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Community Participation in Disaster Planning and the Expectation Gap: Analysis and Recommendations

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Community Participation in Disaster Planning and the Expectation Gap:

Analysis and Recommendations

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Urban and Regional Planning at Virginia Commonwealth University

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Abstract

This thesis explores the expectation gap and how it relates to the field of emergency management. As disasters become more commonplace, many citizens have high expectations of their governments, which results in a lack of individual disaster preparation. This thesis analyzed the current state of community education and engagement programs, use of best practices by governments and inter-agency cooperation and partnerships. The research consisted of fifteen interviews with emergency management professionals representing local, state, and federal government as well as the private sector. The results show limited public participation, as well as issues with crisis communications systems. Over 80% of research participants noted lack of disaster education programs as a serious issue. The results also show differences between expectation levels across demographic groups, limited educational program accessibility for minority populations and a difference in expectations between urban and rural residents.

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I. Introduction

As natural disasters become more and more frequent, communities expect more from their local, state and federal governments. Planners, emergency managers, policy makers and government officials in general will benefit from improving their relationships with the communities they are charged to serve as part of their position.

In Crisis Response and Disaster Resilience 2030: Forging Strategic Action in an Age of Uncertainty (2012, p. 2), the Federal Emergency Management Agency (FEMA) states the following:

> "the emergency management community faces increasing complexity and decreasing predictability in its operating environment. Complexity will take the form of more incidents, new and unfamiliar threats, more information to analyze (possibly with less time to process it), new players and participants, sophisticated technologies, and exceedingly high public expectations. This combination will create a vastly different landscape for risk assessment and operational planning. pressure to perform in this environment will be extraordinary."

This pressure from the general public continues to grow, especially following events such as the September 11, 2001 terrorist attacks and Hurricane Katrina, for better management of and response to disasters (Kapucu, 2008) as more incidents occur and more agencies become involved in disaster response. The general public expects all three levels of government (local, state, and federal) as well as nonprofit aid agencies and other nongovernmental agencies (NGOs) to provide quick and complete response to disasters. Governments and NGOs have a finite capability to respond to disasters, a fact that is lost on members of the general public. This "gap" between the public's expectations

regarding disaster response and the actual disaster response capabilities is known as the expectation gap (Kayes, 2006).

Through interviews and analysis of existing literature and best practices documentation, this thesis analyzes the effect of major disasters on governments' approaches to citizen participation, education and the expectation gap issue. Public engagement, education and warning programs/systems are discussed and analyzed in the context of how well they do (or do not) reduce the expectation gap. From this analysis I provide recommendations related to reducing the expectation gap through improvements in citizen participation in emergency preparedness planning and response. The following research topics are explored:

(1) What is the current status of citizen participation and preparedness? How can we increase levels of citizen participation?

(2) What public education and engagement programs exist? How can these programs be improved?

(3) What is the current status of warning and alert systems? How can warning and alert systems be improved?

(4) To what extent are best practices used? How often do agencies share best practices and lessons learned with one another?

II. Rationale for the Thesis Topic

Public policy makers have long sought to reduce the risk to human safety and life as part of their position as public administrators. Through these efforts, the discipline of emergency management emerged (Petak, 1985). Petak notes that "the primary focus of

research in the emergency management area has been in the general area of human response and technological fixes" (p. 6). Response is only a small part of the emergency management process (Federal Emergency Management Agency, 2011b). Public policy makers have, for the most part, been reactive rather than proactive when it comes to disasters. It is important for public policy makers to understand their role as facilitators of disaster preparedness as well as communicators, both between agencies and with the general public.

In the past decade, the United States has experienced many disasters. This fact, combined with increased interest in homeland security following 9/11, means that the field of emergency management has grown considerably. Despite this growth, there is a disconnect between the policy makers in government/emergency response agencies and the general public. The expectation gap applies across multiple disciplines, including urban and regional planning and emergency management. Recommendations based on the research conducted in conjunction with this thesis can be used to assist policy makers in their decision-making. The recommendations that I make regarding public education and participation programs can be applied to planning agencies as well as emergency management agencies. Emergency preparedness planning typically follows the rational model. Planners are constantly learning from their mistakes and the experiences of others. This thesis analyzes the mistakes and experiences of real emergency situations with the goal of reducing the expectation gap.

Federal government contributions to disaster relief costs have increased over the past 50 years, partially due to an increase in the number of presidential disaster declarations (Michel-Kerjan & Wise, 2011). From this it is clear that the expectation gap

is a very real issue, and one that will not be likely going away any time soon. The growth of the expectation gap is compounded by an ever-increasing number of disasters and the ever-increasing cost of disasters as shown in Chart 1 and Chart 2 below (Center for Research on the Epidemiology of Disasters, 2009) .

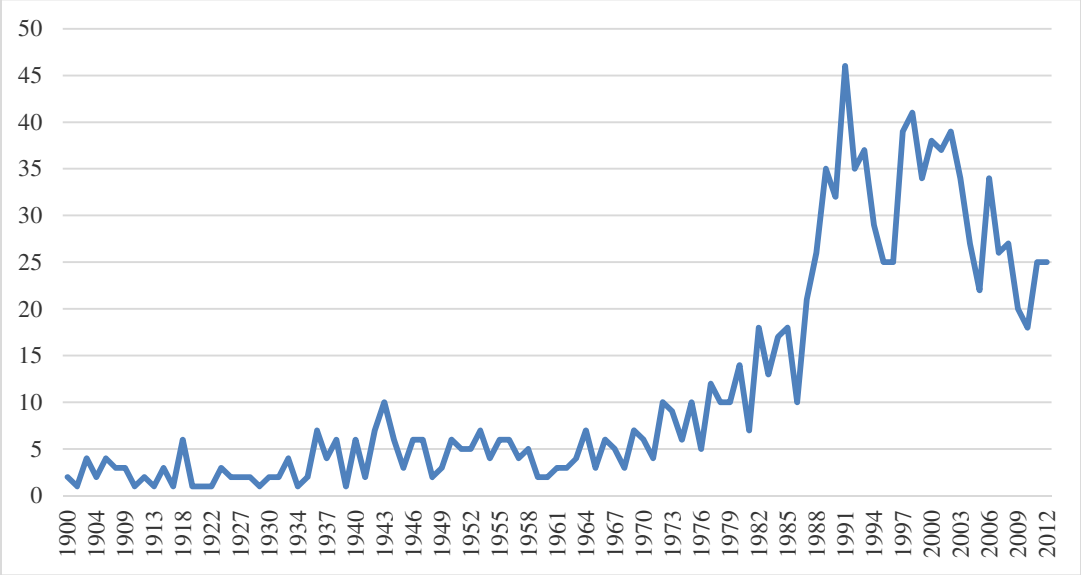

Chart 1: Number of disasters in the United States since 1900

Source: EM-DAT: The OFDA/Center for Research on the Epidemiology of Disasters (CRED) – International Disaster Database

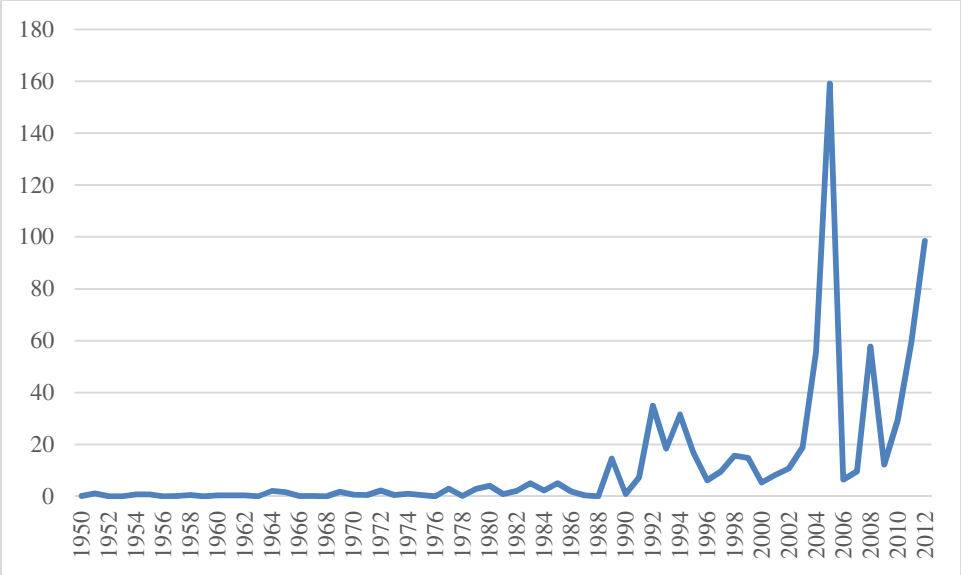

Chart 2: Damages (in thousands of U.S. Dollars) from disasters in the United States, 1950-2013.

Source: EM-DAT: The OFDA/Center for Research on the Epidemiology of Disasters (CRED) – International Disaster Database

Several studies indicate that the public's disaster response expectations are growing (Kapucu, 2008, Kayes, 2006). Because of the nature of the American political system, new administrations are driven (at least partially by the media) to provide more aid and quicker response to disasters than their predecessors. This, combined with the fact that disasters are becoming more frequent, produces a "vicious cycle" that results in the public expecting more and more from the government with each passing disaster (Michel-Kerjan & Wise, 2011).

III. Context

In this thesis I compare the differences between community participation in disaster preparedness and planning in the states of Virginia and New York Comparing the social and political differences in disaster planning between these two areas allows

for recommendations to be made regarding planning for future disasters and in the public administration field in general. Before outlining the research methodology, it is necessary to discuss the background of emergency management as a field of study. This section also contains historical background information regarding citizen participation and education programs as well as warning/alert (crisis communication) systems

Historically, and at present, disasters have always been managed locally first, followed by state assistance, and then followed by federal assistance. Prior to the creation of FEMA, federal disaster assistance came from dozens of different agencies, making coordination of resources difficult. While the first federal government aid to a locality can be traced back to the Congressional Act of 1803,which provided aid to Portsmouth, New Hampshire after a large fire, it wasn't until the 1930s that federal-level preparedness actions were taken. Following the onset of the Great Depression, the Tennessee Valley Authority (TVA) was given the task of electrification for an entire region of the United States using hydroelectric power. Additionally, the TVA was tasked with reducing flooding in the region. The Flood Control Act of 1934 outlined federal responsibilities, this time falling within the purview of the U.S. Army Corps of Engineers, related to the designing and implementation of flood control measures for American rivers, including the Mississippi. For the first time, U.S. Government programs were oriented toward mitigating the hazards produced by natural disasters, namely flooding. This illustrates a shift in focus toward preparing for disasters as a method to reduce their harm instead of simply responding to disasters (Houge & Bea, 2006).

The origins of emergency management as we know it today come from the Civil Defense programs created during World War II and expanded upon during the Cold War.

(Green, 2003a). During the 1960s and 1970s, a series of broad-reaching and deadly disasters forced public safety officials at all three levels of government to consider both natural and man-made disasters. This is known as an "all-hazards" approach.(Green, 2003b). Following the events of September 11th, 2001 and the creation of the Department of Homeland Security (DHS), which absorbed FEMA in March 2003, the all-hazards approach has been expanded to include terrorist attacks. However, this substantial expansion in responsibilities does not necessarily result in the same substantial level of increased resources. Since local, state and even federal governments have a finite amount of resources and manpower, essential services (water, electric service, telecommunications, etc) could be disrupted for an extended period of time before help arrives. This period of time is generally accepted to be up to 48 hours following an event. It is up to individuals to prepare for that period of time.

Community participation and education are relatively new concepts in emergency management. However, programs to improve public education and participation such as the Community Emergency Response Team program (CERT) are in operation. CERT was originally conceived in 1985 by the Los Angeles City Fire Department and has since been adopted nationwide on the federal level and by various states at the state level. CERT is, by nature, a local program. FEMA produces standardized training manuals and methods for use in CERT programs nationwide. CERT is a training program designed to expose citizens to a general overview of disaster preparedness and response concepts and to provide those citizens with basic hands-on training in disaster response topics such as simple Search and Rescue (SAR), first aid and fire suppression training and other information to allow citizens to begin recovery operations prior to arrival of emergency

personnel and to allow those citizens to assist emergency personnel in a large-scale disaster (Federal Emergency Management Agency, 2013b). It should be noted that the course materials offered on the FEMA website are also available in Spanish language. Best practices documents are produced by various agencies from local to state and federal agencies as well as private and nonprofit agencies. Today, emergency management is primarily a local government responsibility. All disasters start and end at the local level. Once the resources of a locality are running low, the state emergency management agency starts to provide aid, often with the assistance of other state agencies. In large disasters, the federal government provides aid to the states after the President declares a disaster. No matter what the scale of an event, command of resources in the field remain the responsibility of the local incident commander. During large events, there are multiple incidents with multiple commanders. During these events, the state takes on a coordination role but does not take over command from the local incident commanders. As discussed later in this document, the Incident Command System (ICS) – a part of NIMS allows for scalable response to any incident, no matter what size. Volunteer groups such as the Red Cross work under state emergency management agencies and their resources are coordinated with other available resources to the areas that need the most assistance. The actions discussed above are part of the response phase of the emergency management cycle. The emergency management cycle includes (1) mitigation, (2) preparedness, (3) response, (4) recovery. It is important to note that the emergency management cycle is continuous and does not stop when a community has completely rebuilt after a disaster (Federal Emergency Management Agency, 2011b).

Federal government agencies such as FEMA acts as a facilitator in allowing

localities and states to share their best practices with each other through their "Mitigation Best Practices Portfolio" online service. State-level agencies also provide best practices. The federal government has an extensive source of best practices. In the emergency management world, that agency is FEMA, or its cabinet-level umbrella agency the Department of Homeland Security. FEMA provides an extensive library of best practices documents and creates/maintains nationwide standards for incident command and management. FEMA publishes the National Incident Management System (NIMS) standard documents for use nationwide through their National Integration Center (NIC). (Federal Emergency Management Agency, 2011c). NIMS is a scalable incident management system that can be applied to any incident. Part of NIMS is the Incident Command System (ICS). ICS was developed in the late 1960s in the southwestern United States in response to problems wildfire fighting organizations experienced during large fires. ICS standardizes command and control functions into a scalable system that can be duplicated for each incident (Bigly & Roberts, 2001). ICS has since been widely adopted across the public safety sector and is used in other sectors such as healthcare (Thomas, Hsu, Kim, Colli, Arana & Green, 2005). ICS (and by extension, NIMS) are examples of nearly universal adaptation of concepts that were originally produced as best practices documents.

The history of public warning systems dates back to the days of the Cold War and Civil Defense (CD). The first nationwide alert system was called CONELRAD (CONtrol of Electromagnetic RADation) and was created in 1951. It involved two specially assigned AM broadcast frequencies that citizens could tune to in the event of a nuclear strike against the United States. All other radio stations would shut down their

transmitters and only CONELRAD stations would continue to operate. CONELRAD was never intended to be used for weather information or other natural disaster warnings (Federal Communications Commission, 1994). CONELRAD was supplemented by localities installing air raid sirens. However, these sirens were rarely, if ever, connected to a wide-area alert system and had to be activated manually. Sirens are still in use in some parts of the country today, mainly areas prone to tornados, severe thunderstorms and tsunamis. Sirens are activated either by hardwire link or dedicated radio control panels located at emergency operations centers or Public Safety Answering Points (PSAPs) There appears to be little or no standardization regarding siren usage or control/activation (Coleman, Knupp, Spann , Elliott & Peters, 2011).

CONELRAD was replaced in 1963 with the Emergency Broadcast System (EBS) (Defense Civil Preparedness Agency, 1978) . EBS added the capability of the President of the United States to issue nationwide alerts, or for local/state alerts (weather, other disaster information, etc). It greatly improved upon CONELRAD in that it transmitted through all AM/FM broadcast radio and television stations instead of just two specific AM frequencies. Any station that didn't carry EBS messages during an emergency was required to refer its listeners to another local station that did carry EBS and then go off the air (Moore, 2009). EBS would be followed by the Emergency Alert System (EAS) in 1997. EAS has since been complimented by the Wireless Emergency Alerts (WEA) system as part of the Integrated Public Alert and Warning System (IPAWS). Both EAS and IPAWS in general are discussed in more detail in the following sections.

IV. Literature Review

In order to aid in the analysis of the emergency management expectation gap, the thesis explores existing published literature in three areas of research: (1) citizen participation prior to disasters, (2) the use of best practices, and (3) public education/warning/hazard awareness.

Citizen Participation and Engagement Prior to Disasters

Improving citizen participation in emergency planning is anticipated to reduce the expectation gap. The more engaged people are the more they learn about how to prepare themselves for disasters. Once people realize that they must look after themselves and be prepared, they will have a greater understanding of the limitations of emergency response. With this understanding comes the reduction of their expectations. The literature provides examples of both high quality citizen participation and non-existent or limited citizen participation. Schoch-Spana et al, (2006) suggest that despite the negative influence on expectation gap, limited citizen participation is the norm (Schoch-Spana et al, 2006). Other research points out the importance of not only working with, but partnering with the public during a crisis, and that it is the responsibility of all organizations involved to ensure the public gets accurate and complete information (Seeger, 2006).

The following section discusses various topics related to citizen participation. These topics include the proliferation of social networking sites, the importance of individual expectations, the role of the policy maker, and the challenges encountered when attempting to engage marginalized populations. The literature also points out that the way individuals interact with each other is changing very rapidly. The Internet,

tablets, smart phones and other mobile devices are extremely popular and social networks have become one of the primary sources of information for the general public. FEMA also points out that as social networks become more popular and ubiquitous, public trust in government institutions decrease. (Federal Emergency Management Agency, 2011a) This is a serious and emerging issue that needs to be addressed. With less trust in institutions, individuals look toward members of their peer groups for information.

This paradigm shift may provide an opportunity for improving citizen participation and reducing the expectation gap. Emergency managers and policy makers could engage the public through social networks such as Facebook, Twitter, etc. and use them to provide the usual warnings for emergencies and provide general information to the public regarding preparedness. The literature suggests that social networks promote individual participation and general interest in politics (McClurg, 2003). More recent research echoes McClurg's findings by showing that survey respondent's reliance on using social networking sites showed a positive relationship to civil participation (Zhang, et al 2010).

In Facing the Unexpected, Tierney, et al (2001) note that many other factors help determine the level of preparedness a person is likely to have and that the type of hazard itself is one of those factors. Other factors range from the cost of the protective measures, an individual's access to information, his or her past experiences with hazards, as well as his or her level of risk perception (defined as "individuals' expectations about both the probability and severity of disaster impacts"). (Tierney, et al. 2001, p. 159) Due to the wide range of literature discussing the factors involved in an individuals' (and a populations') preparedness, an opportunity to improve citizen hazard and preparedness

education programs can be based upon the results of existing research. Increasing exposure to hazard information through improved public education programs and warning systems could serve to reduce the expectation gap.

The literature outlines the responsibility of all levels of government to ensure public involvement. It is also responsibility of the policy maker to understand his or her community. The United States is a diverse nation with large cities and small towns. Larger, more complex communities are likely to have formal processes for how they engage in emergency planning and response. Smaller, more rural communities still produce written documentation but these communities also rely on informal relationships (Perry & Lindell 2003a).

When examining the expectation gap it is important not only to consider the operation of disaster management agencies, the role of the policy maker, and public participation, but also the shortfalls of relevant public education, warning and currently active hazard awareness programs (risk communication systems). It is also important to note that public participation, engagement, education and warning overlap each other to varying degrees. For example, engaging the public in order to educate them about a specific hazard covers both education and engagement. Warning the public about an impending immediate hazard could be considered both education and warning. As discussed later in this literature review, a simple warning is usually inadequate. Specific hazard-based information and recommended preparedness actions should be included in warning information. It is important to point out that disaster education is a continuous process. There will always be disasters, so preparing for the next disaster stems from recovering from the previous one. Therefore, disaster education must cover all parts of

the disaster from preparedness to response and recovery.

Research indicates that there are many challenges in reaching an intended population. Getting the "right" people to attend public information meetings, for example, can prove to be difficult. When holding a public meeting on pandemic influenza, Li-Vollmer noted that underserved groups (those who know nothing about pandemic influenza) did not make up the majority of citizens at the meeting. The majority in attendance consisted of people with a great interest in pandemic influenza and therefore fell into a category of people who needed the education least, because they had a high likelihood of already knowing the information being presented (Li-Vollmer, 2013). Li-Vollmer recommended incentives (in the form of gift cards, meals, etc) tailored for the groups who are historically underserved and underrepresented. Focused incentives should be used to improve representation of underrepresented groups. Additionally, networking with community or nonprofit organizations such as faith-based groups can help remove the representation barrier (Li-Vollmer, 2013). Nonprofits are a powerful tool in emergency response and recovery efforts and their capabilities are well-understood and utilized by emergency management agencies, including their ability to acquire large sums of donations and distribute them back to the disaster-affected community (Comfort, Ko & Zagorecki, 2004). Many of the nonprofits involved in disaster response are social service organizations with ties to various communities that stem from the work they do in those communities.

Being able to understand the different needs of different population groups when planning for and responding to disasters is an important task for policy makers. Getting all the different groups in a jurisdiction to work together as a community to make plans

for risk mitigation and disaster response improves the situation for every citizen in the jurisdiction (Comfort, 2006). The federal government acknowledges this issue in FEMA's 2013 National Preparedness Report (2013). The report outlines three areas for improvement in regards to national preparedness, including "integration of individuals with disabilities and access and functional needs." This includes "children; older adults, racial and ethnically diverse communities, and individuals with limited English proficiency." (Federal Emergency Management Agency, 2013a).

In a 2011 best practices document published by FEMA entitled A Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action, three "Whole Community Principles and Strategic Themes" are listed. These include: "(1) Understand and meet the actual needs of the community, (2) Engage and empower all parts of the community and (3) Strengthen what works well in communities on a daily basis". The Whole Community Approach document discusses the various methods a locality could use to understand what makes up their community and how to use that information to improve engagement and participation, disaster planning, planning in general and public-private partnership (Federal Emergency Management Agency, 2011a). In other words, improving public participation and engagement involves a lot more than simply producing a best practices document on how to engage your community.

Risk communication methods must be designed with all of the population in mind, including at-risk population groups (Nick et al, 2009). Determining how these programs could be improved to reduce the expectation gap would provide a knowledge base for policy makers. The literature reiterates the importance of developing and

maintaining effective public disaster awareness programs as a method to reduce a community's vulnerability to disasters. Because people who are not aware of the steps they can take to mitigate the effects of disasters on themselves often believe they are helpless in disasters, public education programs empower citizens to help themselves and their family members, thus helping their communities. (Davis et al, 2003). It is important to policy makers to grasp the importance of the tasks they face. In any given jurisdiction there are different groups, and these groups require different needs (Comfort, 2006).

A 2004 study of CERT program teams in Virginia during Hurricane Isabel concluded that even though this program was still in its early stages it was able to be used as a dynamic source of manpower depending on the needs of a local community (Franke & Simpson, 2004). The needs of their locality corresponded with the different effects the storm had. On the coast, in Virginia Beach, CERT teams interacted directly with the public by going door-to-door and educating their neighbors prior to arrival to the storm. Following the storm they conducted damage assessments. In other parts of Virginia, CERT teams conducted damage assessment, answered phone calls and helped distribute food aid. CERT provides a useful tool that can be applied where help is needed most following a disaster, when regular emergency services are overloaded. Franke & Simpson (2004) noted that not all CERT teams were activated due to various issues but even though their teams were not activated, individual members still provided assistance they had learned in their CERT training.

The CERT program is not without its issues. The research noted that CERT teams equipped with two-way radio equipment were able to continue to operate once

electrical power and telephone/cellular services were disrupted by the storm whereas CERT teams that relied on "traditional" communications means were unable to communicate effectively, if at all (Franke & Simpson, 2004). Communications system survivability and interoperability during and following natural disasters is a recurring theme in the literature and does not just apply to the CERT program. While worthy of mention in this paper, an in-depth discussion of disaster/emergency two-way radio communications (in relation to CERT and in general) is beyond the scope of this research. There is some effort to standardize the use of two-way radio by CERT team members (County of Boone, IL, 2008) This is in a similar fashion to how the federal government encouraged standardization of public safety radio protocols following the 9/11 attacks.

The CERT program shows considerable promise because it incorporates public engagement and education into a single package. CERT training is offered free to citizens and the course materials are available online for anyone to view. In the example given, CERT volunteers went out into the community and educated people directly. This means that even those citizens who aren't directly involved with CERT can still reap its rewards. The CERT program has the capability of being a powerful tool in the reduction of the expectation gap.

Social networks can also be used to help educate the public. They provide an opportunity to serve dual-purpose roles. Dufty (2013b) states in his paper Towards a Learning for Disaster Resilience approach: exploring content and process:

> "…with technological developments such as social media, all people have the opportunity to be involved in disaster education. There is therefore a pressing

need to examine disaster education in this context and provide robust education based guidance to people using these emerging technologies for disaster education." (Dufty, 2013b) .

Dufty identifies the need to use new technologies for disaster education. As more citizens engage with social media, more people will utilize it to stay informed about warnings and immediate hazard information, as well as general information about disasters. Disaster education as a subset of education as a field is a relatively new concept (Preston, 2012). Prior to September 11th, 2001, disaster training focused on civil defense (from the end of World War II to the end of the Cold War) and region-specific natural disaster preparedness (for example, earthquake or tornado drills). Following 9/11 and the formation of the Department of Homeland Security (DHS), disaster education shifted toward a dual approach involving preparing for both natural and man-made disasters and acts of terrorism (Birkland, 2009). Public education regarding disasters is distributed by various methods including school lessons, warning sirens and signs, and the other methods previously mentioned in this literature review. In its current form, disaster education focuses more on the family and the individual instead of the state or the nation (Preston, 2012). The literature points out that because disaster education is often carried out by emergency management or response staff and not educators there is almost no research on the topic from an educator's point of view (Dufty, 2013a).

Widespread public disinterest in disaster planning led to the federal government having to pick up a large amount of the insurance bill following Hurricane Katrina. Even though programs such as the National Flood Insurance Program (NFIP) could have

provided many homeowners affected by Katrina's flooding with subsidized flood insurance, lack of education and planning for storms meant most homeowners were left without flood insurance when Katrina struck (Kunreuther & Pauly, 2006).

Warnings and Crisis Communication

The Emergency Broadcast System (EBS) was replaced by the Emergency Alert System (EAS) in 1997. EAS is transmitted through traditional AM, FM and TV broadcasters as well as cable TV, satellite radio, satellite TV, digital radio, NOAA Weather Radio and public safety two-way radio networks. EAS has since become a part of the Integrated Public Alert and Warning System (IPAWS) (Moore, 2009, Federal Communications Commission, 1994).

Today, the modern, connected and mobile citizen often looks to more immediate, dynamic social networks for their information. Improving warning systems and methods ensures that members of the public who do not use radios or televisions but instead rely solely on mobile devices receive complete warning information with preparedness actions outlined as part of the messages. Next-generation alerting systems are being rolled out across the country. IPAWS is a set of standards for alerting technologies (radio, television, smartphones, etc) that is designed to ensure instant dissemination of warnings, AMBER alerts, and other information as needed. IPAWS is not an alert system by itself, however, rather it is effectively an "alerts clearinghouse" that allows state and local governments to "push" alerts out through the IPAWS networks. IPAWS consists of the Emergency Alert System (EAS) and the Wireless Emergency Alerts (WEA) system (Goldstein, 2009). According to the 2013 National Preparedness Report,

during Hurricane Sandy, for example, the New York City Office of Emergency Management used the WEA system to send out local warnings to citizens' smart phones.

IPAWS is an emerging technology and is not without its faults. In a survey conducted by the U.S. Government Accountability Office, 42 out of 50 states reported they either plan to or have already begun to issue alerts outside of the EAS (and therefore IPAWS) system (Goldstein, 2009). Because of setbacks in IPAWS standardization and implementation, many states have decided to go ahead with adopting and implementing their own various alerting systems. The issue with this is when states move forward without waiting for the federal government to finalize their standards for IPAWS, the states risk adopting incompatible technology platforms. FEMA adopted the Common Alerting Protocol (CAP) in September 2010. CAP is designed to allow for alert information to be moved seamlessly among different alerting platforms (Coleman, Knupp, Spann , Elliott & Peters, 2011).

Watches and warnings are normally sent out through traditional media such as television, radio, the Emergency Alert System, NOAA Weather Radio, etc. These channels could also be used to provide preparedness messages, useful information and specific hazard information to the public. Providing an "all of the above" warning/hazard information approach is another option. A good example of the all-of-the-above approach is Virginia Commonwealth University's (VCU's) VCUAlert system, which includes text messages to students and staff as part of a broader-reaching warning/alert system that includes digital information signs in classrooms, sirens on campus and email alerts.

The National Preparedness Report also mentioned how more than 20 million

Twitter "tweets" related to Sandy were sent in the two weeks following the storm - despite widespread cellular outages (Federal Emergency Management Agency, 2013a). This statistic indicates the power of social networks as a communication tool during and following a disaster. However, its capabilities as an education tool are not discussed in the report. As mentioned, simply having a system with which to send out emergency alerts is not sufficient. The alerts must be coordinated between agencies to avoid broadcasting conflicting or confusing information to the public.

Conflicting messages are identified in the literature as an issue. Tierney, et al. (2001) state there are often conflicts between information dissemination sources. These conflicts may be caused by delays in transmitting updated information to broadcasters, which could result in one station providing outdated information while another station provides the latest update. The possibility of an individual tuning into a broadcast intended for another nearby region is also possible, in which case that individual would receive incorrect warning information (Tierney, et al. 2001). As people are likely to receive their information from more than one source, conflicts in information could cause confusion or distrust of the information altogether.

The importance of having useful and consistent emergency messages is illustrated by a 2012 report released by the Wharton Risk Management and Decision Process Center at the University of Pennsylvania. The report was based on a survey taken of 538 coastal residents from southern Virginia to northern New Jersey. The Wharton survey identifies a series of issues, including confusion as to exactly what hazards Sandy presented. Widespread misunderstanding about hazards means that people are more likely to take incorrect or inadequate preparedness actions. For example, if a coastal resident thinks the

biggest danger to their home is wind damage, the preparedness actions they take will more than likely involve securing their home against wind, while neglecting to take actions against the possibility of flooding (Baker, Broad, Czajkowski, Meyer & Orlove, 2012).People were uninformed regarding the possibility of extended power outages. Of the coastal residents in New Jersey and Delaware surveyed in the Wharton Study, only 28% of them thought their power would be out for more than 48 hours. Over 70% of those surveyed who lived less than a block from the water thought the biggest risk from the storm was wind, when the majority of damage came from storm surge and inland flooding from heavy rains (Baker, et al, 2012).

The Wharton Study shows that communicating risk information and preparedness action information to the public in a clear and usable way is very important. While emergency alert and warning systems have improved dramatically in the past decade, the content of these messages needs to be improved as well.

Perry & Lindell discuss the problem of fear of panic on a wide scale. This fear is often used as justification for withholding information regarding a hazard from the public or otherwise providing them with "vague or incomplete warning messages". Perry notes that when people are provided with incomplete information they are less likely to heed the warnings or instructions contained within the message. The fear of panic is an unfounded one. Typically, citizens behave normally and do not panic, loot or otherwise cause disruption. In fact, they tend to act rationally (Perry & Lindell 2003b). It is clear from the literature presented that confusing, contradictory or incomplete warnings have the potential to cause harm. The risk of widespread panic is low, and citizens who are provided with clear and complete warnings are more likely to take preparedness actions,

evacuate, or otherwise follow instructions given to them.

Use of Best Practices

Best practices are a powerful tool for emergency managers, first responders, public service and business in general. They are, however, not without their limitations. Best practices documents should cover both social and technical levels of discussion. Currently, public policy does not promote community involvement and until this issue is addressed, best practices documents will only focus on technical aspects while neglecting community involvement (Godschalk, 2003). Best practices documents are based on real life experiences or practical real-world experiences and in research. (Seeger, 2006). The literature also notes that it is difficult to develop best practices for disasters due to their rare and unpredictable nature (Seeger, 2006).

Perry & Lindell call attention to the fact that all types of planning are continuous processes and should not be considered "complete" at any point. Because of the inherent unpredictable nature of emergency management, the moment a plan is finished it has already become outdated. A nearly infinite number of variables are subject to change. Because of this, many emergency response agencies include provisions in their plans that require the plan be updated annually or biannually, in comparison to comprehensive plans for localities which are updated every 5 to 20 years. Best practices documents suffer the same issues with updates that plans do. If best practices documents are not updated frequently and comprehensively their effectiveness is greatly reduced.

Although best practices documents such as the National Incident Management System (NIMS) and National Response Plan (NRP) existed before Katrina, it does not

necessarily mean they were followed or understood by local, state or even federal officials. The literature demonstrates that even with best practices documents in place, there was a lack of understanding among agencies about the delegation of each agency's responsibilities as well as the manner in which they were to interact with one another and with resources on the ground (Wise, 2006).

Katrina disrupted commercial telecommunications infrastructure (mobile phones, landlines, the 911 system, etc) as well as first responder voice and data communications infrastructure. This problem was compounded by the fact that local, state and federal resources all used different radio communications systems, protocols and plans (Miller, 2006). Best practices documentation must also address these issues so that communications are not a major obstacle in providing adequate disaster response. It is the responsibility of policy makers to ensure responders are not faced with communications difficulties like those after Hurricane Katrina. If responders are unclear about the best course of action, the public will likely be confused and frustrated by the inaction that follows.

Other literature suggests even more significant issues, notably the paradigm shift that occurred following the September 11th attacks (Perry & Lindell, 2003b) on the merging of law enforcement and related agencies with natural/technological disaster agencies. This is sometimes referred to as the "all-hazards" approach. The all-hazards approach is defined as an approach that allows for response to a wide range of emergencies. These emergencies range from natural disasters (such as floods, hurricanes, earthquakes, etc) to technological hazards (for example a chemical spill or radiation leak), to terrorist acts (Waugh, 2005). This is important because often the administrators

of these newly formed agencies are typically well versed in law enforcement procedures and practices, despite the fact that natural and technological disasters occur more often than terrorist attacks. Combining these disciplines leads to both positive and negative consequences. The best practices used by law enforcement agencies may not apply well in responding to a natural disaster. (Perry & Lindell 2003b).

The all-hazards concept has had wide-reaching effects. It is noted in the literature that the adaptation of all-hazards (and the combination of homeland security functions with emergency management functions) creates a "clash" between the core concepts of these two fields of study (Drabek, 2007). Drabek (2007) notes that those involved in homeland security tend to narrowly focus on "the enemy" while those involved in emergency management must broaden their focus because of the unpredictable nature of natural or technological disasters. Drabek also notes the nature of homeland security is often a "top-down" approach whereas emergency management is, by its very nature, a "bottom-up" approach. He concludes that a clash between these two paradigms is unavoidable (Drabek, 2007). Because homeland security and emergency management have been combined as part of the "all-hazards" approach, best practices documents must be created with this in mind. When creating guidelines and templates, the agencies should strive to create a product useful for emergency management and homeland security professionals. Other researchers expand upon this notion and highlight the importance of teaching students of emergency management the organizational "culture" of those involved in the homeland security field and vise-versa to minimize this clash (Waugh & Sadiq, 2011).

Discussion

After reviewing the literature relating to the expectation gap, some trends have been noted. The level of public participation is low, and while programs do exist to engage the public, these programs are not evenly applied across communities and across the country. The United States is a diverse country with diverse communities. Different demographic groups and their respective communities have diverse needs. The literature shows that those sections of the population which are least exposed to life-saving information and education are likely to need the information the most. Approaches to disaster education, citizen engagement and warnings/alerts must include the whole community. Emergency information must be tailored to convey the intended message to diverse target audiences. Disaster education is still in its infancy and appears to be mostly taught by those outside the education field.

The literature also shows that disasters are becoming more frequent and costly. The federal government is spending an increasing amount of money on disaster recovery. The challenges presented by the expectation gap are expected to become more significant as time passes. However, programs such as the Community Emergency Response Team (CERT) show that the capability of reducing the expectation gap through improved citizen engagement and education exists but requires improvements.

It is the job of emergency management agencies and other government agencies to provide citizens with complete and understandable warning information. This includes making use of rapidly-developing technology such as smartphones and social networking sites. Simply using these methods to disseminate data is not enough. Standardization of warning terminology and platforms is key to successful crisis communications. As discussed in the literature review, many people are ill-informed about the hazards of an

imminently threatening disaster. This is due to any number of factors, including poor comprehension of terms used in warnings, misunderstanding the differences between a "watch" and a "warning," and confusion as to the specific hazards they face. Because hazard information drives preparedness actions, incorrect or non-existent hazard information can have serious consequences, however, the literature seems to suggest that creating a "perfect" warning system is an incredibly difficult undertaking.

The literature review illustrates the seriousness of the expectation gap. It shows the existence of issues with educational programs, citizen engagement, particularly minorities, crisis communications, as well as interagency cooperation and partnerships. With these factors in mind, I developed a research methodology to further explore these topics with the goal of discovering ways to reduce the expectation gap and increase individual preparedness. The following section discusses the methodology I utilized to investigate these topics.

V. Research Methodology

The research consisted of in-person and telephone interviews with officials involved in emergency preparedness and disaster response. Interview questions explored the participants' experiences in their positions and how they relate to the research topic of public participation and interagency coordination and cooperation in disaster preparedess and planning. Interview participants discussed their experiences administrating public engagement programs such as CERT. I used a digital audio recorder to record each interview and took detailed notes on the topics discussed. All recordings were kept confidential. I noted anything of interest mentioned by the interviewee, including topics

outside the prescribed interview questions.

My first approach involved making contact with possible subjects through professional connections at the Virginia Department of Emergency Management (VDEM). My second approach focused on other pre-existing contacts in the emergency management field. As part of my third approach, I attended the 2013 Homeland Security Expo in Washington, D.C. on October 15th and 16th. I met with many vendors, attendees and speakers and discussed my research with them. After speaking with the contacts made using these three methods, I requested that they recommend colleagues who could further contribute to my research. This is known as the snowball sampling method. The October 2013 U.S. Government shutdown (October 1st – October 16th) caused a significant amount of difficulty in finding interviewees, specifically those working for the federal government. Because furloughed government employees were not permitted to answer their work phones or reply to any emails, it became nearly impossible to make contact with them for the duration of the shutdown. However, once the shutdown was lifted, a handful of government workers made contact to schedule an interview. Overall I conducted 15 interviews, providing a sample of federal, state and local officials as well as professionals with volunteer and private sector experience. The research participants interviewed discussed their experiences, as well as their relationships with planning departments, public affairs offices, and the public. Table 1 provides a listing of the research participants and their positions and Chart 3 provides an illustration of the research subject contact process. On Chart 3, the green boxes indicate research subjects (interviewees) and the blue boxes indicate the sources of those contacts. Both Table 1 and Chart 3 are located below.

Name	Position	Date
Phil Miskovic	Councilman, Town of Crewe, VA/VDEM Policy Analyst	19-Aug
Linda Rubin	Director, CERT Program, VDEM	20-Aug
Bob Spieldenner	Director, Public Affairs, VDEM	3-Sept
David Calkins	Deputy Plans Chief, VDEM	3-Sept
Bonnie Scott	Continuity Manager, City of Richmond OEM	18-Sep
Anthony McLean	Coordinator, City of Richmond OEM	18-Sep
Sean Brew	Supervisory Special Agent DHS/ICE	25-Sep
Morgan Armstrong	Former Chief Judge of 21st Judicial District/EMT, Henry County, VA	25-Sep
Kristin Devoe	Assistant Director, Public Affairs, NYS OEM	26-Sep
Jalal Mapar	Director, Resilient Systems Division, DHS	30-Sep
Christine Beste	Former Team Leader, Americorps/National Civilian Community Corps (NCCC)	11-Oct
Keith Holtermann	Director, Research and Development Partnerships in Science/Technology Directorate, DHS	21-Oct
Lisa Dinhofer	Owner, Kodan Consulting Services LLC	21-Oct
Gwen Camp	Director, Individual and Community Preparedness Division, FEMA	24-Oct
Jill Smith	Owner, Waterford Publishing Group	30-Oct

Table 1: List of Research Participants (Interviewees)

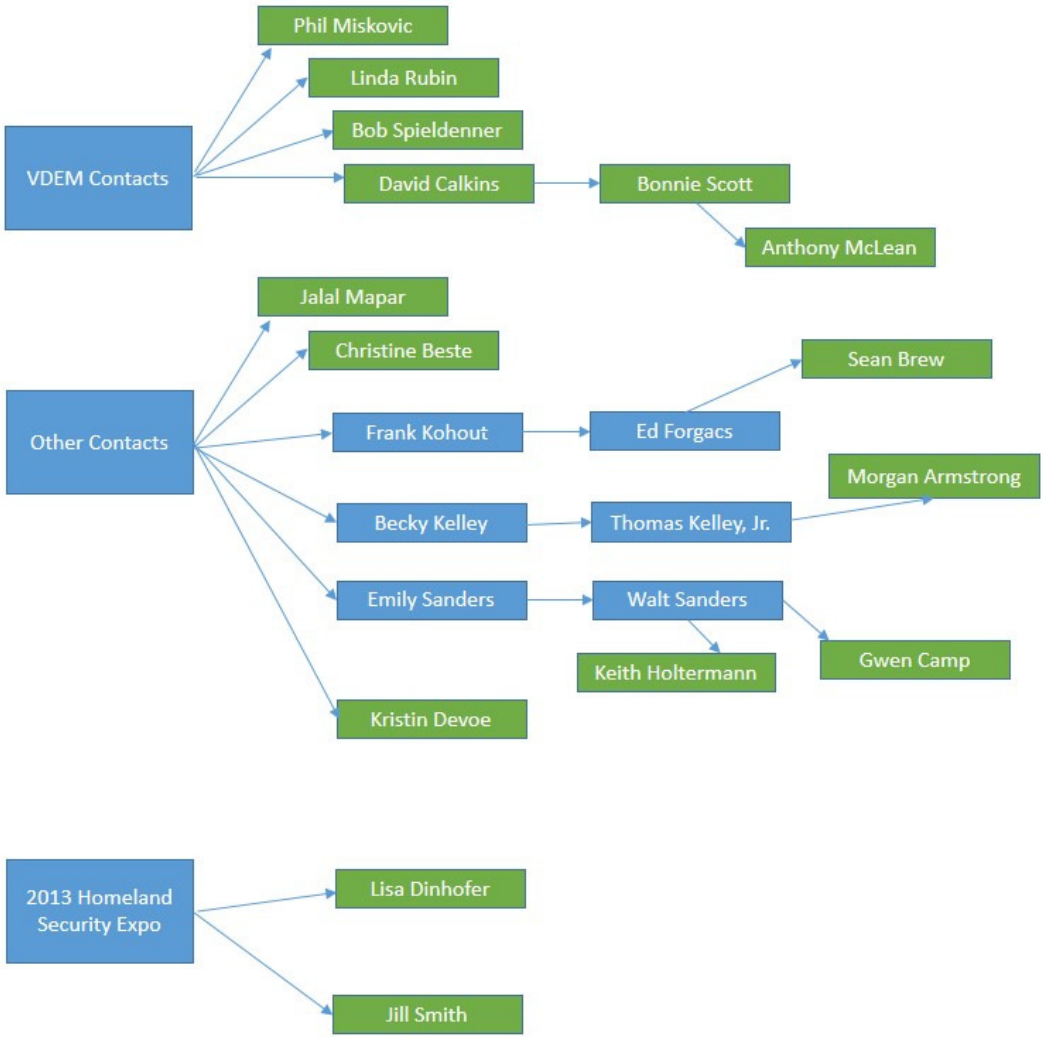

Chart 3: Research Participant Contact Flowchart

Exploring the issues with current programs, existing opportunities for citizen engagement and education, along with exploring how different agencies interact with each other during disaster planning has allowed me to make recommendations. Through research and analysis of the interview content, I make recommendations relating to multiple areas of public policy, especially planning and emergency management.

VI. Findings

The following section discusses the research findings. It includes discussion on citizen participation and preparedness as well as education and engagement. It also discusses the issue of created expectations, issues with warnings and crisis communications, use of best practices, the differences in preparedness levels and expectations across demographics, and cooperation and partnerships.

Citizen Participation and Preparedness

As discussed in the literature review, citizen participation levels are unsatisfactory. Low participation levels are associated with low preparedness levels. According to a 2010 survey conducted by VDEM, a majority of respondents surveyed stated they had discussed emergency plans with their families. However, when asked if they had an actual emergency plan, most of the respondents answered no (personal communication, 9/3/13). This suggests many people believe they are prepared for disasters, but they are only partially prepared and/or only prepared for one specific type of disaster/services disruption. This ties back to a larger theme, which is that people tend to overestimate their preparedness level.

According to the a representative of the VDEM Public Affairs Division, when an

event is about to occur, people go out and buy "milk, bread and toilet paper" even if there's a chance of extended electrical power disruption (personal communication, 9/3/13). Individuals are prone to follow a "herd mentality" and engage in behaviors such as stockpiling items such as milk which require refrigeration is ill-advised if the impending event is predicted to cause extended power outages. It is the job of public policy makers in general to ensure that people make the right decisions.

Education and Engagement

The majority of interviewees remarked on the relationship between someone's expectations and their experiences. People are uninterested in preparing for a disaster until it affects their area, their friends/family or them directly. Unfortunately, people in general seem to have bad short-term memory. A representative with VDEM described was a "window of opportunity" – that is, 6-8 months following a major disaster, people remain interested in emergency preparedness. Following this, the "it won't happen to me" mindset returns, making it difficult to get people interested in preparedness as interest in preparedness quickly returns to pre-disaster levels (personal communication, 9/3/13). Generally, people do not want to spend time or resources preparing for something frightening such as a disaster.

Interview participants provided examples of community education and involvement from both states. New York operates regional emergency management offices and these offices are involved in community outreach. Virginia operates in a similar fashion. The regional offices coordinate with localities. Most outreach is done on the local level. This is true in Virginia as well. The localities know their communities better than anybody else. For example, Albany County, New York maintains a "senior

service list" of all the elderly citizens in the area, giving them priority following disasters (police checking up on them, etc) (personal communication, 9/26/13). The city of Richmond, VA offers a Senior Help Line, a dedicated telephone number designed to help senior citizens access city services and information (personal communication, 9/18/13). The elderly, like other vulnerable populations, stand to benefit from services such as those mentioned above.

An interview participant from the NYSOEM Public Affairs Office discussed the New York State Fair, where, NYSOEM (in cooperation with New York State Police) operated a booth that showcased preparedness, provided examples of kits, etc. Over 10,000 people visited this building. Thousands of preparedness handbooks were distributed. Other giveaways included small flashlights, whistles and car emergency kits with the NYSOEM preparedness information website printed on them (personal communication, 9/26/13).

Over 80% of the interview participants noted there is little focus on preparedness education in the United States. FEMA intends to develop open-source platform video games for mobile devices, which will be aimed at the K-4 age group and aim to develop a child's awareness of possible events and how to properly react to them (personal communication, 9/30/13). An extreme example would be a school shooting, which would well illustrate the concept of teaching children preparedness. Schoolchildren are often not prepared to cope with school shootings because they have not been educated about then. The same could be said for disasters in general.

An interview participant from the VDEM Public Affairs Division mentioned the importance of Virginia's yearly tornado drill in teaching children emergency

preparedness behaviors. In Virginia, all public schools must participate in the yearly statewide tornado drill. This improves awareness and preparedness in regards to a specific type of hazard. The Virginia statewide tornado drill is a successful program and could be used as a model for other education programs. All public schools in Virginia are required to participate in the tornado drill. Private schools are encouraged as are businesses and government. However, Virginia currently does not have the power to force private schools to participate. This potentially puts private school children at a disadvantage. VDEM offers optional registration for the tornado drill. In 2012 there were over 1 million registrations in Virginia, the highest number for any state in the southeast United States. Preparedness level is difficult to measure but participation in the tornado drill is a starting point. Following the 2010 tornado outbreak in Virginia, tornado drill registrations increased (personal communication, 9/3/13). This is another example of people becoming interested in preparedness following a disaster.

Two interview subjects from VDEM discussed the concept of "Preparedness Seasons" is a good starting point, going from the statewide tornado drill program (Spring). For example, in October, there is the worldwide "Great Shake Out" drill (10/17 at 10:17am local time). The "Great Shake Out" earthquake drill program originated in California has since become worldwide exercise. It was not until the August 2011 Virginia earthquake that people began to incorporate earthquake drills. In the winter, preparedness activities for blizzards and ice storms can be undertaken (personal communication, 9/3/13). During hurricane season, the yearly sales tax holiday is an opportunity to encourage people to stock up their emergency kits. Another recommendation is to create preparedness "catchphrases." The phrases associated with

Smokey The Bear and forest fire safety ("only you can prevent forest fires") as well as general fire safety ("stop drop and roll") are well-known throughout the United States (personal communication, 8/20/13).

Another possible method for educating the public is providing hands-on training in the basics of emergency response. The CERT program offers exactly this. However, CERT suffers due to limited marketing. Currently, CERT is only "advertised" through word-of-mouth and on government and associated preparedness websites. No advertising or marketing funds exist for CERT. An individual who seeks out information on emergency preparedness training will probably come across CERT, but chances are the average citizen will not (personal communication, 8/20/13). That same interested citizen may encounter online classes are available through the Emergency Management Institute (EMI) on the FEMA website. These classes are available for anyone to take free of charge. These classes provide in-depth information on a wide range of emergency management topics and are geared toward professionals who already work in the emergency management field. While worthy of mention as an educational tool, the FEMA-EMI classes are likely of little use to the average citizen (personal communication, 9/3/13).

When compared to other countries, the preparedness education in the United States is unimpressive. An interviewee from the DHS Resilient Systems Division used Israel as an example of comprehensive preparedness education. Israel routinely conducts emergency exercises in schools. However, in contrast with the methods used in the United States, these exercises are paired with an intensive public relations campaign which includes inviting the media and foreign dignitaries to observe the exercises. These

exercises are heavily covered in the media and receive large amounts of public attention. The students there don't view the exercises as a nuisance, instead they consider it a normal part of their daily lives. Their culture has been changed to include preparedness as something that comes naturally (personal communication, 9/30/13).

Creating Expectations

Both interviewees from the City of Richmond OEM discussed Hurricane Isabel as an example of unrealistic public expectations. These expectations were in some cases perpetuated by those providing disaster assistance. For example, power companies provided ice to some residents who were without power and soon ice became a commodity, even though ice is of very little use in a disaster situation and requires large amounts of expensive resources (manpower, vehicles, and fuel/energy) to keep frozen.

The "ice example" was encountered multiple times throughout the research. It was related to the concept of "political resources". Elected officials want to show that they are taking care of their constituents' needs, If the people demand ice, the people will get ice. Following Hurricane Isabel, the city of Richmond, Virginia delivered over 90,000 pounds of ice over three days. The ice example shows how politics and lack of community education combine to create an expectation. Now, whenever a similar event occurs, people expect ice to be provided to them. Without realizing it, elected officials and the power company had actually widened the expectation gap by perpetuating the idea that ice will always be available no matter what. The two interviewees from the Richmond OEM felt that the issue of "created expectations" can be mitigated by improving citizen education.

Warnings and Crisis Communication

Multiple interview participants identified the issue of 'crying wolf' as an issue facing those responsible for warnings and crisis communication. People become desensitized to warnings and emergency messages, when warnings are issued and nothing happens or the event is less intense than the warnings predicted, people quickly lose faith in the system. Compounding this problem is when people ignore the warnings and remain in dangerous areas put themselves and first responders at risk. Ignoring warnings causes problems not only for the individual who ignores them, but for the community as a whole.

One interviewee (an ICE Special Agent who works in the New York City area) pointed out that expecting 100% of citizens to comply with evacuation orders is unrealistic. During his interview the special agent stated "Short of forcing people out, you'll never get 100% of the people to comply with evacuation orders" (personal communication, 9/25/13).

This interviewee also discussed how people may be reluctant to leave their homes for various reasons. One of the big reasons is pets. Shelters don't (usually) provide accommodations for pets. Providing shelters for pets with their owners or providing a secure shelter location for pets would encourage those people to evacuate. The research subject provided an example relating to the then-current flooding in Colorado and how National Guard helicopters rescued people who had ignored evacuation warnings because of their pets (personal communication, 9/25/13).

Most people assume services like electrical power and telephone (both landline and mobile) will be restored quickly, even though this is usually not the case after large

scale disasters. One of the interviewees, the owner of a family assistance consulting company, discussed the role of disaster as a personal stressor. When people are stressed they think differently. A sense of urgency and doubt contributes to panic and anxiety. Reducing this doubt by providing regular updates during and after an event serves to make the public's expectations more realistic. The less informed people are, the higher their expectations tend to be. This applies to both disaster response and preparedness (personal communication, 10/21/13).

As discussed earlier in this paper, expectations largely stem from personal experiences. Improving communication to the citizens during a crisis will help establish reasonable expectations in the future. In this same interview, the interviewee outlined other areas of concern in regards to crisis communications. She noted that authorities tend to overstate the positive and understate the negative in an attempt to reassure people. She also noted that authorities tend to mislead people in regards to their capabilities and time frames involved. These pitfalls actually have an effect opposite to their intended effect. Providing incomplete or incorrect information causes people to distrust authorities which in turn makes their expectations less realistic. Keeping emergency messages consistent and steady (meaning regular updates on the situation, even if nothing has changed, an update is still provided) is essential to keeping expectations in check (personal communication, 10/21/13).

An interviewee from FEMA's Resilient Systems Division discussed a way to improve warnings. Following the Christchurch earthquake, the New Zealand government conducted a whole community survey to get a better idea of what messages people did and did not understand before, during, and following the earthquake. This was not an

After-Action Report (AAR) or similar but a scientific study, the results of which are being used to improve warning systems and the language used in warnings and emergency information in New Zealand. Conducting surveys like the one follow large events could be used to improve warning systems in the United States (personal communication, 9/30/13).

Use of Best Practices

Nearly all the interviewees spoke of widespread adoption of best practices and their use. Some exceptions were noted, however. Some organizations appear to be "strict" in their applications of rules and regulations on how things should be handled. In urban areas, following best practices and standard operating procedures makes things easier for everyone involved, even volunteers. One example provided by a former team leader with Americorps/National Civilian Community Corps (NCCC) was of an American Red Cross shelter leader who refused to allow volunteers to work past their prescribed work hour amounts even though those volunteers were willing to work more hours (personal communication, 10/11/13). All interviewees spoke of universal (or near-universal) adoption of the NIMS/ICS protocols.

One interviewee, from the FEMA Individual and Community Preparedness Division discussed the significance of Presidential Policy Directive 8 (PPD-8, also known as the National Preparedness Directive). PPD-8 outlines a framework for preparedness. It was noted that issues tend to occur when people do not follow the framework. In order to follow the framework, agencies must set their policies according to the framework, train to the framework and test the training often. The importance of training cannot be understated. Frequent and consistent training is essential for people to respond correctly

during a disaster situation (personal communication, 10/24/13). The importance of training was a common theme during the interviews. No matter the background of the interviewee, they discussed the need for more training to improve preparedness and response.

Differences in Group Preparedness Levels and Expectations

There appears to be a significant variation in preparedness levels and expectations across population groups. When asked about differences in group expectation levels, an interviewee with the FEMA Individual and Community Preparedness Division noted that the public's expectations vary depending on which phase of the emergency management cycle is being discussed and depending on the scope of the disaster in question. During the response phase, expectations can vary from urban to rural areas as well as across socioeconomic lines. During the recovery phase, however, expectations appear to equalize. This is especially true following large scale disasters (personal communication, 10/24/13).

Rural vs. Urban

In regards to rural areas, it was noted that citizen expectations tend to be more realistic and closer to the actual response capabilities of their community. This was noted by interviewees from both Virginia and New York, as well by interviewees with experiences in urban, suburban and rural areas. 13 out of 15 subjects interviewed mentioned the disparity between rural and urban areas. This could be due to several factors: Small communities tend to rely more on volunteer emergency services, so citizens are more likely to have experience with working for volunteer fire departments or to know somebody who has had these experiences (personal communication, 9/25/13).

Familiarity with local first responders' capabilities means residents know what to expect. It also means these residents are more likely to be prepared. This supports earlier statements by interviewees that illustrate that lower dependency on government services is associated with greater levels of preparedness. Being knowledgeable about response capabilities is not the only reason that people from rural areas tend to be more prepared, however. Due to their isolation, people from rural areas tend to develop strong connections with their neighbors. It was noted by an Emergency Medical Technician in Henry County, VA that following severe storms, many residents did not wait for crews to remove trees, instead they used existing connections with their neighbors to band together and begin the cleanup process (personal communication, 9/25/13).

In another interview a participant from the NYSOEM Public Affairs Office made a comparison between New York City and the Mohawk Valley in Central New York. Residents in the city expected quicker emergency response, and wanted their services restored quickly. In the rural Mohawk Valley, people were generally able to respond themselves, or at least start recovery activities before emergency services arrived. Those living in urban areas are accustomed to reliable service and rapid restoration of services following a disruption which may contribute to their higher expectations compared to rural residents. Those who live in rural areas tend to be more self-reliant just as a result of where they live and the lifestyle they live (personal communication, 9/26/13).

An interview participant from the VDEM Planning Section also discussed this issue. He discussed how people with easy access to shopping are more likely to live an "off-the-shelf lifestyle". In other words, stocking up on supplies is uncommon because many people are accustomed to buying goods on an as-needed basis. This is more

common in urban and suburban areas. Compounding this issue is the fact that many retail chains operate on the "just-in-time" principle. Stocks are replaced only when supplies of a particular item have run out or are about to run out. This means that following the initial rush for emergency supplies, it will be difficult to source emergency supplies because disasters also disrupt distribution networks. He remarked that a long-term disaster situation would result in extreme difficulty in locating supplies, putting those who have little or no supplies stockpiled at significant risk and increasing their dependence on disaster relief services (personal communication, 9/3/13).

Socioeconomic Considerations

Extending from this discussion comes the question of lower-income citizens. Richmond's Emergency Coordinator, described a "55 year old grandmother who takes care of her grandkids alone" as the first type of person who calls City Hall during or after a disaster asking why her power hasn't been turned back on. In this example, the citizen has barely enough money to put food on the table, let alone money to purchase supplies for an emergency kit. In cities such as Richmond where 26% of the residents are below the poverty line, providing for low-income citizens presents a significant challenge. This demographic is the largest user of other government programs such as food stamps and Medicaid and stands to lose the most when disaster strikes (personal communication, 9/18/13).

Interview subjects from the City of Richmond Office of Emergency Management also described a program to "kickstart" citizen's emergency kits. Providing low-income families with items such as flashlights, battery powered radios and extra batteries as well as food and water were considered. However, the federal government initially declined

to provide funds for this project. They stated that food and water should not be included in free kits and that families should go about acquiring supplies themselves. Those who only have enough money to put food on the table are not likely to spend money on stockpiling food for a disaster, making those living in poverty considerably more vulnerable. Poor populations tend to live in flood-prone areas and tend to suffer more following a disaster, especially one involving flooding, increasing their dependence on outside aid following a disaster. These findings are similar to those Leitch (2012) described in her paper regarding poor neighborhoods' vulnerability to flooding in the city of Richmond. The combination of these two vulnerabilities poses a significant threat to areas of high poverty. Individuals and communities need to be prepared for 72 hours without outside help. This means 72 hours of total service disruption. Lower-income families and individuals will find preparing for this amount of time difficult, if not impossible.

During another interview, the NCCC team leader noted another issue regarding poverty and disasters. A disaster provides an opportunity for people to take advantage of a large amount of resources "surging" into a disaster zone post-disaster. People who suffered little to no loss from the storm still took supplies offered to them. It is difficult for untrained or under-trained volunteers to make a judgment call and even harder for them to refuse supplies to someone. This echoes the issue of created expectations. Some of those living in poverty expect free supplies to be available following a disaster and feel that they deserve those supplies regardless due to their economic situation. However, this is by no means the norm. One example that the NCCC team leader provided was that of an elderly woman who had lost everything as a result of Hurricane Sandy and was living

in the shelter but went out and volunteered every day and asked for no special treatment. An individual's regular day-to-day attitude will more than likely carry over to post-disaster situations. While there are people taking advantage of emergency relief services, there are other people who put their community first and do not expect anything in return (personal communication, 10/11/13).

Age Differences

Over half those interviewed discussed disparities in preparedness levels on the basis of age. Young adults tend to be the least prepared group. This is most likely due to several factors, one of which is that many young people live in locations for short periods of time (university dorms especially) and have less of a desire to prepare in a place that they have very little emotional and economic connection to. Another reason could be a result of the growing dependency on mobile devices such as smartphones and computers. An extended service disruption to mobile phone service, electrical power, cable TV, etc will have a more profound effect on people who have grown dependent on those services.

It was interesting to note that while young people tend to be ill-prepared, an interviewee from the VDEM Office of Public Affairs stated that those who are new parents generally take a greater interest in the safety of their children. New parents appear to be considerably more prepared than unmarried young adults. School age children are another group that could be considered an "issue group". The responsibility of addressing the issue with school-age children has fallen into that hands of states and localities (personal communication, 9/3/13).

Older generations tend to have stronger connections with places. They have strong associations with specific homes and neighborhoods that are significant to their

personal history. This applies across economic backgrounds but is particularly strong with lower-income citizens. This was noted by a VDEM Policy Analyst as well as a NCCC team leader during their interviews. When someone works their entire life to own a home and it is the only physical object of value they own, it is unlikely that they will leave. Not only does this demographic suffer in terms of preparedness but evacuation as well. Those of greater socioeconomic status have the privilege of leaving the affected area and utilizing options such as hotel rooms and accommodations with family. The extreme poor do not have these options. Lack of evacuation options combined with a strong connection to their homes and communities mean that many will not evacuate regardless of the expected severity of the impending disaster. The NCCC team leader stated that, in her experiences working in both the Gulf Coast post-Katrina and the New York metro area post-Sandy, the poor and elderly populations suffered the most. They suffered not only because they happened to live in a vulnerable location but because they were less likely to have the means to evacuate and/or the desire to leave their homes and communities (personal communication, 10/11/13).

Functional Needs Populations

In regards to functional needs, an interviewee from the NYSOEM Public Affairs Office discussed how NYSOEM publishes brochures in nine different languages. The state provides interpretation services free of charge (known as the Language Access Plan). Census data was used to determine which languages preparedness information should be translated into. NYSOEM is in the process of adding language access information to their website and a 24-hour telephone number "language line" to assist non-English-speaking citizens (personal communication, 9/26/13). In his interview, a

participant from the VDEM Office of Public Affairs discussed how VDEM offers brochures in ten different languages. From this it is clear that state emergency management agencies are making these materials available (personal communication, 9/3/13).

In her interview, an interviewee representing the FEMA Individual and Community Preparedness Division discussed how FEMA has identified modifying plans to better include provisions for functional needs populations as a high priority. Many state and local plans were written assuming the population is all able bodied and not young or elderly (personal communication, 10/24/13). Provisions for functional needs populations, those who require medication and/or medical care on a regular basis, children, and the elderly were included as appendices instead of being integrated into the main plan. FEMA is encouraging states and localities to re-write plans that include all members of the community. A key part of this process is obtaining demographic information on the community in question, as well as statistics on functional needs populations and any other location-specific information (i.e. languages commonly spoken, cultural considerations if applicable, etc) in order to better tailor the plan to the community to better serve all members of the community when a crisis occurs. This is referred to as the "whole community approach". The whole community approach to emergency planning was mentioned in three different interviews, Resilient Systems Division (DHS), Individual and Community Preparedness Division (FEMA) and the Science Technology Directorate (DHS).

Cooperation and Partnerships

Throughout the research process, many interviewees mentioned the importance of partnerships. For example, the Virginia Department of Transportation (VDOT) has taken the lead in planning the activities behind National Preparedness Week. The Virginia Department of Education (VDOE) administers drills in public schools. The VDOE cannot "force" schools to participate in activities however, an example is that some schools scheduled their Standards of Learning (SOL) standardized tests on the same day as the tornado drill (personal communication, 9/3/13).

Volunteer organizations (VOADs – Volunteer Organizations Active in Disaster) such as the Red Cross and Salvation Army (as well as other faith-based organizations) are useful in disaster response but can also be used for disaster preparedness, especially faith-based organizations with deep connections to the communities they serve. It was noted that relationships with faith-based organizations tend to be more informal than relationships with organizations like the Red Cross. An interview participant with VDEM's CERT program and the NCCC leader interviewed both identified the possibility of using VOADs' to improve disaster preparedness and reduce the expectation gap.

During her interview, the NCCC team leader remarked on the strong connection between NCCC volunteers and the American Red Cross as well as city agencies while working in the New York City metropolitan area following Hurricane Sandy. She described in detail her experiences working with a combination of local, state, federal and nonprofit/VOAD organizations. The American Red Cross shelters were staffed by a combination of NCCC volunteers and American Red Cross staff. NCCC teams from across the country were sent to the areas affected by Sandy and proved to be a valuable resource post-disaster. NCCC volunteers also performed pre-staging activities prior to

the arrival of Sandy, working closely with FEMA and NYSOEM to set up shelters in Upstate New York.

When Sandy changed course and moved towards the city, these resources were quickly repositioned and the volunteers moved to where they were most needed. It was noted, however, that NCCC volunteers focused only on pre-staging and operating shelters, not education. It appears no organized efforts were made to educate people in shelters about preparing for future disasters. This could be due to one of several factors. The rarity of a strong storm such as Sandy hitting the Northeastern United States influences many people to believe a similar event will not occur again in their lifetimes, leading them to believe that future preparations are unnecessary. Many people in shelters experienced considerable trauma, such as losing loved ones, pets, property, or other belongings. Any discussion regarding future preparedness occurred in an informal one-on-one setting in the shelters (personal communication, 10/11/13).

Faith-based nonprofits were recognized by interviewees from NYSOEM and VDEM as well as the NCCC team leader interviewed as having a crucial role in reaching out to the public. New York City has a large Jewish population and faith-based organizations encourage community members to be prepared. An example provided was the "if you see something, say something" campaign, Jewish organizations assisted in spreading the word of this campaign. Partnerships with many other agencies in addition to the faith-specific one listed above. The New York City metropolitan area is incredibly diverse and is served by a multitude of different nonprofits and faith-based organizations.

A participant with the City of Richmond Office of Emergency Management described the close partnership Richmond has with Virginia Dominion Power. Electrical

service restoration is a key part of disaster response. Dominion conducts monthly disaster preparedness meetings with city leaders. Dominion works with city Department of Public Works (DPW) during disaster response. Citizens see Dominion working in cooperation with the city. The partnership was described as being very successful. DPW crews investigate downed power lines and communicate with Dominion to determine the status of the line. This allows for more efficient use of manpower and resources following a disaster (personal communication, 9/18/13).

The NCCC team leader interviewed discussed how the major nonprofit organizations/VOADs involved in disaster response (such as the Salvation Army, Catholic Charities, American Red Cross and others) are generally not independent from political influence. In order for a nonprofit to motivate people to donate funds, they must appeal to the political and/or religious beliefs of their target audience. While this appears to have no effect on the quality of the services these organizations provide, it is worth noting, especially when one considers organizations such as the American Red Cross to be apolitical (personal communication, 10/11/13).

VII. Conclusions

The expectation gap is a complex issue facing public policy makers today. Policy makers face a population that is generally under-educated and over-confident in their level of preparedness. My research shows that differences in expectations and preparedness across exist demographic categories, including age, socioeconomic status, and family status. For example, whether an individual lives in an urban or rural area influences his or her level of preparedness and expectations. This rural vs. urban split is

not discussed in the literature specifically, however, the literature does discuss differences in groups' expectations in general. The literature shows the public's prior disaster experiences influence their current expectations. My research supports this, however, the literature does not discuss the issue of created expectations. Expectations can also be created inadvertently by politicians, government agencies and private entities. Expectations tend to vary during the immediate response phase and approach equalization during the long-term recovery phase of emergency management. During the recovery phase expectations appear to be high across demographic groups, even following large-scale disasters.

As discussed in the literature review programs are operating and in development at all three levels of government and in the private and nonprofit sectors to improve public participation and reduce the expectation gap. The literature identifies that these programs are not sufficient and the expectation gap is still a significant issue. My research supports this, showing that existing education programs do not adequately cover all types of hazards and are limited in scope in comparison to education programs in other countries. Additionally, my research reiterates the importance of education and training as a crucial step in reducing the expectation gap. My findings echo earlier statements in the literature about the importance of education. The literature identified inconsistent application of education programs as another possible issue. Those with less exposure to education programs generally have the greatest need for the information, an issue I also identified in my research. Programs such as CERT are in operation and have demonstrated their effectiveness in reducing the expectation gap and improving preparedness through educating those who participate in the program. My research

shows the CERT program requires improvements to allow it to reach the most vulnerable members of the population, another issue identified in the literature review. All three levels of government identified providing for the needs of functional needs groups as a high priority. As discussed in the literature review, the whole community approach of emergency planning was developed with these populations in mind. Communities continue to improve their plans to accommodate the needs of all the members of their community. Previously, the literature identified this issue and my findings echo the previous findings discussed earlier in this paper, specifically the adoption of the whole community approach to emergency planning.

Both the literature and my research determined improving crisis communication to be an important part of reducing the expectation gap. Warning and alert systems are constantly being improved and new systems are being developed. The literature identified issues with current crisis communication and warning systems, including the failure of public officials to provide citizens with complete information due to an unfounded fear of panic. My findings mirror this and show that failure to provide complete information to citizens can undermine the credibility of public officials and increase public anxiety, but is unlikely cause widespread panic. In contrast to the discussion in the literature review, my research does not show widespread misinterpretation of emergency messages as a significant issue, however, it discusses the importance of tailoring emergency messages to a specific area and for a specific hazard.

Partnerships are currently in place and are effective. This includes partnerships horizontally between state agencies, and between states as well as vertically between local, state, and federal agencies. These entities partner with service organizations,

private enterprises and VOADs on both small and large scales. These partnerships are well-established and provide life-saving services during and following disasters. My findings show widespread use of best practices with some minor exceptions. Best practices are widely understood and adopted by agencies throughout the emergency management world. This is in line with what I found in the literature, which points to near-universal understanding of best practices with some isolated issues in the application of best practices.

As a result of these findings I believe that more research is needed in the following areas:

- How can CERT and similar programs be improved and adapted to better prepare under-represented groups such as minorities, the elderly and young adults?
- How can volunteer organizations be utilized to increase citizen participation and engagement in the disaster preparedness phase?
- How and why do expectations change during the four phases of emergency management?
- In what ways can warning and crisis communications systems be improved to better serve our communities during all phases of the emergency management cycle?
- Why is there a notable difference in expectation levels between urban and rural areas?
- What influence does individual political affiliation have over expectations in urban and rural areas?

Recommendations

The research findings indicate several ways in which policy makers can reduce the expectation gap. The following recommendations outline methods which should help improve emergency preparedness for all members of our communities.

1) Improve educational programs to include all-hazards - Educating children is key. The majority of interviewees mentioned education as an extremely important part of reducing the expectation gap. The research subjects noted that children are a captive audience and it is easier to teach children than it is to teach adults. For example, Virginia has a statewide tornado drill that takes place yearly in public schools. Another approach involves using the statewide tornado drill and other initiatives such as the Great Shake-Out earthquake drill as model programs from which preparedness drills for all-hazards can be developed. Implementing CERT training as a part of high school U.S. Government courses is also a possibility. This will expose teenagers to preparedness training and increase the chances of those students discussing their newly acquired knowledge with their families.

2) Offer CERT and similar programs in other languages - Minority populations were often overlooked in the disaster planning process prior to the development of the whole community approach. As part of a whole community emergency planning approach, CERT programs should be offered in the many of the more common languages spoken in a specific region.

3) Improve crisis communications - Providing clear and complete information to citizens during all phases of the emergency management cycle is crucial in regards to managing expectations. The more informed people are, the better managed their

expectations will be. It is important to provide event-specific information to allow for people to take specific preparedness actions. For example, stating that power will be out for a week or longer instead of just saying that the power will be out provides citizens with a more complete picture of what to expect.

Disasters are stressful situations and stress changes the way people think. Those responsible for providing emergency information should tailor the way they present crisis information for people under stress. Information should be provided in a complete form, understanding the negative and overstating the positive should be avoided. This will serve to both improve the creditability of warnings and emergency messages and reduce the future expectation gap.

4) Increase exposure to preparedness information and programs - It is important to repeat a message often and through different types of media. The more frequent somebody is exposed to a message, the more likely they are to remember it. The growing influence of social media provides an opportunity for this, but social media is not enough. Policy makers should consider providing advertising funds for CERT and similar programs.

As disasters become more commonplace and citizens expect more from their governments, the issue of public expectations becomes increasingly important. Educating citizens, improving accessibility and proliferation of disaster preparedness information are all crucial elements of creating a culture of preparedness and tackling the "it won't happen to me" mindset of many Americans. This effort must be undertaken by all levels of government as well as private enterprises and private individuals. A collective effort among diverse communities is needed. Currently, in the realm of public

policy, very little academic discussion of the expectation gap exists. While this paper focuses on emergency management, it allows for the possibility of further research into various aspects of the expectation gap and how it relates to the public's expectations of their governments in the realm of public policy in general.

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Appendix A: Interview Questions

The interview phase of this research will consist of telephone and face-to-face interviews with emergency management officials, public information officers, community outreach officers, and city planners. Because of the variation in the interview subject's backgrounds, the following questions are intended to be open-ended, leading to more in-depth discussion regarding the topic of community participation and its relationship to the planning and emergency management fields.

Background:

(1) Does your organization have a plan (or a section of a plan) for working with the public to prepare for disasters? Why? Why not?

(2) Does your agency have a public affairs officer or department (*could also be called Public Information Office [PIO] or public liaison depending on the individual agency*)?

(3) Describe how you interact with members of the public while preparing for disaster situations *Note: This question is intended to lead into more extensive discussion regarding the interviewee's role in community engagement/participation. It is likely that some interviewees will provide considerably more in-depth answers to this question than others.*

(4)While thinking about your role, I'd like to ask you some more questions about your interactions with members of the public.

(4a) Does your plan include instructions on who is responsible for communicating with the general public prior to an emergency? Does it include provisions for interactions with special needs members of the public (i.e., disabled, elderly, those with limited English proficiency, etc)?

(4b) In general, do you think the public is well informed about how to prepare for disasters? What public education programs exist? Do you feel these programs are adequate?

(4c) What tools do you use to educate the public? Do you use different tools/mechanisms to reach different target audiences? Please give examples, share brochures, announcements, presentation, and other tools you use.

(4d) Are certain groups of the public (could be socioeconomic, age cohorts, etc) more apt to be better prepared for disasters and/or more informed about hazards and therefore are these groups less likely to require as much as assistance as other groups?

(4e) How would you describe the public's expectations regarding disaster assistance or planning? Do those expectations differ based on age, socioeconomics or other demographics? Do different groups have different expectations about disaster assistance than others or are the expectations more uniform for all of the public throughout a given disaster area?

Inter-agency Coordination/Cooperation:

(5) Does your agency have pre-determined agreements with other government agencies (including agencies on all three levels of government), NGOs such as the American Red Cross, etc?

(6) When working with other agencies and departments within your agency to create your plans, have you experienced problems? If you have, please describe them. Examples of problems include inter- and intra-agency politics, personality clashes, or any other issue that reduces the effectiveness of cooperation across department and agency lines. Please note that this only applies to the planning phase and not to response. *Note: This question is intended to lead into more extensive discussion regarding the interviewee's experiences with other government agencies and other departments within the interviewee's agency.*

(7) Does your agency make use of best practices documents? This includes recommendations about planning, templates, operating procedures, agency organization, operational models such as the Incident Command System (ICS), NIMS, etc. Best practices documents can come from federal, state, local government agencies or other sources.

(8) When creating plans, do you and/or your agency make use of lessons learned from previous real-world experience and/or the experiences of other agencies in disaster situations?