


2019

# Effective Planning of Urban Communities' Vulnerabilities for Mitigation of Homelessness after a Natural Disaster

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# Walden University

College of Social and Behavioral Sciences

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Walden University  
2019

Abstract

Effective Planning of Urban Communities' Vulnerabilities for  
Mitigation of Homelessness after a Natural Disaster

By

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MA, University of Phoenix, 2011

BS, University of Phoenix, 2009

Dissertation Submitted in Fulfillment  
Of the Requirements for the Degree of  
Doctor of Philosophy  
Public Policy and Administration

Walden University

May 2019

## Abstract

Urban communities often lack the ability to recover after disaster plans have been implemented because of a lack of coordinated resources among federal, state, and local agencies. As a result, economically marginalized citizens find themselves in risky conditions, particularly concerning finding and securing post-disaster housing. Using social conflict theory as a guide, the purpose of this exploratory case study of an urban area in a southern state was to better understand the specific vulnerabilities of urban communities and develop solutions for challenges related to emergency or temporary shelters to victims. Data were primarily collected through interviews with 10 residents who experienced a series of tornados in 2011. These data were inductively coded and then subjected to a thematic analysis. Findings indicate that participants tended to consider themselves as displaced, but not homeless, even though temporary housing needs ranged between 45 days and 18 months. Participants also reported that coordination efforts to distribute funding to displaced residence failed, as did private insurance in most cases. As a result, competition for scarce resources was significant and most people tended to rely upon financial help from friends and family members. The positive social change implications stemming from this study include recommendations to city planners and emergency managers to strengthen relationships with community leaders to assess needs prior to a disaster and establish a “bottom-up” planning policy rather than wait for a disaster to assess the availability of federal or state funding that may not come in order to proactively protect vulnerable community members from post-disaster housing deficiencies.

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## Dedication

I would like to dedicate this to disaster survivors in all the communities throughout that saw their way past the storm and were able to recover. I know there are many that lost more than I could have ever imagined, so I am hoping that they were able to find the necessary resources to recover.

## Acknowledgments

I would like to take the time to thank my husband, Chester Lapsley, and children, Charlie and Alize Windham, who encouraged me when I wanted to give up. They gave up those special moments so I could reach my goals and I truly appreciate them for being there for me in this process.

I would also like to acknowledge my mom and grandparents who encouraged me so much in the process of getting my education.

I would also like to acknowledge the first lady I knew that held a PhD, Mrs. Darlene Clark, who made me say I want that in my life.

I would also like to thank my friends and peers who assisted me by brainstorming and reading many pages of my dissertation.

I was lucky to put together a dream team that involved very educated and smart instructors such as Dr. Milen, Dr. Spoons, and Dr. Ian who gave me the needed criticism. At the end, it was well worth the journey. Each one of them provided me with guidance so that I was able to finish this dissertation. I would not have selected anyone else because I was able to be successful with this team. Also acknowledging my editor Dr. Montgomery who I spent a lot of time with me helping me along when I was discouraged. Lastly, God for seeing me through.

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## Chapter 1: Introduction to the Study

### **Introduction**

An estimated 1,000 natural disasters (e.g., tornadoes) occur every year throughout the United States and is considered the most unpredictable devastating events. The study focused on the damage and loss of housing in, Tuscaloosa, Alabama, in 2011. Tuscaloosa was the subject of this study because it is an example of the long-term effects of a natural disaster on a community when residents lack the resources and economic capabilities to recover. The effective planning of the city will adequately prepare to protect citizens in the aftermath, for example, to provide housing assistance to those whose homes were destroyed. The significant decrease in affordable housing after a disaster should be the primary concern of the city because of the long-term effect it has on residents resulting in displacement or homelessness (Chang, Seville, Potangaroa & Wilkson, 2010, p.259).

According to the National Weather Service, Alabama averaged 59 tornadoes from 2001 to 2011. Alabama has not yet fully recovered from a tirade of 55 tornados that hit throughout Alabama on April 27, 2011. In the path of destruction, five lives were lost, and 12.5% of the Tuscaloosa was destroyed to include a significant amount of low-income housing with an estimated loss of 7,000 jobs throughout the communities (Crosswalk Checklist, 2015, p. 28).

The lack of adequate affordable housing and the delay in economic revitalization across the MID area only further exacerbate the effects (Crosswalk Checklist, 2015, p. 35). This resulted in long-term hardship in the lives of community residents and harm to their well-being. When city planners focuses on economic revitalization, and minimum to

no help from the city, the residents experiences difficult challenges to reconstruct their homes and provide for the personal safety of their family unit (Blaikie et al., 2005).

One specific area within the Tuscaloosa city limits with unique needs was Alberta City. Because of the specific needs of low-income housing communities, longer displacement comes on top of existing social vulnerabilities (Mueller, Bell, Chang & Henneberger, 2011, p. 291). It is known that the failure to recognize the needs of high-level urban poverty areas has contributed to the slow realization that many urban dwellers are often vulnerable to a long period of homelessness (Pelling, 2003, p.30).

Some families, while waiting for the slow process of the government's recovery plan to come to fruition, will seek housing in mobile homes or other poorly constructed houses that are easily destroyed or readily incur damages from storms or other disasters, which leaves them prey for yet another disastrous storm (Pastor et al., 2006). Prior to the disaster, these populations were typically renters. Renters are an example of a neighborhood with unique and different needs than homeowners.

The development of a human rights framework for the recovery of housing lost to disasters is an urgent priority (Gould, 2009, 204). In order to prevent long-term displacement or homelessness, which is the focus of this exploratory case study, the possibilities of homelessness, economically deprived communities, and community vulnerabilities need to be linked to assess the need for housing in a community

### **Background**

It is impossible to predict all the ways a natural disaster can disrupt a community. Disaster-resilience and recovery policies do not account for the ongoing vulnerabilities

that low-income households experience (Ross, 2013, p. 2). A disaster occurs when a physical hazard meets a vulnerable population. People living in certain types of housing – poor quality housing, insecure, hazardous, and overcrowded housing, housing located on dangerous sites such as flood plains, steep slopes and soft or unstable ground – are more vulnerable to disaster risk (Paidakaki, 2012, p.143). In the urban communities, most will align with poor quality housing that no longer meets the needed specifications to withstand a tornado.

In 2011, tornadoes hit Tuscaloosa, like most cities the housing market was hit resulting in a strain on the housing market after a disaster. A large percentage of the homes in the Tuscaloosa was damaged or destroyed. There is an extremely high percentage of rental housing in many parts of this community, especially in some of the neighborhoods made up of single-family detached housing (Specific Plan the Greater Alberta Community, 2007, p.4). Over 1,000 families were on the public housing waiting list with over 500 on the Section 8 waiting list, a prorated housing rate for public housing per the Tuscaloosa Housing Authority (Crosswalk Checklist, 2015, p. 9). Meanwhile, the residents relocated to shelters or to the homes of family and friends in surrounding areas. Because these individuals were displaced from their primary residence living with family, they are considered homeless until they were able to return to a home that they could call their primary residence (Edgington, 2009, p. 40).

There are unique challenges that low-income residents face in rebuilding their homes and lives post disaster (Mueller, Bell, Chang, & Henneberger, 2011, p. 291). This was the case in Louisiana after Katrina in 2005. After the disaster in 2011, Tuscaloosa



was faced with the same situation of delays in revitalization of the commercial corridor that continued to impact individual business owners which resulted in a significant impact on the economic vitality of the City (City Crosswalk, 2015, p. 28). With housing representing two-thirds of the total building stock of a community, the recovery of housing is essential to the community's recovery. Typically, this is not the priority of the city's government which tends to focus on economic revitalization and reestablishing infrastructure.

Most economically deprived communities are vulnerable to disaster because of the lack of economic resources to begin a process of recovery. The families will migrate to live with other family members, relocate to an area that has inexpensive immediate housing available, or fall into the system where they end up homeless while trying to figure out a long-term plan for their family (Edgington, 2009, p. 40). In most poor households, there are insufficient financial reserves for purchasing supplies in anticipation of an event or buying services and materials in the aftermath (Marrow, 1999, p.3). The immediate sheltering of disaster victims would likely be accomplished by state and local governments and non-governmental organizations even if federal assistance is involved (McCarthy, 2010, p. 4).

The disadvantaged communities are faced with a significant increase in housing costs after a tornado. An additional worrisome reality is that rental properties often have a more difficult time in accessing recovery programs due to program conditions or to the complicated ownership structure of the housing (Gould, 2009, p.185). In this instance renters are the most transient and difficult to assist after a disaster for many reasons

beyond a planner's control. However, mitigating the housing factor needs to be addressed in response and recovery planning to gain insight of the depth of the issue in the disadvantaged communities.

Economically deprived people around the world suffer the greatest disaster losses and have the most limited access to public and private recovery assets, both in developing societies as well as wealthy industrialized nations like the United States (Blaikie et al., 1994; Peacock et al., 1997).

According to Fothergill and Peek (2004), the use of social phenomenon will explain how sociological scholarship works by determining that one's location in the social strata plays a role in life experiences, relationships, opportunities, and overall life chances (p. 90). The main issue is understanding how being economically deprived affects one's experiences in a disaster, from risk perception to the post-disaster reconstruction of lives and communities (Fothergill & Peek, 2004, p. 90). As of January 2016, according to the Tuscaloosa Housing Authority (THA), over 1500 families remain displaced.

### **Statement of the Problem**

There is a problem in urban communities that lack the ability to recover effectively after disaster plans has been implemented due to the lack of coordinated resources among federal, state and local agencies. Despite the federal programs that FEMA offers with a lack of assistance from the state, poor overall preparedness efforts, and inadequate state authority for action, as well as a lack of cooperation from local officials, can make the development of post-disaster housing a much greater challenge

(McCarthy, 2010. p. 4). The development of recovery plans that provide coordinated resources that address the needs may include financial and housing assistance along with immediate relocation. The local and state recovery plans in the past has focused on revitalization and not recovery, leaving the community unprotected. This problem has negatively influenced low-income communities and minorities that are economically deprived to recover after a natural disaster, resulting in long-term displacement or homelessness. Hartman and Squires (2009), Edgington, (2009) and Fothergill, Maestas and Darlington (1999), indicated that challenges often exist in urban communities before the disaster. Some of those challenges are lack of planning, community development, and lack of housing are often exacerbated in the wake of a disaster. A possible cause of this problem is the lack of planning and funding. Perhaps a study, which investigates recovery planning for vulnerable urban communities by using a qualitative method to remedy the situation, would be useful. Lack of recovery planning that includes coordination among agencies for resources specific to communities has become an increasingly significant issue in government planning (Comerios, 1997, Darlington, Fothergill, Maestas and Darlington, 1999, Baily, Kerchner & Masozera, 2006, and Rendell, 2011).

The failure to plan according to a community's specific needs has become a significant issue in recent years, but the solution is unresolved. In order to address recovery of vulnerable communities, it is necessary to know more about recovery planning process and mitigation from a disaster. A study that uses exploratory case study can help identify necessary changes in recovery planning for these communities.

### **Purpose of the Study**

The purpose of this study was to identify the vulnerabilities of the urban communities in order to assess those vulnerabilities and address them in an emergency response plans (ERP). Extreme events have raised challenges for emergency agencies and have imposed radical constraints on planners and logistic managers. One of the challenges emergency agencies have faced is to provide emergency or temporary shelters to victims (McCarthy, 2009). The development of a plan to address housing capacity needs of the community is the primary issue emergency managers are faced with after a disaster. Studies show that economically deprived people are particularly vulnerable to extreme events due to their poor housing quality, poor environmental conditions, and economic instability (Ross, 2013, p.4). The loss of housing has been considered the “second disaster” for people of color and economically deprived families as a significant issue during the recovery (Ross, 2013, p. 7). This shows how social conflict theory can be used to demonstrate the unequal process of recovery resources and planning.

### **Research Questions**

This study was based on the following research question: How can emergency recovery plans be adapted to the specific needs of individuals and vulnerable communities following a natural disaster?

The commitment to resiliency starts with the emergency managers however using a bottom-up approach will involve the community and assist in identifying those vulnerabilities. As disasters become a norm it will exacerbate these vulnerabilities and the strength of our country will decline (Ross, 2013, p. 25). Emergency management

efforts in the United States have been characterized by a top-down approach in which rigidly applied plans and approaches have been promulgated in Washington and then mandated for adoption by states and local governments using model plans and programs (Burby, Steinburg & Basolo 2003, p. 50).

The shift of focus from a top-down approach, to a bottom-up traditional approach, that is, toward an alternative approach addressing the vulnerabilities and capacities of local communities in disaster management, has yielded an interplay between community and disaster risk reduction strategies characterized by resistance, sustainability, and resilience (Ireni-Saban, 2012, pp. 653-654).

Planning departments should implement policies in advance to support residential property owners during the first several months following a disaster (Zhang & Peacock, 2009, p. 24). The developed emergency response policies should support individuals and communities to assume responsibility for preparedness and account for the ongoing vulnerabilities that low-income households need to recover quickly (Chandra, Williams, Plough, Stayton, Wells, Horta & Tang, 2013, p. 1183 & Ross, 2013, p. 2 & Tobin, 1999). The development of specified government programs to focus on low-income residents has been reduced throughout the years since disasters has become costly to the government. The resources FEMA provides has been restricted with specific limitations that has limited the homeowners and renter's ability to qualify for the needed resources to recover. According to Ross (2013), the Mississippi River and Missouri River floods in the spring and summer of 2011 caused billions of dollars of damage, particularly to lower-income homeowners near the rivers. According to a CAP report, the typical

household in areas that suffered from these floods earned on average \$44,547 per year—a staggering 14% below the U.S. median income (p. 11). According to the Furman Center for Real Estate and Urban Policy, 55% of the storm-surge victims in New York City were very-low-income renters, whose incomes averaged \$18,000 per year (Ross, 2013, p. 7). Following a devastating natural disaster, housing recovery should not be considered a short-term emergency issue nor simply left up to the capacity of real estate market. It must be regarded as a critical component of a long-term community recovery strategy (Zhang & Peacock, 2009, p. 21). Economically deprived citizens in these communities are faced with higher housing cost post disaster (Mueller, Bell, Chang & Henneberger, 2011, p.291).

### **Theoretical Framework for the Study**

The use of the Marx social conflict theory in this study will focus on the unequal resource's availability after a disaster in specific communities. Conflict theory in the social sciences has a long history. In 1905, the writings of Bonger echoed Marxist principles by describing the ongoing struggle between the haves and the have-nots as a natural consequence of a capitalist society (Bonger, 1969).

The disasters exacerbate inequality for marginalized groups but neither poverty alone nor worsening economic trends predictably produce conflict. Conflict can often break out or intensify among the middle strata in a society or in the context of improving economic circumstances. The study of the perceptions of fairness, expectations of improvement, resource mobilization, and state repression, provide a better understanding of the role of disasters in the growth of conflict (Bhavnani, 2006, p.11).

In addressing the vulnerability perspective, the issue is more theoretical than what is implemented in practice. Researchers largely agree that emergence of social change or continuation of pre-disaster conditions is a matter of power and resources (Henry, 2011, p. 228). Marx saw such a struggle between classes as inevitable in the evolution of any capitalist society and believed that the natural outcome of such a struggle would be the overthrow of the capitalist social order and the birth of a truly classless, or communist, society (Rummel, 1977, p. 5.1). In reviewing the differences in resources for social classes will assist in providing insight into the vulnerabilities. The use of bracketing the data will assist in identifying the specific needs and vulnerabilities that was experienced by the participants in this study.

The use of bracketing is a way to ensure validity of data collection and analysis and to maintain the objectivity of the phenomenon (Ahern, 1999; Speziale & Carpenter, 2007). Husserl believed that bracketing helps to gain insight into the common features of any lived experience. He referred to these features as universal essences and considered them to represent the true nature of the phenomenon under investigation (Lopez & Willis, 2004; Wojnar & Swanson, 2007). According to Marx, two fundamental social classes exist in any capitalist society: the haves or the bourgeoisie, who are capitalists and wealthy owners of the means of production (factories, businesses, land, natural resources), and the have-nots or the proletariat, who are relatively uneducated workers without power (Rummel, 1977, p. 5.1). This explains why the conflict perspective maintains that conflict is a fundamental aspect of social life that can never be fully

resolved, and that formal agencies of social control merely coerce the underpowered and disenfranchised to comply with the rules established by those in power.

### **Nature of the Study**

This study focused on the economically deprived families in the urban communities in Tuscaloosa, AL. that have been experience difficulties in recovering following a natural disaster due to lack of resources or individual vulnerabilities that limited recovery. The communities are derived primarily of rental units that will have to rely on the property owners or public housing agencies to provide some sort of financial assistance to recover. I contacted residents living in the disaster areas and displaced a significant amount of time after the tornado. The Marxist social conflict theory focuses on the conflict among each of the social classes and demonstrates the formative framework for this case study, which explored the experiences of 10 displaced families through interviews. The data were transcribed and analyzed.

### **Definition of Terms**

*Disaster* - the occurrence of an extreme hazard event that influences vulnerable communities causing substantial damage, disruption, possible casualties, and leaves the affected communities unable to function normally without outside assistance (Benson & Twigg, 2007, p, 16).

*Conflict theory*- argues that society is not understood as a complex system striving for equilibrium but rather as a competition. Society is made up of individuals competing for limited resources (Lyudmila, P., 2014, p. 95)



*Dynamic economic resilience* – Hastening the speed of recovery from a shock (Rose, 2011, p.97).

*Emergency managers* - individuals responsible for coordinating an emergency response and requesting aid from other levels of government (Ross, A., 2016, p. 10).

*Emergency management* - the governmental function that coordinates and integrates all activities necessary to build, sustain and improve the capability to prepare for, protect against, respond to, recover from, or mitigate against threatened or actual natural disasters, acts of terrorism or other man-made disasters (FEMA, 2010, p. 17).

*Emergency shelter* - a place where survivors stay for a short period during the height of the emergency, which can be in the house of a friend or in a public shelter (Felix, Branco, & Feio 2013, p.137).

*Emergency preparedness*- involves knowing the risks particular to a community, developing an emergency plan, and having an emergency kit in the home containing food, water, and medical supplies to shelter in place for 72 h (Levac, J., Toal-Sullivan, D. & O`Sullivan, T.L. J., 2011 p.727).

*Federal Emergency Management Agency (FEMA)* - federal organization that provides federal funding, assistance to state and local government, and training for community emergency response teams (CERT) to assist in disaster recovery by linking community members and local governments in the recovery (Cowan, Ortega & Williams, 2013, p. 801).

*Homeless person* - an individual may be considered to be homeless if that person is ‘doubled up,’ a term that refers to a situation where individuals are unable to maintain

their housing situation and are forced to stay with a series of friends and/or extended family members (Edgington, 2009, p. 40).

*Housing* - denotes the return to household responsibilities and daily routine (Johnson, 2002).

*Low-income households* - The report defines low-income working families as those earning less than twice the federal poverty line. According to the City's 2010 census tract data, the median household income for this area was between \$14,856 and \$20,889. Between 2007 and 2011, the share of working families who are low income increased from 28 percent to 32.1 percent. (U.S. Department of Housing and Urban Development, CDBG-Disaster Recovery Action Plan, 2012, pp.3-4).

*Mitigation*- is any structural (physical) or non-structural (e.g., land use planning, public education) measure undertaken to minimize the adverse impact of potential natural hazard events (Benson & Twigg, 2007, p. 16).

*Natural disaster* - hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought (Stallings 2005, pp. 240-241).

*Permanent housing* - the return to the rebuilt house or resettling in a new one to live permanently (Felix, Branco & Feio 2013, p. 137).

*Preparedness* - seeks to reduce the loss of life and property and protect the Nation by planning, training, exercising, and building the emergency management profession. Preparedness includes a cycle of planning, response, recovery, and mitigation (FEMA, 2010, p. 18).

*Recovery* – plays an integral role in FEMA’s overall mission with an emphasis on ensuring individuals and communities affected by presidentially declared disasters of all sizes are able to return to normal function with minimal suffering and disruption of services (FEMA, 2010, p.35).

*Renters* – people who rent because they are transients, do not have the financial resources for homeownership, or do not want the responsibility of homeownership (Masozeraa, M., Bailey, M., and Kerchner, C., 2007, p.301).

*Resiliency* - described as the ability to “bounce back” or to return to a state of functioning that was in place prior to exposure to a significant stressor such as a natural hazard (Ersing, 2012).

*Response* - seeks to conduct emergency operations to save lives and property through positioning emergency equipment, personnel, and supplies; evacuating survivors; providing food, water, shelter, and medical care to those in need; and restoring critical public services (FEMA, 2010, p.30).

*Section 8 waiting list* - a prorated housing rate for public housing (Tuscaloosa Housing Authority, 2011).

*Sheltering* - refers to a place to stay during the immediate aftermath of the disaster, suspending daily activities (Quarantelli, 1995, p.3).

*Social Class* - a distinction made between individuals based on important social characteristics (Fothergill, A., & Peek, L.A., 2004, p.90).

*Social vulnerability* - defined as the socioeconomic characteristics that influence a community's ability to prepare, respond, cope, and recover from a hazard event (Cutter et al. 2003; Laska & Morrow 2006).

*Socially vulnerable households*- as defined by social features (e.g., income, race, and ethnicity) are more likely to live in poorer quality housing that is subject to greater damage (Berke, P., Cooper, J., Salvesen, D., Spurlock, D., & Rausch, C, 2010, p. 372).

*Sociological theory*- complex theoretical framework that is used to explain social theories through empirical formula. (Lyudmila, P., 2014, p.94)

*Static economic resilience* - the ability of a system to maintain function when shocked (Rose, 2011, p.97).

*Sustainability* - in relation to disasters means that a locality can tolerate—and overcome—damage, diminished productivity, and reduced quality of life from an extreme event without significant outside assistance (Mileti & Noji, 1999, p. 4).

*Temporary housing* - the place where the survivors can reside temporarily, usually planned for six months to three years, returning to their normal daily activities, and can take the form of a prefabricated house, a rented house (Felix, Branco & Feio, 2013, p.137).

*Temporary shelter* - used for an expected short stay, ideally no more than a few weeks after the disaster, this may be a tent, a public mass shelter (Felix, 2013, p.137).

*T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act)* - serves as legislative basis for emergency management. It defines how the Federal Emergency

Management Agency (FEMA) and other institutions operate during and after disaster (Witham et al. 2007, pp. 13-14).

*Tuscaloosa Housing Authority (THA)* - the public housing agency created by resolution of the City of Tuscaloosa in 1951. THA is a quasi-governmental entity governed by a Board of Commissioners appointed by the Mayor to capture unmet needs of the low-income housing (Crosswalk Checklist, 2015, p. 71).

*Urban Communities* - a big city or town considered an Urban Community if there are more than 2,500 people living in the community. Urban communities are often busy and crowded. Normally, the city is the most central location in a region (Mueller, E., Bell, H., Chang, B., & Henneberger, 2011).

*Vulnerable Communities* - In this context, it can be defined as the diminished capacity of an individual or group to anticipate, cope with, resist, and recover from the impact of a natural or manufactured hazard. The concept is relative and dynamic (Berke, P., Cooper, J., Salvesen, D., Spurlock, D., & Rausch, C, 2010, p. 390).

*Vulnerable Populations* - citizens that may be faced with financial circumstances or place of residence, health, age, functional or developmental status, ability to communicate effectively, presence of chronic or terminal illness or disability, personal characteristics, and populations less able than others to safeguard their own needs and interests adequately (Berke, Cooper, Salvesen, Spurlock, & Rausch, 2010, p.369).

*Vulnerability* - describes the degree of susceptibility to “loss or disruption from hazard activity (Levac, J., Toal-Sullivan, D. & O`Sullivan, T.L. J., 2011, p.726).

### **Assumptions**

The assumptions were made that assessing the vulnerabilities of the communities before a disaster eliminate the possibility of displacement or homelessness. This has not panned out in past research leaving the need for future research. Vulnerability to natural disasters is the group of characteristics of a person or group that influences capacity to anticipate, cope with, resist, and recover from the impact of a disaster (Bhavnani, R., 2006, p. 10). Resiliency has to be addressed throughout planning which can be done from a community standpoint. Improving the community's vulnerabilities will permit them to recover strong after a disaster.

These assumptions that the vulnerabilities in these communities will increase after a disaster is critical in establishing response plans and building resiliency. The need to address each community individually will be important in disaster planning and recovery since the vulnerability will be different based on the social structures of each community. Factors that influence vulnerability are race and ethnicity, class, gender, household structure, and poverty. The roots of vulnerability parallel the roots of poverty: being at risk of a natural disaster usually means that there is a high probability that the characteristics generated by political-economic conditions coincide in time and space with an extreme event to which they have been made vulnerable (Bhavnani, 2006, p.10).

### **Scope**

The study aimed at residents who resided in Tuscaloosa, AL, during the 2011 tornados. They would have lived in Tuscaloosa at the time of the tornado. I recruited a sample of 10 residents that met a specific criteria of being displaced after the 2011

disaster in Tuscaloosa, Al using a purposeful sampling strategy ensuring representation of experiences of the victims. The primary requirement was being displaced or homeless after the disaster. The participants interviewed was the head of household at the time of the disaster and 18 years or older at the time of the interviews. According to Streeter & Murty (2013), any resident who lacks an address 90 days or more is considered homeless. This was discussed throughout the study to determine the participant's status after the disaster.

### **Limitations**

The ability to make contact with the participants 7 years after the disaster was a challenge and placed limitation on the number of participants. The study identified 10 participants providing details on their experiences will provide needed information to explore the vulnerabilities of the community. The small pool was to allow for detailed discussions and understanding of the experiences. The participants was contacted through social media and emails to determine eligibility to participate in the study. The interview was conducted via skype or telephone which placed limitations on the type of information the researcher would not be able to gain such a non-verbal response. This had no effect on the study since follow-up questions was deigned to gain insight as we discussed the experiences and how they recovered after a disaster.

### **Delimitations**

The participants have recovered from the disaster and will have to recall the events after the disaster. The researcher begun the study in 2011 but was approved for data collection in 2017 which is one of the delays in collecting the data. The participants

provided details of their experiences through a phone or skype interview will prevent observation of the non-verbal responses. I provided pauses for the participants so they can collect their thoughts and had follow-up questions that assisted in gaining the needed insight into their responses.

### **Significance of Study and Implication for Social Change**

The research was unique because it provided a guideline for planning policies identifying specific community vulnerabilities. In reviewing disaster management solely at the community level may be a skewed way of taking comprehensive account of adverse consequences for family and community life, health, and citizenship, resulting from the pressure of disaster emergency and risk. It is believed that many of these potential negative consequences go beyond loss of life and damage to property and bring to light the social justice issues (Ireni-Saban, 2012, p.652). The primary focus will need to be preparedness and coordination of resources for vulnerable communities that are economically deprived. The findings of this study could have a significant impact on how communities prepare for emergencies, thus minimizing property loss in future disasters.

### **Understanding the Resources**

The research is expected to guide emergency managers, community leaders, and residents to identify the resources to help overcome the vulnerabilities and to prepare for an extreme event or disaster. The emergency managers will be able to understand that each community will need assessment for vulnerabilities and a plan developed to alleviate those vulnerabilities, allowing a shorter recovery to regain stability. The community leaders and residents will have resources such as funding at local and state levels and



developed partnership agreements with non-governmental organizations such as Red Cross, local businesses and Habitat for Humanity to address citizens' basic needs. These resources will be determined based on the level of destruction and citizens' requests for specific resources. The change is in alleviating the undue stress of a disaster on a family economically and developing a process of equality among social classes for recovery resources.

### **Summary**

Chapter 1 introduced how a disaster event affected a community that lacked the resources to recover. It explained the need to address the vulnerabilities of the urban communities in order to provide them with resiliency for overcoming the effects of a disaster. This chapter expanded on the background information of the problem statement, research question, conceptual framework, and the significance and scope of the study. This chapter also reviewed the implications of social change at a local government and community level.

Chapter 2 reviewed the literature associated with the themes, issues, and experiences that residents encountered after a disaster. It assisted in identifying the vulnerabilities of the communities and the gap in literature that expanded on the study. The literature allowed the researcher to compare the theories of subject matter experts that was provided in the chapter the ability to find the common data.

Chapter 3 explored the qualitative methodology of study and added details to the research question. It provided a review of the housing mandate policies used after a disaster in Tuscaloosa, AL, reviewing how it was used in each community. I conducted

interviews with open-ended questions. The design and method in the study explored the experiences of residents who were displaced a significant amount of time or homeless in the targeted areas.

Chapter 4 explored the residents in the target area in Tuscaloosa, AL, that experienced a significant displacement period after the disaster in 2011. I interpreted the interviews and documents used in the study.

Chapter 5 provided an analysis of the study and made recommendations for future research. The chapter provided details on the social implications based on the collected data. The social change involved local government procedures and community resiliency in establishing the use of bottom-up approach.

## Chapter 2: Literature Review

### **Introduction**

In natural disasters, the destruction of the communities can be devastating and thus emotionally draining for the victims. Recently, disaster scholars have begun to focus attention on the ways in which race, class, and gender intersect, and how this intersection affects communities that experience disasters (Corbin, 2015, p. 1215). The government focus is revitalization, but it should be preservation of life and reconstruction of home life for victims. The purpose of this research was to examine the policies that govern the revitalization of vulnerable communities after a disaster. Determining the factors that affect the communities can provide emergency managers with important aspects of the response planning. It can also identify how socioeconomic status affects a community's ability to plan and prepare for natural disasters. The social vulnerability of a community is defined as the socioeconomic characteristics that influence a community's ability to prepare, respond, cope, and recover from a hazard event (Cutter et al., 2003; Laska & Morrow 2006).

This chapter reviews the historical initiatives of the government policies that affects the response of operations and community resiliency. Resilience is the ability of a social system to respond and recover from disasters and includes those inherent conditions that allow the system to absorb impacts and cope with events. Post-event and adaptive processes that facilitate the ability of the social system to re-organize, change, and learn in response to a threat (Cutter, Barnes, Berry, Burton, Evans, Tate & Webb, 2008, p.599).

The societal and political failures revealed after Hurricane Katrina created a unique opportunity for policy advocates to offer policy change proposals and shape the political agenda in the initial recovery phases after a disaster (Corbin, 2015, p.1214). The policies determine how communities are assessed in order to provide resources during the recovery process. The literature review includes responses from emergency managers, first responders, and victims explaining how the policies are implemented in the communities after a disaster and their long-term effects. I reviewed the challenges of the different government entities, such as emergency and city managers, in managing the different tasks of response and recovery operations. The last section of the review will be developed based on the conceptual framework of the study.

I examined the emergency manager's process of developing policies for all the communities within Tuscaloosa, AL. The study examined the past and present responses after a disaster and the revitalization plans that affected the vulnerable communities' long-term recovery. The review of the assessment of the communities needs to address the economic factors and the housing market. In examining how these assessments were conducted in the past will provide insight into policy development for future responses.

### **Literature Search Strategy**

For the study, I searched for peer-reviewed journal articles, dissertations, and scholarly publications such as books, after-action reviews focused on response and recovery from past disaster events, and research reports published 5 years or less from the time of this dissertation. The databases I searched were as follows: CDC Library databases; Business Source Complete, Journals and Google Scholar.

The keywords used in the search of literature included *community resilience*, *community recover*, *emergency management*, *preparedness*, *disaster preparedness*, *emergency planning*, *emergency response*, *community revitalization*, *nongovernmental organizations*, *recovery after a disaster*, *recovery plans*, *social economics*, *Tuscaloosa disaster recovery plans*, *Tuscaloosa disaster preparedness 2011* and *Tuscaloosa revitalization plans*. The use of seminal sources was used to address some past work that had been done in this field of study.

### **Emergency Preparedness vs. Emergency Response**

Emergency preparedness is defined as the actions of responders that are performed before an emergency, whether by nature or manmade. This includes the planning and coordinating of a meeting, policy development and writing, organization, and community training including emergency drills to test policies and emergency equipment. The planners must understand that preparedness activities will influence the community's ability to perform before an event. Preparedness involves identifying the contextual issues and conditions, which contribute to vulnerability, as well as the individual and collective strengths to respond effectively to an adverse situation (United Nations International Strategy for Disaster Reduction (UNISDR), 2004). Thus, emergency response demonstrated the expected actions that responders are responsible for during an actual event. Overall, the research needs to focus on identifying strategies that overcome the challenges in assessing the preparedness of households for a disaster (Levac, Toal-Sullivan & O`Sullivan, 2012).

### **Resiliency as the Best Policy**

The adoption of resilience by the federal government as a “national vision” is an effort to recast federal emergency management in a manner that is more flexible, dynamic, and tailored to local needs and capacities (Ross, 2016, p. 7). Resiliency is the capability of a group of people to plan and recover after a disaster with no limitation. Property damage can cost as much as \$100 billion after a disaster (National Weather Service, 2006). In most cases, the use of resiliency has been the best route for emergency planning at all levels. Resilience in this perspective is understood not as a fixed asset, but as a continually changing process—not as a being but as a becoming (Davoudi & Porter 2012, p. 302). The lower economic community’s condition is likely to be positively associated with significant loss caused by natural disasters (Toya & Skidmore, 2007, p.3). For this reason, counties displaying better socioeconomic conditions are expected to experience lower disaster losses. Poor and low- income communities are particularly vulnerable as many people driven by poverty and unemployment (McBean & Ajibade 2009, p.179). However, functionality remains to be seen in many communities, especially in those vulnerable communities that lack the economic resources before a disaster. The determination of how to overcome those vulnerabilities will be vital for change in the circumstances that communities face after a disaster. Resilience in urban areas is primarily driven by economic capital, whereas community capital is the most important driver of disaster resilience in rural areas (Cutter, Ash & Emrich, 2016, 1236). Resiliency in the vulnerable communities is a necessity, since it will give the local government planners the opportunity to develop a plan that targets the community specifically and

builds resources (Berkely, Cooper, Salvesen, Spurlock & Rausch, 2010, p. 369). The building of community resiliency has to be a priority in emergency management planning because it will provide for victims of low-income housing, or those that lack financial stability, the opportunity to recover within a timely manner without prolonged displacement. This is one important aspect that needs addressing, however, that alone will not provide the community with the resolution to overcome the vulnerabilities they are faced with overall. On the other hand, policies have hindered the possibility of recovery in the past and affected the community's ability to be resilient. The federal agencies have waived certain rules and regulations, such as those requiring a bidding process for federal contracts, as a form of aid to the affected region (Copeland, 2005, p.1). This will make the recovery process easier to rebuild homes in vulnerable communities. A gap analysis of past responses would benefit the planning process and policy development in order to provide each community with a comprehensive plan specifically for the vulnerabilities of those communities.

The use of a qualitative study on community resilience, the development of toolkits and design evolution used in preparedness can be effective tools in addressing the preparedness of these communities. This resolution can provide possible opportunities for a community to develop a preparedness plan according to their vulnerabilities but shifting its focus to the recovery will be the major issue in vulnerable communities. The link between resiliency and equalization in the urban community details that the resilience of one group can increase the risks for other communities to be vulnerable to factors that affect social equality (Friend & Moench, 2013, p.99). The inequality of resources and

economic balance is the major issue that separates one community from the next, leaving one more susceptible to facing total loss in a disaster and becoming displaced or homeless. If an area has higher rates of unemployment and poverty and lower household income before the disaster occurs, our results suggest that it will undergo higher levels of human loss during natural disasters than a county having stronger economic and social characteristics (Kim & Marcouiller, 2016, p. 991).

The government must determine a plan that will systemically address problems of corruption, inadequate planning to establish resiliency within these communities (Carmalt, 2014, p. 50). The focus on government and administrative shortcomings prevents affected communities from improving their life circumstances (Ireni-Saban, 2012, p. 651). Determining the need to use a resiliency approach to community-based disaster management is what constitutes positive or desirable outcomes for a resilient community. There is a need to shift the focus from investigating the social change to documenting continuity, enhancing the clear understanding and planning of post-disaster situations, and using qualitative data focusing on documenting the emergence of conflict post-Katrina (Henry, 2011, p. 220). The study enhanced the understanding and planning of post-disaster situations focusing on continuity instead of social change. Resiliency building in communities focuses on preparation for a crisis in vulnerable communities' ability to recover after a disaster (Leichenko, 2011, p. 164). The approach of resiliency will permit a system to withstand major shock and rebound to normalcy quickly. This approach will not work in all communities, however. There is still a gap for those communities living below the poverty line before the disaster and a narrow period that



limits the opportunity to understand what conditions make communities more resilient or likely to recover in the long term. The longitudinal studies of disaster recovery beyond the immediate post- disaster stage are needed to reduce vulnerabilities and increase capacities (Flint & Luloff, 2005, p. 402). The use of community-based study will be viable in exposing the true vulnerabilities in the communities and developing a recovery plan.

### **Addressing the Framework**

It has been discovered that there is the need for research that focuses on the characteristics and progress of change induced by disasters (Birkman, Buckle, Jaeger, Pelling, Setiadi, Garschagen...& Kropp, 2008, p. 637). The research focused on analytical framework for distinguishing change from disaster impacts. Patterson, Weil, & Patel (2010), explained how community resilience is a significant factor in preparedness, response, and recovery exploring the conceptual framework. It is important to identify where and who makes the decisions for the community in the conceptual framework. The use of a conceptual analysis of resiliency with social networking and innovation in determining how homelessness and natural disasters identified in large cities will assist in pinpointing needed recovery planning for specific community vulnerability (Paidakaki, 2012, p.137). The socioeconomic risks reviewed show a lack of adequate and affordable accommodation, high unemployment rates and increased poverty, the extreme form of which is linked to homelessness. In developing a framework, the researchers have challenged the process of the preparedness and recovery of the community. One framework may be more useful in one community and have little impact in other

communities. The conceptual framework identifies the decision makers and provides the structure of who will provide all the answers before and after a disaster. The decision maker is expected to provide the community with information. The analytical framework is used to discuss how disasters change situations for families. Tobin (1999), focused on the ecological approach, which utilizes aspects of the socio-political ideas regarding how each community is affected by disasters and their ability to recover (p.15). He explained that a review of structural-functional views, conflict theory, competition for resources, and other geo-sociological and anthropological ideals are potential frameworks that will address resiliency issues. In this context, some indicators of resilience could be community evacuation plans, the level of seismic retrofit on structures, or mandated mitigation such as storm shutters (Cutter, Barnes, Berry, Burton, Evans, Tate, & Webb, 2008, p.602).

The use of qualitative data to describe how stakeholders viewed community resiliency, the development of toolkits and demonstration design evolution (Wells et al, 2013, p.1172), and the development of resiliency toolkits provides the community and government with the ability to assess the vulnerabilities and explain the needs of the community to overcome circumstances after a disaster. However, the toolkit lacks the ability to address the community needs before a disaster in order to prepare them for the possibility of worst-case situations after a disaster.

### **The Role Racial Minority Plays in Recovery Resources**

In past disasters, inequalities were evident during the response and recovery phase surrounding race and social class. Fothergill, Maestas & Darlington (1999) addressed

issues of race and ethnicity in past studies synthesizing how various racial and ethnic groups perceive natural hazards (p. 156). Poor communities have no chance of a fully recovery after a disaster because of limited access to recovery resources. McMahon (2011, p. 2), Ross (2013) interviewed victims of a disaster who faced inequalities in the government housing programs (p.17). The study focused on the southern states and home programs that discriminated against low-income families. Each of them determined that resources are disproportionately shared among communities and it affects the resiliency of the communities. The question is how would providing them resources prevent them from becoming homeless? The resources are distributed at three levels of government from local, state, and federal, but have limitations that restrict many from having the needed access to recover. This leads to the need to address the communities individually and establishment of programs. Rukmana, (2010) focused on determining which neighborhoods homeless prevention interventions should target and resources that would be of value in those neighborhoods to prevent homelessness (p.96). The resources must be readily available after a disaster and be well prepared before a disaster. This will require a combination of agencies such as the local homeless shelter programs, urban development-housing agency, and non-profit organizations to develop the resources. In most cases, recovery can be highly uneven, with some parts of a community recovering quickly, while others lag. This can jeopardize the overall vitality and resiliency of a community and bring into question its future (Van Zandt, Peacock, Henry, Grover, Highfield & Brody, 2012, p.30).

According to Streeter and Murty (2013), even after 14 months, many of the vulnerable community remains homeless (p. 94). They also examined why such a large amount of people in the community was faced with prolonged periods of homelessness more than a year after a disaster. It is due to the lack of low-income housing available after a disaster. There is still a continuous gap in many studies since no resolution has been developed to identify specific causes and address the issue.

### **Determining a Vulnerable Urban Community**

In understanding the vulnerabilities of these communities, there is need to address the social economic factor overlooked in disaster planning. High population and housing densities, as well as high proportions of individuals who either are of a foreign descent or have recently moved to the area with clusters or communities dominated by low-income populations (Petit, 2016, p.18) dominate urban areas. The different social classes perceive preparedness and response to natural disasters differently based on their economic ability to recover (Fothergill & Peek, 2004, p. 89). The decision makers in policy development tend to learn from real-world experiences, rather than being proactive. They need better ways to assess preparedness prospectively to make better choices as to how and where to strengthen it. The social vulnerability index provides a framework for understanding the ways in which minorities, women, and people living in poverty, among others, disproportionately affected at every stage of a disaster (Corbin, 2015, p. 1215). The assessment involves better ways to prepare citizens at all levels to have reasonable expectations about the performance of national, state, and local response systems and prepares them to make judgments about how confident they should be that the system

would be able to deliver when they need it (Jackson, 2008, p. 2). In reviewing how the recovery process affected the low-income populations in the United States, it could identify the specific causes. The purpose was to determine if the poor are more vulnerable to natural disasters due to type of residence, building construction, and social exclusion. The socioeconomically vulnerability of many families results in many victims being stuck for years, or even generations, in socioeconomically distressed neighborhoods (Sharkey 2008; Black et al. 2013). Take Cutter's hazards-of-place model of vulnerability for example (Cutter, 1996; Cutter et al., 2000). Cutter's hazards-of-place model integrates systems exposure and social vulnerability, but fails to account for the root causes of the antecedent social vulnerability, larger contexts, and post-disaster impact and recovery (Cutter, Barnes, Berry, Burton, Evans, Tate & Webb, 2008, p. 601).

There were several gaps found, including the difficulty with conducting in-depth and comparative studies regarding vulnerability issues in different regions in the United States, and examining the impacts of different disasters and research that focused on how forms of diversity – including age, gender, race and ethnicity, religion, and social class – affect vulnerability. Bhavnani (2006) and Chamlee-Wright & Storr (2011), addressed how studies overlooked the aftermath of a disaster and how social capital played a role in shaping how responses in these communities are conducted (p.280). The research analyzed how natural disasters can influence the eruption of social conflict after a disaster, making these communities more vulnerable to homelessness. There was a need to plan for the victims of a disaster that become homeless post disaster (Gilbert, 2001, p.33). This identifies another factor that the community planning must address to

alleviate those vulnerabilities. However, most determine that no matter how good a plan, if the economic factor is not addressed it will be irrelevant. The study suggests that pre-existing socio-economic conditions play a significant role in the ability for specific economic classes to respond immediately to the disaster and to cope with the aftermath (Masozera, Bailey & Kerchner, 2007, p. 299). The study suggested a need for policies that reduce social and economic vulnerabilities to natural disasters. It will come to a point of discussion that social factors play another significant role in the vulnerabilities. The lack of social and economic equality before the event affected the response and identified the serious structural gaps in the US disaster response system (Miller, 2012, p. 136). In using the classic sociology theory, he explained the tremendous impact Katrina had on specific vulnerable populations that lacked the preparedness and response resources. This can explain why other southern states have the same identical issues after a disaster. The question remains: who is responsible for identifying these vulnerabilities and addressing them in these communities? The community must become proactive in the response planning along with local government. In the past, state and federal organizations have been tasked with the responsibility of addressing the needs of these communities. In the study, they argued that plans need to include meaningful community input to develop a bottom-up and realistic approach to planning (Schmeltz, González, Fuentes, Kwan, Ortega-Williams, & Cowan, 2013, p. 805). Now it is a matter of local, state, and federal agencies to identify their roles and better prepare these communities. Policymakers and the public need ways to prospectively assess preparedness so they know what they can expect when disaster strikes that will be critical in resource management (Jackson, 2008,

p. vii). The government should focus on preservation as a key driver of urban revitalization and analyze the need to revise the preservation policies in urban communities (Ryberg-Webster & Kinahan, 2013, p.132).

### **How the Economics of a Community Affect Recovery: Homeowners vs. Renters**

The economics of a community drives the resiliency capabilities and their ability to recovery after a disaster. You have three types of residents in a community to assist in resiliency the businesses, homeowners and renters. It has been determined that renters are less prepared for a natural disaster (Burby, Steinburg, & Barolo, 2003, p. 38). They determined there were many factors that constrained the renters and homeowners from investing in preparedness, including the lack of incentives to prepare for disasters and numerous constraints such as social and economic issues. Economically deprived households occupy more than two-thirds of renter occupied housing in the United States, and more than half of the very economically deprived households in the United States are renters (Chin, Lee, & Marden, 1995). In the United States, policymakers assume that the private property market will adapt in post disaster situations, however, economic conditions since the financial crisis of 2008 suggests that markets alone would not be able to solve post disaster housing reconstruction (Comerio, 2014, p. 56). It has been determined that rental housing is slower to recover, which makes it more difficult for minority and low-income households to find post-disaster housing and return to their pre-disaster communities, often extending the recovery process (Quarantelli 1982; Comerio 1998; Comerio et al. 1994; Bolin 1986, 1993; Bolin & Stanford 1998a, 1998b; Morrow &

Peacock 1997). Another factor constraining renters is the lack of financial resources to pick up and move at a moment's notice. Thus, recovering is difficult. Renters are more transient than homeowners, the investment of time, effort, and money needed to prepare for disasters can seem ill spent, if the household expects to move in the near term (Burby, Basolo & Steinburg, 2003, p.53). The property owners will seek more financial assistance because of the changes in building codes, which tend to be costly resulting in a financial loss. The homeowners are more vested in the communities than the renters. The renters will have to look for other means of housing in a community that is already limited resulting in many relocating outside the immediate community they resided in pre-disaster. The homeowners will not have that same option under most circumstances. Throughout the years many renters have learned that insuring their property is the only to protect themselves but as said before most will not have the financial resources for that expense. Hooks and Miller (2006) examined the impact disasters have on low-income families and marginalized groups including renters and minorities in communities. The socially vulnerable populations are not evenly distributed throughout communities instead; they are clustered in neighborhoods that exacerbate the effect of the disaster. However, it makes it possible for public officials to address such disparate outcomes through spatially targeted efforts both prior to and after a disaster (Van Zandt, Peacock, Henry, Grover, Highfield & Brody, 2012, p.36).

In reviewing the FEMA public assistance programs for efficiency, it overlooked these community's long-term needs. These programs have become less available to the communities throughout the years because of the substantial cost of recovery. In the



United States, limited U.S. Department of Housing and Urban Development (HUD) involvement in public housing repairs and block grants for rental housing repairs are insufficient to meet the needs in contemporary society (Comerio, 2014, p. 58). The many stipulations in place on who may receive assistance and how much a person will receive have shrunk and seem to be inefficient to address the needs of the community. This leaves the responsibility of providing those resources to state and local government organizations such as Department of Housing and Urban Development (HUD). The lack of housing in urban communities has become a more significant issue in recent years, but the solution is unresolved (Rendell, 2012, p. 656). U.S. policies furthermore assume that renters can find alternate rentals, but in what has become a highly urbanized society, multifamily losses will leave many renters homeless while building owners or landlords make investment decisions that may not include replacement housing (Comerio, 2014, p.58). Zhang and Peacock (2009), in several studies over the years of recovery following Hurricane Andrew in 1992, show how reconstruction of rental units and homes in low-income neighborhoods persistently lagged on housing reconstruction, despite federal reconstruction assistance (p.14).

The U.S. Department of Housing and Urban Development, noted an estimation of 3 to 8 years to replace low-income housing, thus illustrating the need for temporary housing for low-income residents for that period (Fothergill & Peek, 2004, p. 100).

This is still an issue 20 years later because of the increased vulnerabilities of the communities and the cost of disaster recovery. The organizations that would typically

supply low-income housing to assist low-income victims such as HUD, would be faced with issues of limited resources. The new National Disaster Housing Strategy (McCarthy 2010) addresses some of these concerns, emphasizing the role of the local and state governments as partners in the provision of temporary housing assistance (p.3).

Even though a housing program is in place it does not address the problem of supplying enough post-disaster housing (Ad Hoc Subcommittee on Disaster Recovery of the Committee on Homeland Security and Governmental Affairs, U.S. Senate, 2009). These communities solely rely on the assistance from government organizations such as HUD for supplying permanent housing, which is vital for low-income families. The lack of housing will prevent vulnerable communities from starting the recovery phase. This will place them in a state of urgency and overwhelm their housing markets.

The use of the social vulnerability framework can be used to explain the importance of understanding the different social impacts of natural disasters. There is no established human rights framework that protects the individuals and families who lost their homes every year to natural disasters (Gould, 2009, p. 204). In other formats, the framework was a needed piece of the puzzle but with different perspectives on what it should address. According Johnson (2007), the use of a framework for strategic planning that focused on temporary housing including organizational designs and available resources (p.439). Chang, Wilkinson, Potangaroa, & Seville (2010) examined the resource management for post-disaster reconstruction lies in the appropriateness of the responses and improvements to address resourcing challenges (p.248). In the research, they determined the availability of resources combined with a series of economic

advances influenced how assistance is distributed and contribute to a reconfiguration of local approaches to housing. Socioeconomic stratification and its distribution in the city continue to influence the long-term recovery and mitigation efforts currently underway (Finch, Emrich, Cutter, 2010, p. 180).

In developing a framework that focused on housing, it was determined that four phases of this would assist in preventing a delay of permanent housing. According to Johnson, Lizarralde and Davidson (2006), the use of the four phases of housing: (a) emergency sheltering (b) temporary sheltering (c) temporary and (d) permanent housing would benefit the recovery phase in the vulnerable communities (p.367). In the research, the local planners have to be responsible for developing an effective plan for each of the phases to prevent the displacement of the community limited. These four phases of housing are in place with purpose of developing at which point a community need for housing is at and determining the need of the community based on time limits. You must understand the various phases of housing before, during, and after a disaster when planning. In developing plans for housing the need to differentiate between temporary and emergency sheltering, and temporary and emergency housing will allow planners to develop the housing recovery plan that would be effective based on the circumstances of the event (Quarantelli, 1995, p.7). In providing, a base of understanding on how each housing phase should be implemented into a functional plan that prevents long displacement or homelessness. Due to a steady increase in disaster events, it has resulted in increased costs of rebuilding and increased chances of the victims becoming homeless (Felix, Branco, & Feio, 2013, p. 136). Studies have focused on the use of temporary

housing as the primary resolution to recovery and homelessness. They determined that a quick response is the best response and temporary housing meets that need. This has been questioned as disasters continued to increase throughout the years resulting in the need for more temporary housing. However, temporary housing is widely used after the largest scale disasters, but it has been criticized in past mainly for being unsustainable and culturally inadequate (Felix, Branco & Feio, 2013, p. 137). Temporary housing projects continue to suffer from top-down problems of cost and cultural suitability (Johnson, 2007, p. 449).

In eliminating the possibilities of long-term displacement, an approach in developing a permanent housing plan instead of temporary housing that will decrease the chances of displacement of victims (Patel & Hastak, 2013, p. 95). The approach focused on emergency managers implementing a strategy for post disaster housing in a four-phase method. They proposed that building 200 homes in 30 days would eliminate the prolonged displacement of disaster victim; however, in many areas the cost of this method would not be feasible. Is there a true way of housing many after a disaster and ensuring no one become homeless or displaced? Housing is fundamental step to establishing the community life and normalcy in the life of the victim. The post-disaster housing provides privacy, protection, and better health conditions for victims, which are decisive requirements to start a recovery and reconstruction programme after a disaster (Felix, Branco & Feio, 2013, p. 137).

## **Recovery Issues**

In assessment of the community is a tool used to identify recovery issues. The most appropriate role of governmental organizations is to inform, support, facilitate, and influence the many recovery actors (Olshansky & Johnson, 2014, p. 294; Olshansky, et al., 2012). In all phases of the disaster planning cycle, the recovery-planning phase is continuous since the end-result is the most important. It is important for emergency management planners to review the cost of recovery since in most cases there is significant loss of homes and businesses resulting in a staggering cost that has been overwhelming in most communities (Comerio, 1997). In exploring, the common denominator in urban disaster understanding that housing and recovery issues are different in cities than in rural areas. Fussell (2015) explained that there are gaps in the literature on recovery of a population after a disaster that causes widespread destruction of urban infrastructure and housing (p.1). He focused on the population mobility and recovery to relocate outside of the area where the disaster occurred. This relates to the economic disadvantage in these communities a major vulnerability that needs addressing in planning. It had been identified that in order to recover after a disaster the assessment of housing recovery has to be reviewed and placed into the recovery plans (Zhang & Peacock, 2009, p. 22). The housing response time is the most critical part, as delay in aiding residents leads to many consequences like community displacement and mental stress (Patel & Hastak, 2013, p. 98). In Alabama, there was standard 3-6-month displacement period for of many of the victims because of the lack of housing options. The housing market saw an increase in cost, which limits some of the victim's options to

return to their communities. After each disaster, the length of displacement changes but as this happens it will lengthen the recovery phase. Preservation of the communities will be the key driver for the government resulting in urban revitalization. The emergency management planners should review the revitalization or housing plan to ensure each community needs are addressed during the recovery (Ryberg-Webster & Kinahan, 2013, p.123). The revitalization of any community will drive the housing and economic factors in these communities and possibly effect the long-term displacement or homelessness of victims. Tobin (1999) focused on the ecological approach utilizing aspects of the socio-political ideas on how each community is affected by disasters and their ability to recover (p.15). He explained that a review of structural-functional views, conflict theory, competition for resources, and other geo-sociological and anthropological ideals are potential frameworks that will address the resiliency issues. Seidman, K., (2013) used the triangulation method of a diversity of sources, including more than interviews, U.S. Census data, media articles, plans, reports, scholarly accounts, and neighborhood organization archives to determine what is the best approach for recovery in a community (p.352). Each method will provide the planners with the needed methods to plan for these communities.

### **Summary**

This chapter focused on the current literature review to provide support for the study. The literature search strategy involved using various databases using keywords to ensure the literature was aligned with the study. The literature provided support for the

framework of the study assisting in identifying gaps of study in response and recovery planning for vulnerable communities that are economically disadvantaged. I determined the use of conflict theory to address resources availability inequality after a disaster which influences recovery timeline for residents.

The preceding chapter will discuss the qualitative methodology for the study explaining the rationale for the qualitative case study and selected population. The chapter will outline the instrumentation used for the study, the data collection method, and data analysis providing any issues of trust worthiness or ethical procedures that needed to be addressed in the study to prevent bias issues.

### Chapter 3: Research Method

#### **Introduction**

In this chapter I will discuss the research methodology to include, research design and rationale for the study, case study, role of the researcher, identifying the target population-study sample, instrumentation with semi-structured questionnaire, data collection and analysis, issues of trustworthiness and ethical procedures. The methodology selected for this research design and rationale was a qualitative investigative case study. The goal was to explore the long-term effects a disaster event has on individuals or vulnerable communities. Using an explorative case study methodology, the events that occurred after the tornadoes of 2011 in Tuscaloosa, AL, were explored. Such an exploration can identify the vulnerabilities of the affected communities to identify patterns or behavioral trends that will help answer the research

question. Such exploration will also facilitate the development of recovery plans to overcome future emergency event challenges.

### **Research Design and Rationale**

The following research question guided this study. The data were organized and collected to answer the question: How can emergency recovery plans be adapted to the specific needs of individuals and vulnerable communities following a natural disaster?

I utilized a semi-structured questionnaire and conducted interviews of 10 participants. The participant's answered open-ended probes related to their actual lived experiences during the emergency event (disaster). I gathered the information in relation to the recovery event in Tuscaloosa, AL, aligned with the case study. The qualitative method supported interviewing individuals or groups gaining their perspectives and allowing them to portray the complexity of the phenomenon through their own lived experiences creating a better society even during times of disaster (Creswell, 2009).

### **Research Design: Case Study**

A case study provided the evidence-based means to gain a deeper understanding of the decision factors that contributed to local recovery policy decisions (Yin, 2014). The strength of the case study centered on the multiple sources of evidence, a theoretical assumption to expand upon, and a contemporary issue (Yin, 2014). I analyzed the individuals' sense of their experiences and the world in which they live after the disaster. Gaining the evacuee's insight on recovery within their communities provided insight into the ineffective recovery plans that failed to address community-specific needs such as affordable housing, jobs, and financial assistance to rebuild. Individuals living in the



community who had experienced the highest level of threat for the longest period perceived their community as less resilient than did individuals in the other communities (Norris, Stevens, Pfefferbaum, et al., 2008, p.135). The case study design supports the exploration of a specific phenomenon and enables the investigation and description of the phenomenon within a contemporary context (Yin, 2012, p.2). The case study design is optimal for this qualitative study in analyzing the effects a natural disaster has on a community long-term. Case studies are a design of inquiry found in many fields, especially evaluation, in which the researcher develops an in-depth analysis of a case, often a program, event, activity, process, or one or more individuals (Creswell, 2014). The use of exploratory case study permits the systematic interviews to gain insight on the experiences individually and determine how policies effect specific demographics. Furthermore, this study design has the ability to use original data sources such as documents, observations, interviews conducted by others, and artifacts as the main data source for the research in addition to using direct interviews (Yin, 2012). I analyzed historical data, government documents, and conducted semi-structured interviews with 10 participants, determined the gap in the planning phase of recovery for vulnerable communities, to identify the similarities and differences and determine efficiencies or inefficiencies in the system. In the case study conducted in Florida the researchers determined that a county with higher rates of unemployment, poverty, and lower household income before the disaster occurs, the results suggested that it would undergo higher levels of human loss during natural disasters than a county having stronger economic and social characteristics (Kim & Marcouiller, 2015, p. 994). The use of

multiple sources offers the means to use inductive and deductive analysis for themes creation to understand the vulnerabilities of the communities (Yin, 2014).

The case study research tradition will contribute to positive social changes within the local recovery policy. The use of government policies and accredited articles will be used to review the recovery plans, nongovernment organizations that provided services after the disaster and interviews with displaced residents that resided in the area during the 2011 tornados.

The qualitative research methodology is defined as a research process that uses inductive data analysis to learn about the meaning that participants hold about a problem or issue by identifying patterns or themes (Lewis, 2015, p. 473). The approach is a form of social inquiry that allows a review of how communities view their experiences before, during, and after a natural disaster. The qualitative method allows the researcher to interpret the data and use a case study approach (Yin, 2012, p. 2), and the qualitative method was more appropriate than the quantitative or mixed methods approach. This description will explain the rationale for using a qualitative approach to include the details on the setting, sample, materials, data collection, and any issues with the reliability and validity. As Emmel (2013) explained, qualitative sampling is not a single planning decision, but it is an iterative series of decisions throughout the process of research (p.223). In a qualitative study, the inquirer seeks to examine an issue related to oppression of individuals by collecting the stories of individuals that has been oppressed during an event using a narrative approach (Creswell, 2013). The qualitative method will support interviewing individuals or group gaining their perspectives and allowing them to

portray the complexity of the phenomenon while creating a better society even during times of disaster (Creswell, 2009).

### **Role of the Researcher**

As the researcher, I ensured the highest standards of academic rigor, and approached the study with honesty, integrity, and confidentiality. Fusch & Ness (2015) explained that researchers has challenges primarily in addressing data saturation using a personal lens primarily because novice researchers (such as students) assume that they have no bias in their data collection and may not recognize when the data is indeed saturated or bias (p. 1410). Creswell (2013) states that the researcher should address their own bias from the outset so that participates will understand their perspective and the interpretations presented by the researcher.

I avoided the data mismanagement, shallow interpretations of the interviewees, and weak analyses by repeating participant's responses and providing clarity to responses. I displayed objectivity as required to separate the scientific findings from their own experiences. I collected the data concerning the lived experiences of participants and not reflecting on my personal experiences. Although I lived in the same geographical area as participates, I had no contact personally or professionally. I was not a decision maker during the event and had no financial gains during the recovery. This eliminated the bias and established trust with the participants. I didn't discuss participates lived experiences outside this research.

## **Methodology**

### **Selection of Participant's**

The target population will have resided in Tuscaloosa, AL (zip codes 35401, 35404, 35405) during and after the 2011 tornados. The participants would have been displaced a significant amount of time or homeless after the disaster. The purposeful sampling method during the selection of the participants will enforce the criteria established for the study. The use of a purposeful sampling permits purposefully selection of participants or sites (or documents or visual material) to assist the researcher in understanding the problem and research question. Rubin and Rubin (2012) explained that many interviewees are not necessary to achieve balance during the conduct of a qualitative study (p. 30). The minimum requirement of interviews for each subsample is two or three to achieve a suitable depth and diversity of perspectives (Rubin & Rubin, 2012, p. 30). A small sample size of participants can be utilized by conducting a purposeful sampling to recruit study participants. The researcher determined that 10 interviews would be enough to gain insight into the phenomenon to reach saturation. Emmel (2013) explained that the use of purposeful sampling permits the researcher to be flexible and makes decisions in response to empirical findings and theoretical developments that occur in the study (p.23). Patton (2015) explained that purposeful sampling involves selecting information rich cases, stating when determining the qualitative size, the role of resources is limited (p.292). In the recruiting process for participants, I contacted local community members and made social media requests to solicit participants that met the requirements. As contact was made with potential

participants, I provided them with the details of the study asking for their participation. I designed a research tool that is transparent and honest to maintain integrity of the data and avoid potentially harmful consequences (Simundic, 2012).

### **Instrumentation**

I elected to use a preemptive questionnaire as its data collection instrument. The instrument was utilized during interviews with participants. The semi-structured interviews facilitated discussion on topics specifically related to the research question (Rubin & Rubin, 2012, p.31). In using preemptive questionnaire, I established the credibility of the interview process using data triangulation with recorded and written responses, and non-verbal communications (researcher observation notes). All the participants answered 10 open-ended interview questions, with the possibility of elaborating on their own responses. The questions probed the *why*, *when*, *where*, and *how* to gather data that will validate the understanding of their lived experiences, and their cognitive thinking (Corbin et al., 2014). I collected all the participants' responses and coded those using NVIVO 12 Software/SPSS to ensure appropriate and proper data reporting, analysis, confidentiality, and anonymity. NVivo has been identified as the ideal tool for analyzing and coding qualitative data.

The interview questions were in relation to the research question in identifying vulnerabilities of the communities, recovery resources used after the disaster and resiliency. The CART survey was used as a theory-based, evidence-informed survey that has a 21 core community resilience items to address four interrelated CART domains that both reflect and contribute to community resilience (p.46). They surveyed a community

of five poverty neighborhoods located in a southern United States metropolitan area was used (p.45). The CART survey is appropriate because its queried demographics (age, sex, race, employment status, and marital status), homeownership, and prior experience with a personal emergency or crisis while living in the neighborhood, sources of emergency assistance, sources of connection to the neighborhood, and support for the organization that sponsored the application (p. 46). Purposeful samplings were used with the survey aligning with this study protocol. The 21 questions were categorized, however for this study; the researcher will utilize 17 questions modifying them by expanding with additional request for specifics to make them open-ended. This is important because I needed to explore the experiences of the participants and how recovery response plans affected their recovery. Identifying, the vulnerabilities of these communities will assist in better emergency event and disaster recovery planning. The questionnaire can be reviewed in Appendix A.

### **Data Collection**

Data collection and their management are essential aspects of any research study (Creswell, 2014). Data collection approaches for qualitative research involves direct interaction with individuals (Creswell, 2012; Marshall & Rossman, 2014). The instrument for data collection was an interview facilitated through Skype or phone calls. The questions addressed the problem statement obtaining the themes related to the research question. The survey questions focused on addressing the problem statement answering the research question. It will also allow participates to address items for future

studies. The primary data to be collected in this qualitative research study will be from open-ended questions, follow-up questions and probes (Wahyuni, 2012, p. 74).

Jamshed (2014) explained that data captured more effectively, by recording the interviews, which is an appropriate choice but sometimes a matter of controversy between the researcher and the respondent (p. 87-88). The use of handwritten notes tends to be unreliable, distracting and can make the researcher overlook key points. However, recording of the interview makes it easier for the researcher to focus on the interview content and the verbal prompts and thus enables the transcriptionist to generate verbatim transcript of the interview (Jamshed, 2014, p.88). I organized and prepared the data for analysis compiling the similarities by hand initially. I transcribed the interviews, optically scanning material, typing up field notes, cataloguing all the visual material, and sorting and arranging the data into different types depending on the sources of information.

### **Data Analysis Plan**

This data was analyzed with the use of bracketing thematic codes to gain an understanding of lived experiences, beliefs, and/or ideas of the participants. The bracketing method is the process in which qualitative researchers put aside their own feelings and beliefs about the phenomena under consideration to avoid bias observations. I was able to be impartial during the interviews by not providing leading questions or speaking on their experiences. In a qualitative study, researchers mostly use analytical categories to explain social phenomena (Marshall & Rossman, 2014). The plan included addressing the issues of identifying and soliciting participants, preparing research protocols and other data collecting tools, as well as the formulation of procedures

pertaining to the study as recommended by Miles, Huberman, and Saldana, (2014).

According to Wahyuni (2012), the use of data analysis in a qualitative study involves the organization and coding of data into themes represented by figures, tables, or a discussion (p.76). I organized the data from the surveys into themes consistent with the overall goal of answering the research question and patterns was identified. The process included organizing the data by bracketing chunks (or text or image segments) and writing a word representing a category in the margins (Rossman & Rallis, 2012). I coded and analyzed the qualitative data using additional methods to analyze data. Miles, Huberman & Saldaña (2014), noted that coding drives ongoing data collection as a form of continuing analysis (p. 23). Collection and analysis of qualitative data are concurrent processes in which the analysis process brings order, structure, and interpretation of the collected information (Miles, Huberman & Saldaña, 2013). I placed the data into tables to assist in identifying key patterns of interest for the study.

### **Issues of Trustworthiness**

With regards trustworthiness, Wahyuni (2012) stated that credibility is established when the data collected accurately measures or tests what is intended (p.77). The use of triangulation with multiple data sources and semi-structured questions will build credibility. Creswell (2013) both explained that the triangulation of data facilitates a confirmation, collaboration, and defense of the data against potential bias. The methodological triangulation is when information from several sources is verified against each other to check both the validity of the information and the information from all the sources agree with each other (Fusch, 2013). Triangulation in this study will assist in



mitigating loss of housing, health and employment. The use of triangulation will facilitate prevention of allegations concerning bias seeping into the data analysis and conclusions. In using the data with at least two mechanisms, such as interviews and current data recovery plans, will eliminate bias. Inherent within triangulation is the reliability of each source of qualitative data. Clauser et al. (2012) defined reliability, as evaluating the quality of a qualitative study with the purpose of generating deep meaning and understanding. Many qualitative researchers noted concerns about reliability and validity when designing a study, analyzing results, and judging the quality of a study (Merriam, 2014; Marshall & Rossman, 2014).

I provided all the participants with an informed consent and confidentiality forms prior to scheduling the interviews. Creswell (2013) and Patton (2015) recommend having the participants sign the informed consent form prior to the interview. I reviewed the interview process and the usage of the responses used in the study. Patton (2015) added that informed consent also addresses the risks and benefits as well as confidentiality. I informed the participants of the objectives, risks, and potential benefits of research and final dissertation results. I collected the data using journals, emails, and reports that will be stored in a secured location by the researcher for up to 7 years based on current data retention practices ensuring to protect the privacy of the participants. All source data will be accessible for audit if requested. To preserve confidentiality, Creswell (2013) explained the use of numbers rather than names as interview identifiers; avoiding asking for participants full names; and have participants use initials only to sign consent forms.

These measures facilitated participant's confidentiality. I assigned each participant an identification number that will correlate with the collected data.

Validity is defined as how well a test measures what it is purported to measure. Leung (2015) noted that validity is one of the core concerns in qualitative research. Maxwell (2013) explained that researcher bias is a significant threat to the validity and credibility to research findings. Mallett et al. (2012) explained that trustworthiness is crucial to guarantee the reliability in qualitative research since, it consists of establishing credibility to enforce confidence in the truth of the findings. I met the requirement of saturation of literature providing validity in the study. Researchers can approach their research with a certain disposition and may strive to shape the data acquired to fit such a disposition (Maxwell, 2013).

Reliability involves transcribing the interview responses and taking extensive field notes (Creswell, 2013). The researcher can also record the nonverbal cues that provides additional perspectives from participants. Such data enables a more thorough and revealing coding process to facilitate interpretation of the research findings (Creswell, 2013).

Dependability refers to the idea of "reliability which promotes replicability or repeatability" (Wahyuni, 2012, p. 77). I explained the selected research process and design, in order to meet the dependability requirements for the study.

To ensure trustworthiness of the study, I tested for confidentiality, internal and external validity, and dependability. In qualitative research Mallet et al. (2012) emphasis

the crucial role, that trustworthiness plays to guarantee the integrity of the qualitative research.

### **Ethical Procedures**

I reviewed and applied the stipulations of Walden University's Institute Review Board (IRB) because the IRB must approve the data collection methods. I submitted the IRB application along with participant consent forms and the researcher's interview questions for approval. Upon receipt of approval #11-01-17-0296266 from the IRB. I commenced a selection process for participant's that met the criteria. I conducted interviews based on participant's availability by skype or telephone. I conducted the interviews based on a published time schedule. The protection of the data collected, and analysis of the data will be handled in a manner consist with established ethical principles and procedures of qualitative scientific research.

### **Summary**

This chapter focused on the methodology for this case study, with the purpose to develop an efficient recovery plan that would provide a quick turnover time for citizens to return to normalcy. I explored housing recovery and resources that are accessible to urban communities after a natural disaster. The research methodology utilized in this study is explorative case study.

The results of the study will be presented in Chapter 4.

## Chapter 4: Results

### **Introduction**

The purpose of the case study was to explore the vulnerabilities of the urban community after a disaster to mitigate against long-term displacement or homelessness. The goal of the research was to identify specific vulnerabilities of individuals in urban communities and determine what resources would help the most in preventing displacement or homelessness after a disaster. I reviewed the participant's responses which is vital in analyzing the effectiveness of the preparedness and recovery planning after disaster events. The participants provided insight into the current resources they used during a disaster event and its effects on their ability to recover after a disaster. The results of the study addressed the study's research question: How can emergency recovery plans be adapted to the specific needs of individuals and vulnerable communities following a natural disaster?

The chapter is organized into the following 10 sections: introduction, overview, data analysis, setting, demographics, data collection, findings of the interviews, results, data analysis evidence of trustworthiness, summary and conclusion.

### **Overview**

A pilot study wasn't used due to the extent of current and past documentation information that was available to use in the study. I located a published instrument that provided specifics towards the study and allowed for flexibility in development of probing questions. The IRB approved the use of the questionnaire as the research

instrument to gather data from the participants. The instrument was deemed valid by the IRB and the questions were aligned with the study by the researcher.

The study addressed residents who lived in Tuscaloosa, AL, during the storms in 2011 in three area codes. The participants were comprised of six single, and four married residents with an age range of 25-64. The participants were predominantly females, who were head the household, with minor children. The two males who participated in the study were married and two of the eight female participants were married, leaving six single participants.

I collected the data using a semi-structured questionnaire to interview the participants. I interviewed all participants by telephone using Skype or telephone with each participant being assigned a designated time that met their personal schedule. Each participant was instructed to identify a place of comfort and security to participate in the survey for at least 25-30 minutes. The data was collected over 4-6-month period due to availability of participants and the researcher.

### **Data Analysis**

The data analysis procedures were guided by Wahyuni (2012) data analysis method that involved organizing and coding of data into identified patterns, themes representing with figures, tables and discussion. I used the triangulation method by using multiple data sources and semi-structured questionnaire to establish credibility. In order to prevent any bias seeping into the data analysis and conclusions I ensured the validation of documentation that was used in the triangulation method. By using the data collected during the interviews with at least two other mechanisms will ensure the validity.

I began the analysis by collating all the interview data into an Excel and Word files. I transcribed all the interviews of the participants into a word document coding patterns and themes. I uploaded the files to NVivo 12, a qualitative data analysis software. The software included automatic coding features; however, in this study, the data were manually coded using the software's nodes and node hierarchies feature. I utilized an excel spread sheet to develop a word cloud showing a pattern in the interviews. I reanalyzed the data by reading and highlighting key information to identify additional patterns and themes.

### **Setting**

The issue that was present was scheduling the interviews due to the time and distance of the participants from the researcher. The participants schedule delayed a few of the interviews to be conducted later in the evening. I followed a specific protocol for the phone interviews as I would have done for face to face interviews. I was in a locked office space in Lawrenceville, GA within my home and conducted the phone interviews using skype to ensure no phone interruptions. I used a headset and took written notes while interviewing the participants. The researcher was responsible for repeating back an overview of response to the participant to clarify any details that needed to be highlighted or verified. The participants were instructed to find a safe, secure and private location prior to the interview, 8 of the participants called from their personal phones or computers in Tuscaloosa, AL. within their home for privacy. Due to scheduling, 2 of the participants called in from Tuscaloosa, AL within their office at work allowing for privacy.

## Demographics

The research population is comprised of residents that resided in area codes 35401, 35404, 35403 during the tornadoes in 2011. The participants were considered the head of households, at least 18 years old or older, both married and single, displaced for a significant amount of time as demonstrated in Table 2 and Figure 1. This including living with family in their residence, temporary housing, hotels, and shelters. Eight females and two males participated in the interviews as demonstrated in figure 2. Table 1 shows the participants housing types and Figure 3 demonstrates age demographic with displacement timeline. The participants were considered the head of household and all family members was accounted for in the survey.

Table 1 *Housing types*

		<b>Housing Types</b>			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	apartment	4	40.0	40.0	40.0
	house	5	50.0	50.0	90.0
	public housing	1	10.0	10.0	100.0
	Total	10	100.0	100.0	

Table 2. *Displacement period for participants*

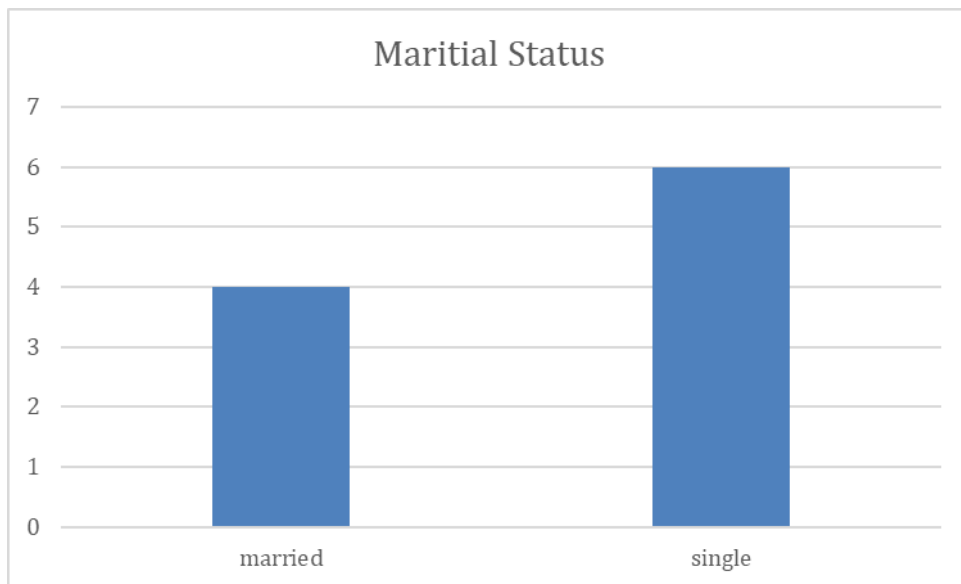
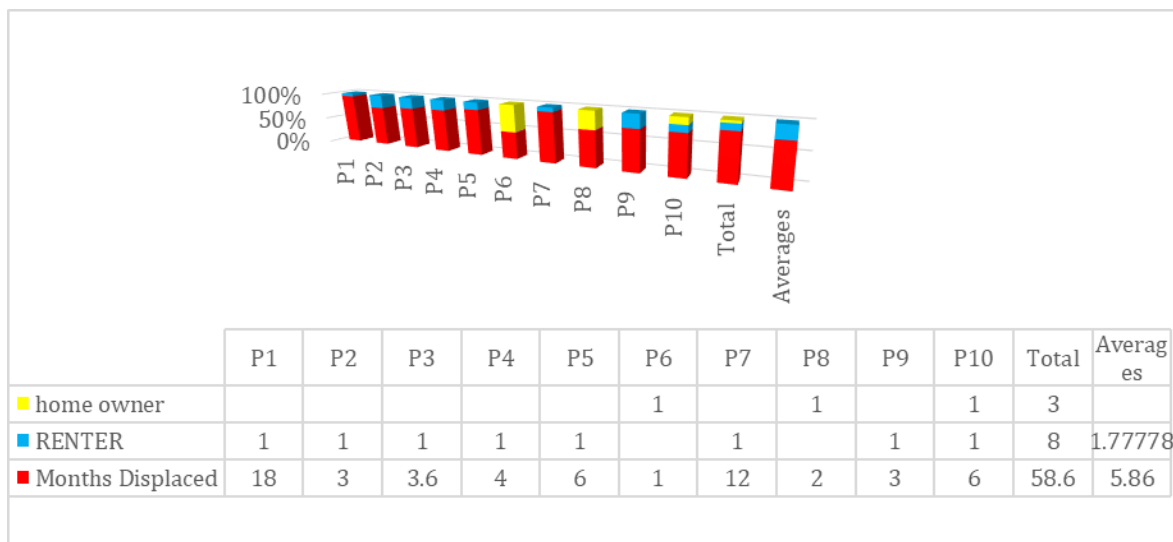


Figure 1. *Marital Status*



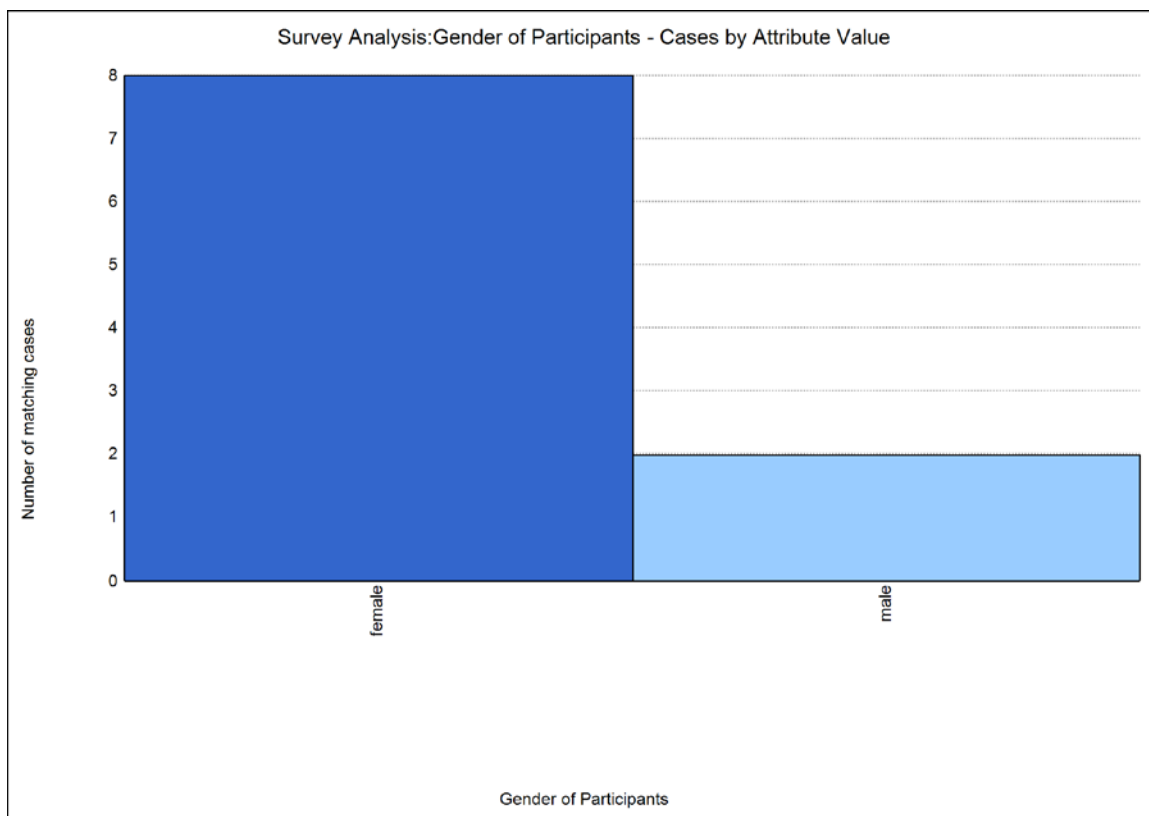


Figure 2. *Gender of participants*

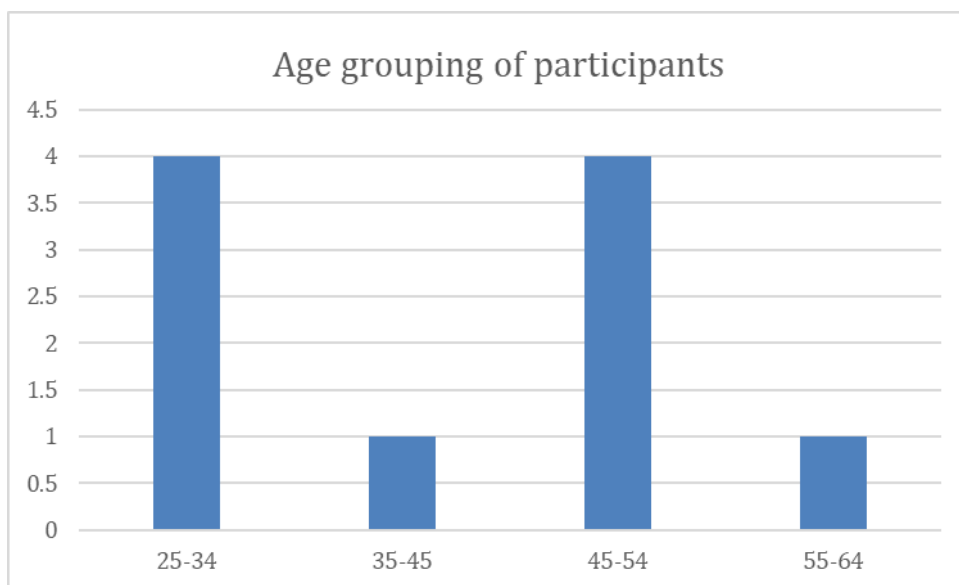


Figure 3. *Age grouping of participants*

### **Data Collection**

The data for the study were conducted using multiple sources. The questionnaire was conducted with 10 participants that met the specific criteria for participation. The data collection tool was a semi-structured questionnaire allowing participants to share their experiences. The questionnaire allowed for the participant to explain in detail their specific experiences that may have been unique to their recovery.

The findings were reviewed and developed by establishing patterns and themes among the responses and identifying the similarities in the experiences. The interviews were reviewed and coded using thematic analysis using NVivo 12 qualitative software to identify themes, which highlighted the lived experiences. The experiences of the participants will provide details of the needs within the community for resources. The data collection process began with the recruitment of participants with a purposive sampling method. The recruitment and interviews were conducted between April 2018 and November 25, 2018.

First, I determined the criteria for the participants that promoted the study on social media outlets and sent emails to potential participants. The participants that met the criteria were sent consent forms (see Appendix A) before the interview was scheduled. I received the consent form assigned each participant a code and skype number for interview. The time to complete the interviews varied between 15-30 minutes based on the interviewee responses and availability. The participants were emailed a copy of the transcript for their review to ensure statements were captured correctly by the researcher.

The city planner and emergency managers weren't contacted during the collection process but will be sent a copy upon their request.

### **Findings of the Interviews**

I conducted the interviews using a semi-structured questionnaire with open-end questions providing the researcher with rich, original voices from residents in Tuscaloosa, Al after the disaster. The interview questions were designed to answer the study's research question and identify additional areas for further research. The use of verbatim quotes should be used in a study when you depict the experiences of the participants (Moustakas, 1994). I have arranged the findings according to patterns, themes and topics that was drawn out through the interviews with the participants.

#### **Theme 1: Displaced vs Homelessness**

The participants never referenced themselves as homeless during the interviews since each one of them had temporary housing (living with family or hotel). The experiences were similar in the fact that the participants lacked the finances to relocate before 90 days. According to Eddington (2009), he defined homelessness as being without a home over a long period, to include living with family or being displaced for 90 days or more (p.221). Participant's displacement period ranged from 45 to 365 days. Even though the participants had temporary housing they faced challenges during the displacement period that varied. The longest displacement period was 18 months with the shortest displacement period being 45 days.

In addressing the challenges, the participants stated that they relied on family for support while they were recovering. Those participants that had insurance was able to address their challenges quickly since they were given financial support by other means.

### **Theme 2: Vulnerabilities of the Community**

This study addressed questions concerning the vulnerabilities of urban communities before and after a disaster. Low income families who are renters in these communities rely on government for resources. The lack of disposable income is a vulnerability that the participants were faced with before the disaster which exhausts the financial resources to recover quickly.

Table 3 displays the loss of property and the severity to understand the magnitude of the disaster destruction. The participants were affected by one or more of the categories that was part of the property damage assessments. The community preparedness would have lessened their vulnerability and assist with a quick recovery had resources been allocated for those vulnerabilities. The participants expressed concerned over future disasters and their ability to recover. As renters they are most vulnerable and has experienced extended displacement due to affordable housing availability. Rental housing is slower to recover making it difficult for low-income communities to recover (Quarantelli, 1982; Morrow & Peacock, 1997).

Participant 4 stated *“It was a lot of renters that loss property and found out due to being a renter they didn’t have any services that assisted them directly to recoup their loss property since they didn’t have insurance. As renters you are expected to insure your personal property however many is unable to afford that expense or isn’t aware of the*

*need*". The renter has options to purchase renter's insurance to cover their personal property since the landlord will only cover the home repairs. This leaves the renters in low-income communities to determine if the cost of insurance is worth adding to an already limited budget. Most residents opt-out of purchasing rental insurance due to cost or lack of education on the need of the insurance to protect their property.

According to Burby, Steinburg, and Barolo (2003), had determined that renters are less prepared for disasters (p.44). The study has agreed with the literature identifying with many of the factors that constrained residents during recovery. The constraints include lack of financial preparedness, lack of incentives after the disaster and lack of affordable housing after the disaster. Participant 1 stated "*Housing assistance to address the increase cost of housing after the disaster would be beneficial*". This would influence their ability to recover quickly and create stability of the residents and family.

Participant 2 stated "*I had to seek the information it wasn't difficult but had to make many calls to contact the correct organization*". The participant's need for information was imperative after a disaster to alleviate the stress of the event. The inability to get the needed information is another factor should be addressed is self-preparedness plans and community preparedness programs. Participant 10 stated "*There was an increase in families looking for housing, but due to the changes in the types of residences built during that time (student only housing), it was difficult finding housing that accommodated families*". The housing market was being limited for families not addressing the immediate need of those who was faced with the long-term effects of the disaster. Determining the housing needs must be assessed based on need across the

community. This method of housing left many families with limited options in an already small market for affordable housing. Participate 7 stated *“the lowering of housing costs and vouchers to cover housing deposits is needed. I would like to see vouchers for apartments due to the cost of them I had to remain with my family longer than expected”*.

The residents concern with cost to relocate after a disaster is a vulnerability that can be assessed by residents that live in areas that are subject to disasters. In communities that are economically deprived relies on the government for assistance after a disaster with specific programs for the vulnerabilities of the community such as vouchers and financial assistance.

### Table 3 *Property Damage Assessments*

*Note:* From “Alabama Emergency Management Agency, Federal Emergency Management Agency, American Red Cross, and Alabama Forestry Commission”

### **Theme 3: Disaster Services**

The participants were disappointed in the services that they received from FEMA which varied based on meeting the qualifications. The services that FEMA provide is

considered a supplement to state and local assistance and that requires the victim to apply and meet qualifications for financial assistance. Many of the participant's relied on assistance through FEMA with different outcomes. Participant 8 applied and was offered a loan and was told insurance must payout first and a loan can be applied for to supplement additional costs. The participant insurance assisted with specific costs for repairs, but the additional cost was left up to the participant. This can place additional constraints on the residents when insurance assistance is limited, and government funding is supplemented through a loan. Participant 5 insurance covered all expenses which is largely due to the type of insurance coverage and applying for FEMA wasn't necessary. Many residents that had insurance fell short of paying for cost of repairs and replacement of property. In most cases you find out at the time of a disaster that your insurance is inadequate and government assistance is limited. Participant 9 stated, "*No, I didn't qualify since I was a renter with no insurance and had adequate living arrangements*". The renters are held responsible for purchasing renter's insurance but in most cases residents in these communities lack the funds for the insurance. This is a vulnerability in economically disadvantaged communities due to economic challenges and costs. However, there was participants that was renters that was able to afford the cost of the insurance and wasn't in need of any FEMA assistance for housing needs. The FEMA program has specific restrictions and guidelines that outline the criteria for financial assistance under the Stafford Act explaining that financial assistance should come from the insurance companies initially before the government provides any assistance. The participant's insurance provided them sufficient amount for repairs according to their

assessments however there was a financial shortfall that wasn't covered by government or insurance.

In educating the residents on the importance of preparedness it will be beneficial to address insurance for renters. Most renters in these communities is unable to afford additional expenses and determined renter's insurance as an expense added onto an already tight budget. The coordination with local insurance companies to provide basic rental insurance would assist in this vulnerability and build resiliency.

However, the participants understood that there were many other services available other than FEMA which was helpful in their immediate needs and recovery. *"American Red Cross was immediately available" (P3)*. The plan call for the role of American Red Cross who responses with basic needs such as water, toiletry items, food and immediate supplies for repairs. This has been a general practice of the organization and other non-government organizations that has established agreements with the local government. *"Red Cross was there providing assessments, water and supplies like tarps" (P5)*. These immediate services provided the participants some relief to deal with other issues such as temporary housing.

There were services that the participants would like to see in the future to assist them after a disaster. These services were readily available and provided the participants with the immediate needs such as water, and tarps for the roofs. These are services that is usually provided by American Red Cross and other non-government organizations without the long process of applications.



Participants concerns was long-term costs for relocating with limited access to finances to cover those unexpected costs. Participant 10 stated, “*Vouchers for the cost of all of the unexpected cost to relocate and the increase in housing would have been of great assistance*”. The concern in the community after a disaster is how I will afford to pay for new housing along with replacing those personal items being loss in the disaster. The immediate cost for residents is temporary housing, food and clothing for the family as well as needed healthcare assessed after the disaster.

The participants concern on affordable housing after the disaster is another vulnerability that renters will continue to face. This is a vulnerability that would need continue assessment before and after a disaster to better prepare these communities. This vulnerability has many factors to consider from the housing market, availability of affordable housing and finances to assist with the associated cost of relocating.

### **Relevance to Conceptual Framework**

Karl Marxist social conflict theory that addresses the availability of resources for groups based on social classes. Conflict theory argues that society is not best understood as a complex system striving for equilibrium but rather as a competition where individuals compete for limited resources (Lyudmila, 2014, p. 95). In relation to disasters the phenomena that brings forth the disparities and demonstrates how such an event establishes competition between different groups, such as the rich and the poor? This social conflict theory aligns with the study that has demonstrated in the survey responses from participates who are economically disadvantaged that the lack of resources found it difficult to recover quickly after a disaster. The participates has stated in many variations

that services were limited to immediate assistance and housing wasn't one of the needs addressed resulting in an extended displacement of residents. Participant 10 explained the difficulty encountered to locate housing that accommodated families limiting the options for family-style dwellings. This type of housing is predominately affected by disasters resulting in the loss of options for families. Affordable housing needs have historically been provided by the federal government, however over the last 40 years resources have been on the decline across the country (Schwartz, 2010). The need to keep families together is imperative after a disaster to relieve the stress of the events. The participants faced difficulty in gaining specific resources to assist in returning to their permanent housing and normalcy in life. This vulnerability is based in individuals not as a community which makes it difficult to gauge the actual need for the community.

### **Results**

The results of the study consisted of descriptive coding identifying the content that each participant provided that was consistent. The word *clouds* are a visualization keywords such as *displaced*, *housing*, and *repairs* as seen below in Figure 4 & 5. The key word and phrases emerging from the word clouds are as follows:

Figure 4. *Visualization Word Clouds 10 most frequent words from the survey*



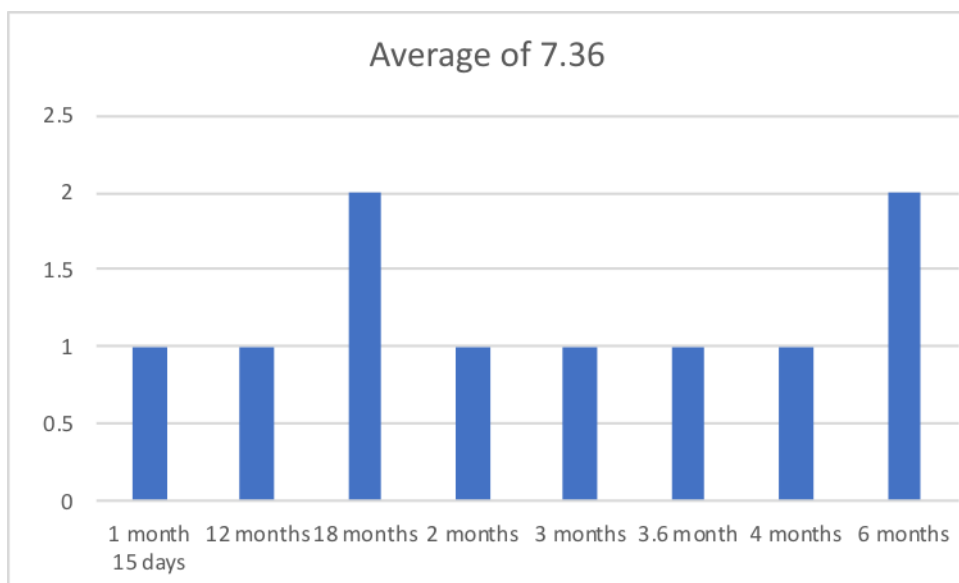
Figure 5. *Visualization Word Clouds 50 Most Frequent words from survey*

The research question focused on emergency recovery plans that can be adapted to the specific needs of individuals and vulnerable communities after a natural disaster based on the data collected. According to Berke, Cooper, Salvesson, Spurlock & Rausch (2010), the three types of plans (mitigation, preparedness/response, and recovery), planners need to create a plan that best supports the concerns and capabilities of disadvantaged people, takes advantage of opportunities presented by federal and state policies, and is integrated with a community's other planning efforts (p.373). Effective mitigation can reduce, if not preclude, the need for response and recovery; badly planned

recovery can reproduce pre-disaster vulnerability and, thus, increase the need for preparedness and response (Berke, Cooper, Salveson, Spurlock & Rausch, 2010, p.374). The bottom-up approach would work in conjunction with this type of planning to address resources needed post-disaster. Identifying the individual and community vulnerabilities during preparedness will assist in the mitigation and recovery process.

The data collected showed that these communities lacked economic resources and housing to recover quickly after a disaster. Table 4 shows an average time of 7.3 months for participants that was displaced after the disaster. The participants weren't necessarily homeless but was in temporary housing over an extended amount of time rather living in hotels or other family members. The displacement of the participants was in relation to the limited number of affordable housing available after the disaster. The participants were affected by the cost of housing and repairs that placed restraints on their ability to recover and return to permanent housing quickly. This section has provided support in answering the following research question:

**RQ1:** How can emergency recovery plans be adapted to specific needs of individuals and vulnerable communities following a disaster?

Table 4. *Dislocation timeline*

Among the 10 participants five lived in a single-family home while the other five rented apartments. There was eight renters and two homeowners among the participants. One renter purchased a home after the disaster. The two participants that was dislocated 18 months was renters and housing wasn't rebuilt or had significant delays. The two participants that was displaced for six months experienced delays due to repairs and availability of affordable housing. The two participants with three months or less was homeowners with resources such as insurance assistance. The lack of financial resources and affordable housing limited the participant's ability to recover to normalcy. The renters are likely to experience a significant amount of time displaced after a disaster. The renter's options are limited to the housing resources that are available after a disaster. The renters are likely to experience homelessness over homeowners due to the resources available through the insurance companies. The only exception is renters that have rental

insurance to assist them and provide some financial assistance. The participants didn't consider themselves homeless regardless if they were living with family for an extended amount of time. This is more of an inconvenience or means to an end that will lead to the participants gaining their own home once they have financially recovered.

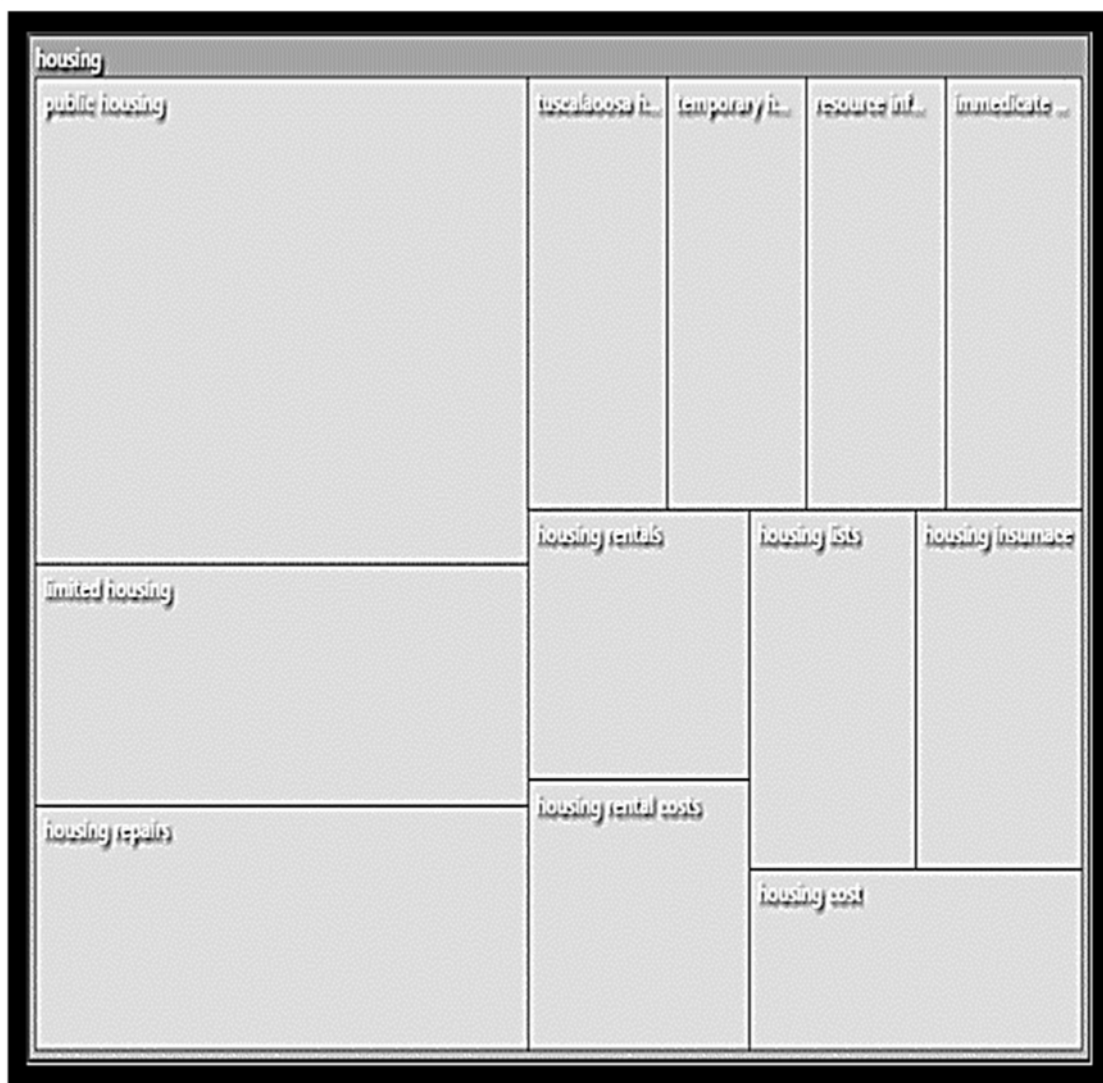


Figure 6. *Descriptive coding*

### **Data Analysis**

Qualitative analysis involved responses to Questions 1, 2, 3,4,5 & 10 addressed in Table 1 outlined participants past status. In Question 4, if residents provided information in relation to permanent housing after the 27 April disaster, discussing factors that affected their ability to return to permanent housing in a timely manner. The researcher placed the responses into categorized groups. The responses from question 3 and 4 were then directly compared to responses from Question 1, 2 and 5 for each individual participant. This allowed for the tracking of how long each participant was displaced over a specific amount of time, housing status and what was the relations. I used only open-ended questions, and responses were annotated and grouped by common answers, for example, participants that answered Question 1 as a renter was grouped and those that answered as homeowner prior to disaster was grouped to identify the differences of experiences for recovery or attaining housing after the disaster. In the research the renters responded that they have since returned to permanent housing however didn't return to their former home. The participants that responded stating they had insurance was able to return to permanent housing faster than participants with no insurance. The renters and homeowners had similar delays finding such as finding affordable housing and repair delays. The participants identified resources that was available to them after the disaster which varied but had significant similarities. The participants all stated at some point that the warning method was enough, but they weren't personally prepared financially for the recovery and relocation costs. Those that lack insurance would likely consider the

importance of the insurance for future disasters. As well as developing a recovery plans by addressing finances for temporary housing.

According to the Tuscaloosa Planning Committee (2011), “the priorities in recovery planning involves assisting residents in returning their neighborhoods quickly; seek Congressional help and relief from certain regulatory restrictions to the HOME and CDBG programs; relieve post-storm overcrowding, and the need for FEMA trailers; create and fund programs to address the deconcentrating of poverty; work to reconfigure public housing, and meet the fiscal needs for Permanent Supportive Housing (PSH); and develop a strategic plan to develop the agency while meeting the continuing needs of citizens” (p .6; see Figure 7).

The plan may layout that returning residents to their homes as one of the priorities however this was limited since the participants returned to different homes outside of their neighborhood. The factors were renters was unable to find available affordable housing within their communities. This has no effect on the current plan since this is an individual preparedness issue more than a city planning issue. In preparing the residents by providing them with an outline to financially plan for such a huge loss after a disaster as part of the preparation phase of planning. The bottom-up approach would be beneficial in community resiliency and during recovery in assessing from the community standpoint identifying those individual needs and community vulnerabilities from the residents.



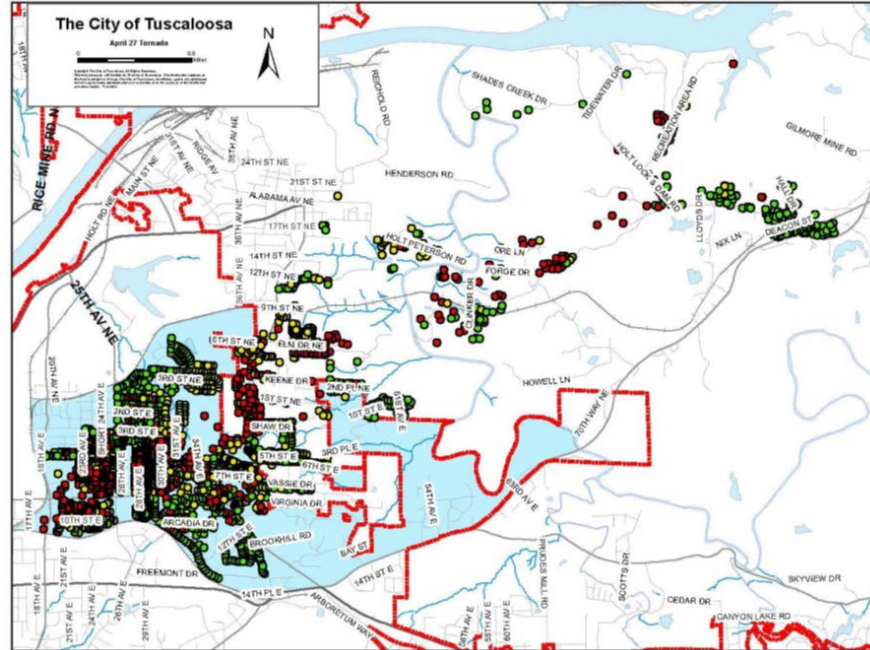


Figure 7. *Tuscaloosa neighborhood Assessment Map*

*Note.* The East parameter encompasses neighborhoods in the surrounding areas of Alberta Heights, Juanita Drive, Brentwood, Crescent Gardens, Austin Subdivision, Druid Hills, and Pondering Mead. Noticeable landmarks and streets include Crescent Ridge Road, Kicker Road, University Boulevard, and the Leland Shopping Center.

### **Evidence of Trustworthiness**

The researcher asked questions and recorded responses with a uniform approach, providing only clarification about the meaning of the question to respondents so as not to introduce bias. The use of this approach would assist in mitigating some of these concerns.

The credibility of the study was triangulated with the use of multiple data sources and semi-structured questionnaire. All the data collected through the semi-structured questionnaire were analyzed and placed into patterns and themes to identify similarities. The secondary data and case studies was reviewed and placed into specific categories and

analyzed for disparities. The actions taken throughout the research will establish the dependability, the documents and materials are archived and available upon request. Moreover, journaling about biases on the phenomenon under study and the participants helped ensure the research dependability. In order to protect the data collected, and analysis of the data I handled the data in a manner that is consisted with the established ethical principles and procedures of qualitative scientific research.

### **Summary**

In the study has many similarities among participates experiences that placed value on the research. There were 8 participants that either rented an apartment or a single-family dwelling while two of the participants were homeowners. Six of the renters was less prepared financially due to the fact they had no insurance or economic gains to assist them in the recovery. In preparing for a disaster one of the importance aspects for renters or homeowners is to protect their property with some form of insurance that would financially assist in recovering loss property. According to Table 2 the displacement of the participants varied experiencing a different aspect of recovery at different points after the disaster. The average timeline for displacement was 7.3 months while the longest displacement period was 18 months and shortest was one month and 15 days demonstrated in appendix A. The experiences of displacement period were determined based on repairs and availability of housing. The participant with the shortest displacement period was a homeowner while the participant with the longest displacement period lived in public housing as a renter. The timeline for displacement is important since you are considered homeless after being displaced to include living with

family for an extended amount of time. In the study there was a total of nine participants that was displaced 90 days or more.

The main similarity was that the participants stayed with extended family member while searching or repairing their homes. However, except for two participants that was homeowners with insurance was placed in temporary lodging such as hotels. The temporary housing as discussed in Chapter 3 is the stage in which participants would be preparing to return to permanent housing after a specific time period. The literature determined that being displaced to include living with another family in one residence the displaced family is considered homeless. The participants didn't consider themselves homeless since they were living with family.

As of the date of the interviews all the participants had returned to permanent housing with eight returning to a different home while only two returned to the former home. The factor affecting the participant's ability to return to their former homes was similar such as repairs to homes was costly and time consuming. As well as many of the renters had to relocate due to the landlords didn't rebuild in a timely manner for their family to return. The renters had difficulty in relocating since the cost of property in some areas was above their budget at the time. The homeowners were able to return to their former homes but only after adequate repairs was done. This shows that renters are more likely to be displaced longer after a disaster.

The services and programs that were available after the disaster was adequate to meet the needs of the many of the participants. The participants felt the services and programs was readily available through Red Cross, Habitat for Humanity, local churches,

and local government services. The services included sheltering, food and repair supplies. The participants didn't receive any financial assistance from FEMA due to being renters and homeowners using their insurance. The participants depended on local churches for initial resources such as water, food and clothing. Only eight of the participants relied on one or more of the voluntary organizations for services while two participants didn't use the services of these organizations.

The participants identified specific disaster relief services or programs found to be helpful after the disaster as American Red Cross, Habitat for Humanity and local churches as the most popular organizations. The federal organization FEMA was mentioned but participants didn't rely on their services. According to the response plans the above organizations provided the agreed services as it was outlined in the response plans.

### **Conclusion**

In conclusions many of the participants are aware that disasters are events that occur at a no notice and being prepared is imperative in the recovery process. The results showed that participants who lacked a plan rather a renter or homeowner experienced an extended amount of time displaced. However, those with insurance had a quicker recovery and services was proficient since the insurance company was providing them with resources such as money and temporary housing. Those participants that solely relied on government services had a longer period time frame of being displaced living in temporary housing. The use of services through non-profit agencies such as Red Cross and local churches was easier to access. The participants explained that the services that

government provided met a temporary need and was cumbersome with paperwork and stipulations on who qualified. Among the participants age nor marital status had no specific effect on the displacement or recovery timelines. The participant's financial capabilities placed another limitation on their ability to recover. The participants felt more could have been done to relieve the burden that most of them endured after the disaster. However, assessment of individual vulnerabilities of the participants was similar but varied based on their needs at the time of the recovery.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

In this chapter, a review regarding interpretation of the findings, limitations, recommendations, social changes, and reflections of the researcher will be discussed in detail. I used a qualitative phenomenological methodology to gather data to explore the vulnerabilities of urban communities after a disaster. The primary research question that guided the study was: How can emergency recovery plans be adapted to the specific needs of individuals and vulnerable communities following a natural disaster? The study involved 10 participants who shared their experience as they recovered from a disaster event in 2011 to provide insight into the individual and community vulnerabilities.

### **The Interpretation of the Findings**

The findings showed that low-income communities has faced longer recovery periods after natural disaster due to limited resources available and socioeconomic indifferences agreeing with the literature reviewed. A phenomenological approach was

used to help identify and illuminate the phenomena under investigation from the perspective of the individuals under study and their specific experiences (Creswell, 2007). As stated in Chapter 2, this study also demonstrated new findings, showing that each participant's vulnerability was unique to their situation.

I used the thematic analysis to identify patterned responses in the research. I identified patterns, coded the patterns as themes, and then determined the findings. I also placed data into Nvivo 12 with identified nodes on an Excel spread sheet to identify additional themes, such as employment. In this study, the themes that emerged included affordable housing, preparedness, and local churches. The themes addressed the needs of the participants as well as the resources received to recover. Andrulis (2007) argued that information related to vulnerable populations is lacking; however, there is literature in relation to public health preparedness education and training materials emphasizing the vulnerable population's needs (p. 1272). The consistent responses noted among the participants were the need for relocation assistance, affordable housing, and understanding the need for preparedness. The vulnerabilities of these communities must be assessed and addressed in planning.

### **Availability of Affordable Housing**

The interview Questions 1, 2, 3, 4, 5 and 10 addressed housing, which was the major concern for all the participants. Low-income households are faced with many limitations weaken their recovery. Low-income households occupy more than two-thirds of renter-occupied housing in the United States, and more than half of the very low-income households in the United States are renters (Lee, Chin, & Marden 1995). Eight of

the participants are renters, which confirms what the literature reported: This population of residents in these communities is more transient and lacks the economic resources to recover after natural disasters. The participants who were renters struggled in the recovery phase due to the lack of preparedness. According to Tuscaloosa Planning (2011), “the development of housing becomes the vehicle to create economic revitalization and thus addresses vulnerabilities such as unemployment and housing. Understanding the impact of how private, commercial and residential projects interconnect to education, healthcare, transportation and resources are the driving force toward a strong community is essential and when accomplished creates the financial structure to support implementation and maintenance” (p.52).

### **Community Preparedness**

Interview Questions 6, 11 that addressed community preparedness was another concern for all the participants. They have a general understanding that disasters are unexpected event that they are subject to at any given time. However, the preparedness seems to be of no concern before the disaster but after they have determined the need. The study has identified that many renters has no vested interest in being prepared since they will not be responsible for the repairs their only concern is their ability to relocate and replace their lost property. Burby et al, 2003, renters have taken a lower percentage of the action’s households can undertake to prepare for disasters, and they are less likely than homeowners to feel that their households are well prepared (p.42). The emergency management organization has to identify this vulnerability and communications for better

preparing this specific group of the community. The preparedness campaign should focus on the necessity of a better planning means of resiliency. The development of preparedness toolkits that address these specific needs of renters to include the importance of renter's insurance providing many options to assist with the cost. This will also overall save the government money in recovery funding if more people have insurance to cover their costs of recovery.

In Appendix D demonstrates income, poverty and housing tenure being the vulnerabilities that leads to the disparities in the communities when it comes to resources, preparedness, evacuation and recovery. Most vulnerable populations are located within the urban communities that has economic challenges. The real benefit of being able to identify areas that are physically and socially vulnerable for planning purposes is being able to overlap this data so that areas can be identified as being critically vulnerable and hence the focus of emergency management and mitigation activities (Van Zandt, Peacock, Henry, Grover, Highfield, Brody, 2012, p.39). This mapping will provide emergency management with the needed details for community assessments while developing preparedness, response and recovery planning. This aspect will be vital in addressing the participants concerns of affordable and available housing after a disaster.

### **Disaster Resources and Organizations**

The participant's responses to Questions 3, 6,7,8,9, addressed the resources and organizations that was readily available to them after the disaster. In most cases local organizations such as community churches and American Red Cross that provided the immediate needs of the participants. According to the Tuscaloosa Crosswalk Checklist



(2015), the agreements with organizations such as American Red Cross and other partners needed to assist in mitigating the vulnerabilities of the community (p.45). Appendix D chart outlines the partnerships, roles and responsibilities during planning, response and recovery operations. The participant's stated assistance from the local churches and the American Red Cross was prominent and helpful in addressing immediate needs while they prepare for the long recovery period.

### **Limitations**

This study has provided data describing the lived experiences of the residents in Tuscaloosa, AL after the 2011 disaster. The study was limited to specific areas within Tuscaloosa this placed limitations on the pool of participants resulting in a small number of participants. In addition, only two males participated in the study which may affect the results in terms of gender.

The second limitation was the duration of the data collected. Due to scheduling of the participants and location of researcher it extended the time and how many times the interview was conducted. The interviews weren't conducted in person and not recorded. The researcher ensured accuracy of information by re-reading responses and clarifying with participant the information being provided. The researcher also provided the participants with a copy of their transcript for verification.

The third limitation is that the study was conducted seven years after the event, and the participants has recovered and returned to permanent housing. The city has continued to follow their recovery plans and revitalizing the communities addressing the needs of affordable housing. However, the study will still have identified gaps that can

assist in planning for a disaster as a resident and emergency planner for future disasters. It also can provide other cities a guideline of building community resiliency as Tuscaloosa did after the disaster.

### **Recommendations**

This study focused specifically on the experiences of residents in Tuscaloosa after a natural disaster discussing recovery and resources utilized to assist with returning to permanent housing. It also provides local EMA and officials with best practices to assess and assist vulnerable communities in preparing for natural disasters. In examining the actual recovery period of the residents, it will provide insight on the individual limitations of the economically disadvantaged communities. The following documents were assessed and provided details to assist in identifying the stakeholders and recovery operations: The Tuscaloosa Forward Plan; CDBG-Disaster Recovery Action Plan; Greater Alberta; Service Assessment; and City of Tuscaloosa NDRC Application. The discussion of the protocols that can assist city emergency managers and officials on planning recovery operations for specific communities based on vulnerabilities.

Recommendations for further research and implications for positive social change will also be presented. The scope of the study was small so there are additional topics that can be explored in relation to homelessness, identification of vulnerabilities, preparedness in economic disadvantaged communities, housing and economic issues in specific communities. An examination of other organizations that is responsible for response assistance, such as Tuscaloosa County, FEMA, The University of Alabama, and Habitat for Humanity or the American Red Cross. A study of the city response and recovery

plans to address the entire crisis recovery process. The Tuscaloosa Forward plan and the Specific Plan: The Greater Alberta Community could also be evaluated to determine how it addressed the community vulnerabilities in future responses.

Another aspect in future studies, the use of interviews with non-profit organizations and local stakeholders would benefit analysis of services provided in relation to services that was identified in the preparedness plan. The city plan can be used in comparison with other cities to determine the benefit of Tuscaloosa strategies for preparedness, response and recovery in vulnerable communities. It's important to use lessons learned and incorporate them in future planning. The review of the emergency plans and experiences of residents could assist in improving their preparedness, response and recovery operations. The study will provide residents with information on needed resources for preparing and recovering after a disaster.

### **Implications for Social Change**

The social change from the findings of this qualitative study includes improvement in community awareness and preparedness. Beginning with the need for local business and non-government organizations to collaborate with the residents of the communities as well as the emergency planners. This type of planning is referred to as the bottom-up approach allowing the community to assist in the planning for disasters and identifying approaches for recovery based on the community needs. In the planning process these organizations will identify ways to address the vulnerabilities of the community not just the agreed services identified in the plan. The participants recognized the local churches and American Red Cross as the primary sources of assistance and

resources immediately following the disaster. However, the added collaboration of the local businesses will assist in the economic recovery needs within the communities.

In some communities the use of employment growth will assist in quick recovery. The sooner residents can work it will provide them normalcy and financial stability to relocate after disaster events. This involves reestablishing the infrastructure as soon as possible and allowing businesses to recover quickly. The businesses are part of the community resiliency and has to play a part in building community commitment to being prepared for the unexpected disaster event. In Tuscaloosa this played a big part and was one of the reasons for the community stability.

The identification of actual services that would best benefit each community based on vulnerabilities. The loss of housing and food was the primary concerns of the participants and is a necessity of life. Emergency planners can identify programs such as SNAP assistance as an emergency need for all residents with specific limitations to provide food assistance to address immediate needs. Also housing voucher agreements with apartment complexes that isn't affected to assist in deposits and first month rent as the residents begin to recover. In some cases, developing an agreement that waves deposits to relieve the financial burden of displaced residents and government programs. This places residents into permanent housing quickly and eliminate the possibility of homelessness or long displacement periods.

The housing market influences the recovery timeline and cost of rental property. The city planners need to assess the availability of affordable housing throughout the city to determine market capabilities after a disaster. The Housing Urban Development

(HUD) would benefit from the assessment in identifying locations that need more public affordable housing. The importance of the assessment is to develop plans around the potential loss of housing after a disaster. This assessment will mitigate the long displacement period or homelessness of residents. The assessment works best conducted before and after a disaster to determine the needed baseline for affordable housing development. This will also highlight new partners such as local realtor companies, rental property organizations, private rental property landlords, apartment, and housing community associations to provide insight on the housing needs and mandates following a disaster.

During planning the emergency manager would benefit from the vulnerability assessment of each community. After every disaster a review of the plans and the actual response of the organization will assist in identifying vulnerabilities that was exuberated after each disaster response. Identifying those vulnerabilities and mitigating them by putting in place updated plans that are specific to that community. In order to mitigate the potential loss stakeholders should conduct an annual review of the plans and exercise them to test the reliability of the plan. The plan must vary addressing different hazards as well as the community's needs, identifying primary and secondary resources, determining programs for recovery services and who will be responsible for providing those resources and services to the communities. The partnerships with non-profit organizations such as American Red Cross, Habitat for Humanity and local churches has proven to be successful during the 2011 response in Alabama.

Community preparedness has to be a priority to build resiliency and mitigating the vulnerabilities that affects the communities. Educating residents on the unexpected hazards and how to better prepare their families. As mentioned in Chapter 3, a preparedness toolkit should be provided to each head of household. This tasking needs to be collaboration among government and non-profit organizations to be effective. Provide a list of resources within the community that will be readily available such as sheltering locations with addresses and phone numbers. In some households they will be relying on this information to address the immediate need of food, sheltering and necessities after a disaster. This information needs to be updated as changes are made to ensure residents has the most accurate details. These toolkits can be handed out at public awareness meetings, college and job fairs, community meetings, non-profit organizations, local churches and businesses. It's important to reach as much of the community as possible and taking advantage of these venues will ensure the right residents, always has the right information, at the right time. The three R's will ensure all aspects of the community has been accounted for in the preparedness, response and recovery plans. FEMA has developed a preparedness guide that outline individual preparedness that would be beneficial in developing the community knowledge on preparedness.

Disasters occur without a moment notice and emergency managers must utilize the plans on hand. The community must better prepare themselves by determining the needs of their family. In becoming advocates for their families and attending public meetings to voice their needs and concerns. The residents need to have a voice in the planning to have a better understanding of their role in emergency response.

Development of a community response committees will assist in providing that voice and addressing the concerns of the community. This committee should be comprised of registered voters, homeowner's owner association members, landlords, and renters within the identified community. This committee would need to meet to discuss the current outreach preparedness programs and identify needed programs based on past responses. The community has the capability to help themselves builds resiliency and stability during the recovery phase of operations. This demonstrates the bottom-up approach in emergency planning by giving the voice to the community.

### **Reflections of the Researcher**

As the researcher, I was expected the residents would be better prepared for disasters since they are aware of the unexpected possibilities of disasters in the area. In most cases some of the residents has experienced disasters several times throughout the years. The prediction of disasters is one no one can be exact on when and where to expect however preparedness seems to be the key to resiliency and recovery. The study had no effect on my perception that communities with economic disadvantages has a longer recovery time period as well lack resiliency. I expected to hear more complaints from the participants; however, the participants expected a shorter displacement period and financial resources from the government. During the interviews I realized that each participant experiences with the government for resources was different not sure any specific reasons attributed to those experiences.

I have lived through a disaster, but didn't experience any loss, so I couldn't relate to the experiences of the participants except for the initial fear of the unknown. My bias

was limited however, I sympathized with each participant as they expressed their concerns and experiences. Disasters are those events that occur without notice so I had to start thinking about my preparedness plan for my family. I have determined that preparing myself and educating others on the necessity of preparedness should be a priority.

### **Conclusion**

The findings of the study indicated that the disaster had a significant impact on those communities faced with financial disadvantages and a significant need such as awareness of preparedness campaigns. An important aspect in preparedness is self-preparedness within the communities. The residents have to develop a plan that will assist their family through the recovery phase quickly. The Tornado Recovery Action Council of Alabama held several public forums in the most affected areas throughout the state. Participants from each forum identified opportunities to strengthen their communities through rebuilding and recovery efforts. Topics included sustaining the spirit of volunteerism, implementing improved building codes, creating new community organizations, and using urban planning tools effectively (EconSouth, 2012, p.30).

The findings showed economic resources as the vulnerability that leads to other vulnerabilities. The focus on resiliency needs to be addressed within these communities. Addressing each vulnerability as identified would assist in creating resiliency. The affordability of housing after a disaster includes addressing insurance needs to assist the resident's recovery. Lastly understanding the need for a disaster and emergency preparedness kits and its associated items to assist in the resiliency and recovery of



families. The importance of placing families in permanent housing must be a priority among planners. The population of renters are more fluid and transient when it comes to relocating however, limited after a disaster in finding available affordable housing. The availability of housing in any community is limited after a disaster but the major concern is making them affordable to the residents of an urban community that lack economic capabilities.

According to Tuscaloosa Planning (2011), “the development of housing becomes the vehicle to create economic revitalization and thus addresses vulnerabilities such as unemployment and housing. Understanding the impact of how private, commercial and residential projects interconnect to education, healthcare, transportation and resources are the driving force toward a strong community is essential and when accomplished creates the financial structure to support implementation and maintenance” (p.52).

The key to effective planning is looking back at prior events and identifying those gaps to address the needs of the communities. The vulnerabilities of these communities will always be there, however identifying and mitigating those needs during the preparation, response and recovery planning to ensure the vulnerable population is accounted for in the plans. Developing community groups to assist these communities can influence the response and recovery outcomes. The bottom-up approach would be feasible in assisting the planners in the process of identifying those vulnerabilities and building resiliency. The question will remain which vulnerability has to be addressed first to ensure resiliency in these communities. Can resiliency truly exist in a community that has so many vulnerabilities? Who is responsible for addressing those vulnerabilities? Disasters tend to

add more vulnerabilities to a community and tasks for the emergency planner to address in the plans. Being prepared must be a personal responsibility since the government has changed its processes and programs. The discussion needs to start with the residents and evolve into resolutions that ensures that everyone is accounted for the plan regardless of socioeconomic standings.

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## Appendix A: Resident Questionnaire

### **Introductory text:**

Thank you for agreeing to take part in this research in which I will ask you about your experiences following the 2011 tornadoes in Tuscaloosa. The purpose of the study is to help identify ways in which future disaster recovery efforts might be improved, so that people affected by natural disasters are able to return more quickly to permanent homes. There are no right or wrong answers to the questions, I am just interested in hearing about your own views and experiences. You are free to stop the interview at any time, and please let me know if there is anything you do not understand or feel uncomfortable about answering. Do you have any questions about the study before we begin the interview?

Do you give your permission for me to audio record the interview?

1. **First of all, before the 2011 tornados in Tuscaloosa, did you rent or own your home?**
2. **How long were you displaced from this home following the tornado?**
3. **When your former home become uninhabitable, how did you and your family find temporary housing? *Probe if necessary:***
  - Did you have to seek out this information and support or was it just made available to you?
  - How easy or difficult did you find it to locate the information and support you needed to find temporary housing?
  - Which organizations were responsible for providing this information and support?
  - Did these organizations arrange temporary housing for you? If not, how did you find accommodation?
4. **In this section of the interview I will ask about your housing situation after your former home became uninhabitable as a result of the tornado.**
  - a. First, how long were you displaced from your home?
  - b. While displaced from your home, where did you live?
    - i. For example, in rental accommodation; with family or friends, other?
    - ii. How far from your former home was this?
  - c. Were you able to stay in this temporary accommodation until permanent accommodation was again available, or did you have to move again during this time?
  - d. Were all the members of your household able to live together during this time?

- e. Was the temporary accommodation suitable for your household's needs?  
Please explain your answer?

**5. Have you now returned to permanent housing?**

**If yes:**

- a. Is this your former home or a different home? *Probe if necessary:*
  - i. Why did you move to a different home?
  - ii. How far is this from your former home?
- b. Do you think the length of time you had to live in temporary accommodation was reasonable?
- c. What were the main factors preventing you from returning to permanent accommodation more quickly?
- d. What would have had to happen to enable you to return to permanent housing more quickly?
- e. What would have been the main benefits to you and your family of returning more quickly to permanent housing?

**If no:**

- a. What is the main reason you have not yet returned to permanent housing?
- b. What needs to happen for you to be able to return to permanent housing?
- c. When do you expect to be able to return to permanent housing?

**6. In general, do you feel that there were adequate disaster relief services and programs in your neighborhood to help you and your family after the tornado? Please explain your answer.**

*Probe if necessary:*

What about: emergency shelter arrangements; food and water provision;  
Search and rescue facilities; evacuation arrangements; damage

assessment;

other?

**7. Can you tell me about any disaster relief services or programs in your neighborhood that you found particularly helpful when the tornado occurred, or in the aftermath of the disaster?**

- a. Which organizations were responsible for these?

8. **Can you think of any particular types of programs or services that should have been available to help people in your neighborhood at the time of the tornado, but which were not available to your knowledge?**
9. **Do you think anything different should have been done in advance to prepare your local community for a natural disaster?**
  - a. If so, please explain
  - b. Why do you think this didn't happen in advance of the 2011 tornadoes?
10. **Do you think anything different should have been done to help displaced residents return to permanent homes more quickly?**
  - c. If so, please explain
  - d. Why do you think this wasn't done?
11. **In your opinion, why has it taken so long for many Tuscaloosa neighborhoods to recover from the tornadoes? What might have been done to speed up this recovery process?**
12. **Is there anything else you would like to tell me about your experiences following the tornado?**

**Finally, I have a series of brief questions about your personal characteristics:**

13. **Can you please indicate which age group you fall into?**  
 16-24            25-34            45-54            55-64            65 or over
14. **Please indicate your marital status:**  
 Single            Divorced or widowed            Married
15. **How many dependent children (aged 18 or under or still in full-time education) live in your household?**
16. **How many non-dependent children (aged over 18 and not in full time education) live in your household?**
17. **What is your sex and/or gender identity? (please tick ONE OR MORE boxes)**  
 Male  Female  Gender Diverse


**Thank you very much for participating in the interview**

## Appendix B: Vulnerabilities vs Disparities

Race/Ethnicity    Gender/HH Composition    Education  
Income/Poverty    Age    Housing Tenure

**VULNERABILITY**

Leads to differences in:



Capacity  
Information  
Power/Control  
Resources

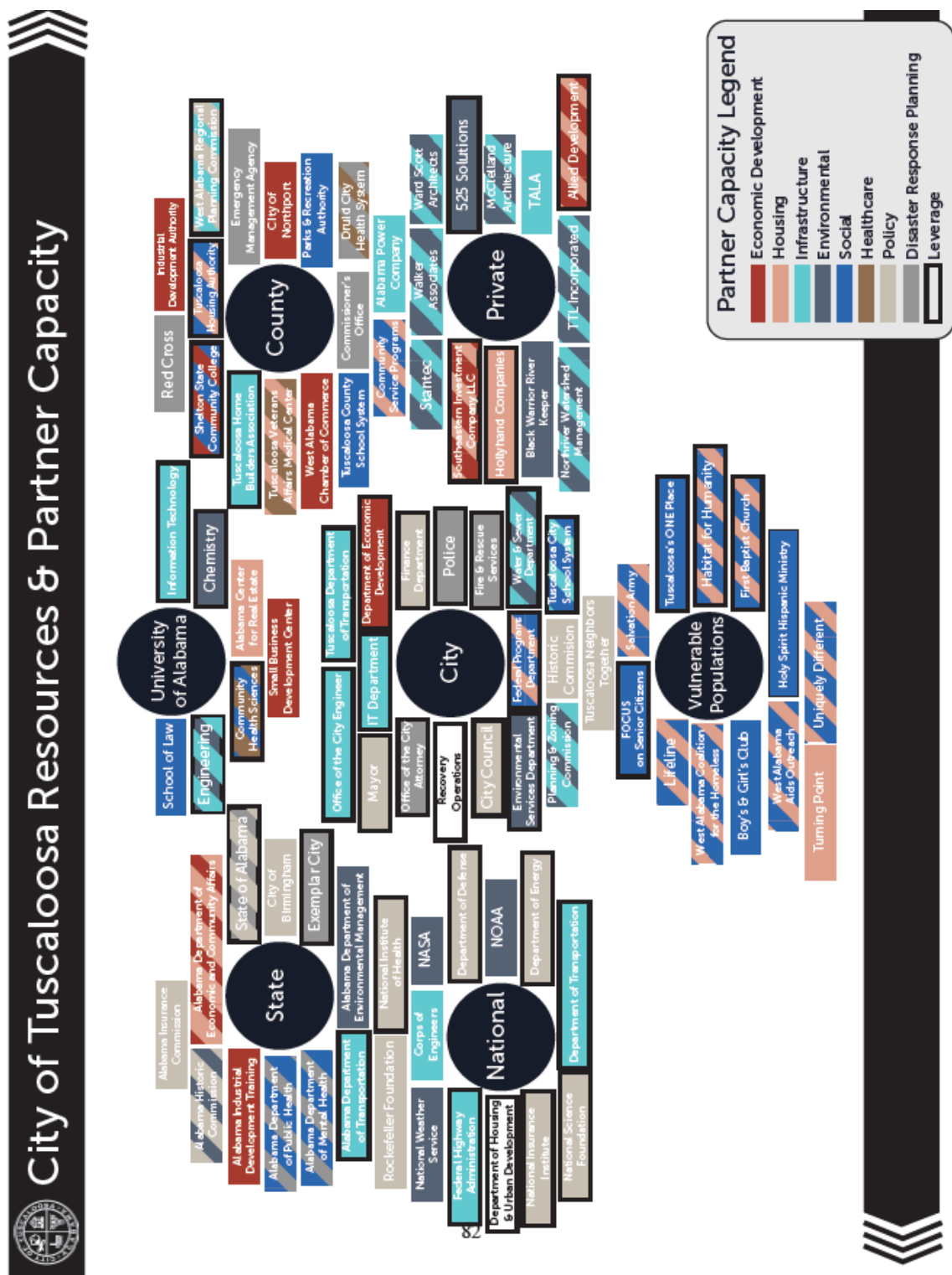
Resulting in:

**DISPARITIES IN RESPONSE**

Warning    Damage  
Preparedness    Evacuation    Recovery

Van Zandt, S. Peacock, W., Henry, D., Grover, H., Highfield, W. & Brody, S., 2012.  
Mapping social vulnerability to enhance housing and neighborhood resilience.  
<http://dx.doi.org/10.1080/10511482.2011.624528>.

Appendix C: Resource and Partner Chart



Retrieved from Tuscaloosa percentage Checklist, 2015.

## Appendix D: City Storm Census

<b>Pre-storm Household and Income Characteristics in Storm Damage Area (ESRI report)</b>	<b>Storm Area</b>
Total Population in affected area	10,342
<b>Total Housing Units</b>	5,666
OWNER Occupied units (39 percent of total occupied units)	1,819
RENTER Occupied units (61 percent of total occupied units)	2,885
VACANT Units	964
<b>Housing Units by Value and Monthly Costs</b>	
Median House Value	\$108,409
Median Monthly Mortgage Payment	\$755
Median Monthly Rent Payment	\$366
<b>Households by Income</b>	
Median Household Income 2010	\$28,106
Extremely Low Income (<30 percent of HUD Income Limits*)	35 percent
Very Low Income (51<80 percent HUD Income Limits*)	15 percent
Low to Moderate Income (>81 percent HUD Income Limits*)	50 percent
<b>Demographics</b>	
White households (48 percent are owners)	49.80 percent
Black households (27 percent are owners)	46.20 percent
Other	4.00 percent

\* HUD Median Income for 2011 is \$55,700

<b>Housing Characteristics &amp; Types in Storm</b>	
<b>Damage Area</b>	<b>percent of Total of Housing</b>
Single family detached	60 percent
Single family attached	2 percent
2 family units	3 percent
3 to 4 family units	6 percent
5 to 9 family units	6 percent
10 to 19 family units	8 percent
20 to 49 family units	6 percent
50 or more family units	6 percent
Mobile Home	3 percent
	100 percent

Source: Tuscaloosa Forward, Mayor's Report – Data Source: ESRI