, 2007; Lum et al., 2009; Marion & Cronin, 2009; Ortiz, Hendricks, & Sugie, 2007; Pelfrey, 2007; Randol, in press; Rojek & Smith, 2007; Stewart, 2011; Stewart & Morris, 2009). Compared to other police practices, strategies, reforms, and innovations, however, the volume of research on homeland security practices in policing is comparatively small. In a 2004 report, the National Research Council lamented that, "little is known about the capability of especially local police to handle these weighty [homeland security] responsibilities" (p. 209). Five years later, the situation remained largely unchanged. Lum and colleagues (2009) reported, "not only do we not have a clear idea of what activities police are engaged in, but there is also a lack of empirical research that documents police activity or scientifically evaluates interventions" (p. 102). Stated differently, though considerable funds, particularly through federal and state grants, have been allocated to train, equip, and coordinate local personnel and agencies, only limited systematic evidence exists to help us understand whether such efforts and expenditures have achieved the desired outcomes.

To be sure, the available evidence does provide some insight into homeland security practices. We know, for example, that law enforcement agencies have taken a variety of steps to enhance preparedness such as updating mutual aid agreements and seeking out training opportunities (e.g., Davis et al., 2004; Davis et al., 2006; Giblin, Schafer, & Burruss, 2009; Pelfrey, 2007). Studies also show that variation in preparedness is evident across departments. For example, larger departments tend to be more prepared than smaller agencies (Davis et al., 2004; Pelfrey, 2007; Randol, in press) and agencies at a greater risk for a terrorist attack tend to take more preparedness steps than others (Burruss, Giblin, & Schafer, 2010; Davis et al., 2004; for an exception, see Gerber et al., 2005). The value of the available studies is unequivocal; they shed light on an important and dynamic subject.

Several gaps, however, remain in the literature and our understanding of homeland security activities. First, while the general consensus is that larger organizations tend to take more preparedness steps than smaller ones, scholars tend to treat agencies similar in size the same. Although differences between large and small organizations have been observed, there is only limited research explaining intra-group differences. This neglect is particularly acute for the modal department in the United States, the 78 percent of local law enforcement agencies nationwide with 25 or fewer full-time sworn personnel (Bureau of Justice Statistics, 2011; Reaves, 2010). Many view small agencies as a group of homogenous agencies, but they are not universally rural, isolated organizations. In fact, nearly half of small agencies are located within metropolitan counties (see Crank & Wells, 1991; Falcone, Wells, & Weisheit, 2002). Unclear is whether physical and relational proximity to large agency peers facilitates the development of homeland security preparedness and improves perceptions of organizational efficacy (the capacity of an organization to respond) in small agencies and, conversely, whether the geographic isolation of small, rural agencies inhibits homeland security efforts.

Second, much of the literature implicitly or explicitly assumes that homeland security preparedness can be improved through funding allocations (e.g., grants), particularly from state and local governments (Davis et al., 2006; Gerber et al., 2005). Alternatively, other writings have assumed that preparedness is simply a byproduct of, or rational response to, the potential for a terrorist attack in a jurisdiction (Davis, 2004; Henry, 2002). What these studies tend to ignore is the larger environment. The efficacy of efforts to enhance homeland security may not be just a function of perceived/actual risk or funding, but both of those forces and others. For example, enhanced preparedness and innovative practices may also flow from written products such as books and journals, as well as conferences, training, and other professional networks and channels. These sources, as shown in a study of Illinois law enforcement agencies, play a significant role in determining preparedness levels, independent of risk and resource allocation (Burruss, Giblin, & Schafer, 2010). To date, however, researchers have

largely ignored these sources (termed institutional pressures) as determinants of homeland security practices. Moreover, if these channels are salient, the proximity of small agencies to big-city peers might be irrelevant as learning and modeling is indirect rather than direct. This omission is glaring considering that research verifying the significance of these factors could be used to shape the diffusion of a range of innovations across the law enforcement industry.

Third, with few exceptions (see Caruson et al., 2005; Davis et al., 2006; Giblin, Schafer, & Burruss, 2009), researchers have concentrated on preparedness activities while neglecting assessments of preparedness outcomes. Admittedly, it is difficult to evaluate practices when they are designed to prevent extremely rare events though some scholars have assessed specific anti-terrorism practices (see, for example, Hewitt, 1984; Lum, Kennedy, & Sherley, 2006). Organizational research, however, draws attention to the concept of organizational efficacy, which is the perception about the organization's ability to accomplish its goals (see Lindsley, Brass, Thomas, 1995). In the absence of an ability to assess overall preparedness plans and actions to evaluate actual outcomes, organizational efficacy serves as a viable proxy to examine the likely success of such efforts or, at least, the perceived capacity of the organization to prevent and respond to terrorist attacks.

Finally, the literature on homeland security preparedness examines bivariate and multivariate relationships without a theoretical context (for exceptions, see Burruss, Giblin, & Schafer, 2010; Henry, 2002). Research incorporating theory, such as contingency and institutional theory frameworks, could begin to answer policy-related questions. For example, does perceived risk shape preparedness and, if so, why? What role does the institutional environment play in determining preparedness levels? Do preparedness measures enhance an organization's perceptions of its efficacy in the event of an actual homeland security incident? A theoretical context is essential for understanding the mechanisms through which preparedness and organizational efficacy are shaped.

The present study was designed to address these four gaps in the literature and clarify/expand upon an empirically-derived model of homeland security preparedness and organizational efficacy. Drawing upon data collected from 350 small (1-25 FT sworn officers) law enforcement agencies nationwide, we incrementally build to a final model inclusive of elements derived from contingency, resource dependence, and institutional theories as well as measures of relational and physical proximity to large agency peers. The report concludes with a discussion of the implications of this research for homeland security preparedness, the diffusion of innovations, and criminal justice theory more generally.

ORGANIZATIONAL THEORY

Over the past decade, researchers documented the nature of preparedness steps taken by local law enforcement agencies, especially those taken since 9/11 (Davis et al., 2006; Giblin, Schafer, & Burruss, 2009; Lum et al., 2009; Pelfrey, 2007; Reaves, 2010). Table 1 illustrates some of common actions taken as documented in recent state and national studies. Organizations have updated or created terrorism-related response plans (Davis et al., 2006; Giblin, Schafer, & Burruss, 2009; Reaves, 2010), created divisions or units to handle homeland security issues (Davis et al., 2006; DeLone, 2007), and participated in field or table-top homeland security training exercises (Lum et al., 2009). They have also increased collaborations with other agencies and updated mutual aid agreements (Davis et al., 2004). For example, collaborations between state and local law enforcement agencies have increased, with state police departments integrally involved in gathering, analyzing, and sharing of intelligence information. Local police departments also rely on state agencies for homeland-security related training and specialized services (Council of State Governments, 2005).

Less clear is how effective these preparedness measures are at thwarting terrorist attacks, preventing disasters, or, should an incident occur, generating a timely, efficacious response. Given the

rarity of these incidents, particularly terrorist incidents, researchers have had to rely upon examinations of specific terrorism-prevention measures (Hewitt, 1984; Lum et al., 2006) or post-hoc assessments of preparedness activities after disasters strike (see, for example, Rojek & Smith, 2007). Directly assessing the efficacy of the full range of preparedness activities is extremely difficult. In its place, researchers have examined organizational efficacy, an organization's "collective belief that it can successfully perform a specific task" (Lindsley, Brass, & Thomas, 1995, p. 648). Organizational efficacy is a perceptual construct. Do the organization's members believe that they can successfully prevent and mitigate the harm in the event of a terrorist attack, natural disaster, or other homeland security incident? In the absence of direct measures of effectiveness, organizational efficacy serves as a proxy.

Table 1.

		2007		
	2003 National	Illinois (Ciblin et al	2007 National	2007 National
Preparedness activity ¹	(Davis et al., 2006)	(Gibiin et al., 2009)	(Lum et al., 2009)	(Reaves, 2010)
Created/updated written response plan	41%	73%		54%
Participated in training exercises	34%-54%	49%-60%	58%-64%	62%
Created special unit/ position	38%	14%	25%	
Employed intelligence analysts		7%	8%	
Conducted risk assessments	59%	55%	34%	
Increased personnel		12%	6%	36%
Purchased hazmat mon- itoring/detection equip.	11%		35%	

¹Figures are not directly comparable due to variations in question wording. They are presented for illustration purposes only. When ranges are provided, multiple questions addressed the preparedness activity in question.

Distinguishing between efficacy and preparedness is a matter of separating the subjective assessment of how well an agency would perform when confronted with a homeland security incident (efficacy) from the actual steps taken to prepare for, respond to, and recover from such an incident (preparedness). In the academic literature, measures of efficacy are employed frequently even if referred to by some other name. Caruson and colleagues (2005), for example, measured preparedness by asking respondents how ready they were for a terrorist attack on a 10-point scale (not ready at all – very ready). Their measure captured perceptions rather than activities and efficacy rather than preparedness steps. They found that improved intergovernmental relationship quality enhanced the local government unit's readiness to respond to a terrorist incident. Respondents in a RAND survey were also asked about their level of readiness in multiple areas: planning, knowledge, equipment, training, communication/coordination, and overall preparedness (Davis et al., 2006). RAND's measure similarly separated preparedness steps from perceptions of adequacy. The majority of law enforcement organizations ranked their readiness as somewhat adequate or better on their planning, knowledge, communication/coordination, and overall preparedness. Fewer provided high rankings in the other areas. More recently, Giblin, Schafer, and Burruss (2009) found that Illinois law enforcement agencies rated the adequacy of budgets, personnel availability, and equipment (all resource-related) lowest among efficacy-related items.

Research also demonstrated that preparedness steps positively affect perceptions of organizational efficacy (Caruson et al., 2005; Giblin, Schafer, & Burruss, 2009; Schafer, Burruss, & Giblin, 2009). Increasing actions only improves perceptions that the organization can successfully respond in an emergency. The problem is that departments are not universally prepared for homeland security incidents (as measured by the range of actions taken). Instead, considerable variation exists in the number and type of activities engaged in by law enforcement organizations. Perceptions of organizational efficacy are, as a result, similarly varied. A number of explanations have been offered to

account for that variation. While much of the work is atheoretical, as the discussion that follows demonstrates, the sources of variation are implicitly linked with a number of key theoretical perspectives derived from the organizational theory literature—contingency theory, resource dependence theory, and institutional theory.

Contingency Theory

One approach to explaining preparedness activities is to view them as rational responses to real or perceived environmental threats. For example, as the risk of a terrorist attack increases, organizations are under considerable pressure to adapt. Failure to do so only amplifies the risks should they come to fruition; departments will be ill-prepared when a response becomes necessary. This view of organizations as rational entities interested in effective performance is consistent with contingency theory, an organizational framework developed during the 1960s (Burns & Stalker, 1961; Lawrence & Lorsch, 1967; Thompson, 1967; Woodward, 1965). Challenging the then-dominant "one size fits all" approach, the theory suggests that organizational structure and activities depend or are contingent upon a variety of considerations including external environmental factors (e.g., crime rates, customer demands), organizational size, and organizational technology. These factors, referred to as contingencies, are linked to an organization's structures and activities and, ultimately, its performance (Donaldson, 2001). As Donaldson noted:

Because the fit of organizational characteristics to contingencies leads to high performance, organizations seek to attain fit. For this reason, organizations are motivated to avoid misfit that results after contingency change, and do so by adopting new organizational characteristics that fit the new levels of the contingencies. Therefore, the organization becomes shaped by the contingencies, because it needs to fit them to avoid loss of performance (p. 2).

He proposed the aptly named structural adaptation to regain fit (SARFIT) model to explain how organizations rationally adapt to the contingencies they face in order to become or remain effective.

Maguire and Uchida (2000) referred to contingency theory as the "implicit foundation of nearly every study of police organizations" (p. 535). The theory has received mixed support in the general policing literature unrelated to homeland security. The implementation of COMPSTAT in the New York City Police Department was driven, in part, by the commissioner's desire to combat high crime rates. Similarly, the adoption of the same reform in Minneapolis was attributed to the city's high murder rate (Willis, Mastrofski, & Weisburd, 2007). Crime rates were high or at least perceived to be high (the contingency) suggesting, from an organizational standpoint, that police department structures and activities were not fitting the environment. Performance was suffering. In order to adapt—to regain fit and improve performance—each organization needed to reform. In New York, Commissioner Bratton used COMPSTAT to "maximize efficiency and drive crime down" (p. 151). In another study, Mullen (1996) found that the ratio of officers to the population (the contingency) was negatively related to the adoption of computer technology. He argued, "an agency can perform its policing function with few officers as long as they have the technology to assist them" (p. 132). The unfavorable ratio may have affected performance if not for the benefits of advanced technology. In spite of these examples, contingency theory has not always received strong support in the policing literature; it proved incapable of explaining community policing innovation or the creation of gang units (see Katz, Maguire, & Roncek, 2002; Zhao, Ren, & Lovrich; 2010).

There is considerably more support for contingency theory in the homeland security literature. Jiao and Rhea (2007) noted that it is necessary for police agencies to adapt to their environments. From this intuitive perspective, law enforcement executives rationally choose to modify their organizations to address the contingencies of homeland security risk in order to remain effective. That is, as agency heads perceive the risk of a homeland security incident to be higher, they are significantly more likely to take steps to enhance their preparedness. Although many studies have included risk measures within their analyses, few have explicitly referred to them as contingency variables. Nevertheless, they are

consistent with the theory's central propositions. Most studies including risk variables have found support for the association between risk and preparedness: several waves of a national survey of state and local law enforcement agencies conducted by RAND found that departments' preparedness was significantly associated with their risk of an attack (Davis et al., 2004; Davis et al., 2006). Burruss, Giblin, and Schafer (2010) explicitly tested contingency theory in their survey of Illinois law enforcement agencies. They also reported a positive relationship between perceived 5-year risk of a terrorist attack (e.g., chemical, biological, radiological, conventional explosive, cyber-terrorism, military weapons) and preparedness. Gerber and colleagues' (2005) study only partially supported contingency theory; while perceived risk was found to be significantly associated with preparedness and preparedness commitment, it was unrelated to actual preparedness activities. The fact that the findings contrast with other works may be due to their more limited measurement of preparedness.

Organizational size is also considered an important contingency, linked to structural characteristics such as the division of labor (horizontal complexity) and formalization (rules) (see, for example, Blau, 1970; Blau & Schoenherr, 1971; Langworthy, 1986; Maguire, 2003). As organizations grow in size, they divide up the work and use mechanisms such as rules to coordinate the activities of employees (Maguire, 2003). How is this related to homeland security? Within the homeland security literature, size is correlated with preparedness activities (Davis et al., 2004; Gerber et al., 2005; Jiao & Rhea, 2007; Pelfrey, 2007). This may be due to elevated risks in larger jurisdictions (more attractive targets), essentially a risk-related argument. Alternatively, preparedness activities such as updating policies, entering mutual aid agreements, and adding special units may simply be indicators of increasing formalization and horizontal complexity, both byproducts of increasing size. As organizations grow, they take certain actions in order to divide up and coordinate homeland security-related tasks (see Maguire, 2003).

Overall, contingency theory provides a useful framework for understanding organizations as interested in their overall performance. Both risk and size are important contingencies to consider in any model of homeland security preparedness and, as discussed above, both have been shown to be predictive of departmental activities.

Resource Dependence Theory

Homeland security preparedness is also stimulated by external funding support. The federal government provides significant contributions to local law enforcement agencies through numerous grant programs (Clarke & Chenoweth, 2006; Prante & Bohara, 2008). During fiscal year 2005, for example, \$400 million was appropriated for local law enforcement agencies (Clarke & Chenoweth, 2006). In fiscal year 2006, seven Department of Homeland Security funding programs distributed over \$1.8 million in grants to states for use "in conjunction with units of local government, to enhance the capability of State and local jurisdictions to prepare for and respond to terrorist acts including events of terrorism involving weapons of mass destruction and biological, nuclear, radiological, incendiary, chemical, and explosive devices" (Maguire & Reese, 2006, p. 3). Resource dependence theory, developed during the 1970s, suggests that resource providers are capable of making demands of the organization dependent upon those resources (Jaffee, 2001; Pfeffer & Salancik, 1978). These demands result from the restrictions attached to many funding allocations. Opportunities typically come with some specific programmatic elements in mind. Agencies receive funding only if they comply with the goals established by the funding programs. Failure to abide by these restrictions—to comply with these demands—increases the risk of losing critical resource support. For example, Oliver (2000), describing the adoption of community policing in the 1990s, argued, "many of the agencies coming to community policing during the third generation were simply seeking grant funding, and they would hire the officers as community-policing officers" (p. 379). The homeland security literature points to the salience of

external resource support. Davis and colleagues (2004) found that law enforcement agencies receiving funding were more than twice as likely to internally reallocate resources, participate in joint training exercises, and update standard operating procedures when compared to other agencies. Conversely, budget constraints have a detrimental effect. Controlling for risk, city size, and other factors, a city's budgetary situation limits its ability to take preparedness measures. Funding appears to be of critical importance and may be even more relevant in small jurisdictions where overall operating budgets and economies of scale prevent agencies from taking significant preparedness steps (Schafer, Burruss, & Giblin, 2009).

Institutional Theory

The third theoretical perspective, institutional theory, suggests that preparedness steps are taken irrespective of concerns about effectiveness/efficiency or resource acquisition. Instead, the theory asserts that the organization's environment— everything outside of the organization that provides the organization with funding, materials, calls for service, equipment, clients, and other inputs—widely supports certain structures and practices and places considerable pressure on organizations to conform to these expectations (Katz, 2001; Meyer & Rowan, 1977; Oliver, 1991; Roy & Seguin, 2000). As Meyer and Rowan (1977) declared in their classic work, "the formal structures of many organizations...dramatically reflect the myths of their institutional environments instead of the demands of their work activities" (p. 341). The point is that the supported practices obtain a myth-like status; they are assumed to be effective even though evidence may be inconclusive or suggest otherwise. All that matters, according to Lipsky (1980), is that the practices are "hypothetically associated" with good performance (p. 51). For example, Willis, Mastrofski, and Weisburd (2007) documented the importance of the New York COMPSTAT model in shaping innovation elsewhere. The program received considerable recognition, served as a model, and, at least implicitly (and, perhaps, erroneously), was associated with

the dramatic crime drop in the nation's largest city. Nevertheless, reality mattered less than beliefs. Other agencies adopted the COMPSTAT model even if its components were ill-fitting in other jurisdictions. Why? As the authors note, "should a department implement a COMPSTAT program that does not closely resemble what COMPSTAT is *expected* to look like (the NYPD model), it risks forfeiting the innovation's legitimating value" (emphasis in original; p. 160). Conforming to these expectations allows the organization to demonstrate its "organizational worth" (Hinings & Greenwood, 1988, p. 53). This is especially important when the value of particular practices cannot be established other ways (e.g., by proving that activities prevented a terrorist attack).

Where do these pressures come from? For law enforcement organizations, many are centrist in origin (Crank & Langworthy, 1996; Renauer, 2007). What this means is that the pressures have a broad effect on a large proportion of the law enforcement industry. In contrast, local pressures would include factors such as those emanating from community groups, mayors, city councils, and other sources that are presumed to uniquely affect local departments only. Given the centrist nature of institutional pressures, organizations affected by them should come to resemble one another (i.e., become more prepared) through a process known as isomorphism (DiMaggio & Powell, 1983). DiMaggio and Powell proposed three processes that contribute to isomorphism in an industry: coercive, mimetic, and normative processes. Coercive isomorphism is evident when organizations are forced through legal mandates, court decisions, or funding allocations (what has been referred to as seduction) to alter their practices (Crank & Langworthy, 1996; Tolbert & Zucker, 1983). For example, court decisions shaped a drug interdiction program studied by Crank and Rehm (1994); furthermore, Oliver (2004) argued that the lure of funding was sufficient to encourage the adoption of community policing.¹ Mimetic isomorphism results when organizations borrow or imitate the practices of other organizations

¹ If funding is a pressure, institutional theory resembles resource dependence theory. However, we demonstrate empirically that, in spite of DiMaggio and Powell's contention, funding appears to be a separate non-institutional construct (see, for example, Giblin & Burruss, 2009)

perceived to be successful (DiMaggio & Powell, 1983; Katz, 2001; Mastrofski & Uchida, 1993; Roy & Seguin, 2000). This is clearly evident in the COMPSTAT example described earlier where New York's program served as the model; other agencies adopted similar COMPSTAT-like programs leading to increasing isomorphism in the law enforcement field. Finally, normative isomorphism occurs as a byproduct of professional networks, associations, and training. As organizational members are exposed to prescriptive recommendations, they return to their employing organizations with this knowledge in tow. Harris (1999), for example, described the Drug Enforcement Administration training of "approximately 27,000 police officers in 48 participating states to use pretext stops in order to find drugs in vehicles" (p. 4). These officers brought these tactics back to their home department, offering a possible explanation for the spread of racial profiling (Engel, Calnon, & Bernard, 2002).

Giblin and Burruss (2009) developed a measurement model for policing. They empirically determined that funding allocations, a part of DiMaggio and Powell's mimetic processes, were not consistent with other institutional pressures but those related to mimeses, publications, and professionalization (e.g., education, and professional meetings) were indicative of the larger institutional environment. Their model was subsequently used to predict community policing innovations (Burruss & Giblin, in press). There is no doubt that the larger institutional environment promotes preparedness activities among police agencies. A wealth of government and academic publications espouse best practices in emergency preparedness and homeland security-related conferences are regularly held across the country. Taking preparedness steps is universally expected even though considerable variation in risk exists. Recognizing this, Burruss, Giblin, and Schafer (2010) applied the institutional pressures model to the study of terrorism preparedness among Illinois agencies. They found that, with the exception of organization size, institutional factors (attending conferences, modeling after other agencies, reviewing publications, etc.) were more salient predictors than perceived risk. In other words, conforming to expectations was more important than adapting to contingencies. The only other study to

address the effects of the institutional environment was conducted by Pelfrey (2007). He noted a relationship between agency accreditation, a process that promotes certain guidelines related to homeland security issues, and agency preparedness. Although the number of studies addressing the institutional environment is limited, there is evidence that it is a significant determinant and should be considered further.

DEPARTMENT SIZE AND PROXIMITY

There is no denying the importance of the research reviewed above in beginning to address the gaps identified by the National Research Council (2004) and Lum and colleagues (2009). Even more, the research has tended to avoid the urban-centric focus of many police studies by drawing upon samples inclusive of agencies of varying sizes (see Davis et al., 2006; Schafer, Burruss, & Giblin, 2009; Pelfrey, 2007). We now know with considerable certainty that variation in preparedness activities exists across departments of different size categories and there is some evidence pointing to intra-category variation (Schafer, Burruss, & Giblin, 2009). That is, even small agencies of similar size exhibit different levels of preparedness that cannot be explained entirely by factors such as homeland security risk. The problem is that small agencies are often treated as a homogenous group even though variation exists within size categories. Crank and Wells (1991) warn that yet unknown empirical distinctions may exist within the population of small agencies. In addition to predictors used in prior research and consistent with the three major contemporary theories of organization (contingency, resource dependence, and institutional theories), we argue that two unexplored considerations—physical and relational proximity—are important determinants of small agency preparedness.

Relatively few municipal police departments in the United States are large, typically defined as 100 or more full-time sworn personnel. Although over 60 percent of officers nationwide work in large agencies, only 624 of 12,575 departments (5%) fit this definition (Reaves, 2010). Almost without

exception, these agencies are located within metropolitan counties.² Similarly, popular beliefs, media depictions, and academic scholarship often place small police departments, defined in the present study as those employing between 1 and 25 FT sworn officers, within a singular type of geographic setting, specifically remote, isolated, and/or rural locations. Kraska and Cubellis (1997), for example, titled their study of police paramilitary units in jurisdictions serving between 25,000 and 50,000 citizens, "Militarizing Mayberry and Beyond," a reference to the rural North Carolina setting of the 1960s television program, The Andy Griffith Show. Universally associating small with rural is unfortunate as small police departments run along a continuum from rural to urban. More than 20 percent of small police departments operate in metropolitan counties with populations of 1 million or more residents, nearly four times more than operate in rural counties with fewer than 2,500 residents (see Table 2 in methods section). Marion County, Indiana, for example, operates according to a combined city-county government structure. Several years ago the Indianapolis Police Department and Marion County Sheriff's Department merged to form the Indianapolis Metropolitan Police Department. In spite of the predominance of the large agency across the county, several smaller municipalities, including Beech Grove and Speedway, continue to operate their own police departments within this metropolitan county environment.

These variations in location mean that small agencies are differentially situated some physical distance from large agency peers. If large agencies, as research consistently demonstrates, are typically more prepared—engage in more training, have emergency response plans, purchase additional equipment—then *physical proximity* should benefit small agencies. They may reap the benefits of a network of partnerships, training opportunities, model homeland security policies, and other advantages less readily available in isolated jurisdiction. Some evidence supports this contention. In an

² This was determined by assessing the distribution of large agencies across rural-urban continuum codes (see sampling frame discussion below) using the *Census of State and Local Law Enforcement Agencies, 2004* (Bureau of Justice Statistics, 2004) and the Department of Agriculture's continuum codes ("Measuring rurality," n.d.).

earlier study, we found that the smallest Illinois law enforcement agencies (those with 9 or fewer FT sworn officers) located in and around the Chicago area (in what are referred to as Cook or the Collar counties) were more prepared for a terrorist attack than other agencies located in urban or rural counties (Schafer, Burruss, & Giblin, 2009). Bailey and Cree (2011) also found preparedness scores to be higher among urban (compared to suburban/rural) agencies. Given these results, we posit that preparedness within smaller police departments is influenced, in part, by physical proximity.

Physical proximity, by itself, may not be sufficient. There is evidence that interactions between agencies are necessary to enhance homeland security preparedness (Council of State Governments, 2005). The National Incident Management System (NIMS), a framework for critical incident preparedness and response, encourages collaborative activities including training, interoperable communications, planning, unified command structures, and other actions that would encourage effective response in the event of an emergency (Herron, 2004). In this case, relational proximity joins physical proximity as a possible determinant of preparedness activities. Interactions and connections with, not just distance to, a large agency peer are necessary to facilitate the types of partnerships and opportunities prescribed by NIMS and in other reports. Small agencies again appear to be at a disadvantage. Stewart (2011) found that small departments in Texas were less likely than large agencies to collaborate with federal agencies. He offered a number of possible explanations to account for this finding: homeland security is primarily a large agency function, small agency reluctance to share information with outside agencies, and the historically limited need to interact with external agencies. Stewart (2011) acknowledged that most of the agencies in his sample were outside of metropolitan statistical areas. We argue that the variation among small departments in their physical proximity may be enough to stifle their relational proximity. In other words, Stewart's sample included more physically isolated agencies, the ones least likely to interact with large agency peers. In contrast, inclusion of small urban or urban-proximate agencies may have resulted in significantly different results.

RESEARCH GOALS

In sum, the present study tests a model (depicted conceptually in Figure 1) inclusive of many of the most common predictors of terrorism preparedness. In doing so, we offer multiple contributions to the homeland security literature. First, we avoid the tendency to treat agencies of similar size as similar on all dimensions. We accomplish this by proposing two new measures—relational and physical proximity to large agency peers—that are hypothesized to generate benefits for nearby small agencies. Second, we provide a test of the institutional theory model of policing developed by Giblin and Burruss (2009) that was applied to both community policing (Burruss & Giblin, in press) and homeland security (Burruss, Giblin, & Schafer, 2010) innovations. It further examines the relevance of both risk and external funding in shaping homeland security activities. Third, we offer a theoretically informed treatment of homeland security preparedness, something that is lacking in many contemporary studies of the issue. Finally, we contribute to the growing body of literature assessing the outcomes of preparedness activities (Caruson et al., 2005; Davis et al., 2006; Giblin, Schafer, & Burruss, 2009). In the absence of an ability to assess overall preparedness plans and actions to evaluate actual outcomes, organizational efficacy serves as a viable proxy to examine the likely success of such efforts or, at least, the perceived capacity of the organization to prevent and respond to terrorist attacks.



Figure 1. Conceptual model of homeland security preparedness in small law enforcement agencies.

RESEARCH METHDOLOGY

Sampling Frame

One of the initial challenges confronting most survey researchers is developing a suitable sampling frame. For law enforcement scholars, the challenge is less daunting, as they benefit from the periodic enumeration of municipal police, sheriffs', state police, and special law enforcement agencies sponsored by the U.S. Department of Justice's Bureau of Justice Statistics (BJS). Indeed, the *Census of State and Local Law Enforcement Agencies* (hereafter referred to as the Census or Census data), formerly the *Directory of Law Enforcement Agencies*, serves almost exclusively as a sampling frame for survey efforts, including BJS's *Law Enforcement Management and Administrative Statistics* project (Groves & Cork, 2009). Census data cover, "all state and local law enforcement agencies that were publicly funded and employed at least one full-time or part-time sworn officer with general arrest powers" (Bureau of Justice Statistics, 2011, p. 5). In spite of this claim, some have questioned whether the dataset is truly complete (see King, Cihan, & Heinonen, 2011; Maguire et al., 1998). Even if some proportion of agencies are left uncounted, the Census is the best listing of law enforcement agencies currently available and the one used, either directly or indirectly, as a sampling frame for many national-level surveys of police agencies (see, for example, Katz, Maguire, & Roncek, 2002; Lilley & Hinduja, 2006).

For the present study, the sample was selected from the frame provided by the 2004 iteration of the *Census of State and Local Law Enforcement Agencies* (Bureau of Justice Statistics, 2011).³ Almost 13,000 municipal law enforcement agencies are included in the Census dataset. Although there is no consensus as to a definition of "small" police agencies, we established an upper threshold of 25 full-time sworn officers. Agencies with 25 or fewer FT officers account for approximately 78 percent of

³ Data from the most recent administration, 2008, was not released until August 2011, after project data collection ended. As indicated below, agencies from 2004 no longer in existence in 2011 were identified and removed. We are unable to determine the number of new departments that formed during those years.

departments but employ only about 15 percent of all officers (Bureau of Justice Statistics, 2011; Reaves, 2010). A lower threshold—at least one full-time officer—was also established resulting in the elimination of 262 departments staffed solely by part-time personnel. The decision to exclude these agencies was based on practical considerations. A number of survey questions largely assumed regular department staffing and there were questions about the ability to successfully contact agencies lacking full-time personnel. In the end, the sampling frame included 9,708 municipal police agencies employing between one and 25 full-time sworn officers.

As noted earlier, all small police departments are not the same and small is not necessarily synonymous with rural (Crank & Wells, 1991; Falcone, Wells, & Weisheit, 2002; Schafer, Burruss, & Giblin, 2009). Recognizing these differences among small agencies, the 9,708 municipal departments were stratified according to geographic location using the U.S. Department of Agriculture rural-urban continuum codes (Weisheit & Donnermeyer, 2000). The Department of Agriculture classification scheme includes 9 categories and counties are re-classified after each decennial census. The first three categories in the continuum are based exclusively on population size and designate metropolitan counties only (3 categories; n=1,089 counties nationwide); the remaining six are based on a combination of population size and adjacency to metropolitan areas (6 categories; n=2,052 counties nationwide) (Ghelfi & Parker, 2001; Hart, Larson, & Lishner, 2005; "Measuring rurality," n.d.; see Lee & Slack, 2008 for an example of a classification scheme employed in criminal justice research). The continuum, an ordinal scale, provides an opportunity to examine differences in law enforcement agency preparedness and efficacy based on their proximity to urban areas. Moreover, unlike classifications of police agencies as urban, suburban, or rural, the continuum codes offer "finer delineations on the rural end of the scale," an important consideration given our central research questions (Hall, Kaufman, & Ricketts, 2006, p. 169). Each of the 9,708 small agencies was assigned a 2003 rural-urban continuum code based

on the county in which the agency operates.⁴ The distribution of codes across the small agency population is presented in Table 2.

The original plan called for the sampling of approximately 800 agencies, selected proportionately from across the nine rural-urban continuum code strata. As the project progressed and codes were assigned to each of the 9,708 agencies in the sampling frame, it became clear that a proportionate stratified sample was neither feasible nor desirable. Proportionate sampling would result in small samples in several strata (e.g., roughly 28 agencies in category 5). Assuming a 50 percent response rate (see Schafer, Burruss, & Giblin, 2009), the realized sample in the smallest stratum would total only 13-14 agencies thereby precluding any meaningful comparisons across strata. In the interests of maximizing variation, a sample of 810 agencies, 90 from each rural-urban continuum code classification, was selected from the population of small law enforcement agencies.⁵ The sample was further adjusted after data collection commenced to eliminate agencies no longer in existence. A number of surveys were returned uncompleted with notes from city managers, county sheriffs' departments, or others noting the disbanding of the sampled department. Investigation by project staff on undeliverable surveys further identified several additional non-existent agencies. Overall, we determined that 24 agencies operating at the time of the 2004 census no longer existed at the time of the present study's survey administration. This resulted in an adjusted sample of 786 agencies.

⁴ 2003 continuum codes were merged with agencies in the *Census of State and Local Law Enforcement Agencies* using 5-digit federal information processing standards (FIPS) codes where the first two digits designate the state and the remaining three identify the county. The 2004 Census dataset omitted FIPS codes so these were first obtained from the 2000 Census dataset.

⁵ A disproportionate stratified sample, when randomly selected, increases the likelihood of obtaining representative samples within strata. However, the overall sample, absent a weighting scheme, is not representative of the overall population of agencies from which it is drawn.

Table 2.

Distribution of small law enforcement agency population and sample across ruralurban continuum code categories

			Sele	cted	Adju	isted	Rea	lized
	Popul	ation	Sam	nple	Sam	ple1	Sam	ple ²
Code	n	%	n	%	n	%	n	%
Metropolitan counties								
1. Population of 1 million or more	2,210	22.8	90	11.1	86	10.9	38	10.9
 Population of 250,000 to 1 million 	1,577	16.2	90	11.1	88	11.2	36	10.3
3. Population of fewer than 250,000	1,111	11.4	90	11.1	86	10.9	51	14.6
Non-metropolitan counties								
4. Urban population of 20,000 or more, adjacent to a metro area	908	9.4	90	11.1	90	11.5	40	11.4
5. Urban population of 20,000 or more, not adjacent to metro area	328	3.4	90	11.1	88	11.2	39	11.1
 Urban population of 2,500-19,999, adjacent to metro area 	1,649	17.0	90	11.1	89	11.3	38	10.9
 Urban population of 2,500-19,999, not adjacent to metro area 	1,023	10.5	90	11.1	87	11.1	38	10.9
8. Completely rural or less than 2,500 population, adjacent to metro area	373	3.8	90	11.1	86	10.9	36	10.3
9. Completely rural or less than 2,500 population, not adjacent to metro area	529	5.4	90	11.1	86	10.9	34	9.7

¹The sample pulled from each strata was adjusted after the survey was fielded as notification was received that agencies (n = 24) no longer existed. No replacements were chosen.

²The realized sample of 350 agencies represents a 44.5 percent response rate using the adjusted sample as the denominator.

Survey Administration

Surveys were mailed to the chief executive (e.g., chief, commission, director of public safety, chief marshal, officer-in-charge) of each agency using the mailing address contained within the census database. The name of each agency's chief executive was identified through web sources and the most recent version of the National Directory of Law Enforcement Administrators, Correctional institutions, and Related Agencies (National Public Safety Information Bureau, 2011). The survey was accompanied by a cover letter describing the purpose of the study, human subject protections, and instructions for completing and returning the survey, as well as a postage paid envelope. Although the survey was mailed to the agency's leader, in some cases it was completed by an individual other than the intended recipient. Nearly one of five (19.1 percent) of surveys were returned completed by someone other than the chief, commissioner, chief marshal, officer-in-charge, or other title denoting chief executive status in the organization. It is possible that the survey was forwarded to the individual in the organization most capable of answering questions regarding the agency's homeland security functions. Regardless of who completed the survey, the individual is acting as the informant about the agency's functions and activities; the organization, rather than the individual, is the unit of analysis. Although some argue that the use of agency informants increases the possibility that the respondent does not have full knowledge about departmental operations resulting in inaccurate answers, such a concern is minimized when surveys address only a part of an organization's operations (Babbie, 2004). The informant is believed to have sufficient knowledge to respond to questions pertaining to that part of the agency's operations.

The survey was administered in three mailings, with each wave intended to increase the response rate. The first wave of 810 surveys was mailed on March 10, 2011. Approximately 20 percent of respondents returned surveys by the time of the second mailing on April 7. The second wave produced an additional 10 percent response rate. A third and final mailing, sent May 3, generated a total response rate of slightly over 38 percent. A final attempt was made to contact each non-responding

agency in June 2011 in order to encourage participation. A member of the project team attempted to phone each of the roughly 500 non-responding agencies at least once. In small agencies, however, making impromptu contact with the chief executive is hampered by the fact that he/she is often on patrol during the work shift. Where direct contact could not be made, messages were left with administrative assistants, on voice mail, or with others reminding potential respondents about the survey. The phone calls proved efficacious, yielding an increase in the response rate of 7 percent. Overall, 350 agencies returned surveys for a realized response rate of 44.5 percent.⁶

The response rate, while lower than other national studies of law enforcement organizations, is not entirely unexpected given the more restricted small agency sample. While some general organizational studies posit an inverse relationship between size and response rates (Tomaskovic-Devey, Leiter, & Thompson, 1994), prior work by the authors found that the smallest organizations were less likely to respond than their larger counterparts (Burruss, Giblin, & Schafer, 2010). While large police agencies are routinely included in survey projects (often a census of large agencies), smaller organizations, the bulk of all law enforcement agencies, are usually only sampled. Consequently, any given small agency executive has likely been asked to participate in surveys far less often than large agency leaders. Moreover, the content of the survey, homeland security preparedness, may represent a sensitive topic for which executives are less willing to disclose information. This concern might be particularly acute considering smaller agencies are those reporting fewer preparedness actions (Burruss, Giblin, & Schafer, 2010; Davis et al., 2004; Gerber et al., 2005; Pelfrey, 2007).

The primary concern about the response rate is non-response bias. If respondents are somehow different than non-respondents, the validity of conclusions drawn is questionable. Fortunately, the census survey and other sources provide a broad range of data to assess non-response bias. Respondents and non-respondents were compared on 36 measures: 28 describing the functions of each

⁶This is based on a denominator omitting agencies no longer in existence. Using the original 810 agencies as the denominator, the response rate was slightly lower, 43.2 percent.

agency, three describing the spatial distribution of the agency (e.g., number of district stations), and the remaining addressing issues related to department size, operating budget, region, and rural-urban continuum code. Out of the 36 comparisons, only three were significant at the .05 level (see Table 3). Responding agencies were significantly more likely to report being first responders to criminal incidents (99.4% v. 97.2%), responsible for arresting criminal suspects (99.7% v. 97.9%), and handling the processing of firearms licenses (26.6% v. 18.6%). The effect size eta-square measure (η^2) for each of the significant measures was small; the participation (respondent v. non-respondent) variable only explained about one percent or less of the variation in the three significant measures. Although it is possible that additional, unexamined factors differentiate respondents and non-respondents, we feel confident based on these results that no significant response bias exists. Basic descriptive statistics for the sample are presented in Table 4.

		Effect			Effect
	p ¹	size ²		p ¹	size ²
Total FT sworn, 2004	0.134		Operating budget	0.225	
Continuum code	0.323		# district stations	0.371	
Miles to large peer	0.323		# neigh. stations	0.877	
Region	0.126		# mobile stations	0.067	
Functions					
First response	0.022	0.007	Traffic control	0.329	
Routine patrol	0.269		Accident invest.	0.054	
Answer calls for service	0.106		Parking enforce.	0.144	
Arrest criminal suspects	0.027	0.006	Traffic law enforce.	0.772	
Crowd control	0.136		Vehicle inspections	0.168	
Dispatch	0.089		Animal control	0.128	
Bomb disposal	0.431		School crossing	0.930	
Search & rescue	0.530		Emergency medical	0.541	
Tactical operations	0.688		Emergency manage.	0.500	
Underwater recovery	0.426		Fire services	0.404	
Operate training acad.	0.688		Personal security	0.056	
Drug enforcement	0.169		Tax collection	0.333	
Part of drug task force	0.134		Process firearms apps.	0.006	0.010
Vice enforcement	0.562		Property storage	0.132	

Table 3.Comparison of respondents and non-respondents across multiple measures

¹Depending upon the level of measurement of the variable, either an ANOVA or chi-square test was used to compute the p value (η^2 and Cramer's V were used to compute effect size).

²Effect sizes are only reported when significant differences are identified.

	Number of				
	agencies	%			
Agency size, 2004					
1-5 officers	182	52.0			
6-10 officers	89	25.4			
11-15 officers	39	11.1			
16-20 officers	21	6.0			
21-25 officers	19	5.4			
Total	350	100.0			
Region of country					
Northeast	54	15.4			
South	114	32.6			
Midwest	136	38.9			
West	46	13.1			
Total	350	100.0			
Metropolitan or Non-Metropolit	tan				
Metropolitan	125	35.7			
Non-Metropolitan	225	64.3			
Total	350	100.0			
Miles from nearest large agency with 250+ sworn officers					
0-25	30	8.6			
26-50	63	18.2			
51-75	57	16.4			
76-100	60	17.3			
101-125	53	15.3			
126-150	28	8.1			
151-175	23	6.6			
176+	33	9.5			
Total ¹	347	100.0			

Table 4.Size, region, location, and proximity to peers of responding agencies

¹Mileage could not be determined for three Alaska agencies.

Large Agency Peers

The survey contained items covering topics such as preparedness, efficacy, risk, resource dependence, and institutional forces. In order to measure the influence of physical and relational proximity, respondents were asked a series of questions about their relationships and interactions with their nearest large municipal police department peer. One approach to identifying this large agency would be to allow the respondent to report its name in an open-ended question. Unfortunately, this

would increase the likelihood of erroneous or missing data. Even if we attempt to limit responses to particular agency sizes, types (e.g., municipal), or other criteria, there is always the possibility that actual answers will depart from those criteria or be indeterminable (see Roberts & Roberts, 2007 for similar problems). To overcome this problem, we identified the *correct* (i.e., those meeting the specified criteria) large peer for each respondent by affixing a label on the survey directly above questions pertaining to the large agency. Respondents were instructed to answer questions based on the large agency identified on the label.⁷

To identify the nearest peer, the 191 largest municipal agencies in the United States, defined as departments with 250 or more full-time sworn officers (approximately 1.5 percent of all municipal agencies), were plotted on a map along with the 810 sampled small agencies using ArcMap software. The nearest large agency was determined for each small department using an estimate of the "as the crow flies" or Euclidian distance. The 810 agencies were ultimately matched to 112 of the 191 large agencies. Some small agencies shared a common, large agency peer. In several cases, two or more large agencies were within proximity to one another (e.g., Minneapolis (MN)/St. Paul (MN), Kansas City (KS)/Kansas City (MO)). In these situations, the designation of large agency peer was based on distance even though small agencies may prefer to interact with the agency just a few miles further away. Three large departments were identified as the nearest large peer for more than 15 small agencies each *and* were within 10 miles of another large agency. For two of the three agencies, Minneapolis (MN) and St. Paul (MN), an imbalance existed (47 to 19 small agencies linked, respectively) but not an overwhelming imbalance. In the third case, Cambridge (MA), due to its location less than five miles northwest of

⁷ Specifically, the survey read: "The next several questions deal with connections to or interactions with one of the large (approximately 250 or more sworn officers) law enforcement agency nearest to your own agency. We have identified an agency below. Your agency may or may not be in the same state as this agency, it may be within close proximity to it or hundreds of miles away, and may have frequent, limited, or no contact with members of the organization. Regardless of the agency's location or your connections to it, we ask that you answer questions 7 and 8 by referencing the agency below only."
Boston (MA), was determined to be the nearest large department for 29 small agencies while the nearby Boston Police Department was linked to a single small agency. To rectify this imbalance, we randomly assigned the nearest agency peer, either Boston or Cambridge, to the 30 nearby small agencies in the sample (15 to each large department).

Variables

Dependent (Endogenous) Variables

The model shown in Figure 1 includes several endogenous variables such as risk, interactions, and connections. The primary focus of this research, however, is predicting homeland security issues related to preparedness and organizational efficacy. We adopt a broad definition of homeland security beyond the singular focus on terrorism. Our definition includes a range of man-made and natural hazards that may result in significant casualties and/or property damage (Bellavita, 2008; Tierney, 2007). The first endogenous variable, *homeland security preparedness*, captured steps taken by departments to prevent, respond to, and recover from homeland security incidents. Respondents were asked to identify which of 13 different commonly prescribed actions their agency employed.⁸ Eight of the items addressed the current state of the organization and five were time bound, addressing activities taken within the past 12 months. Each item was coded "1" indicating the adoption of the policy/action or "0" indicating its absence. Responses for the 13 items were summed to create an additive index ranging from 0 to 13 (alpha= .815).

The second primary dependent variable of interest was *organizational efficacy*. Efficacy was measured by asking respondents to rate various aspects of their agency in the event of a homeland

⁸ Steps as they pertain to homeland security: special unit; interagency task force participation; procedures for distributing advisories; procedures for contacting other authorities; written response plan; mutual aid agreements with law enforcement agencies; mutual aid agreements with non-law enforcement agencies; operate on shared radio frequency; threat inventory (12 mo.); risk assessment (12 mo.); disseminated information to community (12 mo.); training of personnel (12 mo.); and participated in field or table-top training (12 mo.).

security incident involving a multi-agency response (see Giblin, Schafer, & Burruss, 2009; Schafer, Burruss, & Giblin, 2009).⁹ The 14 items were rated on a five-point scale ranging from inadequate to excellent (adequate as the midpoint); responses to each item were summed to create the *efficacy* index (alpha= .916).

Independent (Exogenous) Variables

The remaining variables measuring the concepts of grants, institutional pressures, organizational size, terrorism-related risk, non-terrorism-related risk, physical proximity, and relational proximity will be discussed as they are presented in the descriptive and multivariate analyses sections that follow.

⁹ The question read, "In the event of a homeland security incident in your jurisdiction involving a multi-agency response, how would you rate your own agency's..." Items comprising the index included: emergency response plan; ability to communicate with other agencies; knowledge of emergency response; knowledge of homeland-security incident response; ability to rapidly deploy personnel; equipment; training; partnerships; level of preparation for large-scale incidents; ability to evacuate citizens; ability to provide food/shelter to personnel; availability of personnel; budget; and ability to receive timely intelligence.

DESCRIPTIVE RESULTS

The following section details univariate results from the agency survey. Additional tables are included in Appendix A to present crosstabs contrasting key concepts used in the multivariate analysis.

Risk

As addressed in the literature review, a variety of considerations might encourage an agency to engage in homeland security and disaster response planning/prevention. In a purely rational world, agencies would perhaps assess their risk of experiencing a specific critical incident. Agency leaders might prioritize finite resources based on the estimated likelihood that their jurisdiction would be either the target of a specific form of attack or experience a major critical event. In this study, respondents were asked to evaluate the likelihood of various incidents occurring within their jurisdiction within the next five years. Potential critical events were separated into six terrorism-related incidents and five nonterrorism related incidents; each was ranked on a scale from 0 (not at all likely) to 10 (very likely).

Taken as a whole, perceived risk of terrorism-related incidents was quite modest (Table 5). The greatest risk was perceived to be associated with cyber-terrorism in the respondents' jurisdictions, though this was only assessed as a 2.76 on the 0-10 scale. The six identified terrorism-related incidents were also clustered reasonably close to one another, with the lowest risk being identified as a radiological incident (mean perceived risk of 1.71). Respondents perceived more risk associated with non-terrorism related homeland security incidents than terrorism events. Four of the five non-terrorism incidents were scored as higher risks than the top terrorism-related incidents (cyber-terrorism and conventional explosives), with only structural failure involving mass casualties scoring below (2.59) their perceived risks. The only item on the risk scale to score above the midpoint (6.46) was severe weather, earthquake, or wildfire. This is not particularly surprising given the large number of events captured on this single item. This category of incidents is also one of the more difficult to prevent among the listed

non-terrorism events. Inspections and safety regulations should minimize the risk of structural failures, explosions, and spills; prevention protocols can seek to minimize the risk of medical pandemics. Though mitigation efforts might minimize the spread of wildfires, severe weather of some form is a nearly ubiquitous risk and, along with earthquakes, can only be mitigated, not prevented.

Table 5.

*Perceived likelihood of homeland security incidents occurring within the next five years (mean scores)*¹

Mean	Standard
scores	Deviation
2.76	2.52
2.71	2.35
2.42	2.42
1.95	2.03
1.85	2.06
1.71	2.03
6.46	2.60
3.98	2.90
3.51	2.30
3.11	2.47
2.59	2.32
	Mean scores 2.76 2.71 2.42 1.95 1.85 1.71 6.46 3.98 3.51 3.11 2.59

¹Each incident was ranked on a scale from 0 (not at all likely) to 10 (very likely). Higher scores reflect a greater perceived likelihood of each incident type occurring.

²n=344

³n=348

Preparedness

In the nearly ten years between the 9/11 attacks and the collection of this data, it was expected that agencies would report having engaged in a wide variety of activities to enhance their homeland security preparedness. Table 6 shows the percent of responding agencies who reported having taken common steps to improve their capacity to prevent, be prepared for, respond to, or recover from a major homeland security incident. The listed steps were derived from government recommendations regarding the ideal preparedness measures police departments should be taking. It should be noted the survey did not assess when agencies first began engaging in specific activities; some preparedness measures for some agencies might predate the 9/11 attacks (i.e., shared radio networks or mutual aid agreements).

Shared radio networks were the most common preparedness measure reported by the responding agencies. This is perhaps not surprising, given that smaller jurisdictions might have a greater economic motivation to merge communication systems with proximate peers as a cost-saving measure. Presumably in some cases this merged system might have been a way to provide financial and operational efficiencies (i.e., agencies throughout a rural county contracting with the sheriff's department to provide call processing and dispatch services). Mutual aid agreements specific to homeland security incidents were also very prevalent, reported by more than three-quarters of the agencies. Rural and smaller agencies have had a long-standing interest in such contractual arrangements. When resources are limited in more isolated areas it makes sense that agencies would formalize their commitments to help peers in nearby communities and jurisdictions.

Over half of the agencies also had systematic procedures to convey homeland security advisories to personnel, had written protocols for alerting proper authorities of homeland security threats/incidents, and were part of a regional task force that functioned at least in part to advance homeland security preparation. Other common homeland security preparedness measures were well-

represented across the sample, though time-specific activities were among the steps engaged in with less frequency. The least common activity was having an individual or unit assigned to handle homeland security responsibilities for the agency. Given the lack of organizational complexity generally associated with small agencies, this is not particularly surprising.

Efficacy

Preparedness measures are, of course, expected to yield specific results in the event of a homeland security emergency. As addressed earlier in this report, homeland security events are low frequency, high impact events. The latter makes it important for agencies to take such matters seriously and, within available personnel and fiscal resources, develop appropriate responses given the context of the jurisdiction. The former, however, makes it difficult to assess the value of those preparedness actions in actual application. As a surrogate for determining the actual preparation level of a given agency, respondents were asked to assess the perceived efficacy of their agency's preparation in the event of a homeland security event. Should an incident occur, agencies were asked, for example, to rate their ability to communicate and coordinate with other organizations. Responses were rated on a scale from 1 (inadequate) to 5 (excellent); 3 (adequate) was the midpoint.

The perceived efficacy levels are reported in Table 7, with only four of the fourteen items receiving a mean rating above the midpoint. In the event of a homeland security emergency, respondents perceived agency preparations were adequate in terms of: partnerships with other local responders, the ability to communicate and coordinate with other organizations; organizational knowledge and expertise about emergency response, and the ability to rapidly deploy personnel. Perhaps not surprising given the gross budget of small law enforcement agencies, respondents rated their weakest attribute as their budget to support emergency response, with this item being assessed nearly three-quarters of a point below all other items in the scale.

Table 6.

Percent of agencies taking steps or activities to enhance homeland security prevention, preparedness, response, and recovery ¹

Type of Step or Activity for Enhancement of Homeland Security ²	Mean	Standard Deviation
Public safety agencies operating in or nearby jurisdiction (including responding agency) use a shared radio network that achieves interoperability	0.910	0.287
Has in place one or more mutual aid or cooperative agreements with other law enforcement organizations that cover homeland security issues	0.790	0.408
Has in place systematic procedures ensuring that homeland security advisories/emergency notifications are distributed to appropriate personnel	0.633	0.483
Has a written directive or protocol for contacting the proper authorities in the event of a homeland security incident or threat within jurisdiction	0.592	0.492
Part of a regional interagency task force or working group that functions, in part, to address issues of prevention, preparedness, response, and/or recovery related to homeland security	0.516	0.500
Has a written response plan outlining preparedness, response, and/or recovery issues in the event of a homeland security-related incident	0.487	0.501
Has in place one or more mutual aid or cooperative agreements with non-law enforcement agencies such as transit services, public works, or other governmental agencies that cover homeland security issues	0.458	0.499
Members of agency trained in homeland security procedures in past 12 months	0.437	0.497
Members of agency participated in homeland security-focused field training or table top exercises in past 12 months	0.373	0.484
Completed an inventory of threats or hazards in jurisdiction in past 12 months	0.329	0.471
Conducted a risk assessment to identify high-risk or high-value targets or assets within jurisdiction in past 12 months	0.321	0.467
Disseminated information to members of the community in an attempt to increase citizen preparedness in past 12 months	0.262	0.441
Has individual(s) or special unit specifically assigned to address the homeland security function	0.239	0.427

¹Each question asked whether or not agencies engaged in these steps or activities. Higher mean scores indicate higher engagement in steps or activities.

²n=343

Table 7.

Perceived efficacy for each aspect of preparedness in the event of a homeland security incident involving a multi-agency response (mean scores)¹

		Standard
Policy/Program/Activity ²	Mean	Deviation
Partnerships with other local responders	3.56	0.969
Ability to communicate and coordinate with other organizations likely to		
be involved in responding to incidents	3.48	0.927
Knowledge and expertise about emergency response	3.16	0.903
Ability to rapidly deploy personnel	3.08	1.076
Knowledge and expertise about responding to homeland security-related		
incidents	2.71	0.988
Ability to receive timely intelligence information	2.68	0.993
Ability to evacuate citizens from affected zone	2.65	0.915
Availability of personnel	2.60	1.011
Ability to provide short-term (48-72 hours) food and shelter for responding		
personnel	2.53	1.149
Written emergency response plan(s)	2.49	1.070
Equipment to support effective emergency response	2.36	1.058
Level of preparedness for large-scale incidents	2.30	0.957
Training to respond to large-scale emergencies	2.27	1.049
Budget to support effective emergency response	1.56	0.835
Department Overall Capacity ³	37.44	9.64

¹Each aspect of preparedness was ranked on a scale from 1 (inadequate) to 5 (excellent). Higher scores reflect a greater perceived adequacy of each of the aspects.

²n=339

³Computed by summing the values for all 14 items and computing the mean and sd across depts.

The efficacy items were summed to create an overall assessment of respondent perceptions.

The agencies were asked to assess their efficacy on fourteen policies, programs, and activities related

with homeland security response. The summed perceived efficacy for a given agency could range from

14 to 70. The mean summed efficacy score for all survey respondents was 37.43. A score of 42.00 would

have been generated if all fourteen items were rated adequate (3.00).

Institutional Pressures

Respondents were asked a range of questions designed to assess the extent to which institutional pressures influenced their approaches to homeland security. The measures address factors that are independent of any one person in the organization; that is, they focus on the influence of other agencies, professional associations, and publications without addressing who within the organization was specifically affected by these factors.¹⁰ Table 8 reports the results of a number of questions measuring whether agency practices were influenced by the actions of their peers. In evaluating their own homeland security performance, 25.8 percent of respondents indicated they paid significant attention to other agencies like their own. An additional 59.8 percent of agencies paid some attention to similar agencies. Less than one percent of responding agencies reported that they paid no attention to similar agencies in evaluating their homeland security performance. Participating agencies were asked to what extent their agency modeled homeland security policies and practices after other agencies that they viewed as successful. The majority of agencies indicated they did engage in such modeling often (35.3 percent) or occasionally (54.9 percent).

Other sources of institutional pressure are professional associations and relevant publications. In defining homeland security practices and approaches agencies might be influenced by the resources offered by these other entities. Respondents were asked to rate the influence of four sources of influence on a three-point scale from not at all influential (0.0) to very influential (2.0). Peer agencies were reported to be the most influential. Strong influence was also indicated for professional associations and government publications. Journal articles and books were the least influential, with an average rating between somewhat influential and not at all influential. Grant programs and other

¹⁰ Weiss (1997), for example, found that cosmopolitan police chiefs were linked to organizational innovation. In the context of the present study, a reviewer noted that a chief may have transferred from a large department, bringing with him/her ideas related to homeland security preparedness. Our questions focused on the organizational- rather than individual-level. Future research might consider measuring both organizational-level attributes and individual-level characteristics in the same study (e.g., chief's education and experience).

funding opportunities were generally less influential. In relative terms, federal and state grant funding for equipment and training were most influential. Private or community funding sources were least influential in formulating homeland security approaches and practices. Table 8. Institutional pressures

In evaluating own agency's performance with respect to homeland security prevention, preparedness, response, and recovery policies and practices, to extent to which own agency pays attention to the policies and practices of other law enforcement agencies like own ^{1, 2}	
Pay significant attention	25.80%
Pay some attention	59.80%
Pay little attention	13.50%
Pay no attention	0.90%
Extent to which agency models its homeland security prevention, preparedness, response, and recovery policies and practices after other departments viewed as successful ^{3, 4}	
Often models	35.30%
Occasionally models	54.90%
Never models	9.80%
Influence of resources in formulating current approach or practices related to	
homeland security prevention, preparedness, response, and recovery (mean scores) ^{5, 6,}	
Other police or sheriff's departments	1.26 (0.60)
Professional associations	1.06 (0.67)
Government publications	0.96 (0.54)
Journal articles or books	0.79 (0.56)
Influences of funding formulating current approach or practices related to homeland	
security prevention, preparedness, response, and recovery (mean scores)	
Federal or state grants providing homeland security equipment	1.04 (0.80)
Federal or state grants supporting homeland security training	1.01 (0.79)
Federal or state grants providing personnel resources	0.78 (0.82)
Private, corporate, or community funding or contributions	0.43 (0.67)

¹n=341

²Standard deviation = 0.6

³n=346

⁴Standard deviation = 0.6

 5 Each resource was ranked on a scale from 0 (not at all influential) to 2 (very influential). Higher scores reflect a greater reported influence of each of the resources. Standard deviations are 6 n=306

⁷Each resource was ranked on a scale from 0 (not at all influential) to 2 (very influential). Higher scores reflect a greater reported influence of each of the resources.

⁸n=289

Connections to Large Agencies

As explained in the Research Methodology section, sampled agencies were mapped in relation to all local agencies employing 250 or more sworn officers. This allowed for the identification of the large agencies closest to each sampled agency. The survey booklet listed this identified agency and asked respondents a number of questions regarding connections to the identified agency. The logic for this approach was explained earlier and is addressed further in the Discussion section.

Respondents expressed strong agreement that the problems faced by the identified large agency were not applicable to their own agency (Table 9). Such an assessment makes conceptual sense, as larger agencies would generally be categorized as urban and in the aggregate would be expected to have more problems with violent crime, gangs, and drug markets. The large agencies were generally rated as influential in the law enforcement field, though they were not necessarily seen as being leaders in homeland security policies or practices. Respondents did not express that they necessarily considered the practices of the large agency before adopting their own homeland security policies and practices. The low level of observed influence large agencies had on small agency respondents might have been a function of distance; respondents disagreed that the physical proximity of the two jurisdictions required frequent communication about homeland security matters and most did not have formal cooperative agreements with the large agency. Respondents agreed they were more likely to work with local peers of similar size when addressing homeland security measures.

Table 9.

Connections to the nearest large agency with 250 or more sworn officers (mean scores)^{1,2}

		Standard
Connection	Mean	Deviation
Own agency is more likely to work with regional organizations of similar size than the large agency on homeland security matters	3.65	1.058
Problems faced by the large agency are not applicable to own agency	3.42	1.03
Large agency is very influential in the law enforcement field	3.02	0.91
Large agency is a leader among peers in homeland security policies and practices	2.77	0.87
Own agency more likely to enact homeland security policy or practice if large agency has already enacted the same policy or practice	2.38	1.05
Own agency usually adopts new homeland security policies or practices before the large agency adopts a similar policy or practice	2.36	0.87
Before adopting a new homeland security policy or practice, own agency considers whether the large agency has adopted that same policy or practice	2.24	1.01
Own agency often discusses new homeland security policies or practices with large agency before adopting them	1.94	0.88
Physical proximity between jurisdictions requires frequent communication about homeland security matters	1.87	0.98
Formal and/or informal cooperative or mutual aid agreement with large agency	1.89	1.05
Overall connections score ³	24.67	5.29

¹Each statement was ranked on a scale from 1 (strongly disagree) to 5 (strongly agree). ²n=332

2

³Computed by summing the scores for each item and calculating the mean and sd across depts. In developing the measure, three items were reverse coded: more likely to work with regional organizations, problems faced by large agencies are not applicable to own agency, and adopt policies before large agency. Since these items reflect weaker connections, they are reverse coded for the purposes of creating the overall connections score.

Interaction with Large Agency Peers

Responding agencies provided details about the frequency of interactions they had with the

identified large agency. These interactions included a number of reasons agencies might routinely have

interactions with one another. Respondents were asked to indicate the frequency on a scale from 0

(never) to 5 (at least once per week); other intervals included 4 (2-3 times a month), 3 (about once a

month), 2 (2-8 times per year), or 1 (1-2 times per year). On the whole, interactions between

respondents and the identified proximate big-city agency were infrequent. Crime related intelligence

was shared 1-2 times per year. All other interactions were, on average, occurring between 1-2 times per

year and never.

Table 10.

Interaction with the nearest large agency with 250 or more sworn officers (mean scores)¹

		Standard
Interaction ²	Mean	Deviation
Share crime-related intelligence	1.02	1.50
Share terrorism-related intelligence	0.51	1.15
Train on issues unrelated to homeland security	0.33	0.78
Discuss crime control strategies	0.30	0.84
Exchange information on successful programs or practices	0.30	0.76
Discuss mutual aid agreements about homeland security matters	0.21	0.70
Discuss equipment sharing related to homeland security prevention,		
preparedness, response, and recovery	0.17	0.60
Jointly plan for security at a large event	0.15	0.54
Participate in joint homeland security training exercises	0.13	0.47
Jointly apply for grant funding related to homeland security prevention,		
preparedness, response, and recovery	0.11	0.46
Overall interactions score	3.24	6.13

 1 Each statement was ranked on a scale from 0 (never) to 5 (at least once per week). 2 n=339

MULTIVARIATE RESULTS

The overall model proposed includes measures derived from three organizational theories as well as indicators of relational and physical proximity. Several of the model's components (institutional pressures, terrorism-related risk, non-terrorism related risk) are not directly observed but, rather, measured as latent constructs. Although structural equation modeling (SEM), the technique employed in the present study, can simultaneously address measurement (e.g., confirmatory factor analysis) and structural models (e.g., predictive path models), Anderson and Gerbing advocated establishing the validity of measurement models first through a two-step modeling approach (see also Schumacker & Lomax, 2010). It is necessary to first demonstrate that observed indicators measure the hypothesized latent constructs before using the same constructs in a predictive model of preparedness and efficacy.

Because of the complexity of the analysis, we laid out the results stepwise in five models. The first two models evaluated the measurement of latent factors: institutional pressures and perceived allhazards risk (terrorism-related and non-terrorism). Based on previous research in policing and homeland security practices, we wanted to verify the validity of the latent factors. In the third model, we tested out the structural relationships between institutional pressures with the data on preparedness (Burruss, Giblin, & Schafer, 2010). The fourth model, also a structural model, tested the effect of proximity with large city peers on terrorism preparedness and organizational efficacy. This model was developed from the data in the present study and represented a new direction in the analysis. The fifth and final structural model examined preparedness when relational and proximal distance were considered simultaneously with institutional pressures, controlling for risk of homeland security events.

A good fitting model would indicate that the proposed path model successfully recreated the observed correlations among all the variables. The structural models are regressions, and SEM allows several regression equations to be considered simultaneously. Each model's path diagram shows the hypothesized relationships through straight arrows for a direct causal path and curved arrows for

correlations. Each of the models was evaluated based on standard fit indicators for weighted least squares and maximum likelihood estimators as well as our expectations from our previous work in this area (see, for example, Burruss & Giblin, in press; Burruss, Giblin, & Schafer, 2010; Giblin & Burruss, 2009; Schafer, Burruss, & Giblin, 2009).

The four fit indices used to assess the theoretical model were: (1) the comparative fit index (CFI), (2) the Tucker-Lewis index (TLI), (3) the root mean square error of approximation (RMSEA), and the (4) standardized root mean square residual (SRMR). What is most important, as Gau (2010) pointed out, is the value of each index relative to established cutoff criteria suggestive of a good fit. CFI values range from 0 to 1 with cutoff values at or above 0.95 representing a good fitting model. A good-fitting model will generally have a TLI value exceeding 0.90 although 0.95 represents a more stringent cutoff criterion, though TLI values, unlike the CFI, may exceed 1.00 (Bryne, 2012; Hu & Bentler, 1999; Schumacker & Lomax, 2010). The RMSEA takes into account the complexity of the overall model (number of degrees of freedom); scores below 0.06 point to a good fitting model, though others have identified a cutoff criterion of 0.08 (Byrne, 2012; Hu & Bentler, 1999; Schumacker & Lomax, 2010). Finally, SRMR cutoff values of .08 have been recommended (Hu & Bentler, 1999). All measurement and structural models were evaluated using Mplus, a common SEM software program (Muthen & Muthen, 2007).

Measurement or structural models including institutional pressures (models 1, 3, and 5) were calculated using Mplus's WLSMV estimator, which adjusts for categorical variables in the measurement models. The other two models used the maximum likelihood estimator (Muthen & Muthen, 2007). In the path model diagrams, the hypothesized path models are presented with error terms, correlated predictors, and direct paths. In figures showing the results, only direct paths are shown for clarity.

Institutional Pressures Measurement Model

Based on our previous work on a measurement model of institutional pressures in policing (Giblin & Burruss, 2008; Burruss, Giblin, & Schafer, 2010), we began with a second order factor model, where the highest order latent factor was institutional pressures. We first assessed the fit of a CFA model with an institutional pressures model used in an earlier study of terrorism preparedness in Illinois (Burruss, Giblin, & Schafer, 2010). This institutional pressures factor was then designated as having three first order latent factors: mimesis, publications, and professional associations. Each of these first-order factors was estimated through three observed measures. For mimesis, the three observed measures were 'paid attention to other agencies,' 'modeled practices after other agencies,' and 'influence of other agencies on practices.' The latent factor professional associations was estimated through the 'influence of professional associations,' 'academic courses,' and 'federal and state training.' Finally, publications included the influence of journals and books, government publications, and legislation.

The fit of model 1, based on our earlier work on terrorism preparedness and not shown here, was borderline good (p < 0.000; CFI = 0.910; TLI = 0.904; RMSEA = 0.126). We re-estimated the institutional pressures model based on a more parsimonious one from research on community policing (Giblin & Burruss, 2008). To conform to this model, we dropped from mimesis 'influence of other agencies on practices'; from professional associations we dropped 'federal and state training'; and from publications we dropped 'legislation' (see Figure 2). This model proved to be a better fit to the data (p = 0.015; CFI = 0.985; TLI = 0.967; RMSEA = 0.077).

The second measurement model and the standardized loading coefficients are shown in Figure 3 and the factor loadings reported in Table 11. Note that all factor loadings are greater than 0.500 with the exception of institutional pressures on mimesis, though it is still above the acceptable level of 0.300 (Kline, 2005). The correlated error terms from the variables 'attention to other agencies' and 'professional associations' were noted in the modification. Because of the fit indices and because it confirms the model from previous research using different data, we used this model for institutional pressures.

In sum, two measurement models were proposed to estimate institutional pressures. The first model, based on one from a previous study predicting terrorism preparedness, did not fit the data as well as the more parsimonious model from a study on community policing. The second model is a reduced version from the first, dropping one indicator from each of the first order factors.



Figure 2. Institutional pressures measurement model (Model 1).

Notes: Straight arrows are standardized path coefficients. Paths marked "e" are error terms. Curved arrows represent correlation among error terms.

Figure 3. Results of institutional pressures measurement model (Model 1).



Notes: Straight arrows are standardized path coefficients. Correlations among error terms have been omitted for clarity. * p < 0.05 ** p < 0.01 *** p < 0.001

Indica	tors		Standardized factor loading	R ²
Mimetic ¹			0.392	0.154
	Model other a	agencies ¹	0.946***	0.895
	Attention oth	er agencies	0.606***	0.367
Public	ations		0.933***	0.604
	Journals/bool	ks ¹	0.751***	0.323
	Govt. pubs		0.987***	0.564
Profes	sional		0.777***	0.871
	Courses ¹		0.735	0.973
Associations			0.568***	0.541
Model	Fit			
)	ζ ² (p-value)	12.290(0.0153)	
	C	df	4.000 ²	
	٦	ΓLI	0.985	
	(CFI	0.985	
	F	RMSEA	0.077	
	١	WRMR	0.510	

Table 11.Institutional Pressures Measurement Model

* p<.05, **p<.01, ***p<.001

¹Indicates that the latent construct or observed variable served as the scale. First order latent constructs are in boldface. ²The chi-square value and degrees of freedom are estimated in a way

that corrects for the WLSMV estimator. Only the p-value should be interpreted for model fit.

All-Hazards Risk and Homeland Security Preparedness

Our all-hazards risk measurement model was based, in part, on a terrorism-related risk measure

also used in an earlier study (Burruss, Giblin, & Schafer, 2010). Terrorism-related risk, in that research,

was designated as a first order factor model comprised of six variables, including incidents involving

chemical, biological, radiological, conventional explosives, cyber, and military weapons. To create an all-

hazards model, we added the perceived likelihood of five additional non-terrorism related homeland security events: chemical or radiological spill, severe weather, non-terrorism explosion, structural failure, and medical pandemic. Because we added risk of non-terrorism related homeland security events to the terrorism measures, we first designated a model where all events loaded on a single latent factor (see Figure 4, Panel A). We also considered risk as a two-factor solution where terrorism-related risk and non-terrorism risk were two correlated latent factors (see Figure 4, Panel B).

The single factor solution did not fit the data (p = 0.000; CFI = 0.863; TLI = 0.831; RMSEA = 0.129; SRMR=0.068). In contrast, the two factor-solution (results presented in Figure 5 and Table 12) provided fit the data well (p = 0.000; CFI = 0.963; TLI = 0.952; RMSEA = 0.054; SRMR=0.035). An examination of the modification index indicated that correlated error terms between chemical terrorist attack and non-terrorism related chemical spill would improve model fit. This suggests that both measures have a common source of error. Given that these two measures both consider chemical events, we did correlate the error terms. Additionally, both latent factors were correlated, which resulted in a moderately strong and significant association (r=0.732).

The all-hazards risk measurement, model 2, indicated a two latent factor solution where risk of a terrorist attack and non-terrorism events loaded on two separate latent factors. While empirically separate, both measures are still related as indicated by a moderately strong correlation. Given that it fit the data and expectations, we used these two latent factors in the structural models.





Notes: Straight arrows are standardized path coefficients. Paths marked "e" are error terms. Curved arrows represent correlation among error terms or factors.



Figure 5. Results of risk measurement model (Model 2).

Notes: Straight arrows are standardized path coefficients; curved arrow represents correlation among factors. Correlations among error terms have been omitted for clarity.

Table 12. *Risk Measurement Model*

Indica	tor	Standardized factor loading	R ²
Terrorism Risk			
Chemical ¹		0.787***	0.619
Biological		0.749 ^{***}	0.560
Radiological		0.758 ^{***}	0.574
Conventional	explosive	0.867***	0.751
Cyber terroris	m	0.700***	0.490
Military weap	ons	0.762***	0.580
Non-Terrorism I	Risk		
Structural failu	ure ¹	0.695	0.483
Severe weathe	er	0.553***	0.305
Explosion		0.817***	0.667
Chemical spill		0.633***	0.401
Medical pande	emic	0.696***	0.484
Model fit			
	χ^2 (<i>p</i> -value)	111.735 (0.000)	
	df	42.000	
	TLI	0.952	
	CFI	0.963	
	RMSEA	0.069	
	SRMR	0.035	

* p<.05, **p<.01, ***p<.001

¹Indicates that the latent construct or observed variable served as the scale. First order latent constructs are in boldface.

Institutional Pressures and Homeland Security Preparedness

The first structural model (model 3) predicted homeland security practices through institutional pressures, controlling for agency size, both risk measures, and grants (hypothesized relationships shown in Figure 6). The main hypothesis is that greater institutional pressures would increase homeland security preparedness net of risk, size, and grants. In addition to the direct effect of institutional pressures and other control variables, we also correlated several exogenous predictors of preparedness (indicated by curved arrows in Figure 6). We did this because we expected some predictors to be associated. For example, the institutional pressures factor and both risk latent factors were correlated (Burruss, Giblin, & Schafer, 2010). As risk increases, police agencies may explore potential preparedness options: looking to other agencies, reading publications, and attending professional associations. On the other hand, the causal direction might be reversed: through the institutional environment, agencies discover natural, accidental, or terrorism vulnerabilities, and then increase their preparedness.

As another example, the factor 'institutional pressures' was correlated with grants because resource dependency and institutional pressures are likely related for two possible reasons. First, agencies learn about funding opportunities through peer networks and then apply (i.e., institutional pressures affect grant activity). Second, the process of writing grants alerts an agency to what peers are doing about homeland security through communications, publications, and professional associations



Figure 6. Hypothesized structural path model for terrorism preparedness through institutional pressures and risk (Model 3)

Notes: Straight arrows are standardized path coefficients. Paths marked "e" are error terms. Curved arrows represent correlation among error terms.

(i.e., funding activity increases knowledge of institutional pressures). A correlation allows for a nonspecified causal path allowing for either explanation.¹¹

The results for structural model 3 are shown in Figure 7 and Table 13 (standardized path coefficients are shown). The model fits the data: p = 0.001; CFI = 0.930; TLI = 0.965; RMSEA = 0.048; WRMR=0.778. The predictors explained about forty percent of the variation in homeland security preparedness (R^2 =0.396). Institutional pressures increased homeland security preparedness (b=4.803; p < 0.001). Agency size, as a control variable, was also positive and significant (b=0.109; p < 0.001), indicating that agencies with more officers were more likely to increase their preparedness activities. Neither of the risk measures predicting preparedness was statistically significant. Grants, counter to the hypothesized relationship, were statistically significant but negative (b=- 0.576).

The negative effect of grants on preparedness was counter to expectations. This observed negative relationship possibly was due to a suppression effect. A suppression effect occurs when the relationship between an independent variable (x_1) and dependent variable (y) changes unexpectedly when a third variable (x_2) is added. The attenuation of x_1 on y is expected in partial correlation when controlling for other exogenous variables; however, suppression is a case where x_1 and y have weak bivariate correlation that becomes stronger, or even flips direction when x_2 is added. In this instance, grants and preparedness have a non-significant, positive, and weak bivariate correlation ($r_{grants,preparedness}$ = 0.058). Furthermore when the correlation between institutional pressures and grants is set to zero in the model, grants are no longer significant or negative. This suggests that the latent factor 'institutional pressures' is enhancing grants so that grant activity without the effect of institutional pressures is now negative. In other words, agencies that are not influenced by institutional pressures but seek grants

¹¹ It is also possible, of course, that these correlations exist for a third, unknown cause.



Figure 7. Results for structural path model for terrorism preparedness through institutional pressures and risk (Model 3).

Notes: Path numbers are standardized regression coefficients. Correlations among predictors and error terms have been omitted for clarity. Solid lines represent significant paths; dotted lines represent non-significant paths. * p < 0.05 ** p < 0.00 *** p < 0.01 *** p < 0.001

	<u>Model 3 (n=350)</u>			Mode	<u>Model 4 (n=350)</u>			<u>Model 5 (n=350)</u>		
	Institutional Pressures and Risk			k Proxin	Proximity and Risk			Full Model		
	Estimate	s.e.	β	Estimate	s.e.	β	Estimate	s.e.	β	
Direct Effects										
Institutional Pressures	4.803***	0.996	0.671	_	_	_	4.354***	0.864	0.708	
Grants	-0.576***	0.158	-0.333	_	_	_	-0.466***	0.140	-0.288	
Terrorism Risk	-0.018	0.178	-0.010	0.292*	0.157	0.167	-0.127	0.182	-0.075	
Non-Terrorism Risk	0.272	0.229	0.126	0.162	0.190	0.078	0.290	0.233	0.144	
Agency Size	0.109***	0.032	0.204	0.076**	0.031	0.143	0.099**	0.037	0.197	
Interact (log)	—	—	—	0.890***	0.195	0.269	0.939***	0.219	0.301	
Connect	—	—	—	-0.064	0.035	-0.101	-0.060	0.036	-0.102	
Miles (log)	_	_	—	0.502	0.268	0.120	0.558*	0.295	0.141	
Rural Continuum Code	_	—	—	-0.154*	0.080	-0.117	-0.183**	0.097	-0.142	
Indirect Effects										
Connect via miles (log)	_	_	_	0.116	0.068	0.028	0.108	0.068	0.027	
Interact via miles (log)	—	_	—	-0.426***	0.109	-0.102	-0.482***	0.142	-0.121	
Preparedness R ²		0.39	6		0.173	ł		0.540)	

Table 13.Structural models for homeland security preparedness.1

* p < 0.05; ** p < 0.01; *** p < 0.001.

¹The model coefficients reported here are from the complete path models (Figures 3, 4, and 5). Only the direct and indirect effects on homeland security preparedness are reported here for ease of presentation. SEM Model fit indices are reported in the figures.

engage in fewer homeland security preparedness. We only speculate about this explanation and do not explore it further here.

Interaction with Agency's Big City Peer and Homeland Security Preparedness

Structural model 4 (see Figure 8) hypothesized that the risk measures and agency size would

increase homeland security preparedness. The impact of distance to an agency's big city peer was also

modeled through distance in miles (logged), interaction (logged), and connection, controlling for the

urban/rural continuum. In addition, several of the measures were designated to have indirect effects

through other variables. For example, the rural continuum code was designated as having a direct negative effect through the risk measures, which then predicted preparedness. The continuum code, therefore, had both a direct and indirect effect to preparedness. Notably, distance in miles (logged) was hypothesized to have a direct negative effect on preparedness, and it had indirect negative effects through interaction (logged) and connections.

The model was a good fit to the data: p = 0.000; CFI = 0.964; TLI = 0.954; RMSEA = 0.044; SRMR=0.036. The results of the effect of predictors on preparedness are shown in Figure 9 and Table 13. Neither risk measure on preparedness was significant. Risk of terrorist attack significantly predicted an increase in both peer interactions (b= 0.098) and connections (b=0.606). Risk of non-terrorist events did not significantly impact either interaction or connection. Finally, the rural continuum code did not significantly affect either of the risk measures.

Of the three variables that measured relational and proximal collaboration with an agency's big city peer (interact (logged), connect, and logged miles), only interaction had a significant positive effect on preparedness (b= 0.890). However, distance in miles did have a significant negative indirect effect through interaction (b=-0.426). Thus, the father away an agency is from its peer, the less interaction it had, which reduced the amount of preparedness.

As for the control variables, agency size significantly increased preparedness (b= 0.076) and the rural continuum code significantly reduced preparedness (b=- 0.183; p=0.058). In other words, more officers increased preparedness while agencies in more rural areas engaged in less preparedness activities. Both of these results were as expected. Finally, homeland security preparedness significantly increased perceptions of organizational efficacy (b=0.724). The amount of variation explained in efficacy was about 36 percent through preparedness.¹²

¹² The R² for efficacy is also explained by the indirect effects of exogenous predictors through preparedness.



Figure 8. Hypothesized structural path model for terrorism preparedness and efficacy through risk and distance to big city peer (Model 4).

Notes: Straight arrows are standardized path coefficients. Paths marked "e" are error terms. Curved arrows represent correlation among error terms.



Figure 9. Results for structural path model for terrorism preparedness and efficacy through risk and distance to big city peer (Model 4).

Notes: Path numbers are standardized regression coefficients. Correlations among predictors and error terms have been omitted for clarity. Solid lines represent significant paths; dotted lines represent non-significant paths. * p < 0.05 ** p < 0.01 *** p < 0.001

Full Structural Model Predicting Homeland Security Preparedness

Model 5 predicted homeland security preparedness and organizational efficacy (see Figure 10). This final model included the risk measures, institutional pressures, and the proximal and relational interaction measures: interact, connect, and miles. Grants and agency size were included as control variables; preparedness was predicted to increase efficacy. This hypothesized model is shown in figure 5a.

Model 5 fit the data: p = 0.001; CFI = 0.932; TLI = 0.961; RMSEA = 0.043; WRMR=0.814. The results are presented in Figure 11 and Table 13. This model explains about 53 percent of the variation in homeland security preparedness. The direction and significance for this model produced similar results as model 3 (institutional pressures) and model 4 (big city peer interactions); that is, none of the predictors of preparedness lost significance or changed direction. Examining this final model allows a comparison of the standardized regression coefficients for preparedness and thus allows us to examine which predictors had the largest impact on preparedness. The predictor with the largest standardized coefficient was institutional pressures (β =0.708), followed by interactions (β =0.298), grants (β =-0.288), size (β =0.166), and rural continuum code (β =-0.157). The remaining predictors (logged miles, connections, terrorism and non-terrorism risk) did not achieve statistical significance. Preparedness had a positive, significant effect on efficacy, which explained about 53 percent of its variation.



Figure 10. Full structural model for terrorism preparedness and efficacy (Model 5).

Notes: Straight arrows are standardized path coefficients. Paths marked "e" are error terms. Curved arrows represent correlation among error terms.



Figure 11. Full structural model for terrorism preparedness and efficacy (Model 5).

Notes: Path numbers are standardized regression coefficients. Correlations among predictors and error terms have been omitted for clarity. Solid lines represent significant paths; dotted lines represent non-significant paths.

* p < 0.05 ** p < 0.01 *** p < 0.001

DISCUSSION AND CONCLUSIONS

Our prior research assessing homeland security innovation lent support for the use of an organizational theory framework in the present analysis. Findings from a study of Illinois agencies suggested that while smaller agencies reported less preparation, there was the possibility of intragroup variation. This study of small agencies across the country was designed to further inform an understanding of how preparedness and efficacy functioned across small agencies, and whether physical and relational proximity were relevant. The results confirm that organizational theory remains a strong explanation for the actions small municipal agencies take in addressing homeland security considerations. The findings further suggest that while there is intragroup variation in perceived risk, preparedness, and efficacy, that variation is more complex than anticipated.

Agencies made a conceptual distinction between terrorism-related and non-terrorism-related homeland security risks; the latter were not statistically significant predictors of preparedness in the full structural model. The former, however, did affect relational proximity. Specifically, agencies that perceived their jurisdiction to be at greater risk for terrorism-related homeland security events were more likely to interact with large agencies. In turn, these interactions shaped the preparedness measures taken by the respondents. It is surprising that non-terrorism-related risks do not influence preparedness. Given the all-hazards approach that is generally advanced in homeland security literature and training, it would be expected that both types of risk would exert an influence. That data do not provide a direct explanation for this finding. Regardless of the risk motivating preparedness activities, agencies that have pursued such steps would be expected to be more efficacious in incident response. In other words, even though agencies might be engaging in preparation based on a perceived terrorismrelated risk, those preparatory activities would be expected to yield a better response to any type of homeland security event, including those that are not terroristic in nature.
The focus on terrorism related events emerging post-9/11 might also be seen as a distinct issue on the part of small agencies. One possible reason could be that small agencies were already accustomed to dealing with non-terrorism related events. As such, they might feel less pressure to modify their preparatory steps, which might tend to be more informal in nature. The historic way of conceiving of and planning for non-terrorism critical events in small jurisdictions could be predicated on the use of informal linkages and personalized relationships, as opposed to formalized connections, policies, and training. The small-town chief knows where to locate heavy machinery in responding to a building collapse after a tornado; the chief knows who can be called upon to provide (and likely operate) a boat when the agency needs search and rescue assistance during a flood. As such, perhaps leaders see non-terrorism events as distinct incidents that are still best handled at the local level through personal connections and improvised responses. Consistent with how homeland security efforts have been framed, agencies might feel the need to pursue more formalized and organized prevention and response strategies in concert with both other law enforcement agencies and other emergency service providers.

Institutional pressures remained one of the stronger factors in the structural model. Agencies that were more cognizant of trends in the profession and that paid more attention to professional literature and the actions of peers were more likely to engage in preparedness activities. The results of the analysis suggest a salience for the larger environment within which agencies are situated; professional and government publications, training, professional associations, and the actions of peer agencies exert influence. This reinforces our prior works examining institutional theory by once again validating those external bodies and individuals (such as training organizations, professional associations, government agencies, scholars, and other law enforcement agencies) can help shape the structures and activities of law enforcement agencies. Agencies are influenced by change agents who can spread ideas and encourage the adoption of certain practices (see Rogers, 1995; Rogers &

Shoemaker, 1971). Various communication and knowledge channels do exert an influence by diffusing ideas and innovations through the policing profession. Publication channels, emulation of peers, ideas shared at professional meetings, and knowledge gained through coursework may provide a promising way to spread innovation within the industry. The cross-sectional nature of the data does confound a clear interpretation of this specific relationship. Conceptually, however, we would expect that agencies more connected with broader trends in the policing profession would then take more preparatory actions as an extension of the awareness of those institutional pressures to innovate.

The data derived through this grant project provided a national understanding of the hypothesized relationships, while also including measures of physical and relational proximity. These findings suggest that small agencies, even when geographically isolated, can still benefit from the preparedness levels typically found in large (and typically urban) police departments (e.g., Davis et al., 2004; Randol, in press; Pelfrey, 2007). In effect, smaller agencies that had more interactions with large peers reported more preparation. Physical distance only mattered to the degree that it conditioned those interactions. A greater geographic separation between agencies in a large-small agency dyad did not, by itself, reduce preparedness in the smaller jurisdiction. Rather, increased distance tended to reduce interaction; it was that interaction that exerted an influence on small-agency preparedness. Physical proximity is not, of course, the only factor conditioning interactions and connections between agencies in the large-small dyad. The nature of that distance (i.e., mountains or bodies of water) could be presumed to impede interactions, as could crossing state borders or transiting appreciable socio-cultural or political differences. The present data do not allow us to understand the other geographic and social factors that might shape the legal, ideological, political, technological, and socio-economic distances that could divide two agencies in a large-small dyad.

Another important finding is the continued confirmation that preparedness increases perceived efficacy. As addressed earlier in this report, while the latter is potentially distinct from actual efficacy

should a critical event take place, the low-frequency of homeland security events makes it difficult to measure efficacy in more objective terms. It is clear that agencies more involved in preparedness perceive that they would be more effective in responding to a homeland security incident. The breadth of the efficacy measures would tend to reinforce the measure, while subjective in this study design, likely reflects objective realities. Prevailing professional literature and thought would support that agencies with the equipment, training, communication networks, and plans to respond to homeland security events should experience a more effective outcome. That is not to say that agencies would not encounter challenges or weaknesses in some aspects of incident response. It would be expected, however, that the belief those aspects of incident response are generally robust would reflect some level of reality and that an agency's preparation would yield desired and planned outcomes in application.

What is unknown is whether the benefits of physical and relational proximity to large agency peers can be sustained over a lengthy period of time. From a policy perspective, it is extremely important to know whether preparedness steps are fleeting in nature, a product of the increasing attention to homeland security that will wane over time. Clarke and Chenoweth (2006) suggest that the asymmetry in incentives that emerge from collaborative relationships may ultimately disadvantage certain organizations. For small departments, there is tremendous incentive to participate and coordinate with external, particularly large agency peers. These collaborations enable the smaller department to reap some of the rewards associated with size including extra resources and training opportunities. The asymmetry occurs because the large agency is unlikely to reap similar incentives from the collaborative relationship. The larger partner would presumably be providing more resources and personnel to assist smaller agencies; the likelihood the large agency would be called upon to lend aid is substantial and the impact appreciable, while smaller agencies would be less likely to have to lend aid to larger peers and, when called to do so, would have appreciably fewer staff and resources to offer.

Policymakers must find ways to equalize the incentives for agencies. Funding, especially for task forces, partnerships, or other collaborations may facilitate small agency preparedness indirectly by promoting interactions (Clarke & Chenoweth, 2006; Prante & Bohara, 2008). Similarly, funding for equipment to large agencies, given the economies of scale, is appropriate but the stipulations could be placed on the money requiring regional sharing of the equipment in times of need or the donation of old equipment to smaller agencies over time (as one survey respondent noted). Thus, organizations large and small would see benefits.

While this study offers insight into the importance of physical and relational proximity and the relevance of institutional forces, it is not without limitations. First, our definition of nearest large (250+ FT sworn officers) peer was restricted to only municipal law enforcement agencies. By specifying the nearest agency for respondents, we successfully accomplished this goal and limited respondent error (e.g., situations where a respondent named a more distant agency or an agency with fewer than 250 sworn officers). However, by limiting the definition of large peers to only municipal agencies, we may have missed the fact that small departments contact other, more local large agencies such as state police posts or sheriffs' departments. Many departments in our sample indicated that the state police was the large agency (irrespective of type) contacted most often for homeland security purposes. From a policy perspective, this means that it may be just as important to facilitate contact with nearby agencies of any type. Similarly, the local sheriff may be a primary source for interagency collaboration. However, less than five percent of sheriffs' departments meet the criteria of a large agency used in the present study (Reaves, 2011). Future research might examine whether small agencies cross significant distances to work with large sheriffs' departments in addition to or in lieu of their local department.

Second, a cross-sectional research design was used leading to difficulties in establishing the true causal ordering of variables. For example, it is possible that preparedness steps alter the level of perceived risk of both terrorism-related and non-terrorism events. A longitudinal research design is

more appropriate for disentangling these time order issues. Future studies might advance the understanding of homeland security innovation and agency interaction by tracking panels of agencies over time; similar methodologies could also enhance the understanding of police innovation in other contexts, something which is largely absent in studies of police organizations, change, and the diffusion of new practices across the profession.

Despite these limitations, the study findings confirm many elements of what would be expected about the relationship between large and small agencies in the context of homeland security efforts. Small agencies, like their large peers, demonstrate an association between perceived terrorism risks and preparatory actions. It remains unclear whether risk drives preparation or whether preparation elevates the perception of risk. Interaction with large agency peers is associated with more preparatory measures; small agencies that were close to their larger peers were more likely to engage in such interactions and report connections. Finally, though it is difficult to truly evaluate whether preparation actually enhances responses to critical events (given the infrequent nature of even weather-related disasters), perceived organizational efficacy can be used as a proxy for the presumed benefits of preparatory actions. Consistent with our previous finding using agencies of all sizes in Illinois, this national sample of small agencies perceived greater efficacy in responding to critical events as the volume of preparatory behavior increased. The next step is to develop mechanisms for validating perceived efficacy as a proxy for actual efficacy during homeland security events. Given the rarity of homeland security incidents, researchers will either have to employ a small sample case study methodology or rely upon large sample research using more commonly occurring incidents as the focus (e.g., weather-related events). For example, community survey responses following a homeland security incident could be compared to known police perceived efficacy data. Alternatively, police agencies could be asked to assess their responses during known incidents (e.g., tornados, blizzards, etc.) that fit within the larger all-hazards framework.

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APPENDIX A:

CROSS-TABULATION TABLES

The major concepts in this study (risk, preparedness, and efficacy) were subject to further examination based on respondent agency size (as reported in the 2004 Census of Law Enforcement Agencies conducted by the Bureau of Justice Statistics), the jurisdiction's classification on the ruralurban continuum code, and the distance (expressed in miles) between the respondent and the nearest large agency identified by the research team. Though all agencies would generally be considered "small," a preliminary examination of responses by categorical size classifications allows for provisional consideration of within-group variation. Likewise, the use of the continuum codes to array the major concepts in a bivariate manner can provide a tentative visualization of whether agencies differed based on their positions in metropolitan versus non-metropolitan regions of varying sizes. Distance to the nearest large agency allows for consideration of whether geographic proximity relates with risk, preparation, or efficacy. Bivariate consideration is provided to afford a better understanding of how the data arrayed across the three predictors (size, continuum code, and distance).

	Agency Size ²								
Type of Incident	1-5	6-10	11-15	16-20	21-25				
Terrorism-related incident ³									
Cyber-terrorism	2.31	3.29	2.87	4.00	2.89				
	(2.45)	(2.59)	(2.44)	(2.55)	(2.22)				
Conventional explosive	2.55	3.16	2.23	3.43	2.28				
	(2.41)	(2.44)	(1.77)	(2.34)	(2.16)				
Chemical	2.31	2.76	2.28	3.24	1.33				
	(2.50)	(2.45)	(2.27)	(2.34)	(1.28)				
Biological	1.83	2.36	1.51	2.67	1.33				
	(2.07)	(2.22)	(1.34)	(1.98)	(1.50)				
Terrorism incident involving military weapons	1.56	2.30	1.54	2.95	1.89				
	(1.92)	(2.21)	(1.67)	(2.42)	(2.27)				
Radiological	1.55	2.03	1.62	2.24	1.33				
	(2.13)	(2.00)	(1.93)	(1.67)	(1.61)				
Non-terrorism related incident ⁴									
Severe weather, earthquake, or wildfire	6.37	6.67	6.21	6.90	6.26				
	(2.60)	(2.58)	(2.59)	(2.79)	(2.71)				
Chemical spill or radiological leak	3.76	4.38	3.87	4.67	3.63				
	(2.96)	(2.95)	(2.85)	(2.56)	(2.48)				
Medical pandemic	3.34	3.87	3.49	3.71	3.37				
	(2.36)	(2.40)	(2.01)	(2.03)	(2.06)				
Explosion involving mass casualties	3.04	3.16	2.90	3.76	3.21				
	(2.57)	(2.52)	(2.11)	(2.34)	(2.07)				
Structural failure involving mass casualties	2.41	2.79	2.31	2.90	3.63				
	(2.34)	(2.52)	(1.69)	(1.81)	(2.52)				

Table A1. Perceived likelihood of homeland security incidents occurring within the next five years (mean scores), by agency size¹

¹Each incident was ranked on a scale from 0 (not at all likely) to 10 (very likely). Higher scores reflect a greater perceived likelihood of each incident type occurring. Standard deviations are reported in parenthesis.

²Number of sworn full-time officers as reported in the 2004 Census of Law Enforcement

³n=344

⁴n=348

able A2.	
Perceived likelihood of homeland security incidents occurring within the next five years, by continuum code 1	

	Rural-Urban Continuum Code									
	P	/letropoli	tan			Non-Me	tropolita	า		
Type of Incident	1	2	3	4	5	6	7	8	9	
Terrorism-related incident ²										
Cyber-terrorism	3.29	2.74	2.50	2.74	3.15	2.22	2.78	2.61	2.82	
	(2.28)	(2.43)	(2.44)	(2.48)	(2.93)	(2.62)	(2.49)	(2.31)	(2.78)	
Conventional explosive	2.82	2.85	2.74	2.77	3.15	2.30	2.65	2.39	2.68	
	(2.42)	(2.41)	(2.25)	(2.36)	(2.66)	(2.37)	(2.29)	(1.93)	(2.61)	
Chemical	2.55	2.35	2.56	2.56	2.77	1.97	2.43	1.92	2.62	
	(2.42)	(2.17)	(2.54)	(2.45)	(2.78)	(2.37)	(2.59)	(1.89)	(2.47)	
Biological	2.24	2.18	2.02	1.82	1.79	1.41	2.27	1.61	2.26	
	(1.70)	(1.66)	(2.00)	(1.93)	(2.25)	(1.80)	(2.85)	(1.46)	(2.26)	
Terrorism incident involving military weapons	2.32	1.74	1.56	1.90	2.05	1.43	2.00	1.64	2.09	
	(2.57)	(1.62)	(1.83)	(2.04)	(2.08)	(2.15)	(2.21)	(1.53)	(2.35)	
Radiological	2.42	1.85	1.78	1.64	1.79	1.16	1.65	1.61	1.44	
	(2.58)	(1.83)	(1.73)	(1.66)	(2.39)	(1.77)	(2.15)	(2.05)	(1.97)	
Non-terrorism related incident ³										
Severe weather, earthquake, or wildfire	5.76	6.06	6.84	6.88	5.95	6.32	6.81	6.72	6.65	
	(2.47)	(2.44)	(2.39)	(2.59)	(2.86)	(3.04)	(2.40)	(2.40)	(2.82)	
Chemical spill or radiological leak	4.03	3.92	4.27	3.93	3.50	4.11	4.73	3.39	3.82	
	(2.99)	(2.71)	(2.78)	(2.67)	(3.13)	(3.49)	(2.58)	(2.60)	(3.15)	
Medical pandemic	3.55	3.75	3.84	3.08	3.21	3.03	4.00	3.56	3.56	
	(1.97)	(1.98)	(2.31)	(2.29)	(2.40)	(2.57)	(2.31)	(2.38)	(2.46)	
Explosion involving mass casualties	3.21	3.11	3.12	2.53	3.37	2.71	3.46	3.33	3.21	
	(2.65)	(2.21)	(2.54)	(1.89)	(2.85)	(2.83)	(2.17)	(2.39)	(2.59)	
Structural failure involving mass casualties	2.58	3.00	2.57	2.22	2.55	2.26	2.81	2.89	2.50	
	(2.54)	(2.26)	(2.07)	(1.80)	(2.92)	(2.57)	(1.90)	(2.47)	(2.34)	

¹Each incident was ranked on a scale from 0 (not at all likely) to 10 (very likely). Higher scores reflect a greater perceived likelihood of each incident type occurring. Standard deviations are reported in parenthesis.

²n=344

³n=348

	Miles from nearest large agency with 250+ sworn officers										
Type of Incident	0-25	26-50	51-75	76-100	101-125	126-150	151-175	176+			
Terrorism-related incident ²											
Cyber-terrorism	3.63	2.62	2.55	2.56	2.53	2.39	3.73	2.84			
	(2.44)	(2.28)	(2.62)	(2.25)	(2.59)	(2.15)	(2.30)	(2.76)			
Conventional explosive	2.90	2.87	2.54	2.39	2.49	2.68	3.45	2.84			
	(2.40)	(2.52)	(2.20)	(2.09)	(2.23)	(2.09)	(2.74)	(2.63)			
Chemical	2.53	2.59	2.63	2.02	2.36	2.18	2.64	2.53			
	(2.43)	(2.42)	(2.32)	(2.19)	(2.51)	(2.41)	(2.67)	(2.78)			
Biological	2.27	2.28	1.96	1.90	1.64	1.61	1.82	1.94			
	(1.89)	(1.87)	(2.19)	(2.06)	(1.78)	(2.08)	(1.99)	(2.38)			
Terrorism incident involving military weapons	1.90	2.00	1.80	1.80	1.85	1.79	2.18	1.47			
	(2.11)	(2.27)	(1.83)	(1.85)	(1.99)	(2.28)	(2.36)	(2.17)			
Radiological	2.10	2.20	1.71	1.51	1.25	1.36	2.18	1.47			
	(2.35)	(2.11)	(1.97)	(1.90)	(1.52)	(1.89)	(2.42)	(2.17)			
Non-terrorism related incident ³											
Severe weather, earthquake, or wildfire	5.97	6.29	6.82	6.97	6.56	6.07	6.27	5.82			
	(2.44)	(2.20)	(2.71)	(2.61)	(2.59)	(2.76)	(2.93)	(2.92)			
Chemical spill or radiological leak	4.12	4.54	4.00	3.32	3.77	3.89	3.64	4.52			
	(3.04)	(2.91)	(2.82)	(2.84)	(2.89)	(2.92)	(2.85)	(2.96)			
Medical pandemic	3.37	3.68	3.19	3.38	3.52	3.43	3.55	3.88			
	(2.03)	(2.03)	(2.37)	(2.09)	(2.51)	(2.04)	(2.61)	(2.87)			
Explosion involving mass casualties	3.33	2.95	2.82	3.28	2.85	3.32	3.32	3.27			
	(2.29)	(2.47)	(2.46)	(2.62)	(2.36)	(2.26)	(2.36)	(2.80)			
Structural failure involving mass casualties	2.30	2.71	2.30	2.58	2.38	2.50	3.05	2.85			
	(2.04)	(2.30)	(2.27)	(2.35)	(2.18)	(2.38)	(2.52)	(2.36)			

Table A3. Perceived likelihood of homeland security incidents occurring within the next five years (mean scores), by agency size ¹

¹Each incident was ranked on a scale from 0 (not at all likely) to 10 (very likely). Higher scores reflect a greater perceived likelihood of each incident type occurring. Standard deviations are reported in parenthesis.

²n=341

³n=345

Table A4.

Percent of agencies taking steps or activities to enhance homeland security prevention, preparedness, response, and recovery, by agency size 1

			Agency Si	ze	
Type of Step or Activity for Enhancement					
of Homeland Security ²	1-5	6-10	11-15	16-20	21-25
Public safety agencies operating in or	0.911	0.929	0.868	0.810	1.000
nearby jurisdiction (including responding agency) use a shared radio network that achieves interoperability	(0.285)	(0.258)	(0.343)	(0.402)	(0.000)
Has in place one or more mutual aid or	0.744	0.847	0.816	0.810	0.895
cooperative agreements with other law enforcement organizations that cover homeland security issues	(0.437)	(0.362)	(0.393)	(0.402)	(0.315)
Has in place systematic procedures	0.567	0.694	0.789	0.524	0.789
ensuring that homeland security advisories/emergency notifications are distributed to appropriate personnel	(0.497)	(0.464)	(0.413)	(0.512)	(0.419)
Has a written directive or protocol for	0.511	0.671	0.711	0.619	0.737
contacting the proper authorities in the event of a homeland security incident or threat within jurisdiction	(0.501)	(0.473)	(0.460)	(0.498)	(0.452)
Part of a regional interagency task force	0.456	0.60	0.526	0.476	0.737
or working group that functions, in part, to address issues of prevention, preparedness, response, and/or recovery related to homeland security	(0.499)	(0.493)	(0.506)	(0.512)	(0.452)
Has a written response plan outlining	0.406	0.553	0.605	0.476	0.737
preparedness, response, and/or recovery issues in the event of a homeland security-related incident	(0.492)	(0.500)	(0.495)	(0.512)	(0.452)
Has in place one or more mutual aid or	0.450	0.471	0.342	0.524	0.632
cooperative agreements with non-law enforcement agencies such as transit services, public works, or other governmental agencies that cover homeland security issues	(0.499)	(0.502)	(0.481)	(0.512)	(0.496)
Members of agency trained in homeland	0.383	0.482	0.500	0.571	0.474
security procedures in past 12 months	(0.488)	(0.503)	(0.507)	(0.507)	(0.513)

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Members of agency participated in	0.311	0.341	0.553	0.571	0.526
homeland security-focused field training	(0.464)	(0.477)	(0.504)	(0.507)	(0.513)
or table top exercises in past 12 months					
Completed an inventory of threats or	0.339	0.294	0.342	0.286	0.421
hazards in jurisdiction in past 12 months	(0.475)	(0.458)	(0.481)	(0.463)	(0.507)
Conducted a risk assessment to identify	0.333	0.259	0.316	0.238	0.579
high-risk or high-value targets or assets	(0.473)	(0.441)	(0.471)	(0.436)	(0.507)
within jurisdiction in past 12 months					
Disseminated information to members of	0.200	0.281	0.368	0.333	0.474
the community in an attempt to increase	(0.401)	(0.453)	(0.489)	(0.483)	(0.513)
citizen preparedness in past 12 months					
Has individual(s) or special unit	0.228	0.235	0.211	0.238	0.421
specifically assigned to address the	(0.421)	(0.427)	(0.413)	(0.436)	(0.507)
homeland security function					

 1 Each question asked whether or not agencies engaged in these steps or activities. Higher mean scores indicate higher engagement in steps or activities. Standard deviations are 2 n=343

Table A5.

Percent of agencies taking steps or activities to enhance homeland security prevention, preparedness, response, and recovery, by continuum code¹

		Rural-Urb	oan Contin	าuum Cod	е				
	N	1etropolit	tan			Non-Met	ropolitan		
Type of Step or Activity for Enhancement of		·			·				
Homeland Security ²	1	2	3	4	5	6	7	8	9
Public safety agencies operating in or nearby jurisdiction (including responding agency) use a shared radio network that achieves	0.973 (0.164)	0.889 (0.319)	0.938 (0.245)	0.897 (0.307)	0.895 (0.311)	0.892 (0.315)	0.895 (0.311)	0.972 (0.167)	0.824 (0.387)
Has in place one or more mutual aid or cooperative agreements with other law enforcement organizations that cover homeland security issues	0.565 (0.347)	0.778 (0.422)	0.875 (0.334)	0.821 (0.389)	0.816 (0.393)	0.676 (0.475)	0.816 (0.393)	0.722 (0.454)	0.706 (0.462)
Has in place systematic procedures ensuring that homeland security advisories/emergency notifications are distributed to appropriate personnel	0.811 (0.397)	0.667 (0.478)	0.646 (0.483)	0.821 (0.389)	0.711 (0.460)	0.378 (0.492)	0.658 (0.481)	0.472 (0.506)	0.500 (0.508)
Has a written directive or protocol for contacting the proper authorities in the event of a homeland security incident or threat within jurisdiction	0.757 (0.435)	0.583 (0.500)	0.563 (0.501)	0.744 (0.442)	0.500 (0.507)	0.432 (0.502)	0.684 (0.471)	0.472 (0.506)	0.588 (0.500)
Part of a regional interagency task force or working group that functions, in part, to address issues of prevention, preparedness, response, and/or recovery related to homeland security	0.676 (0.475)	0.444 (0.504)	0.604 (0.494)	0.538 (0.505)	0.474 (0.506)	0.541 (0.505)	0.526 (0.506)	0.361 (0.487)	0.441 (0.504)

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Has a written response plan outlining	0.595	0.361	0.521	0.590	0.421	0.378	0.500	0.472	0.529
preparedness, response, and/or recovery	(0.498)	(0.487)	(0.505)	(0.498)	(0.500)	(0.492)	(0.507)	(0.506)	(0.507)
issues in the event of a homeland security-									
related incident									
Has in place one or more mutual aid or	0.514	0.361	0.479	0.538	0.500	0.351	0.474	0.472	0.412
cooperative agreements with non-law	(0.507)	(0.487)	(0.505)	(0.505)	(0.507)	(0.484)	(0.506)	(0.506)	(0.500)
enforcement agencies such as transit									
services, public works, or other									
governmental agencies that cover homeland									
Members of agency trained in homeland	0.568	0.417	0.583	0.385	0.447	0.297	0.579	0.417	0.176
security procedures in past 12 months	(0.502)	(0.500)	(0.498)	(0.493)	(0.504)	(0.463)	(0.500)	(0.500)	(0.387)
Members of agency participated in	0.568	0.278	0.375	0.385	0.316	0.270	0.500	0.444	0.206
homeland security-focused field training or	(0.502)	(0.454)	(0.489)	(0.493)	(0.471)	(0.450)	(0.507)	(0.504)	(0.410)
table top exercises in past 12 months									
Completed an inventory of threats or	0.432	0.167	0.438	0.359	0.289	0.243	0.368	0.333	0.294
hazards in jurisdiction in past 12 months	(0.502)	(0.378)	(0.501)	(0.486)	(0.460)	(0.435)	(0.489)	(0.478)	(0.462)
Conducted a risk assessment to identify high-	0.378	0.194	0.354	0.359	0.342	0.216	0.395	0.361	0.265
risk or high-value targets or assets within	(0.492)	(0.401)	(0.483)	(0.486)	(0.481)	(0.417)	(0.495)	(0.487)	(0.448)
jurisdiction in past 12 months									
Disseminated information to members of	0.432	0.194	0.292	0.308	0.184	0.135	0.421	0.139	0.235
the community in an attempt to increase	(0.502)	(0.401)	(0.459)	(0.468)	(0.393)	(0.347)	(0.500)	(0.351)	(0.431)
citizen preparedness in past 12 months									
Has individual(s) or special unit specifically	0.432	0.139	0.250	0.282	0.184	0.216	0.237	0.194	0.206
assigned to address the homeland security	(0.502)	(0.351)	(0.438)	(0.456)	(0.393)	(0.417)	(0.431)	(0.401)	(0.410)
function									

¹Each question asked whether or not agencies engaged in these steps or activities. Higher means scores indicate higher engagement in steps or activities. Standard deviations are reported in parenthesis.

²n=343

Table A6.

Percent of agencies taking steps or activities to enhance homeland security prevention, preparedness, response, and recovery, by distance from large agency peer¹

		Miles fr	om neares	st large ag	ency with	250+ swor	n officers	
Type of Step or Activity for Enhancement of								
Homeland Security ²	0-25	26-50	51-75	76-100	101-125	126-150	151-175	176+
Public safety agencies operating in or nearby jurisdiction (including responding agency) use a shared radio network that achieves	0.900 (0.305)	0.887 (0.319)	0.891 (0.315)	0.881 (0.326)	0.902 (0.300)	1.000 (0.000)	0.957 (0.209)	0.939 (0.242)
interoperability								
Has in place one or more mutual aid or cooperative agreements with other law enforcement organizations that cover homeland security issues	0.867 (0.346)	0.887 (0.319)	0.727 (0.449)	0.678 (0.471)	0.745 (0.440)	0.852 (0.362)	0.739 (0.449)	0.909 (0.292)
Has in place systematic procedures ensuring that homeland security advisories/emergency notifications are distributed to appropriate personnel	0.700 (0.466)	0.758 (0.432)	0.564 (0.503)	0.492 (0.504)	0.569 (0.500)	0.852 (0.362)	0.609 (0.499)	0.636 (0.489)
Has a written directive or protocol for contacting the proper authorities in the event of a homeland security incident or threat within jurisdiction	0.700 (0.466)	0.677 (0.471)	0.545 (0.503)	0.525 (0.504)	0.510 (0.505)	0.741 (0.447)	0.435 (0.507)	0.636 (0.489)
Part of a regional interagency task force or working group that functions, in part, to address issues of prevention, preparedness, response, and/or recovery related to homeland security	0.633 (0.490)	0.645 (0.482)	0.491 (0.505)	0.407 (0.495)	0.451 (0.503)	0.444 (0.506)	0.522 (0.511)	0.545 (0.506)

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Has a written response plan outlining preparedness, response, and/or recovery issues in the event of a homeland security- related incident	0.567 (0.504)	0.500 (0.504)	0.382 (0.490)	0.475 (0.504)	0.412 (0.497)	0.741 (0.447)	0.435 (0.507)	0.545 (0.506)
Has in place one or more mutual aid or cooperative agreements with non-law enforcement agencies such as transit services, public works, or other governmental agencies that cover homeland security issues	0.567 (0.504)	0.435 (0.500)	0.473 (0.504)	0.322 (0.471)	0.471 (0.504)	0.481 (0.509)	0.522 (0.511)	0.515 (0.508)
Members of agency trained in homeland	0.567	0.516	0.400	0.305	0.373	0.556	0.435	0.485
security procedures in past 12 months	(0.504)	(0.504)	(0.494)	(0.464)	(0.488)	(0.506)	(0.507)	(0.508)
Members of agency participated in homeland security-focused field training or table top exercises in past 12 months	0.533 (0.507)	0.387 (0.491)	0.327 (0.474)	0.339 (0.477)	0.392 (0.493)	0.407 (0.501)	0.304 (0.470)	0.333 (0.479)
Completed an inventory of threats or	0.400	0.323	0.309	0.254	0.314	0.407	0.391	0.333
hazards in jurisdiction in past 12 months	(0.498)	(0.471)	(0.466)	(0.439)	(0.469)	(0.501)	(0.499)	(0.479)
Conducted a risk assessment to identify high- risk or high-value targets or assets within jurisdiction in past 12 months	0.367 (0.490)	0.274 (0.450)	0.273 (0.449)	0.254 (0.439)	0.392 (0.493)	0.407 (0.501)	0.348 (0.487)	0.364 (0.489)
Disseminated information to members of the community in an attempt to increase citizen preparedness in past 12 months	0.300 (0.466)	0.290 (0.458)	0.182 (0.389)	0.237 (0.429)	0.235 (0.428)	0.370 (0.492)	0.261 (0.449)	0.303 (0.467)
Has individual(s) or special unit specifically assigned to address the homeland security function	0.467 (0.507)	0.258 (0.441)	0.236 (0.429)	0.169 (0.378)	0.137 (0.348)	0.333 (0.480)	0.087 (0.288)	0.273 (0.452)

¹Each question asked whether or not agencies engaged in these steps or activities. Higher mean scores indicate higher engagement in steps or activities.

²n=340

Table A7.

*Perceived efficacy for each aspect of preparedness in the event of a homeland security incident involving a multi-agency response, by agency size (mean scores)*¹

	Agency Size					
Policy/Program/Activity ²	1-5	6-10	11-15	16-20	21-25	
Partnerships with other local responders	3.56	3.51	3.50	3.76	3.67	
	(0.97)	(1.02)	(0.98)	(0.83)	(0.91)	
Ability to communicate and coordinate with other organizations likely to be involved in responding to incidents	3.51	3.41	3.39	3.48	3.78	
	(0.87)	(1.00)	(0.97)	(0.98)	(1.00)	
Knowledge and expertise about emergency response	3.15	3.07	3.26	3.24	3.39	
	(0.95)	(0.81)	(1.06)	(0.54)	(0.85)	
Ability to rapidly deploy personnel	3.11	3.06	3.03	2.95	3.22	
	(1.13)	(1.04)	(1.00)	(1.12)	(0.94)	
Knowledge and expertise about responding to homeland security-related incidents	2.66	2.67	2.82	2.81	3.06	
	(1.04)	(0.96)	(0.96)	(0.68)	(0.94)	
Ability to receive timely intelligence information	2.56	2.84	2.68	2.81	3.06	
	(0.97)	(0.97)	(1.11)	(1.08)	(1.06)	
Ability to evacuate citizens from affected zone	2.64	2.69	2.24	3.00	2.94	
	(0.91)	(0.85)	(0.85)	(1.14)	(0.87)	
Availability of personnel	2.46	2.71	2.71	2.81	2.94	
	(1.07)	(0.94)	(0.87)	(0.98)	(0.94)	
Ability to provide short-term (48-72 hours) food and shelter for responding personnel	2.44	2.59	2.34	3.19	2.78	
	(1.19)	(1.07)	(0.99)	(1.17)	(1.17)	
Written emergency response plan(s)	2.34	2.59	2.68	2.67	2.94	
	(1.11)	(1.06)	(0.99)	(0.86)	(0.87)	
Equipment to support effective emergency response	2.24	2.45	2.34	2.71	2.83	
	(1.09)	(1.05)	(0.85)	(0.96)	(1.10)	
Level of preparedness for large-scale incidents	2.25	2.35	2.18	2.43	2.61	
	(0.98)	(0.98)	(0.93)	(0.93)	(0.70)	
Training to respond to large-scale emergencies	2.32	2.14	2.13	2.29	2.61	
	(1.12)	(1.05)	(0.91)	(0.78)	(0.85)	
Budget to support effective emergency response	1.41	1.68	1.47	2.00	2.17	
	(0.72)	(0.83)	(0.65)	(1.27)	(1.15)	
Sum	36.65	37.76	36.77	40.15	42.00	

¹Each aspect of preparedness was ranked on a scale from 1 (inadequate) to 5 (excellent). Higher scores reflect a greater perceived adequacy of each of the aspects. Standard deviations are reported in parentheses.

²n=339

Table A8.

Perceived efficacy for each aspect of preparedness in the event of a homeland security incident involving a multi-agency response, by continuum code (mean scores)¹

	Rural-Urban Continuum Code									
	Μ	etropoli	itan		Ν	lon-Me	tropolit	an		
Policy/Program/Activity ²	1	2	3	4	5	6	7	8	9	
Partnerships with other local responders	3.78	3.53	3.80	3.38	3.51	3.25	3.39	3.71	3.58	
	(0.89)	(0.81)	(0.97)	(1.02)	(0.96)	(1.11)	(0.99)	(0.86)	(1.03)	
Ability to communicate and coordinate with other	3.68	3.47	3.60	3.41	3.46	3.31	3.44	3.49	3.45	
organizations likely to be involved in responding to incidents	(0.88)	(0.97)	(0.81)	(1.07)	(0.99)	(0.95)	(0.97)	(0.70)	(1.03)	
Knowledge and expertise about emergency response	3.24	3.14	3.44	2.97	3.03	2.94	3.39	3.11	3.06	
	(0.90)	(0.54)	(0.73)	(1.01)	(1.14)	(1.09)	(0.99)	(0.80)	(0.70)	
Ability to rapidly deploy personnel	3.24	3.03	3.36	2.82	2.97	2.92	3.22	3.14	2.94	
	(0.96)	(1.06)	(1.01)	(1.23)	(1.04)	(1.11)	(1.17)	(1.06)	(1.03)	
Knowledge and expertise about responding to homeland	2.89	2.78	2.98	2.67	2.68	2.39	2.81	2.46	2.61	
security-related incidents	(0.99)	(0.68)	(0.82)	(1.13)	(1.13)	(1.13)	(1.12)	(0.98)	(0.75)	
Ability to receive timely intelligence information	2.84	2.81	2.86	2.77	2.73	2.50	2.58	2.54	2.42	
	(0.90)	(0.79)	(1.11)	(1.18)	(0.99)	(0.97)	(1.03)	(0.92)	(0.94)	
Ability to evacuate citizens from affected zone	2.78	2.69	2.74	2.46	2.68	2.81	2.56	2.60	2.48	
	(0.92)	(0.92)	(0.97)	(0.82)	(0.82)	(1.01)	(0.91)	(0.98)	(0.91)	
Availability of personnel	2.78	2.83	2.78	2.51	2.54	2.36	2.56	2.43	2.52	
	(0.98)	(0.91)	(1.04)	(1.05)	(1.10)	(0.93)	(1.18)	(0.98)	(0.87)	
Ability to provide short-term (48-72 hours) food and	2.70	2.72	2.54	2.33	2.46	2.19	2.97	2.40	2.45	
shelter for responding personnel	(1.02)	(1.37)	(1.20)	(1.08)	(1.17)	(1.12)	(1.08)	(1.09)	(1.09)	
Written emergency response plan(s)	2.73	2.44	2.54	2.49	2.38	2.33	2.72	2.43	2.33	
	(1.02)	(1.00)	(1.09)	(1.02)	(1.06)	(1.17)	(1.03)	(1.04)	(1.22)	

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Equipment to support effective emergency response	2.65 (1.18)	2.47 (0.91)	2.52 (1.15)	2.15 (1.01)	2.35 (1.18)	2.22 (1.05)	2.31 (1.01)	2.34 (1.08)	2.18 (0.85)
Level of preparedness for large-scale incidents	2.54	2.33	2.48	2.38	2.14	2.00	2.31	2.29	2.15
	(1.07)	(0.89)	(1.00)	(0.91)	(0.95)	(0.93)	(0.98)	(0.96)	(0.87)
Training to respond to large-scale emergencies	2.59	2.19	2.49	2.33	2.03	1.86	2.19	2.37	2.27
	(1.17)	(0.89)	(1.11)	(1.06)	(0.93)	(0.99)	(1.09)	(1.06)	(1.01)
Budget to support effective emergency response	1.86	1.75	1.58	1.54	1.54	1.31	1.58	1.43	1.45
	(0.98)	(1.00)	(0.84)	(0.72)	(0.84)	(0.47)	(0.91)	(0.88)	(0.71)
Sum	40.30	38.18	39.71	36.21	36.50	34.39	38.03	36.74	35.89

¹Each aspect of preparedness was ranked on a scale from 1 (inadequate) to 5 (excellent). Higher scores reflect a greater perceived adequacy of each of the aspects. Standard deviations are reported in parentheses.

²n=339

Table A9.

Perceived efficacy for each aspect of preparedness in the event of a homeland security incident involving a multi-agency response, by distance to large agency peer (mean scores)¹

Policy/Program/Activity ²	0-25	26-50	51-75	76-100	101-125	126-150	151-175	176+
Partnerships with other local responders	3.83	3.58	3.36	3.46	3.50	3.85	3.83	3.40
	(0.95)	(0.87)	(0.95)	(1.01)	(0.96)	(1.03)	(1.07)	(0.97)
Ability to communicate and coordinate with other organizations likely to be involved in responding	3.63	3.45	3.36	3.37	3.31	3.74	3.91	3.53
	(1.07)	(0.93)	(0.89)	(0.85)	(0.88)	(1.13)	(0.95)	(0.78)
Knowledge and expertise about emergency response	3.20	3.18	3.07	3.10	3.12	3.59	3.22	2.93
	(0.66)	(0.85)	(0.96)	(0.87)	(0.83)	(0.89)	(1.20)	(1.02)
Ability to rapidly deploy personnel	3.27	3.05	2.98	3.03	2.88	3.59	3.22	3.00
	(1.02)	(1.10)	(1.08)	(1.07)	(1.00)	(1.19)	(1.24)	(0.98)
Knowledge and expertise about responding to homeland security-related incidents	2.80	2.83	2.47	2.69	2.60	3.11	2.74	2.57
	(0.76)	(0.96)	(1.00)	(1.04)	(0.93)	(1.01)	(1.01)	(1.14)
Ability to receive timely intelligence information	2.90	2.77	2.53	2.44	2.54	3.33	2.87	2.57
	(0.85)	(1.05)	(0.96)	(0.90)	(1.09)	(1.00)	(1.06)	(0.82)
Ability to evacuate citizens from affected zone	2.83	2.68	2.49	2.54	2.58	2.78	3.04	2.43
	(0.99)	(0.93)	(0.86)	(0.75)	(0.89)	(0.97)	(1.15)	(0.77)
Availability of personnel	2.97	2.75	2.35	2.51	2.44	2.85	2.83	2.37
	(0.96)	(1.00)	(0.93)	(0.97)	(0.87)	(1.26)	(0.98)	(1.16)
Ability to provide short-term (48-72 hours) food and shelter for responding personnel	3.03	2.35	1.96	2.25	2.58	3.11	3.35	2.63
	(1.10)	(1.12)	(0.98)	(1.08)	(1.04)	(1.16)	(1.15)	(1.13)
Written emergency response plan(s)	2.60	2.53	2.36	2.25	2.40	3.07	2.48	2.57
	(1.00)	(1.08)	(1.10)	(1.04)	(1.03)	(0.83)	(1.24)	(1.14)

Miles from nearest large agency with 250+ sworn officers

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Equipment to support effective emergency	2.67	2.55	2.11	2.29	1.96	3.00	2.35	2.37
response	(0.994)	(1.11)	(1.01)	(0.91)	(0.93)	(1.11)	(1.27)	(0.96)
Level of preparedness for large-scale incidents	2.70	2.30	2.11	2.12	2.19	2.70	2.39	2.27
	(0.88)	(1.09)	(0.85)	(0.98)	(0.82)	(0.95)	(1.03)	(0.87)
Training to respond to large-scale emergencies	2.43	2.47	2.05	2.07	1.98	2.63	2.43	2.37
	(0.97)	(1.21)	(0.91)	(0.98)	(0.83)	(1.15)	(1.24)	(1.00)
Budget to support effective emergency response	2.00	1.70	1.35	1.46	1.29	1.93	1.57	1.53
	(1.05)	(1.01)	(0.58)	(0.68)	(0.57)	(1.04)	(0.84)	(0.73)
Sum	41.07	38.17	34.13	35.58	35.37	43.28	40.23	36.54

¹Each aspect of preparedness was ranked on a scale from 1 (inadequate) to 5 (excellent). Higher scores reflect a greater perceived adequacy of each of the aspects. Standard deviations are reported in parentheses.

²n=336

APPENDIX B:

SURVEY INSTRUMENT



HOMELAND SECURITY SURVEY

INSTRUCTIONS:

Please think about the current situation in your organization and select only one response for each item, unless directed otherwise.

If you have any questions, please contact Joseph Schafer, at e-mail: jschafer@siu.edu or phone: (618) 453-6376.

You may return the survey in the postage paid envelope or via fax to the number below. If you choose not to participate, please return the blank survey in the envelope so that we will not send you follow-up notifications. If you would like to receive a copy of the final report (anticipated 4th Quarter 2011) please include your email address below.

We ask that you provide your contact information below in case we have any follow-up questions relating to your survey responses. Your personal information will not be released to any third parties, nor will you ever be identified as a participant in this project. Databases produced by this research project will not identify specific respondents or their agency by name; responses will only be recorded in the aggregate.

This project is funded by the National Institute of Justice (grant 2010-IJ-CX-0024).

So that answers are properly recorded, please completely fill in the appropriate bubble:

Like this:
Not like this:
() (X) (/)

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Research Development and Administration, Southern Illinois University, Carbondale, IL 62901-4709. Phone (618) 453-4533. Email <u>siuhsc@siu.edu</u>.

Person Completing Survey							
Your Name:		Your Title:					
Agency Name:		Telephone:					
City, State, Zip Code:		Email Address:					
Return completed survey by March 30, 2011 to:	Departmen & Criminal J Mail Code 4 Southern III Carbondale Attn: Josep	t of Criminology Justice 504 inois University , IL 62901 h Schafer	Or fax all pages (front and back), including this cover page, to: Joseph Schafer at (618) 453-6377				

Survey questions address **homeland security**, defined broadly to include efforts to protect against, prepare for, respond to, and recover from threats and hazards posed not only by terrorism but also major disasters/emergencies and catastrophic events that involve significant casualties and/or substantial destruction of property (e.g., severe weather, chemical spills, large explosions). Please keep this broad all-hazards definition in mind when answering the following questions unless directed otherwise.

1. How would you rate the likelihood of the following types of terrorism-related and non-terrorism homeland security incidents occurring within your jurisdiction in the next five (5) years? Evaluate each possible incident on a scale from 0 (not at all likely) to 10 (very likely).

		Not at all likel	y									Very likely
The foll homela	lowing <i>terrorism-related</i> and security incidents?	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1a.	Chemical incident	0	0	0	0	0	0	0	0	0	0	0
1b.	Biological incident (e.g., anthrax, contamination of water/food supply)	0	0	0	0	0	0	0	0	0	0	0
1c.	Radiological incident	0	0	0	0	0	0	0	0	0	0	0
1d.	Conventional explosive incident	0	0	0	0	0	0	0	0	0	0	0
1e.	Cyber-terrorism	0	0	0	0	0	0	0	0	0	0	0
1f.	Terrorism incident involving military weapons	0	0	0	0	0	0	0	0	0	0	0
		Not at all likel	y									Very likely
The following <i>non-terrorism</i> homeland security incidents?		(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1g.	Structural failure involving mass casualties	0	0	0	0	0	0	0	0	0	0	0
1h.	Severe weather (e.g., tornado, flood, mudslide, hurricane), earthquake, or wildfire	0	0	0	0	0	0	0	0	0	0	0
1i.	Explosion involving mass casualties	0	0	0	0	0	0	0	0	0	0	0
1j.	Chemical spill or radiological leak (e.g., derailed train, nuclear power plant)	0	0	0	0	0	0	0	0	0	0	0
1k.	Medical pandemic (e.g., avian flu, small pox)	0	0	0	0	0	0	0	0	0	0	0

 Agencies may take a variety of steps to enhance homeland security prevention, preparedness, response, and recovery. Please indicate whether your agency engages in any of the following activities or steps. Remember, homeland security is defined broadly to include both terrorism-related threats and major nonterrorism disasters or emergencies.

		Yes	No
2a.	Does your agency have an individual(s) or special unit specifically assigned to address the homeland security function?	0	0
2b.	Is your organization part of a regional interagency task force or working group that functions, in part, to address issues of prevention, preparedness, response, and/or recovery related to homeland security?	0	0
2c.	Within the past 12 months, have any members of your agency been trained in homeland security procedures?	0	0
2d.	Within the past 12 months, have members of your agency participated in homeland security-focused field training or table top exercises?	0	0
2e.	Does your agency have in place systematic procedures ensuring that homeland security advisories/emergency notifications are distributed to appropriate personnel?	0	0
2f.	Does your agency have a written directive or protocol for contacting the proper authorities in the event of a homeland security incident or threat within your jurisdiction?	0	0
2g.	Within the past 12 months, has your agency completed an inventory of threats or hazards in your jurisdiction?	0	0
2h.	Within the past 12 months, has your agency conducted a risk assessment to identify high-risk or high-value targets or assets within your jurisdiction?	0	0
2i.	Does your agency have a written response plan outlining preparedness, response, and/or recovery issues in the event of a homeland security-related incident?	0	0
2j.	Does your organization have in place one or more mutual aid or cooperative agreements with other law enforcement organizations that cover homeland security issues?	0	0
2k.	Does your organization have in place one or more mutual aid or cooperative agreements with non-law enforcement agencies such as transit services, public works, or other governmental agencies that cover homeland security issues?	0	0
21.	Do the public safety agencies operating in or nearby your jurisdiction (including your agency) use a shared radio network that achieves interoperability?	0	0
2m.	Within the past 12 months, has your agency disseminated information to members of the community in an attempt to increase citizen	0	0

preparedness?

3. In the event of a homeland security incident in your jurisdiction involving a multi-agency response, how would you rate your own agency's...

		(1) Inadequate	(2)	(3) Adequate	(4)	(5) Excellent
За.	Written emergency response plan(s)?	0	0	Ο	0	0
3b.	Ability to communicate and coordinate with other organizations likely to be involved in responding to incidents?	0	0	0	0	0
3c.	Knowledge and expertise about emergency response?	Ο	0	0	0	0
3d.	Knowledge and expertise about responding to homeland security-related incidents?	0	0	0	0	0
3e.	Ability to rapidly deploy personnel?	0	0	0	0	0
3f.	Equipment to support effective emergency response?	Ο	0	0	0	0
3g.	Training to respond to large-scale emergencies?	Ο	0	0	0	0
3h.	Partnerships with other local responders?	0	0	0	0	0
3i.	Level of preparation for large-scale incidents?	Ο	0	0	0	0
3j.	Ability to evacuate citizens from the affected zone?	Ο	0	0	0	0
3k.	Ability to provide short-term (48-72 hours) food and shelter for responding personnel?	0	0	0	0	0
31.	Availability of personnel?	0	0	0	0	0
3m.	Budget to support effective emergency response?	0	0	0	0	0
3n.	Ability to receive timely intelligence information?	0	0	0	0	0

4. In evaluating your own agency's performance with respect to homeland security prevention, preparedness, response, and recovery policies and practices, to what extent does your agency pay attention to the policies and practices of other law enforcement agencies like your own?

O Pay significant attention

O Pay some attention

O Pay little attention

O Pay no attention

- 5. To what extent does your agency model its homeland security prevention, preparedness, response, and recovery policies and practices after other departments that you view as successful?
 - O My agency often models after other agencies
 - O My agency occasionally models after other agencies
 - O My agency never models after other agencies
- 6. How influential were each of the following in formulating your agency's current approach or practices related to homeland security prevention, preparedness, response, and recovery? Please indicate whether each resource has been very influential, somewhat influential, or not at all influential. Again, please think about homeland security using the broad definition provided earlier.

		Very influential	Somewhat influential	Not at all influential	Don't Know
6a.	Other police or sheriff's departments	0	Ο	Ο	0
6b.	Journal articles or books	Ο	Ο	Ο	Ο
6c.	Government publications	Ο	0	Ο	Ο
6d.	Talents and expertise of own department personnel	0	0	0	0
6e.	Federal or state legislation	0	0	0	0
6f.	Federal or state training programs	0	0	0	0
6g.	Academic courses, seminars, or conferences	0	0	0	0
6h.	Professional associations (e.g., IACP, state chief's association) or meetings	0	0	0	0
6i.	Federal or state grants providing homeland security equipment	0	0	0	0
6j.	Federal or state grants supporting homeland security training	0	0	0	0
6k.	Federal or state grants providing personnel resources	0	0	0	0
61.	Private, corporate, or community funding or contributions	0	0	0	0
6m.	Accrediting bodies	0	0	0	0
6n.	The mayor, city council, or other local government body	0	0	0	0
PEER AGENCIES

The next several questions deal with connections to or interactions with one of the large (approximately 250 or more sworn officers) law enforcement agency nearest to your own agency. We have identified an agency below. Your agency may or may not be in the same state as this agency, it may be within close proximity to it or hundreds of miles away, and may have frequent, limited, or no contact with members of the organization.

Regardless of the agency's location or your connections to it, we ask that you answer questions 7 and 8 by referencing the agency below only:

7. The first set of questions deal with your connections, if any, to the agency identified above. For each statement, please indicate your level of agreement or disagreement.

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
7a.	Before adopting a new homeland security policy or practice, my agency considers whether the agency above has adopted that same policy or practice.	0	0	0	0	Ο
7b.	My agency is more likely to enact a homeland security policy or practice if the agency above has also adopted the same policy or practice.	0	0	0	0	0
7c.	My agency usually adopts new homeland security policies or practices before the agency above adopts a similar policy or practice.	0	0	0	0	0
7d.	My agency often discusses new homeland security policies or practices with the agency above before adopting them.	0	0	0	0	0
7e.	The agency above is a leader among peers in homeland security policies and practices.	0	0	0	0	0
7f.	The agency above is very influential in the law enforcement field.	0	0	0	0	0
7g.	The problems faced by the agency above are not applicable to my agency.	0	0	0	Ο	0
7h.	The physical proximity between my jurisdiction and the one above requires our two agencies to communicate often about homeland security matters.	0	0	0	0	0
7i.	My agency has a formal and/or informal cooperative or mutual aid agreement with the agency above.	0	0	0	0	0
7j.	My agency is more likely to work with regional organizations of similar size than the organization identified above on homeland security matters	0	0	0	0	0

8. The next several statements deal with your agency's interactions with the larger agency identified on the previous page. Approximately how often are you or officers from your agency in contact with members of this large agency for each of the following reasons? This could mean that your agency initiates contact or the large agency initiates contact.

		Never	At least once per week	2-3 times a month	About once a month	About 3-8 times per year	About 1- 2 times per year
8a.	To share crime-related intelligence.	0	0	0	0	0	0
8b.	To share terrorism-related intelligence	0	Ο	0	0	0	0
8c.	To participate in joint homeland security training exercises.	0	0	0	0	0	0
8d.	To discuss mutual aid agreements about homeland security matters.	0	0	0	0	0	0
8e.	To discuss equipment sharing related to homeland security prevention, preparedness, response, and recovery.	0	0	0	0	0	0
8f.	To jointly apply for grant funding related to homeland security prevention, preparedness, response, and recovery.	0	0	0	0	0	Ο
8g.	To train on issues <u>unrelated</u> to homeland security prevention, preparedness, response, and recovery.	0	0	0	0	0	0
8h.	To discuss crime control strategies.	0	0	0	0	0	0
8i.	To jointly plan for the provision of security for a large event (e.g., convention, major sporting event, rally).	0	0	0	0	0	Ο
8j.	To exchange information on successful programs or practices (e.g., what works?).	0	0	0	0	0	0

9. Have municipal cutbacks forced your agency to eliminate, reduce, or otherwise scale back on homeland security preparedness and response activities?

- O Yes
- O No

10. Earlier on page 6, we identified the name of a large law enforcement agency. In the space below, please identify the name and location of the <u>LARGE</u> (approximately 250 or more sworn officers) law enforcement agency with which your organization has the most interaction/contact with for <u>homeland security purposes</u>. The agency could be close in proximity to your own or far away. Simply name the one that you most frequently interact with for homeland security purposes. The agency you identify will be referred to in question 11.

MARK HERE IF THE LARGE AGENCY INTERACTED WITH MOST FREQUENTLY IS THE SAME \longrightarrow	Ο
AS THE ONE IDENTIFIED EARLIER ON PAGE 6. OTHERWISE, FILL IN INFORMATION	Ŭ
BELOW.	

Name of <u>large</u> agency
City of agency
State

11. Below is a list of factors that might explain why you interact frequently with this agency (<u>the one you identified</u> <u>in question 10 above</u>) for homeland security purposes. Please indicate whether each is a reason that explains why you interact with this agency.

		Yes, this is why we interact with this agency	No, this is not why we interact with this agency
11a.	This agency is in the same state or region?	0	0
11b.	This agency seems to face the same issues/problems we do?	0	0
11c.	This agency has a good reputation?	Ο	Ο
11d.	I have established a good personal relationship with someone in this agency?	Ο	0
11e.	We have dealt with this agency for a long time?	0	Ο
11f.	The way this agency operates is very much like the way my agency operates?	Ο	Ο
11g.	Both of our agencies are part of a task force, regional mutual aid system, or some other law enforcement collaboration?	Ο	0

12. In the space provided, feel free to comment about homeland security issues of importance to your organization not covered in the survey. Attach additional pages if necessary.