The Thesis Committee for Jessica Marie Jones
Certifies that this is the approved version of the following Thesis:

When Neighbors Prepare Together
An Analysis of Emergency Preparedness Efforts at the Neighborhood Scale

APPROVED BY
SUPERVISING COMMITTEE:

R. Patrick Bixler, Supervisor

Katherine Lieberknecht, Co-Supervisor

When Neighbors Prepare Together
An Analysis of Emergency Preparedness Efforts at the Neighborhood Scale

by
Jessica Marie Jones

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Dedication

I dedicate this research to those who put their lives on the line to protect their fellow neighbor during emergencies.

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Abstract

When Neighbors Prepare Together
An Analysis of Emergency Preparedness Efforts at the Neighborhood Scale

Jessica Marie Jones, MSCRP, MPAFF
The University of Texas at Austin, 2022

Supervisor: R. Patrick Bixler, Co-Supervisor: Katherine Lieberknecht

Natural disasters are becoming more severe in the United States. In tandem, career emergency professionals have declined and are forced to do more with less resources. FEMA recognizes that a formal emergency preparedness response will not be enough. Therefore, it is time to involve the community in emergency preparedness and response efforts.

This research explores local emergency preparedness, specifically neighborhood emergency preparedness efforts throughout the United States. For this research, I explore literature on social capital, neighborhood cohesion, risk perception, and the history of emergency management practices. In addition, I review five case studies to understand how neighborhood emergency preparedness works. These case studies include the City of Los Angeles, California, North Salt Lake City and Bountiful City, Utah, and Seattle and Bainbridge Island City, Washington. In addition to the case studies, levels of social vulnerability and risk to natural hazards are determined to see if there are trends in exposure and vulnerability and the creation of neighborhood emergency preparedness programming.

This research suggests that neighborhood emergency preparedness efforts can be top-down, city-led, or grassroots. Captured narratives from the case studies demonstrate many challenges faced with neighborhood emergency preparedness efforts. These challenges include overcoming apathy, navigating limited financial resources, and city and community relationships. Despite these challenges, the case studies highlight many successes in community emergency preparedness and response activities. Overall, this research aims to help inform the City of Austin's local emergency preparedness work in partnership with the community and expands upon emergency management scholarship.

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Chapter 1: Introduction

Socio-natural disasters, natural and human-influenced, are becoming more intense and severe in the United States (Smith, 2022; FEMA, 2011). The Institute for Economics and Peace states, "globally natural disasters have increased tenfold since 1960" (Institute for Economics & Peace, 2020). Of those polled by the 2021 FEMA National Household Survey, 54% report experiencing a disaster compared to only 47% in 2020 (Ready, 2022).

Despite this rise, a response from emergency professionals can be challenging. Research identifies a decline in career emergency professionals (Goodrick et al., 2019), which creates a situation where emergency professionals must do more with less support. Not surprisingly, 16% of surveyed career emergency professionals (which includes "firefighters, EMTs, police officers, emergency managers, security professionals, and 9-1-1 dispatchers") report that their jobs have become significantly harder (Segal, 2022).

Based on a 2017 research study of 1,796,987 emergency management services encounters, the average EMS response time was seven minutes (Mell et al., 2017). Research indicates that an eight-minute or less response time can differentiate between life or death (Blanchard et al., 2012). Response times can vary drastically during a natural disaster; often, it can take up to 72 hours before professional emergency response teams can respond. Therefore, with these response and resource gaps, individuals and neighborhoods must provide initial support to one another after an emergency event.

Countless examples exist of the role community members can play during emergency events. LaLone (2012) finds after devastating tornadoes in Pulaski, Virginia,

that neighbors were the first on the scene to provide critical support services to one another (LaLone, 2012). In this case study, neighbors "help[ed] victims' sort through the debris and salvage belongings, clean-up uprooted trees and tree limbs from yards, and work on damaged roofs" (LaLone, 2012, p.214). Neighbors also supported each other through their social networks by connecting them to vital resources (LaLone, 2012). Another example of neighbors helping one another can be seen in the Hyogo-ken-Nanbu earthquake that hit Kobe, Japan, in 1995 (Aldrich et al., 2015). After the earthquake,"most individuals who were pulled from the rubble of their collapsed homes were saved by neighbors, not firefighters or rescue workers" (Aldrich et al., 2015, p.256). These examples illustrate the critical role neighbors and community members can play during emergencies.

Recognizing the continued and complex threats and growing demands of a more vulnerable and changing population, FEMA acknowledges that a "government-centric approach to disaster management will not be enough…" (FEMA, 2011, p.2). Instead, FEMA has put a call for a "prepared nation," citing that emergency preparedness is a "shared responsibility" (FEMA, 2022a). This recognition has led to an emergency management method recognized as a 'Whole Community Approach,' which embraces the idea that effective emergency preparedness and response efforts must involve residents, community partners, businesses, and agencies, all working together in preparedness and response activities (FEMA, 2011).

Some municipalities have embraced the call for a Whole Community Approach and have developed programs and resources for household and neighborhood emergency

preparedness and response efforts. These resources include planning-like documents referred to as guides, to-do lists, and formal and informal neighborhood organizing programs or training. Often, these efforts are home-grown and replicate language and resources from FEMA. In addition to city-led efforts, there are also examples of resident-led and community-run programs to support neighborhood emergency preparedness.

While resources and training abound and vary across the nation, there is limited research on how these municipal and community created resources and programming work. Therefore, this thesis builds on previous emergency preparedness scholarship by exploring the following research questions:

1. How do local emergency preparedness programming and resources support neighborhood preparedness and response efforts?
2. What are common barriers to realizing local emergency preparedness efforts?
3. How does the perception of risk and social vulnerability affect emergency preparedness efforts locally?

I will explore five municipal case studies, Los Angeles, California, North Salt Lake City and Bountiful City in Utah, and Seattle and the City of Bainbridge Island in Washington, to answer these questions. While these cities differ in population and geography, they share many commonalities. All the cities in this research have neighborhood emergency preparedness programming, and all have experienced disaster and emergency events in the past. Overall, these case studies illustrate different approaches to addressing local emergency preparedness, identify common and unique challenges, and highlight creative opportunities to prepare residents for emergency events.

The findings from these case studies will guide policy recommendations to support local emergency preparedness efforts in Austin, Texas. Since 2019, community organizers from a local nonprofit, Go Austin Vamos Austin, the City of Austin's Office of Homeland Security, in partnership with researchers from the University of Texas at Austin, have focused efforts on creating neighborhood emergency preparedness resources for the Dove Springs Neighborhood area. The Dove Springs neighborhood has experienced flooding, lacks adequate stormwater drainage infrastructure, and is composed of primarily low to middle-income residents. I worked with these community partners in my role as a graduate research assistant to develop the neighborhood preparedness handbook for Dove Springs. The handbook was completed in 2021 and is in distribution.

This thesis is divided into five proceeding chapters. In Chapter 2, I review relevant literature to provide a framework for emergency preparedness efforts within the United States. This chapter explores factors that impact personal and collective emergency preparedness and reviews formal and informal preparedness and response efforts. Chapter 3 discusses the research methods used in this study to understand and analyze discourse on emergency preparedness at the local scale, including content analysis, interviews, site visits, and ethnography. In Chapters 4-6, I explore municipal and community emergency preparedness efforts through my case studies. These case studies identify emergency management structures, government and community strategies, as well as resources to support local emergency preparedness. Through interviews with municipal staff and community members, I identify common trends,

challenges, and innovative opportunities. Finally, in Chapter 7, I present policy recommendations to the City of Austin, Texas. Overall, this thesis aims to compare ongoing local emergency preparedness efforts and identify best practices that the City of Austin can adopt.

Chapter 2: Literature Review

OVERVIEW

This chapter aims to understand the factors that influence emergency preparedness efforts. These factors include a variety of variables that influence social behavior regarding emergency preparedness and response. Additionally, how emergency management has been practiced in the United States also influences emergency preparedness efforts at the local scale.

Findings from social theories indicate that social capital, neighborhood cohesion, place attachment, and collective efficacy play essential roles in affecting whether communities take action to prepare and support one another during and after emergency events. We see from the literature that demographic characteristics, a sense of community belonging, and previous emergency experiences can influence individual risk behaviors. Meanwhile, resilient communities trust one another and work together to identify community solutions. Resilient communities help one another during emergency events, experience quicker recoveries, and have fewer emergency impacts.

Research cites countless examples of community members serving as informal first responders during emergency events. These individuals and groups that provide informal aid, often called emergent groups, can provide vital relief and recovery support. Unlike government agencies, emergent groups are not beholden to limiting procedures or slow-moving bureaucracies. Free from bureaucracies, emergent groups are more nimble and adaptable to address community emergency needs. However, there are hurdles to

overcome with emergent groups in emergency management. These challenges include difficulty accessing information, an inability to identify a leader, and temporary membership.

Emergency management has a history of emulating military operations and practices. This approach is referred to as command-and-control. Command-and-control emergency management practices have led to top-down decision-making and closed information sharing practices. Under this traditional model, the public is treated as a liability and seen as a distraction. In 2011, FEMA began to shift away from this approach and embrace a whole community approach model. This model recognized the need for community partners to engage in emergency management practices, from residents to businesses to faith-based organizations.

I. History of Emergency Management

Emergency management operations in the United States have their foundations in military-like practices and philosophies. According to Dynes et al. (1994), initial emergency preparedness legislation stemmed from the Federal Defense Act of 1950 (Dynes et al., 1994, p. 2). The Act created a 'civil defense' system to protect "...life and property in the United States" (Dynes et al., 1994, p.3). Led by the Defense Civil Preparedness Agency, emergency management became system-wide, spanning across all levels of government (Dynes et al., 1994, p.3). The Defense Civil Preparedness Agency responded to emergency management to help mobilize and prepare the nation for war (FEMA, N.A.). After World War II and the Cold War, understanding of emergency

management expanded to include “natural hazards and man-made incidents” (FEMA, 2022c, p.16).

Under the Truman Presidential Administration in the 1950s, emergency management was housed under the Federal Civil Defense Administration, focusing on “responding to the potential damage of devastating modern weapons” (Department of Homeland Security Office of Inspector General, 2009, p.3). Before the formation of the Federal Emergency Management Agency (FEMA), “federal emergency functions fluctuated between civilian agencies, defense agencies, and the White House” (Department of Homeland Security Office of Inspector General, 2009, p.3).

According to Drabek et al. (2003), the founding members of emergency management in the U.S. “began their careers in the armed services” (Drabek et al., 2003, p.106). The military experience was prioritized and considered an essential qualification for emergency management (Dynes et al., 1994). Since the creation of FEMA in 1979, appointed directors of FEMA had a military background or were political appointees rather than trained in emergency management (Daniels et al., 2000; Department of Homeland Security Office of Inspector General, 2009; DeLorenzo, 2013). A clear example comes from the Reagan Presidential Administration, where Louis Giuffrida, a former army general, became the FEMA Director (DeLorenzo, 2013).

This practice changed in 1993, with the appointment of James Lee Witt as the Director of FEMA. Before this position, Witt served as Director of the Arkansas Office of Emergency Services (Vice President Gore’s National Partnership for Reinventing

Government, 2001). Director Witt brought “extensive emergency management experience” to the FEMA Director position (DeLorenzo, 2013, p.59). Under the Clinton Administration, FEMA became staffed with people who, like Mr. Witt, possessed creditable emergency management skill sets (Daniels et al., 2000). With emergency management experience, Former FEMA Director Witt helped FEMA embrace an ‘all-hazards approach’ and focus on ‘disaster assistance’ (Department of Homeland Security Office of Inspector General, 2009; DeLorenzo, 2013).

Under President Clinton’s leadership, the FEMA Director had direct reporting capabilities to the Presidential Cabinet (Daniels et al., 2000). However, with H.R. 5005, The Homeland Security Act of 2002, this direct reporting relationship changed. This Act led to FEMA becoming one of 22 agencies housed under the U.S. Department of Homeland Security (DHS) (FEMA, 2022b).

II. Command and Control

Historically, emergency management has taken a military-like approach called “command and control” in the United States (Drabek et al., 2003; Imperiale et al., 2021). Command and control is the idea that “disasters cause chaos” (Boersma et al., 2014, p.126), and the government must control this chaos (Boersma et al., 2014; Henstra, 2010; Simo et al., 2007; Tierney, 2012). Under the command control model, decision-making is hierarchical, with clear decision-makers, guidelines, and a focus on ‘repetition and uniformity’ (Boersma et al., 2014, p.126). Based on this model, Emergency management professionals view themselves “as the only competent responders and push ordinary

people aside" (Scanlon et al., 2014, p.45; Helsloot et al., 2004; Perry et al., 2003). Under a command-and-control approach, emergency management involves planning documents. These documents tend to identify "authority relationships" that are unidimensional, with centralized decision-making (Dynes et al., 1994). Community members are viewed as 'social risks,' and their responses are "threatening the social order," passive, and incapable of protecting themselves under a command-and-control approach (Ferguson et al., 2018, p.729; Dynes et al., 1994; Imperiale et al., 2021). Leading to practices of militarization being legitimized (Imperiale et al., 2021, p.900; Imperiale et al., 2019).

Meanwhile, municipalities emulated command and control practices in emergency management at the local level. Dynes et al. (1994) describe the regional approach to emergency preparedness as depending upon "police and fire to help manage planning due to the authority and rank structures" already in place (Dynes et al., 1994, p.4). This brief historical background of emergency management practices and FEMA illustrates the complexity of approaches to emergency planning by the United States government, where military influence shapes the direction of the agency governing emergency response.

There have been faults in running emergency management operations under a command and control system. Imperiale et al. (2021) determine that the command and control approach has "...negatively influenced the institutional, financial, risk management, community participation, and physical planning strategies" to identify and carry out interventions (Imperiale et al., 2021, p.900). Another limiting belief to the

command and control process is that "government responders [are seen] as the primary if not the only disaster responder" (Wachtendorf et al., 2004, p.6). Additionally, the common belief that standard operating procedures will not fail during a disaster has been disproved (Neal et al., 1995). Many examples disprove the commonly held belief under the command and control model that society collapses and is insatiable during a disaster (Dynes et al., 1994; Neal et al., 1995). Finally, we see examples where governments try to 'restore public order' under the command and control model, limiting a community's resilience (Boersma et al., 2014, p.126; Solnit, 2009).

Examples of the shortcomings of the command and control model abound. A 1991 GAO Report notes that "FEMA's emphasis on war preparedness left much staff ill-prepared to provide services in disasters…" (DeLorenzo, 2013, p.54). Additionally, based on the NAPA Report, funding towards national security outweighed funds dedicated to disaster management, where "…thirty-eight percent of its $100 million-dollar budget was dedicated to national security emergencies" (DeLorenzo, 2013, p.56). After FEMA's move under DHS, reports noted concerns over FEMA being stripped of its authority, becoming resource-drained, and focused on terrorism (Department of Homeland Security Office of Inspector General, 2009). Further, when military-trained professionals who may lack emergency preparedness training take critical positions in FEMA, emergency management focuses on terrorism and civil defense activities, rather than disaster preparation.

The command and control model can also have devastating consequences. Imperiale et al. (2021) cite that the model can lead to "...worsening of inequity and social exclusion" (Imperiale et al., 2021; Clark-Ginsberg, 2020; de la Poterie et al., 2015; Gaillard et al., 2012; Imperiale et al., 2020). From Hurricane Katrina, we see "…citizens affected...were symbolically regarded as the enemy that needed to be defeated, instead of victims that needed help" (Wolbers et al., 2016, p. 422; Boersma et al., 2014). In tandem, individuals may avoid seeking emergency assistance as FEMA has a history of collecting residency status information from relief applicants (Bolin et al., 1998). This action puts those most vulnerable to emergency events at risk of deportation if they seek FEMA aid (Bolin et al., 1998).

III. FEMA: A WHOLE COMMUNITY APPROACH

Over time it has become apparent that municipalities cannot fulfill 'all emergency management tasks' (White et al., 2015, p. 213; FEMA, 2011). Following this recognition in 2011, former FEMA Administrator Craig Fugate gave the following testimony to the Homeland Security and Governmental Affairs Committee:

> Government can and will continue to serve disaster survivors. However, we fully recognize that a government-centric approach to disaster management will not be enough to meet the challenges posed by a catastrophic incident (Homeland Security, 2011).

Shortly after this testimony, FEMA would create a 'Whole Community Approach' (Riccardi, 2016; FEMA, 2011). Under President Barack Obama, the Presidential Policy

Directive 8: National Preparedness was created. This led to creating a FEMA guide on the Whole Community Approach (FEMA, 2011).

Described as a "philosophical approach…to emergency management", FEMA embraced the Whole Community Approach as the idea of more inclusive emergency preparedness and response processes (FEMA, 2011, p.3). FEMA called for the engagement of community partners in emergency management, citing that "preparedness is a shared responsibility, it calls for involvement [of] everyone- not just the government- in preparedness efforts" (Riccardi, 2016, p.127). Under the Whole Community Approach, community partners include: "state, local, tribal, and territorial partners, along with private-sector organizations such as faith-based and nonprofit groups, and industries" (Islam et al., 2016, p.113; FEMA, 2011).

The Whole Community Approach prioritizes 'collective learning' to better understand community risk and levels of disaster resilience (FEMA, 2011, p.2). This approach created the opportunity for a

> more informed, shared understanding of community risks, needs, and capabilities; an increase in resources through the empowerment of community members; and, in the end, more resilient communities (FEMA, 2011, p.4).

The Whole Community Approach has three guiding principles (Islam et al., 2016). These principles include recognizing community needs and fostering community empowerment (Islam et al., 2016). Additionally, FEMA has established the following themes for the whole community approach, these include:

- Understand community complexity
- Recognize community capabilities and needs.
- Foster relationships with community leaders.
- Build and maintain partnerships.
- Empower local action.
- Use and strengthen social infrastructure, networks, and assets.

(Taken from: Islam et al., 2016, p.114)

Since 2011, federal agencies have created requirements and guidelines for incorporating communities into emergency management (Chandra et al., 2013). Recognized projects that embrace a Whole Community Approach involve interagency partnerships with public and private organizations. The Centers for Disease Control Prevention and the Office of Public Health Preparedness and Response have recognized projects that emulate this approach. These projects focus on various topics, including community empowerment and resilience, with one project focusing on community wildfire prevention initiatives through the Project Wildfire in Deschutes County, Oregon (CDC Foundation, 2022).

As Spires (2018) cites, formal emergency management organizations like FEMA are just one of many groups needed during a disaster event; it takes the whole community to recover from a catastrophe (Spires, 2018). Spialek et al. (2018) identify many activities that community members can engage in under the Whole Community Approach. These activities include the ability to "… access, exchange, create, and interpret the information, supports, and narratives necessary to prepare for, survive and recover from a disaster" (Spialek et al., 2018, p.2). Community response can foster greater community trust, social capital, and community resilience (FEMA, 2011). FEMA recognizes that

embracing a Whole Community Approach before disaster events will lead to "lighten[ing] the load during response and recovery efforts by identifying partners with existing processes and resources available to be part of the emergency management team" (FEMA, 2011, p.4).

IV. Social Capital

Relationships at the household, neighborhood and community scale can create vital bonds that can affect the flow of information sharing, decision making, and resource allocation (Sadri et al., 2017). Having a robust personal network supports resource sharing, which can be vital during and after an emergency (Sadri et al., 2017). This experience of social relationships and networks encapsulates the idea of social capital.

Social capital is a vital component of emergency preparedness (Sadri et al., 2017; Quarantelli et al., 1977). Putnam (1993) describes social capital "...as the trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions" (Putnam, 1993, p. 167; Morsut et al., 2021). Social capital can also be recognized as the "...networks and associations of human relationships based on mutual trust, common interest, or particular skills…" (Freitag et al., 2015, p.326).

Disaster impacts can be reduced when community members identify risks and take action to work together (Sadri et al., 2017, p.1381; Yamamura, 2010). Relatedly, research indicates that engaged neighborhoods recover faster from disaster events and return to the "pre-disaster state of functioning" (Yoon et al., 2016, p.442; Sadri et al.,

2017; Aldrich, 2012; Ersing, 2012; Kage, 2010). Sadri et al. (2017) identify in a study on household tornado recovery efforts in southern Indiana that recovery assistance received by neighbors supports a faster recovery (Sadri et al., 2017). Meanwhile, Freitag et al. (2015) find that social capital can act as a 'backup' when systems become disrupted (Freitag et al., 2015).

Social capital can also negatively affect disaster preparedness, response, and recovery. One such negative outcome includes 'exclusionary membership.' Those perceived as different might have limited access to community benefits or recovery resources (Aldrich, 2011; Jensen et al., 2020). Meanwhile, if communities expect social support, this may reduce individuals' preparedness efforts (Babcicky et al., 2017; Jensen et al., 2020; Portes, 1998). For example, Kirschenbaum (2004) found that "strong family-based networks lead to reduc[ed] preparedness actions" (Kirschenbaum, 2004, p.16). Additionally, trust in familial and neighborhood networks was also found to reduce evacuations during emergencies (Kim et al., 2010).

V. NEIGHBORHOOD COHESION

Social capital is multidimensional. One of the dimensions that relate to neighborhood emergency preparedness efforts is the concept of neighborhood cohesion. Neighborhood cohesion refers to neighborhood belonging. Spialek et al. (2018) describe neighborhood cohesion or neighborhood belonging as the "emotional connection individuals have with other residents and the amount of support that individuals provide to those neighbors" (Spialek et al., 2018, p.4). Research indicates that having an

emotional connection or ties to the people around you can increase problem-solving and civic participation (Kim et al. 2010, p.476; McMillan et al., 1986; Spialek et al., 2018; Kim et al., 2006).

Despite these positive links between neighborhood cohesion and social engagement, there is mixed research on whether and how it influences emergency preparedness (Kim et al., 2010). After a hurricane, Kim et al. (2010) identify that neighborhood belonging or cohesion did not generate higher levels of emergency preparedness but instead created an environment where people checked in on one another after the emergency event (Kim et al., 2010). Additionally, information sharing during emergency events can create a perpetuating neighborhood belonging or cohesion cycle. Research indicates that individuals feel community belonging or cohesion when sharing information about disaster events with their local networks, family, friends, and neighbors (Spialek et al., 2018).

VI. Place Attachment

In addition to the feeling of neighborhood belongingness is the concept of place attachment. Place attachment is the idea that one feels emotionally rooted or bonded to an area (Manzo et al., 2006). This emotional connection to place comes from "steady accretion or sentiment and experience" (Manzo et al., 2006, p.337; Tuan, 1974). Manzo et al. (2006) find that "...thoughts, feelings, and beliefs about our local community places…impact…behaviors toward such places" (Manzo et al., 2006, p.336). Brown et al. (2003) identify the connection between place attachment and social cohesion (Manzo et

al., 2006, p.338; Brown et al., 2003). When one feels connected to their neighborhood, patterns of social cohesion, including investing in one's community and collaborating with neighbors, become more commonplace (Manzo et al., 2006; Brown et al., 2003).

Place attachment can support practices of emergency preparedness and recovery. Residents with attachment to their neighborhood are more likely to want to work together on community issues. This work can include "donations of time, effort, and resources" (Dang et al., 2022, p.1740; Lewicka, 2005; Payton et al., 2005; Stefaniak et al., 2017). Research indicates that when residents work together, they are "...more likely to be mobilized toward action and be empowered" (Manzo et al., 2006, p.340; Edelstein, 2003; Rich et al., 1995). Meanwhile, place attachment is limited in areas where residents are transient and remain anonymous to one another (Manzo et al., 2006). Where there are limited feelings of place attachment, researchers find a lack of commitment among residents to seek home improvements and work together with their neighbors (Manzo et al., 2006).

VII. Risk Behavior

While social factors such as relationships, personal networks, sense of belonging, and attachment to place can impact preparedness, other factors worth exploring that contribute to an individual's response (i.e., preparing and taking mitigation actions) to perceived risk. A basic understanding of these factors helps illustrate the complexity of household and neighborhood emergency preparedness and response. Various demographic factors influence whether individuals take preventative measures to reduce

their risk of emergencies. These factors include “age, income, awareness and individual health status” (Thomas et al., 2015). The level of education impacts how likely individuals are to take preventative measures (Kim et al., 2010; Anderson-Berry, 2004; Ecevit et al., 2002; Rustemli et al., 1999; Turner et al., 1986). Additionally, homeownership and time spent in a specific area also affect emergency preparedness actions (Kim et al., 2010; Mulilis et al., 2000; Marsh et al., 2001).

Not surprisingly, having a sense of community can also impact risk behavior. Research indicates that “...shared values and a culture of responsibility” support emergency response actions (Drabek et al., 2003, p. 102). Relatedly, beliefs around individual responsibility and one’s commitment to their community also influence emergency actions (Drabek et al., 2003; Bolin et al., 1986). Kirschenbaum (2004) identifies that “family, micro-neighborhood, and macro-community networks all have a positive effect on stimulating behaviors concerned with stocking up supplies" (Kirschenbaum, 2004, p.15). Additionally, having positive relationships with family also yields ‘protective behavior’ responses (Kirschenbaum, 2004).

Prior experience in disaster events can also foster emergency preparedness and response behavior (Kim et al., 2010). According to Helsloot et al. (2004), communities that have experienced previous emergency events develop “...disaster subcultures’, in which the exchange of knowledge, exercises, and other preparations are of central importance” (Helsloot et al., 2004, p.100). Likewise, exposure to emergency preparedness information and media can also influence risk response (Thomas et al.,

2015). According to Thomas et al. (2015), significant exposure to information can lead to a household having an emergency preparedness plan and having emergency supplies on hand (Thomas et al., 2015).

VIII. COMMUNITY RESILIENCE

Community resilience can also impact emergency preparedness, response, and recovery efforts. Resilience has lineages in environmental scholarship (Walters, 2015). In environmental scholarship, resilience is the ability of nature to 'bounce back' or 'bounce forward' after periods of disruption (Kwok et al., 2018; Walters, 2015; Cumming, 2011; Shaw et al., 2011; Ungar, 2012; Manyena et al., 2011). Resilience has been expanded upon to include community resilience. Community resilience is the ability to "...withstand and recover, or adapt, following a disaster" or change (Walters, 2015, p.51; Bushnell et al., 2007; Coles et al., 2004; Leykin et al., 2016; Magis, 2010), the processes of getting by (O'Malley, 2010), communities adapting and reinventing themselves (Kaufmann, 2013), and practices of preparedness and response for emergencies (Brunner et al., 2009). Norris et al. (2008) define community resilience as a "process linking a set of networked adaptive capacities to a positive trajectory of functioning an adaptation" (Norris et al., 2008, p.131; Gil-Rivas et al., 2016). Meanwhile, adaptive capacity is a process that is "...robust, redundant, or rapidly accessible resources available to a community" (Walters, 2015, p.52; Norris et al., 2008). These resources can include "...social capital, economic resources, community competence, and information/communication" (Walters, 2015, p.52; Norris et al., 2008). With this in mind,

researchers identify community resilience as being both an end goal and a process (Cutter et al., 2008).

Community resilience depends upon individuals thriving and having access to vital resources. A resilient community utilizes “collective and coordinated efforts from a variety of groups, organizations, and social institutions to enhance key resources” (Gil-Rivas et al., 2016, p. 1320; Norris et al., 2008; Donoghue et al., 2007; Emery et al., 2006; Harris et al., 2000; Kusel, 1991; Machlis et al., 1988; Chandra et al., 2013). These resources include “...economic... social capital, communication, and information systems…” (Gil-Rivas et al., 2016, p. 1320; Norris et al., 2008; Donoghue et al., 2007; Emery et al., 2006; Harris et al., 2000; Kusel, 1991; Machlis et al., 1988; Chandra et al., 2013). Resilient communities develop and foster resources (which include both “material, physical, sociopolitical, sociocultural, and psychological”) to cope during emergency events (Magis, 2010, p.404; Berkes et al., 2003; Colussi, 2000; Harris et al., 2000; Healy et al., 2003; Smit et al., 2006).

During times of emergency, community resilience can lead to patterns of adaptation (Morsut et al., 2021). White et al. (2015) describe community resilience as the ability to “...recover rapidly through survival, adaptation, evolution, and growth” (White et al., 2015, p. 201). Meanwhile, Yoon et al. (2016) find that higher levels of community resilience create “better planning and policies to reduce losses from disasters" (Yoon et al., 2016, p.436). Fostering and strengthening community resilience means realizing fewer impacts and a shorter recovery after disaster events (Yoon et al., 2016; Craft, 2020;

Kulig et al., 2011; Smith et al., 2014). In tandem, limited community resilience may lead to longer recovery times and negative health impacts (Bergstrand et al., 2015).

IX. Collective Efficacy

In tandem with community resilience is collective efficacy, or how well a social group believes in its capabilities to complete a task (Babcicky et al., 2020; Bandura, 1997). Collective efficacy is the "perceived ability to coordinate and respond collectively…" to emergency events (Ntontis et al., 2020, p. 1077; Drury, 2018). Relatedly, collective efficacy has been associated with social capital and the ability to cope during trying times (Gil-Rivas et al., 2016). Bandura (1997) argues that an individual's belief in the collective's agency and effectiveness impacts the group's performance, resource management, and personal motivations and goals (Babcicky et al., 2020, p.696; Bandura, 1997). Additionally, research links individual and collective efficacy (Babcicky et al., 2020; Bandura, 1995, 1997). Benight (2004) finds that belief in community resiliency can lead to a reduction in suffering (Babcicky et al., 2020; Benight, 2004). Meanwhile, Babcicky et al. (2020) find that it takes social capital and collective efficacy to put the rubber on the road and make magic happen (Babcicky et al., 2020). Similar to social capital and neighborhood cohesion, Babcicky et al. (2020) warns that high levels of collective efficacy could result in reduced or limited actions toward emergency preparedness (Babcicky et al., 2020).

X. Community as First Responders

Often one's social network, including family, friends, neighbors, and coworkers, will be first on the scene during an emergency. Research has shown that this informal aid network provides vital support services such as food, shelter, and childcare (Helsloot et al., 2004; Whittaker et al., 2015; Ferguson et al., 2018; Gil-Rivas et al., 2016; Jensen et al., 2020). Helsloot et al. (2004) support this finding that "... the 'average' citizen… saves most lives" (Helsloot et al., 2004, p.98). Gil-Rivas et al. (2016) find that this social network also plays a crucial role in helping formal emergency first responders during emergency events (Gil-Rivas, 2016).

There are numerous examples of community members acting as first responders. After earthquakes hit Mexico in 1985, "Ordinary citizens organized brigades to help rescue efforts and provide food, clothing, and emotional support to the homeless. Untrained, spontaneous volunteers saved 800 people" (Orloff, 2011, p.1). After Hurricane Katrina, many informal neighborhood groups arose (Rodriguez et al., 2006), one of which was a group identified as the 'Robin Hood Looters' a group of friends and neighbors who rescued neighbors and gathered resources such as food and water to deliver to those in need (Rodriguez et al., 2006). Similarly, after a hurricane hit Halifax in Nova Scotia, Solnit (2009) reports that neighbors "…had come out of their houses to speak with each other, aid each other, improvise a community kitchen, make sure elders were okay…" (Solnit, 2009, p.4).

Despite the success that ordinary residents can contribute to emergencies, there is often a dysfunctional relationship between community members and formal emergency

management. Conflicts arise when traditional emergency management agencies do not know how to work with residents who want to help (Scanlon et al., 2014; Helsloot et al., 2004; Helsloot et al., 2010; Perry et al., 2003; Voorhees, 2008). Research indicates that "...emergency plans rarely take into account the way ordinary citizens attempt to help themselves and others, so the actions of ordinary people are still rarely associated with any part of emergency management response systems" (Scanlon et al., 2014, p.45; Dynes et al., 1994; Helsloot et al., 2004). Formal emergency management often views residents as deficient, as liabilities, and as victims rather than as partners in helping during and after an emergency (Scanlon et al., 2014; Helsloot et al., 2004).

XI. EMERGENT GROUPS

Disaster research scholarship often refers to informal aid community groups as 'emergent groups' (Stallings et al., 1985). Emergent groups are composed of regular citizens or residents "…who work together to pursue collective goals relevant to actual or potential disasters but whose organization has not yet become institutionalized" (Stallings et al., 1985, p.94). Emergent groups have played critical roles in disaster planning, rebuilding, and mitigation (Stallings et al., 1985).

There are commonalities among emergent groups (Stallings et al., 1985). These commonalities include small membership size (about 100), predominantly white membership, and middle-class women (Stallings et al., 1985). Other notable features of emergent groups include a limited understanding of the policy process (Stallings et al., 1985).

Emergent groups can be bottom-up, spontaneous, or planned during emergency events (Boersma et al., 2014). Due to their grassroots nature, emergent groups can provide crucial flexibility and adaptability and fill gaps during emergency events (Boersma et al., 2014; Wachtendorf et al., 2004; Drabek et al., 2002). An example of this can be seen during Hurricane Katrina, where ham radio operators went beyond their "…information transmittal role… [and served as] 911 operators, ambulance dispatchers, and rescue coordinators" (Majchrzak et al., 2007, p.151). Relatedly, as Twigg et al. (2017) note, emergent groups are more adaptable than government agencies because they are not bound to bureaucracies or government procedures (Twigg et al., 2017; Kendra et al., 2002).

The spontaneous nature of these groups often causes wariness in formal emergency management agencies, where traditional agencies find it "...difficult to recognize, govern and support" (Boersma et al., 2014, p.128; Majchrzak et al., 2007; Dynes et al., 1994). Because emergency management has a culture of being a closed system for information, it can be difficult for emergent groups to identify where and how they can help during emergencies (Dynes et al., 1994). Additionally, difficulty in accessing information can lead to service replication issues. Other challenges emergent groups can experience include "...fleeting membership, dispersed leadership, unclear boundaries, and unstable task definitions" (Boersma et al., 2014, p.127; Majchrzak et al., 2007). It is important to note that these challenges can also serve as strengths for emergent volunteer organizations.

XII. Challenges and Gaps in Literature

This chapter explored various factors that influence emergency preparedness efforts at the neighborhood scale. While these factors can positively impact community engagement practices in emergency preparedness and response efforts, there are noted challenges. One challenge includes social exclusion, where research indicates communities can block those perceived as different from benefitting from social capital and cohesion. Another challenge involves social networks influencing risk behavior, where sometimes we see in-action concerning emergency preparation or mitigation occur because of one's network. In tandem, while individuals and community groups can serve as informal first responders, there are many challenges in coordinating efforts with government agencies. Finally, the command and control approach has shaped historical practices of emergency management. This military like approach has stymied community engagement in emergency management from the federal to the municipal scale.

While literature is abundant on social theories and emergency management dynamics in the United States, there is limited scholarship on municipal models of emergency management practices to engage neighborhoods in emergency preparedness and response efforts. How municipalities engage residents in emergency preparedness efforts, how communities respond, and the struggles they face remain largely unexplored by scholarship. Additionally, there is limited scholarship on grassroots emergency preparedness and response programming. Therefore, this research will explore

neighborhood emergency management practices that are both top-down and bottom-up and identify best practices and common challenges.

Chapter 3: Research Methods

For this research, I will focus on municipal efforts, particularly those plans and resources focused on household and neighborhood emergency preparedness and grassroots efforts that provide similar programming. I selected U.S. municipalities with plans or programming that focus on household emergency preparedness or neighborhood emergency preparedness to support this analysis. Cities chosen for this study included the following: Los Angeles, California; North Salt Lake and Bountiful, Utah and Seattle and Bainbridge Island, Washington.

I. Participatory Action Research

Participatory Action research (PAR) is a reflective empowering community participation process (Baum et al., 2006). Under the PAR model, those being researched and are part of the planning process should be active participants throughout the research process (Baum et al., 2006). In addition to being included as active participants throughout the research process, Hale et al. (2013) note that PAR participants should also be able to set "research priorities" (Hale et al., 2013, p.35). Furthermore, McIntyre (2008) describes this process where "researchers and participants [engage in] the co-construction of knowledge… where participants plan, implement, and establish a process for disseminating information gathered in the research project" (McIntrye, 2008).

As the author, it is essential to describe my positionality. Positionality is an "…individual's world view or where the researcher is coming from…an individual's beliefs about the nature of social reality and what is knowable about the world" (Holmes et al., 2020, p. 1; Sikes, 2004; Bahari 2010; Scotland 2012; Ormston et al. 2014; Marsh et

al. 2018; Grix 2019). I am a thirty-one-year-old female who identifies as white and Hispanic. As a native-born Californian, I moved to Austin, Texas, for my graduate program in August of 2019. I became a graduate research assistant for the Austin Area Indicators (A2SI) project and a Connect Fellow for Austin nonprofit, Go Austin Vamos Austin (GAVA), in late August of 2019. I have since served as a graduate research assistant for A2SI for three years and continue to provide research support to GAVA.

Working with GAVA and A2SI has taught me about community vulnerabilities (poverty rates, educational attainment, health, and wellbeing statistics) in the Austin area. While I had the chance to grow up in a middle-class family, I was not new to poverty and other forms of community vulnerability. Both of my parents came from impoverished backgrounds. Having heard stories and seen family members and friends live in vulnerable conditions, I am attuned to seeing vulnerability and passionate about making the communities I live in a better place. My partner and I are planting roots in Austin. With the purchase of a home and the move of our families into the locale, we hope to further Austin's resilience and environmental sustainability efforts.

As a researcher, I became oriented to neighborhood emergency preparedness when I got assigned as an A2SI graduate research assistant to assist GAVA in creating the Dove Springs Neighborhood Preparedness Guide in July of 2020. In this role, I met with GAVA community organizers and my employer, Dr. Patrick Bixler, monthly. I helped identify emergency preparedness resources (household or neighborhood emergency plans or guides across the country, information from FEMA, and the City of Austin Homeland Security Emergency Management resources for general language and

best practices). I used these resources to support the creation of the guide. In January of 2021, I helped arrange meetings with GAVA, the University of Texas at Austin professors, Austin's Office of Sustainability, the Watershed Protection Department, and Austin's Homeland Security and Emergency Management (HSEM) to provide feedback on the handbook draft. I organized these meetings, took meeting notes, and was in charge of meeting follow-up.

In co-creating the guide, I worked with GAVA to incorporate community member feedback into the guide. I also worked with the Watershed Protection Department to have the guide translated into Spanish. In tandem, HSEM staff helped ensure the information provided in the guide was the same information that the City already provides. Additionally, a PH. D candidate offered guidance to improve the reading level and the design of the information to ensure that the guide was user-friendly for those who have dyslexia. Finally, I worked with other City staff to design the guide.

The Dove Springs Preparedness Guide was completed in August of 2021. Distribution of the guide in the Dove Springs Neighborhood started in October of 2021 at a kickoff event for Climate Navigators. This program is run by GAVA and the University of Texas at Austin. Below are photos from the event taken by Dr. Katherine Lieberknecht.

[1]

Figure 1: Climate Navigator Event in Dove Springs

[1] Image from: Lieberknecht, K. (2021). Climate Navigator Event in Dove Springs. Personal Collection.

 [2]

Figure 2: Author holding Published Preparedness Guide

II. ETHNOGRAPHY

Ethnography is a methodological practice commonly used in qualitative research. Herbert (2000) describes ethnography as a tool to "explore the tissue of everyday life to reveal the processes and meanings which undergird social action…" (Herbert, 2000, p. 551). Under this practice, the researcher becomes a participant observer of the "sights,

[2] Image from: Lieberknecht, K. (2021). Author holding Published Preparedness Guide. Personal Collection.

sounds, smells, tastes and tactile sensations that bring a way of life to life" (Herbert, 2000, p.552). Researchers can document phenomena by having feet on the ground (Berg, 2012, p.191).

Ethnography research can be conducted both in-person and virtually. The scholarship recognizes that ethnographic research requires 'intensive fieldwork' and 'in-depth investigation' of the study site (Singer, 2009). Sites chosen for ethnographic research often include locations that can be generalizable (Hammersley, 2006, p. 4; Herbert, 2000). Additionally, those observed and interviewed under ethnographic practices are considered to be 'knowledgeable agents' (Herbert, 2000, p.551).

Harrison (2020) best describes ethnography as an "iterative-inductive-inscription" based methodology (Harrison, 2020, p.11-12). While ethnography is 'unstructured', the research process involves a 'thick description' and a reflexive review of the research questions and findings (Graddol et al., 1994). Ethnography employs various research methods, including but not limited to interviews, visual recording, document analysis, and field notes (Singer, 2009). Research finds that ethnography is subjective and or interpretive and colored by the researcher's biases and positionality. Furthermore, ethnography best practices prescribe that the researcher be 'reflexive,' transparent, and honest in their narratives and research practices (Herbert, 2000; Singer, 2009).

I conducted ethnographic site visits in Los Angeles, California, and Sandy City, Utah. Additionally, I attended a virtual site visit in Seattle, Washington. Site visit summaries are in Appendix Q. I conducted these site visits during local emergency preparedness events, including a disaster scenario role-playing event, an emergency

preparedness expo, and a community training. At these events, I played the role of participant and observer. When provided the opportunity to introduce myself, I introduced myself as a researcher and described my reason for being present as tied to my thesis research.

The ethnographic practices employed included: field notes, audio recordings, photographs taken of the events, and interviews with participants. As a researcher, I used my contacts, city staff, and resident leaders that I had already interviewed to learn about and access these events. These contacts also helped introduce me to others at the events, which led to a handful of formal interviews.

III. Semi-Structured Interviews

I conducted semi-structured individual and group interviews to understand emergency preparedness at the local scale. I crafted a set of specialized questions for each interviewee. Interview protocols can be found in Appendix A-F. Interview questions were open-ended, descriptive, and experiential (Silverman et al., 2014). Additionally, I reviewed municipal emergency preparedness resources before conducting interviews with staff and residents from that municipality.

I structured interviews in the 'tree-and-branch model,' where the core topic or the trunk was emergency preparedness at the local scale (Rubin et al., 2005). Meanwhile, the tree branches were the specific programs harbored by each municipality to help understand how these programs work, followed by program outcomes. I divided each interview into four parts. I asked interviewees to explain their role in emergency

preparedness work at the local scale, then asked about the program they support and program outcomes, and finally, discussed challenges related to emergency preparedness. I would ask follow-up questions when interviewees used 'new words or unfamiliar terms' throughout the interview (Rubin et al., 2005). I used snowball sampling to identify new stakeholders to interview. Finally, I followed up with interviewees via email after their interview if any lingering questions remained. I also gave interviewees the option to remain anonymous and the option to end the interview at any point.

I conducted fifteen interviews from January 2021 to May 2022. Of the fifteen interviews, six interviews were with City staff, and nine interviews were with residents. Many of the municipalities chosen for interviews had a neighborhood and or household emergency plan. Meanwhile, from the City of Bainbridge Island, Bainbridge Prepares does not have a specific plan labeled as a household or neighborhood emergency plan, but instead has related programs and information on their website.

Category	Geographic Location	Number Interviewed
Municipal Staff	Austin, TX	1
	Los Angeles, CA	1
	Seattle, WA	2
	North Salt Lake, Utah	1
	State of Utah	1
Community Members	Bainbridge Island, WA	1
	Bountiful, UT	1
	Los Angeles, CA	3
	Seattle, WA	2
	North Salt Lake, Utah	2
TOTAL		15

Table 1: Interview Research Participants by Subgroup

I contacted municipal staff by email. I used readily available contact information found on municipal websites and City of Austin staff recommendations. Meanwhile, requests for municipal residents' contact information usually came from municipal staff. The interviews were conducted over Zoom and by phone and tended to last about 45 minutes to 1 hour. I recorded the interviews using the Zoom platform. I transcribed interviews using Otter.ai software. Interviews were conducted under the IRB protocol number: STUDY00001538.

I used grounded theory to shape the coding process for my interviews. My initial coding practices involved identifying simple codes that described chunks of interview text using Google sheets to conduct this analysis. For my secondary coding process, I

used MAXQDA software. I organized the interview data into large expansive categories or codes, which included: “neighborhood” (419), “community” (215), “resources” (96), “volunteer” (86), “outreach” (63), “challenge” (27), “training” (23), “access” (19), “evaluation” (3)[3]. In the secondary coding stage, I employed axial coding. Axial coding helped me better understand the nuts and bolts behind my interview data (Charmaz, 2006). Under axial coding, I recognized the following codes: City relations, funding barriers, volunteer management, staffing challenges, outreach challenges, innovation, and social capital. I used memos to help identify emerging themes (Charmaz, 2015; Walsh et al., 2015; Birks et al., 2013). Overall, this coding helped me to better understand the nuances in household and neighborhood preparedness efforts.

IV. Site Visits

Site visits were employed in this research to enrich my understanding of how emergency preparedness at the household and neighborhood-scale works. Researchers conduct site visits for evaluative work. Site visits are events where,

> the object of the visit would have to be something that could be visited, and something not contained within a single person…[additionally] the object [of the site visit] cannot be just a product, such as curriculum materials, which could as easily be examined off-site; however, site visits could be employed to determine whether a product is being implemented appropriately (Lawrenz, 2003, p.344).

Further, the research identifies that “site visitors possess legitimate ways of knowing” (Lawrenz, 2003, p.350).

[3] Numbers in parenthesis indicate frequency of word from all recorded interviews except my interview with Bountiful where the audio quality did not prove viable for transcription.

I used site visits as an opportunity to meet interviewees in person and tour the locale. The site visits included participating in emergency preparedness scenario training and attending a municipal safety-focused fair. Site visits usually lasted between 1 to 3 days. Some site visits led to new interviews. Field notes were taken by hand on-site and then transcribed using the audio recording software provided through Otter.ai.

V. GROUNDED THEORY

To conduct this research, I employ a grounded theory approach as a framework to guide my research methods. At its core, grounded theory is "the discovery of emerging patterns in data" (Walsh et al., 2015, p. 593). Grounded theory fosters an inductive research approach, which provides a systematic way to analyze "… qualitative data to construct theories [that are] grounded in the data…" (Charmaz, 2006, p.3). Grounded theory allows researchers to explore their data with an open mind and create theories based on the data collected, rather than use theories to interpret data findings (Walsh et al., 2015). Corley (2015) describes grounded theory as a chef perfecting a sauce, where the practice of tasting the sauce and adjusting by adding more salt or other spices is like grounded theory methods. The researcher "iterat[es] between theory and data" and "theoretically sampling to find the best blend" for the research (Corley, 2015, p. 603; Charmaz, 2006).

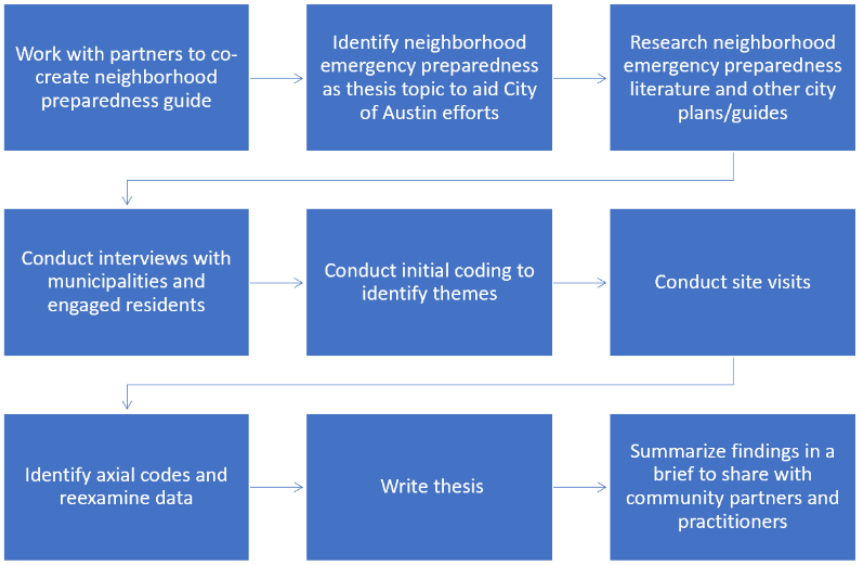


Figure 3: Research Process based on Charmaz's Grounded Theory Process

I incorporated practices of grounded theory into my research methods, including a document or content analysis, coding, semi-structured interviews, geospatial analysis, and site visits. These methods inform how emergency preparedness at the household and neighborhood-scale can work, identify common obstacles or barriers, and highlight best practices in this field.

VI. Document Analysis: Household and Neighborhood Preparedness Plans

This research uses meta-analysis, and content analysis on outreach and educational materials focused on household and neighborhood emergency preparedness. Meta-analysis is the "examination of data from several independent studies of the same subject" to identify "impact, limitations, and implications" (APA Dictionary of Psychology). I utilized these analyses to conduct a comprehensive review of municipal

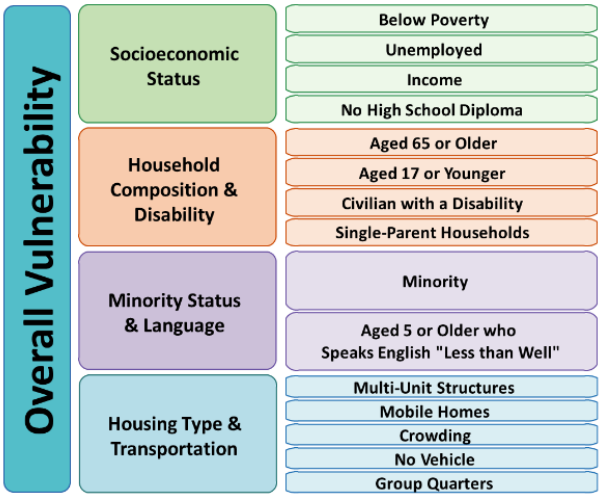
emergency preparedness documents geared at household and neighborhood preparedness. I focused on content analyses of secondary data materials labeled as household or neighborhood preparedness plans. I identified these plans using the Google search engine and shared them with interviewees.

I created categories or codes to analyze the municipal emergency preparedness outreach and educational materials for this research. These categories included: the name of the municipality, year published, authoring agency, the focus of materials (i.e., geared toward households or neighborhoods), and emergency preparedness topics discussed. Following the grounded theory approach and the work of Gaber and Gaber (2007), I created new categories during the content analysis (Gaber et al., 2007). Appendix H displays similarities and differences with the content found in each household and neighborhood emergency preparedness plan reviewed in this research.

VII. GEOSPATIAL ANALYSIS

I created visualizations of social vulnerability and exposure to natural hazards of the municipal geographies to see if there was a pattern of vulnerability among the municipalities reviewed in this research. I retrieved social vulnerability data from the Centers for Disease Control (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR) Social Vulnerability Index. To calculate social vulnerability, the CDC/ATSDR evaluates 15 social factors divided into four themes: “socioeconomic status, household composition, disability, minority status and language, and housing type

and transportation" (CDC- Centers for Disease Control and Prevention, 2020). See Figure 4 for the factors included in the 2018 CDC/ATSDR social vulnerability score.



[4]

Figure 4: CDC/ATSDR Social Vulnerability Framework

Data used by the CDC/ATSDR comes from the U.S. Census American Community Survey. In addition to the 15 factors used in the social vulnerability index, the CDC/ATSDR also included "2014-2018 American Community Survey (ACS) estimates for persons without health insurance, and… estimate of the daytime population" in their 2018 social vulnerability score metric (CDC- Centers for Disease Control and Prevention, 2020). Social vulnerability scores are ranked by percentile value at the census tract level, where "values range from 0 to 1, with higher values indicating greater vulnerability" (CDC- Centers for Disease Control and Prevention, 2020). I use the overall social vulnerability score in the geospatial analysis of vulnerability. This score is calculated by

[4] Image taken from: CDC-Centers for Disease Control and Prevention. (2020). *CDC SVI Documentation 2018*. https://www.atsdr.cdc.gov/placeandhealth/svi/documentation/SVI_documentation_2018.html

taking “the sums for each theme…and then calculat[ing] [the] overall percentile rankings” (CDC- Centers for Disease Control and Prevention, 2020). I chose to visualize social vulnerability using a yellow to orange color scale. On these maps, areas denoted by darker orange indicate higher levels of social vulnerability.

I retrieved natural hazards exposure data from FEMA’s National Risk Index for Natural Hazards. This risk index identifies vulnerability by measuring hazard levels by census tract. Eighteen hazards are incorporated in the Risk Index; see Figure 5 for a list of these hazards.

FEMA National Risk Index Hazards
Avalanche
Coastal Flooding
Cold Wave
Drought
Earthquake
Hail
Heat Wave
Hurricane
Ice Storm
Landslide
Lightning
Riverine Flooding
Strong Wind
Tornado
Tsunami
Volcanic Activity
Wildfire
Winter Weather

[5]

Table 5: FEMA National Risk Index- Natural Hazards

These 18 hazards were sourced from "FEMA-approved State Hazard Mitigation Plans for all 50 states" (FEMA, 2021a). For the National Risk Index, the risk of a natural hazard is calculated using the following formula:

[5] Table information taken from: FEMA. (2021a). *National Risk Index: Technical Documentation*. https://www.fema.gov/sites/default/files/documents/fema_national-risk-index_technical-documentation.pdf

$$Risk = Expected\ Annual\ Loss \times Social\ Vulnerability \times \frac{1}{Community\ Resilience} \quad (6)$$

Figure 6: FEMA National Risk Index- Generalized National Risk Index Risk Equation

Furthermore, FEMA defines expected annual loss as the "expected loss of building value, population, and agriculture value each year due to natural hazards" (FEMA, 2021a). Meanwhile, social vulnerability is "the susceptibility of social groups to the adverse impacts of natural hazards" (FEMA, 2021a). Finally, community resilience is defined as "a community's ability to prepare for, adapt to, withstand, and recover from natural hazards" (FEMA, 2021a).

$$Annualized\ Frequency = \frac{Number\ of\ Recorded\ Hazard\ Occurrences}{Period\ of\ Record} \quad (7)$$

Figure 7: FEMA National Risk Index- Annualized Frequency Equation

Data for the historical loss ratio for FEMA's National Risk Index stems from the Spatial Hazard Events and Losses Database from Arizona State University. This database includes data on "property damage, crop losses, injuries, and fatalities due to a peril or hazard by month, year, and county since 1960" (FEMA, 2021a, p.5-14).

Data used to calculate social vulnerability for FEMA's National Risk Index is sourced from the University of South Carolina Hazards Vulnerability & Resilience

[6] Generalized Risk Equation taken from: ibid, 3-1

[7] Annualized Frequency Equation taken from: ibid, 5-2

Institute. The National Risk Index includes twenty-nine socioeconomic variables to calculate social vulnerability scores by census tract.

- Median gross rent for renter-occupied housing units
- Median age
- Median dollar value of owner-occupied housing units
- Per capita income
- Average number of people per household
- % population under 5 years or age 65 and over
- % civilian labor force unemployed
- % population over 25 with <12 years of education
- % children living in married couple families
- % female
- % female participation in the labor force
- % households receiving Social Security benefits
- % unoccupied housing units
- % families with female-headed households with no spouse present
- % population speaking English as second language (with limited English proficiency)
- % Asian population
- % African American (Black) population
- % Hispanic population
- % population living in mobile homes
- % Native American population
- % housing units with no car available
- % population living in nursing facilities
- % persons living in poverty
- % renter-occupied housing units
- % families earning more than $200,000 income per year
- % employment in service occupations
- % employment in extractive industries (e.g., farming)
- % population without health insurance (County SoVI only)
- Community hospitals per capita (County SoVI only)

8

Figure 8: FEMA National Risk Index- Variables incorporated in SV Score

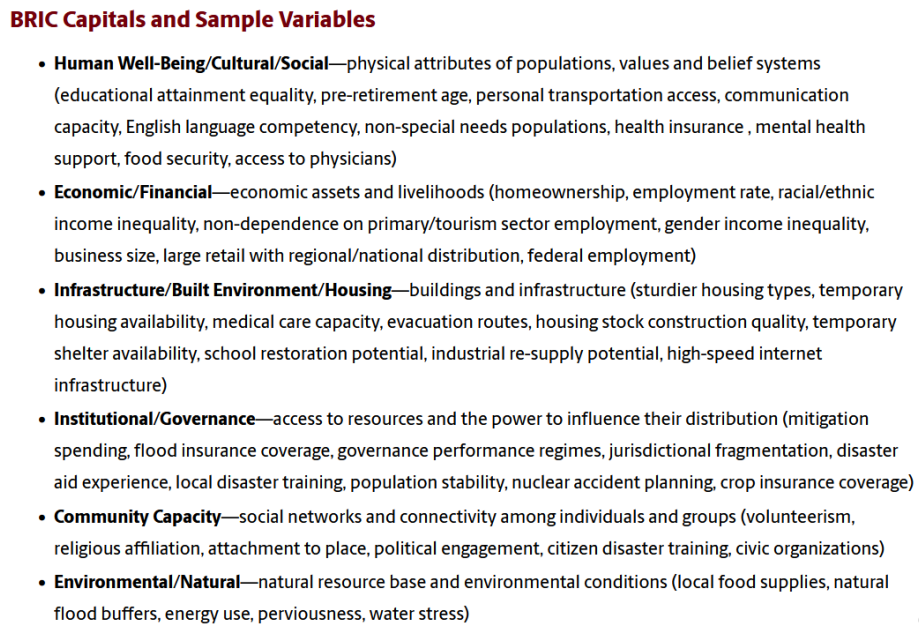
Data used to calculate the expected annual loss for FEMA's National Risk Index stems from

> National Weather Service (NWS), the National Oceanic and Atmospheric Administration (NOAA), the U.S. Geological Survey (USGS), the U.S. Army Corps of Engineers (USACE), the Smithsonian databases, and the U.S. Department of Agriculture (USDA) (FEMA, 2021a, p.5-2).

The expected annual loss is calculated by evaluating the annualized frequency of a natural hazard and the historical loss ratio.

[8] Social Vulnerability Source data taken from: ibid, 4-2

Data for computing a community resilience score for FEMA's National Risk Index stems from the University of South Carolina's Hazards and Research Vulnerability Research Institute Baseline Resilience Indicators for Communities (HVRI BRIC) project. The HVRI BRIC dataset calculates community resilience using forty-nine indicators, see Figure 9.



BRIC Capitals and Sample Variables

- **Human Well-Being/Cultural/Social**—physical attributes of populations, values and belief systems (educational attainment equality, pre-retirement age, personal transportation access, communication capacity, English language competency, non-special needs populations, health insurance , mental health support, food security, access to physicians)
- **Economic/Financial**—economic assets and livelihoods (homeownership, employment rate, racial/ethnic income inequality, non-dependence on primary/tourism sector employment, gender income inequality, business size, large retail with regional/national distribution, federal employment)
- **Infrastructure/Built Environment/Housing**—buildings and infrastructure (sturdier housing types, temporary housing availability, medical care capacity, evacuation routes, housing stock construction quality, temporary shelter availability, school restoration potential, industrial re-supply potential, high-speed internet infrastructure)
- **Institutional/Governance**—access to resources and the power to influence their distribution (mitigation spending, flood insurance coverage, governance performance regimes, jurisdictional fragmentation, disaster aid experience, local disaster training, population stability, nuclear accident planning, crop insurance coverage)
- **Community Capacity**—social networks and connectivity among individuals and groups (volunteerism, religious affiliation, attachment to place, political engagement, citizen disaster training, civic organizations)
- **Environmental/Natural**—natural resource base and environmental conditions (local food supplies, natural flood buffers, energy use, perviousness, water stress)

9

Figure 9: FEMA National Risk Index- Indicators incorporated in the Community Resilience Score

These forty-nine indicators "represent six types of resilience: social, economic, community capital, institutional capacity, housing/infrastructure, and environmental"

[9] BRIC Capitals and Sample Variables taken from: University of South Carolina: College of Arts and Sciences. (2021). *BRIC*. https://sc.edu/study/colleges_schools/artsandsciences/centers_and_institutes/hvri/data_and_resources/bric/index.php

(FEMA, 2021a, p.4-3). For FEMA's National Risk Index, risk score values range from 0-100, where the higher the value equates to greater vulnerability to natural hazards. The overall risk score includes the risk calculation for all 18 natural hazards. For visualizing the risk of natural hazards, I use a yellow to red scale. Areas at higher risk are in dark red.

Data used to visualize social vulnerability and risk of natural hazards are from 2018. I examined vulnerability at the smallest unit for which data was available at the census tract level. I used census tract-level data from FEMA's National Risk Index. I used ArcMap 10.8.1 to clean the shapefile attribute tables to display the individual municipalities included in this research and to create maps. These maps can be found in the case study chapters.

Chapter 4: Preparing as a Community: City of Los Angeles, California

I. BACKGROUND

Figure 10: Map of City of Los Angeles, California

The City of Los Angeles (LA) is in Los Angeles County, California. As of 2020, LA had a population of about 3,966,936 residents (City of Los Angeles, 2022a). As of 2019, residents report a median household income of approximately $65,290 (United States Census Bureau, 2021c). Meanwhile, 17% of adults aged 18+ live in poverty (United States Census Bureau, 2021c). The median age of LA residents is approximately

35 years old (World Population Review, 2022c). Regarding educational attainment, LA residents reported at higher rates, approximately 23%, to having a bachelor's degree (World Population Review, 2022c). Additionally, the majority of the City's households, about 73%, are households without children (Statistical Atlas, 2018a). Finally, approximately 63% of homes are renter-occupied (World Population Review, 2022c).

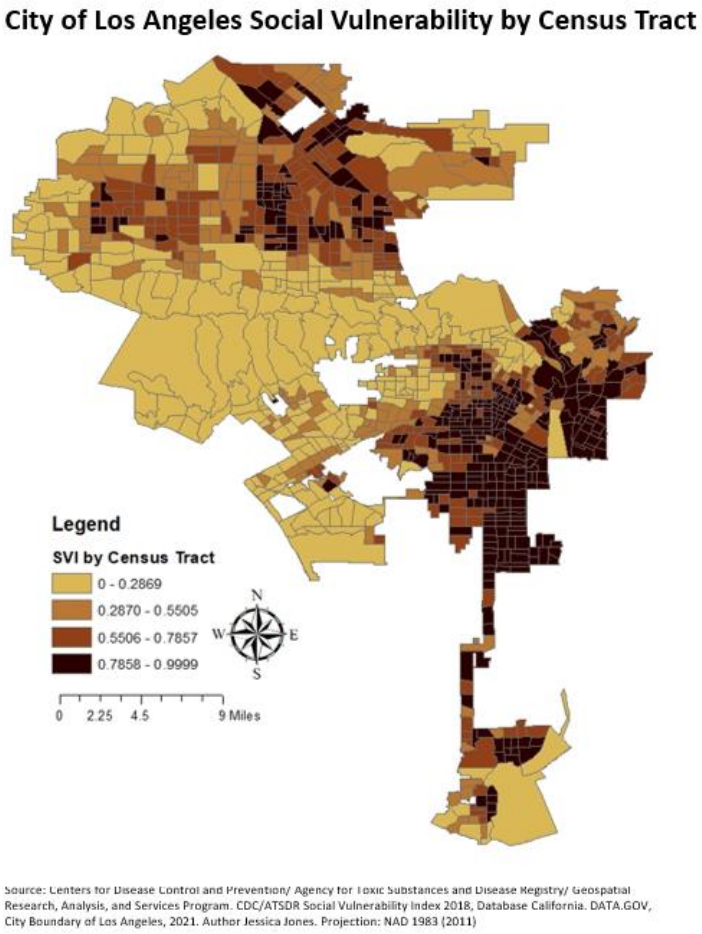


Figure 11: Social Vulnerability by Census Tract for City of Los Angeles, California

As seen in Figure 11, when examining the City of Los Angeles by the Social Vulnerability Index, higher levels of vulnerability exist in the northern and southernmost

points of the municipal boundary, as denoted by the score value between 0.78 to 0.99 and by the burnt orange color. The City's southern area displays higher social vulnerabilities than the northern area. Meanwhile, the center area of the city has the lowest social vulnerability scores, between 0 to 0.26, as denoted by the yellow color.

The City of Los Angeles spans a total land area of 468.67 sq. miles (United States Census Bureau, 2022b). LA lies between the Santa Monica and the San Antonio mountains and the Pacific Ocean. Based on its geography, Los Angeles County falls in the "top ten riskiest places" for exposure to natural hazards (Bornstein, 2021). This geography creates a semiarid climate and an environment prone to "earthquakes, firestorms, and mudslides" (Britannica, 2022). According to FEMA's National Risk Index, most of the census tracts within the City's boundaries are rated as relatively high risk (FEMA, 2021b). The major perceived threat in LA is the big one or an earthquake over the size of a 7.0. Despite these ratings and predictions, the City of Los Angeles has experienced few disasters within its municipal boundaries (Interview with Botz-Forbes and Thammasaengrsi, 2021). The last major regional disaster event for the City of Los Angeles was a flood event in 1938 (LAFD CERT Continuing Education, 2020).

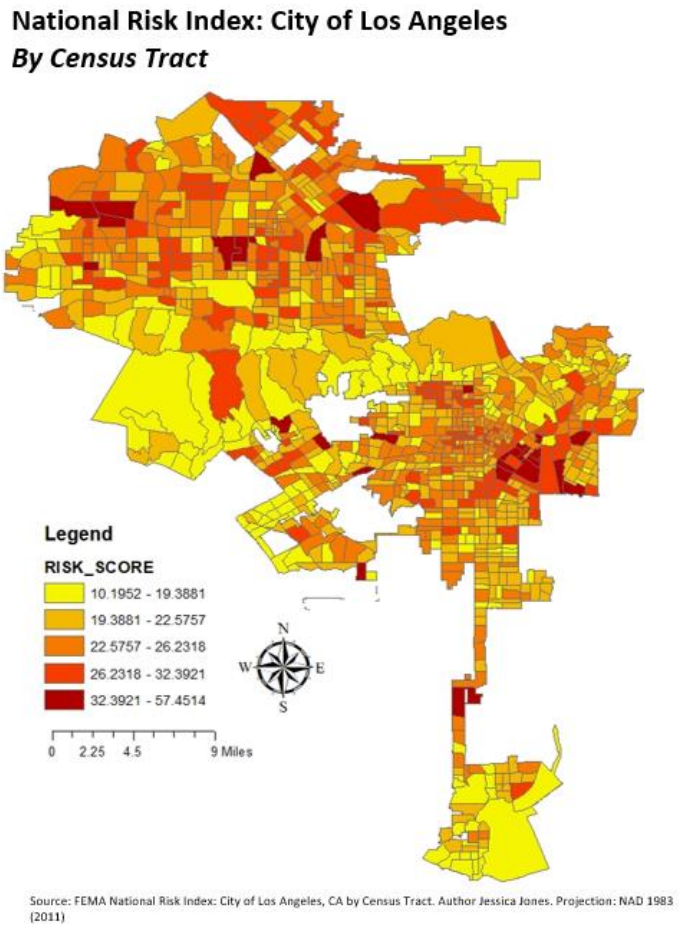


Figure 12: National Risk Index Map by Census Tract for City of Los Angeles, California

As seen in Figure 12, when using the FEMA National Risk Index tool to identify risk areas for natural hazards within LA, unlike the social vulnerability indicator map, the risk of natural hazards is more evenly spread throughout LA. I denote census tracts that experience low to medium risk scores, 10.19 to 26.23, in yellow and orange. Meanwhile, I represent census tracts with higher risk scores, 32.39 to 57.45 in red.

II. Community Preparedness and Engagement Division

The City of Los Angeles has a Community Engagement Division Chief within their Emergency Management Division (EMD). This staff leads a team that supports emergency preparedness efforts in neighborhoods, faith-based organizations, schools, and community groups (Interview with Gonzalez, 2021; City of Los Angeles, 2022b).

[10]

Figure 13: Ready Your LA Neighborhood Program

One of the projects created by this Division is the Ready Your LA Neighborhood (RYLAN) Program (Interview with Gonzalez, 2021). The City launched RYLAN in 2018. The focus on neighborhood emergency preparedness efforts and the creation of the

[10] Image taken from: City of Los Angeles. (N.A.a). City of Los Angeles Emergency Preparedness Guide. Emergency Management Department. P. 21. https://www.google.com/url?q=https://www.readyla.org/sites/g/files/wph1731/files/2021-04/%2520rylan-emergency-preparedness-guide-english-digital.pdf&sa=D&source=docs&ust=1650755823221379&usg=AOvVaw2qAX16UP2ONF9P0fSmDNvc

RYLAN program stems from the 2018 Resilient Los Angeles Plan, which puts the following message forward:

> We are all deeply aware that it is a question of when, not if, Los Angeles will face the next Big One —whether it is an earthquake, flood, heatwave, fire, or other disaster with long-term impacts. While we have made great strides over the past 25 years, it's time to do more —to strengthen and create new partnerships, to change the way our government collaborates and to empower and secure our communities —so that we can work together to make L.A. a global model of resilience (City of Los Angeles, 2018b, p.7).

The City's resilient plan charged City departments to focus on community emergency preparedness and develop new tools to support this type of engagement. In brainstorming tools to promote emergency preparedness, EMD identified the 'Map your Neighborhood' Program used by the Red Cross, Washington, and a handful of other cities (Interview with Gonzalez, 2021). The creator of 'Map your Neighborhood' helped the City design the RYLAN program.

Ready Your LA Neighborhood is EMD's primary tool to engage community members in emergency preparedness work (Interview with Gonzalez, 2021). The program is free and entails training on household and neighborhood emergency preparedness efforts. The RYLAN program comprises of six pillars: prepare, organize, practice, connect, communicate, and learn (City of Los Angeles, N.A.c). Under the prepare pillar, residents are encouraged to seek personal and group actions to prepare themselves, their families, and the community for emergencies (City of Los Angeles, N.A.c). For the organizing pillar, residents are tasked with holding RYLAN training in their neighborhood. This training runs 90 minutes long and can be held in person or

digitally. Since the COVID-19 Pandemic, EMD staff have also offered the training to be community-led/ DIY (City of Los Angeles, 2022c).

Emergency preparedness information is distributed at this meeting, and neighborhood areas are defined. To define their neighborhood area, EMD recommends "...the ideal size for neighborhoods is the number of households you can check on in [60 minutes]" to ensure neighbors are okay (City of Los Angeles, N.A.b; Interview with Gonzalez, 2021). In tandem, the RYLAN program encourages residents to "create a neighborhood response plan…a skills and equipment inventory…a neighborhood contact list…and do a walk-through [of their] neighborhood area" (City of Los Angeles, N.A.b). The training also stresses that neighborhood emergency preparedness is a team effort.

> ...this is a team effort, you guys are going to come together, you're going to learn how to do your plan, and then when the emergency hits, you are going to break up into teams. (Gonzalez, 2021)

Additionally, the RYLAN program encourages residents to identify a 'neighborhood leader' who can host meetings (Interview with Gonzalez, 2021). After the RYLAN training, EMD staff collect block addresses of the interested residents to create a neighborhood map for the new RYLAN team.

Around six months after the training, residents are encouraged to practice emergency response in their neighborhoods by holding practice drills (Interview with Gonzalez, 2021). EMD staff support neighborhoods by utilizing their Everbridge system, a tool to automate emergency messaging, to run practice drills. They also offer scenario cards for the neighbors to practice their RYLAN plan. The Community Engagement

Division Chief and staff like to remind neighborhoods of the following information when they are designing their RYLAN plans and when they are practicing the drills/scenarios:

> ... you are planning on paper as if it is going to work out perfectly. Please don't stick to this paper. This is just your plan [and] it will vary depending on the disaster, the scenario. (Gonzalez, 2021)

Additionally, the RYLAN program promotes its emergency notification system, Notify LA, so that residents can get emergency alerts/notifications. Finally, residents are also encouraged to take ongoing training on various topics about emergency preparedness.

III. Program Revisions

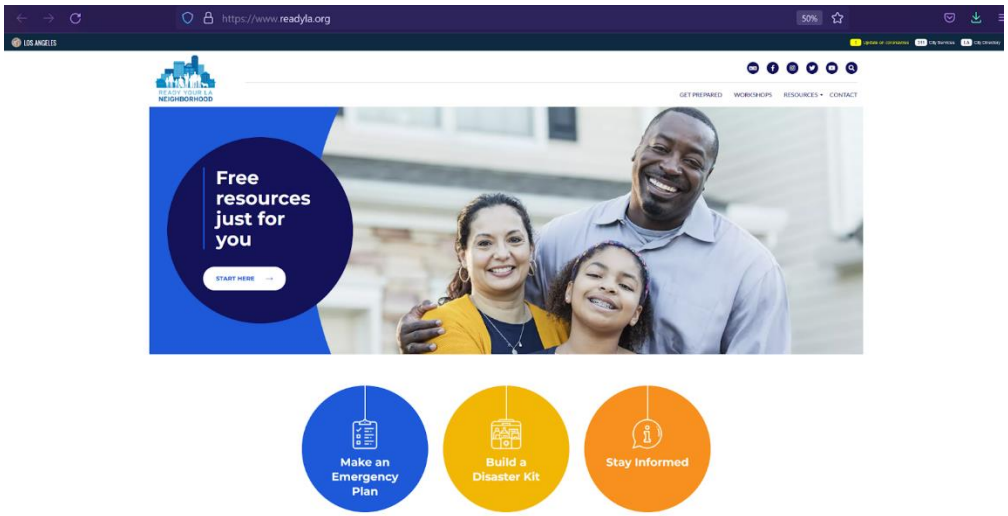
At the end of 2018, EMD staff recognized that the RYLAN program was not a perfect fit for LA's neighborhoods (Interview with Gonzalez, 2021). Where the original plan catered to single-family neighborhoods, LA's neighborhoods are much more dynamic, with lots of different housing types. A contractor updated the RYLAN materials and adjusted them to accommodate multi-family housing and businesses (City of Los Angeles, 2018a). Additional changes to the RYLAN program included adding emergency preparedness information for pets (Interview with Gonzalez, 2021).

Unfortunately, just as EMD staff revised the RYLAN program, the COVID-19 Pandemic started. The program was put on a temporary hold per the mayor's "Safe at Home" emergency order on March 19, 2020 (City of Los Angeles, 2020a). With this City order, the following message was posted on the EMD RYLAN webpage:

> Due to the current "Safer at Home" Order issued for LA County by our City and Council officials and the CDC guidelines for social distancing, Aram Sahakian, our General Manager, has determined that the RYLAN program cannot continue as designed until further notice. Thank you for your patience, and thank you for

> continuing to practice social distancing, which is our best way to slow the spread of Covid-19. (City of Los Angeles, 2020b).

While the program was on hold, EMD staff used Urban Areas Security Initiative (UASI) funding to improve the website to make it "more LA-centric" (Interview with Gonzalez, 2021). The new RYLAN website is described as "more realistic" to what LA "looks like" (Gonzalez, 2021).



[11]

Figure 14: New RYLAN Website, circa 2021

With the relaunch of the RYLAN program around August 2020, the program was adapted to fit a world where neighbors could organize in the digital realm.

> The Do-It-Yourself RYLAN workshop is a great opportunity for you and your neighbors to discuss how you can help each other right after a disaster via virtual communication platforms such as Skype, Zoom, Google Meet, etc. You also have the option to request a staff member from our department to conduct and facilitate your RYLAN workshop via Zoom or Google Meet. We call this Virtual RYLAN led by EMD staff. (City of Los Angeles, 2020c)

[11] Image taken from: Ready Your LA Neighborhood. (2022). Free resources just for you. https://www.readyla.org/

RYLAN materials are also available on the website for downloading (Interview with Gonzalez, 2021).

IV. Resources and Distribution

The RYLAN program currently includes a 90-minute training, an emergency supply checklist, an emergency preparedness guide, and a pet emergency supply checklist.

V. Emergency Preparedness Guide

The City of Los Angeles Emergency Preparedness Guide was created in 2020. The guide provides information on individual preparedness, disaster-specific preparedness, and how to get involved. (See Appendix I for LA Emergency Preparedness Guide table of contents). The guide contains information on engaging neighborhoods in emergency preparedness, including the RYLAN program and the Community Emergency Response Team (CERT). The Urban Areas Security Initaitive (UASI) grant supported the creation of the guide (City of Los Angeles, N.A.a).

In addition to the UASI grant, the City uses funding from the State Homeland Security Program Grant and the EMD budget to support staff overtime and cover the printing of RYLAN emergency preparedness materials (Interview with Gonzalez, 2021). Neighborhood councils have also utilized their resources to print RYLAN materials for their jurisdictions. The City has also hired consultants to help design ads and other promotional materials for the RYLAN program.

VI. Evaluation

About 200 neighborhoods have a RYLAN emergency response plan (Interview with Gonzalez, 2021; Abrahamson, 2022). At the start of the RYLAN program, the mayor set the goal that EMD staff must complete "100 [neighborhood response plans] each year…or about 25 per bureau" (Gonzalez, 2021). During the first year of the RYLAN program, the City met its goal of 100 neighborhood emergency response plans. The City surpassed the 100 plan goal in the program's second year. However, in 2020 the program was put on temporary hold for about six months. Activation of RYLANs has been minimal due to no significant emergency events occurring in the city.

While outreach and training efforts became complicated during the pandemic, EMD staff have tried to reach a diverse audience. RYLAN materials have been translated in the "top six languages the City recognizes" (Gonzalez, 2021). Additionally, RYLAN programming has targeted residents who are renters and residents who live in public housing units, condominiums, and trailer parks (Interview with Gonzalez, 2021). On a long-term goal, EMD staff hope to expand RYLAN to "businesses, schools, and churches" and the unhoused population (Gonzalez, 2021).

VII. Successes

The Ready Your LA Neighborhood program's adaptability should be recognized. Staff revised the program to better fit LA residents' needs and made program modifications to function during the COVID-19 Pandemic. The program's accessibility should also be recognized. The RYLAN training can be delivered by staff or by residents.

Additionally, regarding program accessibility, the training materials have been translated into multiple languages.

Another area worth highlighting is that residents can self-define neighborhood areas through the RYLAN program. The City's EMD recognizes these newly defined neighborhoods by creating a map (Interview with Gonzalez, 2021). Empowering residents to define their neighborhood area may better instill feelings of social capital and cohesion around emergency preparedness efforts. In tandem, the activation of neighborhood response efforts is also worth noting, where one neighborhood has activated its plan during a ten-hour power outage.

The RYLAN program is expanding and transforming, where staff are creating and targeting RYLAN resources to businesses and other community institutions (Interview with Gonzalez, 2021). Additionally, by creating a mobile application for the RYLAN program, the City could potentially engage and educate a broader audience in emergency preparedness efforts.

VIII. CHALLENGES

The following is a compilation of some of the barriers that staff experience with the RYLAN Program.

Not a One Size fits all Approach

Creating neighborhood resources can be time-intensive. According to staff, it "took hundreds of man-hours to just create one neighborhood plan" (Gonzalez, 2021). Another identified challenge was that even though this program has worked in other

cities, a universal template does not work in every urban area. Therefore, the RYLAN program had to go under a rehaul to fit the City's needs.

Funding

Securing funding for municipal emergency preparedness work can be challenging (Interview with Gonzalez, 2021). Staff notes that "The early days of the pandemic brought new challenges which stretched EMD's existing staffing beyond its traditional framework" (Gonzalez, 2021). The pandemic left the division with few resources to dedicate elsewhere. Additionally, emergency preparedness funding is linked to disaster funding. The limited number of disasters LA has experienced also impacts the available funding resources. Staff cites, "As is often the case in government, funding flows from need- in this care, fewer disasters mean lesser funding" (Gonzalez, 2021). EMD has four staff members dedicated to RYLAN work or one representative per City bureau. If we divide the population by the number of staff, each staff member would oversee neighborhood emergency preparedness work for areas with 1+ million residents.

Navigating Programming during the COVID-19 Pandemic

Another challenge staff experienced was navigating how to maintain the program during the COVID-19 Pandemic. EMD got creative where they used the momentum of the Zoom and virtual meeting world to conduct RYLAN workshops and training (Interview with Gonzalez, 2021). Training materials were made available online to make the program more accessible.

Struggles with Marketing

Another struggle that EMD faced was in the marketing of this program. EMD does not have a dedicated budget for advertising its programs or services. To mediate this challenge, EMD staff have utilized funding from the UASI grant to get a marketing firm's assistance with advertising the RYLAN program.

Outreach to Vulnerable Populations

Another struggle is connecting vulnerable communities with the RYLAN program. While staff note that the City advertises to residents who speak a language other than English, the RYLAN website offers materials only in English and Spanish. Additionally, despite the City being able to print RYLAN materials in languages besides English, there is no staff dedicated to serving as translators to provide the 90-minute training in a language other than English (Interview with Gonzalez, 2021). However, if available, some staff within EMD speak different languages and could provide support. To help mitigate this, EMD staff have asked volunteers from the neighborhood to serve as translators during RYLAN training.

Outreach to those who lack broadband access or have limited digital proficiency can also be challenging (Interview with Gonzalez, 2021). To connect to these communities who may not be on social media or have email, EMD staff are looking to create 'buddy systems' with other neighbors and reach out to community organizations that these groups trust. These groups include "community leaders [and] faith-based organizations to help…spread the message about RYLAN" (Gonzalez, 2021).

EMD staff also encountered challenges in making the RYLAN program fit public housing models and multifamily housing units (Interview with Gonzalez, 2021). Unlike other housing types, staff found that public housing and apartments have limitations that block residents from practicing or implementing some emergency preparedness actions. These residents face barriers to activities such as turning off utilities, having ladders in their homes, having fire extinguishers, and lacking public storage space for emergency supplies.

Distrust of the Government

Collecting sensitive data was another challenge for the City. EMD staff note, "...a lot of distrust of the government" (Gonzalez, 2021). The RYLAN Neighborhood Emergency Response Plan asks for sensitive information, such as names, contact information, and information on household ability challenges. Staff assumed that residents would not want to share this information with the City. To adjust for this challenge, staff inform residents at the beginning of the RYLAN training that "they will not retain any information" about the participants who want to create a RYLAN for their neighborhood (Gonzalez, 2021). Thus, RYLAN neighborhood response plans stay with neighborhood leaders, and EMD has no part in holding on to this information.

Follow-up

Another challenge is follow-up. Due to limited staffing, EMD staff struggle to follow-up with neighborhoods after the primary training (Interview with Gonzalez, 2021). In tandem is the challenge of keeping track of those residents who chose the DIY

RYLAN pathway. Currently, EMD staff are going back through their records of who downloaded the materials to reach out to these individuals to check in on how their RYLAN is going and if they require any assistance.

IX. RYLAN Mobile Application

"We hope that it will be a one-stop-shop that keeps people engaged." (Gonzalez, 2021)

In the future, the Emergency Management Division is exploring the creation of a RYLAN mobile application (Interview with Gonzalez, 2021). The mobile application will automate the RYLAN process by helping residents create and download their contact and supply lists, information on the gathering locations, and the "roles and responsibilities for each neighborhood team" (Gonzalez, 2021). In addition, the mobile application will also provide residents with "links to [the] notification system, webinars, and access to quarterly Tedtalks or newsletters" (Gonzalez, 2021). Finally, the mobile application will be designed so that users can access this information even when there is no internet available.

With the mobile application, EMD staff hope this tool will help with data management (Interview with Gonzalez, 2021). With no way to track web engagement, a mobile application could help EMD staff keep track of engaged residents. EMD staff hope to pilot the mobile app in 2022 or 2023 in four diverse income and housing neighborhoods before launching it to the entire City.

Summary of RYLAN Efforts, Los Angeles, CA	
Successes	The training is designed to be delivered by both community and staff
	The city encourages organized residents to practice community drills
	The city utilizes a diverse pool of funding to support RYLAN programming
	The RYLAN program has been revised to better fit LA neighborhood needs
	One RYLAN neighborhood activated during a power outage
	Emergency preparedness materials are offered in six langauges
	As of 2021 200 neighborhoods have gone through the RYLAN training
Challenges	The original 'Map Your Neighborhood' training did not fit LA's needs, had to be revised
	Limited financial support for neighborhood emergency preparedness work
	Limited number of staff dedicated to the RYLAN program
	Limited resources to market the RYLAN program
	No financial resources for translators
	Difficulty in connecting with those who have limited broadband access or have limited digital proficiency
	Barriers experienced in emergency preparedness for those who live in multi-family
	Lack of follow-up with organize neighborhoods due to limited staffing

Table 2: Successes and Challenges in emergency preparedness for the RYLAN program

X. CERT

"The greatest good for the greatest number of people" (CERT-LA, 2022d).

Community Emergency Response Teams (CERT) is a nationally recognized emergency preparedness and response training program. In 1986, CERT was created in Los Angeles, CA (LAFD CERT Continuing Education, 2020). In Los Angeles, CERT is a free emergency preparedness training for community members provided by the Los Angeles Fire Department. CERT training provides residents with basic "all-risk, all-hazard" emergency preparedness skills (CERT-LA, 2022E). After training, CERT members are more capable during emergency events, allowing emergency professionals to focus on significant emergency priorities (LAFD CERT Continuing Education, 2021; CERT-LA, 2022c).

The initial CERT training is 17.5 hours long, “about three hours a night over 7-weeks” (LAFD CERT Continuing Education, 2020). Residents can take courses or watch the training independently, but to be certified and become part of the CERT call-out team, volunteers must pass a background check, provide live scan information, and go through the LAFD training (CERT-LA, 2022b). Once trained by LAFD, CERT volunteers can wear the LAFD CERT uniform. In tandem, CERT call-out volunteers are required to have the following equipment:

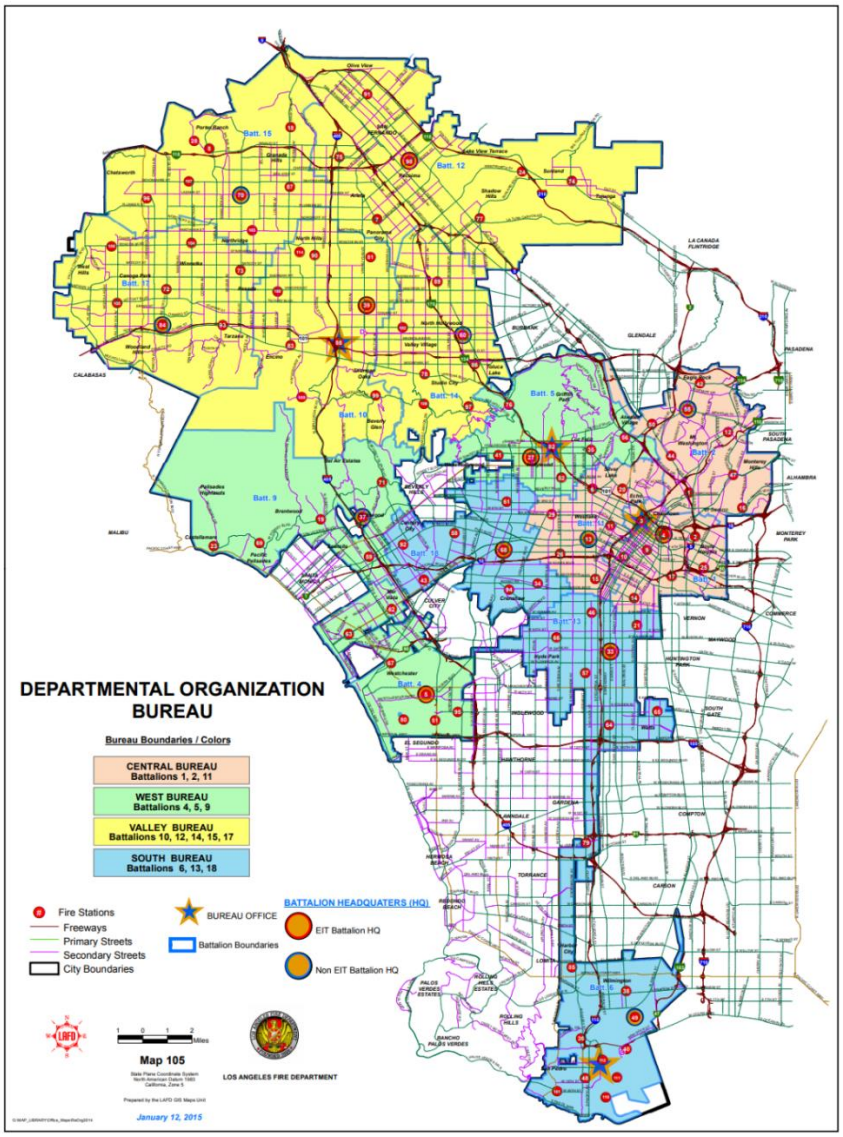
- CERT ID (required for callouts)
- Helmet (no baseball hats) (see information on helmets below)
- Vest
- Dust Mask
- Goggles
- Rubber/latex Gloves
- Leather Gloves
- Sturdy Shoes (absolutely no open-toe shoes allowed)
- Long Pants
- Flashlight (with extra batteries)
- Bottled Water
- Non-perishable Food
- Pen
- Set of the CERT Forms
- Code of Conduct (Taken from: CERT-LA, 2022a)

CERT volunteers are encouraged to continue their training and participate in practice drills monthly (LAFD CERT Continuing Education, 2021). Training can happen in person and online. Additionally, CERT volunteers have expanded online training opportunities throughout the pandemic to help develop and better promote CERT.

CERT call-out team volunteers are called upon by LAFD when professional emergency responders need extra assistance handling emergency events. Callout teams provide rehab and hydration support for firefighters (CERT-LA, 2022b). They can also

offer community fire patrol support to report fires in their local areas (CERT-LA, 2022b).

Under CERT operations, LA is divided into four bureaus (Interview with Botz-Forbes and Thammasaengrsi, 2021). These bureau boundaries are the South, Central, West, and the San Fernando Valley bureaus. These boundaries mirror the City's fire and police department jurisdictions.

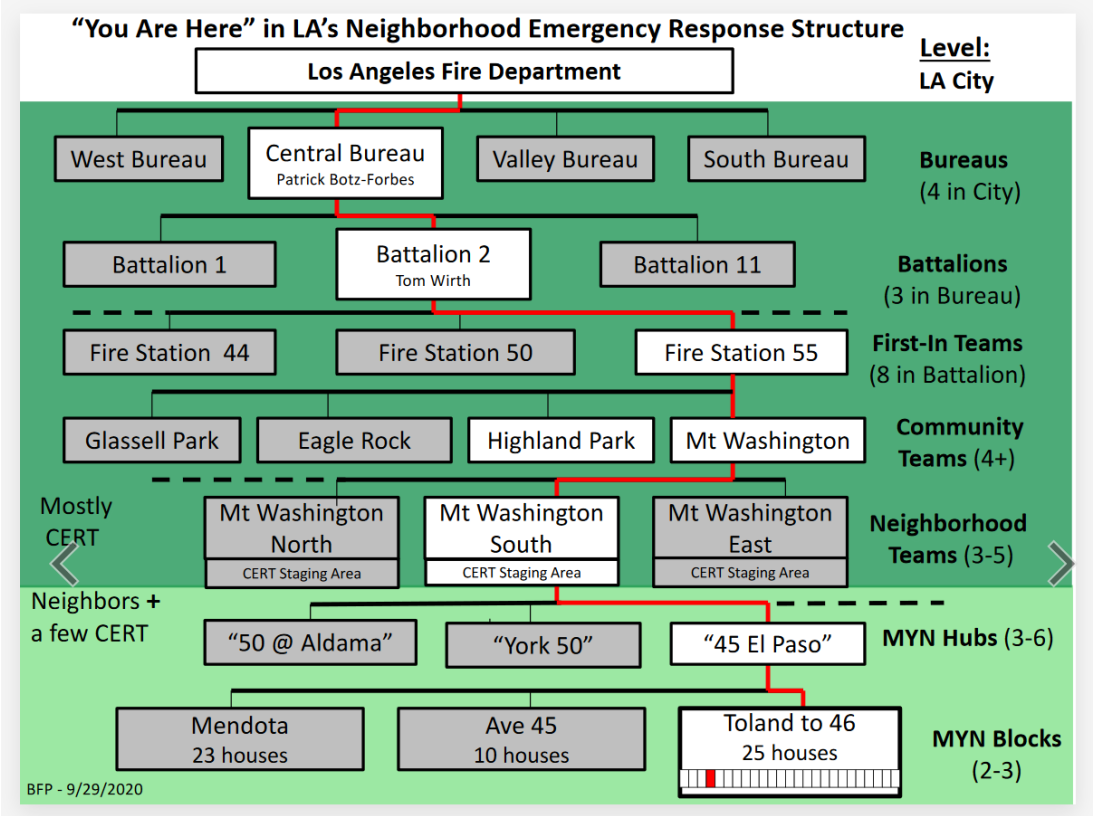


[12]

Figure 15: LA Bureau Map

The map above is available on the LAFD CERT webpage to help residents find their Battalion and Bureau. This map guides whom to contact when seeking information about what local training is available for their specific neighborhood area.

[12] Image taken from: CERT-LA. (2015). LAFD Battalion Map. https://www.google.com/search?client=firefox-b-1-d&q=Los+Angeles+Fire+Department+Bureau+map



[13]

Figure 16: NTP Team Organization Example

Figure 16 visualizes the CERT volunteer structure of local emergency preparedness in the City of Los Angeles. The Los Angeles Fire Department (LAFD) oversees this volunteer structure. Under LAFD are the volunteers who serve as bureau coordinators for the four bureaus. Bureau coordinators help the fire departments oversee the trained CERT volunteers within their jurisdiction (Interview with Botz-Forbes and Thammasaengrsi, 2021). Following Bureau coordinators are Battalion coordinators.

[13] Image taken from: Neighborhood Team Program- Los Angeles. (2020). NTP Team Organization Example. https://www.ntp-la.org/documents/

These volunteers help manage emergency preparedness and response training and run practice drills within their jurisdictions.

Additionally, Battalion coordinators serve as a "liaison between the fire department and the general public" (Botz-Forbes, 2021). Under the battalion, coordinators are the local fire stations. The City's fire stations "provide CERT education and training and manage the call-out team" (Botz-Forbes, 2021). Following fire stations are the Neighborhood Teams or the local NTP groups. These NTPs help oversee the map of neighborhood hubs and blocks.

City resources provide vehicles, radios, and other equipment for the CERT callout team members (Interview with Botz-Forbes and Thammasaengrsi, 2021). The City also pays fire department staff who oversee the program's training. The CERT programming and unit are managed by "a special duty position captain-one" (Botz-Forbes, 2021). Additionally, the fire department supports the hydration team by stocking them with water and Gatorade.

XI. FLOOR WATCH NEWSLETTER

In addition to CERT training, some CERT members put out monthly newsletters or share information via social media. One example of this community education and outreach is the Floor Watch newsletter (Interview with Thammasaengrsi, 2021). The Floor Watch newsletter gets sent out to approximately 800 people monthly and has been distributed for over six years. This homegrown newsletter covers CERT events, training, and CERT participation across the City of Los Angeles. Additionally, the newsletter

contains local CERT and national CERT updates. (See Appendix J for an example of the Floor Watch Newsletter). The newsletter reads like a local newspaper and an educational resource on emergency preparedness work. It gives examples of how CERT members have served their community and puts the call out for future mobilizing activities. Like CERT being advertised and promoted by the RYLAN program, the newsletter helps spread the word about CERT activities and normalizes and helps to build and strengthen CERT as a community entity.

XII. NEIGHBORHOOD TEAM PROGRAM

"The end goal is to have a self-sufficient neighborhood disaster response team that can stand upright after a disaster on their own and operate." (Botz-Forbes, 2021)

A CERT battalion coordinator created the Neighborhood Team Program (NTP) in 2010 (Interview with Botz-Forbes and Thammasaengrsi, 2021). This pilot program established "12 neighborhood teams" and had support from "5 neighborhood councils" (LAFD CERT Continuing Education, 2020). The original idea of NTP was that once volunteers graduated from their CERT training program, they could create a neighborhood team in their local neighborhood (Interview with Botz-Forbes and Thammasaengrsi, 2021).

The Executive Director of the Community Disaster Preparedness Foundation, Patrick Botz-Forbes, states that the original program was "a joint venture of the Los Angeles' Fire Department, Police Department and the Emergency Management Division" (Botz-Forbes, 2021). Once the primary employee who spearheaded the program left, the program nearly became obsolete. Only one of the original neighborhood teams, the South

Carthay Neighborhood Team Program, has been maintained since the original pilot and has been running for approximately 30 years.

CERT volunteers relaunched the Neighborhood Team Program in 2020. The revised program aims to do the following:

1. To have a single place for community members to sign up to find out more about disaster preparedness (CERT training, Ready your LA Neighborhood / Map Your Neighborhood) and to put them in touch with their Battalion and Bureau Coordinators who will guide them along the process.
2. To have a standardized City-wide plan members can follow in their neighborhoods so that Battalion Chiefs know what CERT / Neighborhood Disaster Response Teams will be doing at the block level and write us into their disaster plans.
3. To have a plan to get critical incidents from the block level up to the LAFD Battalion Command Posts via two-way radio when 911 is overloaded, and cellphones don't work.
4. To drill the plan City-wide annually so that we know it works and adjusts the plans accordingly. and have these NTP groups be able to communicate with LAFD representatives (Taken from: Community Disaster Preparedness Foundation, 2022b)

The relaunching of the Neighborhood Team Program is timely. In 2018, the mayor called on the LAPD and the Office of Neighborhood Empowerment to create neighborhood plans (Interview with Botz-Forbes and Thammasaengrsi, 2021). NTP caters to those who do not have an established neighborhood organization and is a next step for those who complete their CERT training (LAFD CERT Continuing Education, 2020).

The Neighborhood Team Program targets emergency preparedness resources to neighborhoods within Los Angeles and "set up staging areas to serve each neighborhood" (Botz-Forbes, 2021). These staging areas could be central locations in the community that will be accessible during an emergency (Neighborhood Team Program Los Angeles, 2021). Staging areas should contain "maps, forms, clipboards, pre-defined damage

assessment routes, licensed commercial two-way radios and medical resupply" (LAFD CERT Continuing Education, 2020). NTP leaders are also encouraged to identify "damage assessment routes" (Neighborhood Team Program Los Angeles, 2021). The team can use these routes to assess damage after an emergency event.

The Neighborhood Team Program provides interested residents with "step-by-step guides, Standard Operating Procedures, and guidance from a CERT Coordinator" (Community Disaster Preparedness Foundation, 2022b). The step-by-step guides cover basic emergency preparedness and response directions and are "short, easy to follow (2-4 pages) in 14-point font" (LAFD CERT Continuing Education, 2020). In tandem, the current guides available for NTP participants focus on how to respond after an earthquake and one on how to set up a staging area. The RYLAN program adapted some of the materials NTP uses for these guides. NTP participants also receive help and okay signs that they can post on their door or window during an emergency event. These resources were created to help neighborhood team leaders assess damage after an emergency event. (See Appendix K for CERT NTP Help and Okay Signs). In addition to these resources, neighborhood team leaders are encouraged to have monthly or bi-monthly planning meetings with their neighbors (Neighborhood Team Program Los Angeles, 2021).

The CERT volunteers spearheading the Neighborhood Team Program want to maintain the grassroots nature of the program. The program is "built by community members" (LAFD CERT Continuing Education, 2020). Additionally, organizers want to organically find community Neighborhood Team Program leaders (Interview with Botz-

Forbes and Thammasaengrsi, 2021). CERT volunteers connect team leaders to their neighborhood council to build an emergency preparedness coalition around their neighborhood area. Currently, the Neighborhood Team Program relies on volunteers, donations, and neighborhood councils' financial support.

“Let’s work together because we are already doing it.” (Thammasaengrsi, 2021)

CERT volunteers do not want to replicate another existing City program. Instead, the program is meant to be ‘turnkey’ and help ‘unify operations’ with other ongoing City initiatives (Interview with Botz-Forbes and Thammasaengrsi, 2021).

> We combine the Community Emergency Response Team (CERT) training taught by LAFD, the block-level organization of Ready Your LA Neighborhood (RYLAN), and the community Neighborhood Watch groups to create a comprehensive self-sufficient grass-roots response group prepared to handle any disaster (Community Disaster Preparedness Foundation, 2022).

The goal of the CERT Neighborhood Team Program is to serve as a connector for EMD and help link interested community members to the RYLAN program (Interview with Botz-Forbes and Thammasaengrsi, 2021). Similarly, NTP organizers want to play the same role as the Neighborhood Watch Program. Botz-Forbes notes that “neighborhood watch members are CERT members in waiting as there is absolutely no reason why someone interested in making sure the neighborhood is safe shouldn’t also be trained for disasters” (Botz-Forbes, 2021).

The idea is to make the Neighborhood Team Program approachable, translatable, and replicable. CERT volunteers want to ensure that nothing about the NTP program is proprietary (Interview with Botz-Forbes and Thammasaengrsi, 2021). The program plans to offer regular training on the LAFD CERT Continuing Education YouTube channel

(LAFD CERT Continuing Education, 2020). Currently, information about the Neighborhood Team Program can be found in program materials for RYLAN, on the Community Disaster Preparedness Foundation website, and through YouTube and social media. Additionally, word of mouth is used to share information about CERT and NTP.

XIII. COMMUNITY DISASTER PREPAREDNESS FOUNDATION

> The Community Disaster Preparedness Foundation is dedicated to promoting disaster preparedness by organizing, training, and equipping neighborhood disaster response teams. (Community Disaster Preparedness Foundation, 2022a)

The Community Disaster Preparedness Foundation is a 501-c (3) nonprofit created and run by Los Angeles CERT volunteers (Interview with Botz-Forbes and Thammasaengrsi, 2021). This foundation oversees the Neighborhood Team Program. While CERT provides training, it does not provide a platform for volunteers to navigate insurance liabilities, receive grant funding, and allow CERT to own equipment. Hence, CERT volunteers saw the need to create the Community Disaster Foundation. Having a nonprofit allows CERT volunteers to use community buildings more easily for practice drills, sign memorandums of understanding (MOU), and receive insurance coverage.

Additionally, having a nonprofit structure provides the community volunteers with the ability to have a more permanent program and resources obtained by CERT volunteers to remain more stable. Having a 501-c (3) is not uncommon in the volunteer emergency preparedness community (Interview with Botz-Forbes and Thammasaengrsi, 2021). A handful of CERT teams have created similar nonprofits. For CERT volunteers

in the City of Los Angeles, having a nonprofit has provided CERT volunteers the ability to promote and expand the Neighborhood Team Program.

Currently, "[Neighborhood Team Programs] are operating in three of the four bureaus," yet there is a varying degree to each bureau's implementation of NTP (Thammasaengrsi, 2021). NTP organizers are actively creating a system of volunteers to help manage the programs' day-to-day operations, fundraising, and website design and maintenance (Interview with Botz-Forbes and Thammasaengrsi, 2021).

XIIII. SUCCESSES

The CERT program is the only emergency preparedness and response program reviewed in this study with national recognition. The program is multifaceted. CERT provides a certification process to allow residents to support professional emergency first responders. Additionally, CERT helps build a community feeling around preparedness and response efforts, where CERT members are encouraged to be active in their community. This engagement includes seeking additional preparedness and response training and participating in community drills. Since 1985, 57,000 volunteers have been trained by LA Fire Departments (Interview with Botz-Forbes and Thammasaengrsi, 2021; CERT-LA, 2022e).

The CERT Neighborhood Team Program builds upon the CERT training to foster neighborhood organization. NTP serves as an example of how to build bridges with other programs to engage residents in emergency preparedness efforts. Instead of creating a separate program, NTP organizers recognize the value of incorporating other program

training into their overall organizing efforts. Additionally, the Neighborhood Team Program fosters neighborhood cohesion, recommending the creation of neighborhood staging areas for emergency planning and monthly neighborhood meetings, and regular community drill practice.

Another area worth highlighting includes the multimodal training resources that CERT and the Neighborhood Team Program provide. Residents can attend both in-person and online training and access a slew of recorded training available online. Additionally, outreach materials are intentionally designed to be easy to use and understand.

Finally, Neighborhood Team Program efforts can be recognized for creating a nonprofit organization. By becoming a nonprofit, organizers have a greater ability to navigate liability requirements and use spaces throughout the City to practice community drills. The nonprofit status also allows organizers to acquire necessary materials to support preparedness and response efforts.

XV. CHALLENGES

The following is a compilation of some of the barriers CERT and the Neighborhood Team Program experience when working with and within the LA City government structure.

Personal Information Collection

Keeping track of personal information is a challenge for CERT volunteers. The City will not provide CERT volunteers with resident contact information (LAFD CERT Continuing Education, 2020). To mediate this, the Neighborhood Team Program has

created a “neighborhood email list” to build a listserv of engaged residents. This listserv is not shared with the government (LAFD CERT Continuing Education, 2020).

Short-term Employees

“There’s a lack of continuity, and sometimes we have to reinvent the wheel every few years” (Botz-Forbes, 2021).

Often short-term government employees oversee CERT training (Interview with Botz-Forbes and Thammasaengrsi, 2021). Fire captain professionals often stay in the CERT unit until they get a promotion, usually two years. This turnover can cause program stop gaps and program inconsistencies. An example of this is an emergency bins program that would contain emergency preparedness supplies at fire departments to support CERT teams during emergency events. Unfortunately, the lead staff member on this project moved to another position and the bin program never really got its feet under it. CERT volunteers have seen a similar cycle with City staff, where programs come and go as staff move on to other positions. To mediate this, CERT NTP Organizer Patrick Botz-Forbes notes, CERT volunteers create “continuity at the grassroots level” by making the Neighborhood Team Program (Botz-Forbes, 2021).

Engaging Volunteers in Emergency Management

> I think that’s where the City of LA has a problem, understanding how to work with volunteers. Career professionals who have career aspirations…[and] having a volunteer step into a paid firefighter position to replace that firefighter would be unspeakable…so we have to remember to walk a fine line because there is a lack of understanding (Botz-Forbes, 2021).

To volunteers, the City often feels siloed. People and programs come and go, and volunteers are included when the City needs them. The relationship between the City and

community volunteers is often confusing and not clearly defined. Another issue that impacts how the City works with volunteers is liabilities. When the City takes a risk-averse position, it is challenging for volunteers to plug in and fill roles for emergency preparedness and support (Interview with Botz-Forbes and Thammasaengrsi, 2021). Interestingly, CERT has a more substantial role in cities where volunteers run emergency management. In these cities, CERT volunteers "fill the role of planning director or planning chief at the emergency operations center during a disaster or drill" (Botz-Forbes, 2021).

Apathy

"We just don't have that concept of what does a disaster mean to myself, my neighborhood [and] my community. (Botz-Forbes, 2021).

Another challenge in local emergency preparedness and response work is apathy. The City of Los Angeles has experienced few disaster events within the City boundaries (Interview with Botz-Forbes and Thammasaengrsi, 2021). Lack of exposure to emergency events can lead to apathy and de-prioritization of mitigation and preparedness activities. Moreover, there is the perception among some homeowner association residents and renters that emergency preparedness and response efforts are the responsibility of the professionals and not the individuals. Cultural and religious beliefs can also impact whether people prioritize emergency preparedness.

Outreach to Diverse Populations

Outreach to bilingual and multilingual communities is also a barrier (Interview with Botz-Forbes and Thammasaengrsi, 2021). It all depends on the volunteer base and if

individuals trained in CERT are also multilingual. CERT Training is offered in languages other than English, where CERT classes have been presented in Spanish.

Lack of Community Feeling

Another challenge that impacts local emergency preparedness is the general feeling of a 'lack of a sense of community' (Interview with Botz-Forbes and Thammasaengrsi, 2021). Chin Thammasaengrsi, South Bureau Coordinator and LAFD CERT Call Out Team Dispatcher, described how we do not live in the era of bringing casseroles to neighbors anymore, noting that "you can live on a street with neighbors whom you've never spoken to" (Thammasaengrsi, 2021). When neighbors do not take the time to connect, each household becomes an island, leading to isolated struggles during emergencies.

Summary of CERT NTP Efforts, Los Angeles, CA	
Successes	Nationally recognized program
	Trainings are multi-modal
	Professional certification available
	Continuing education encouraged
	Can be activated by the fire department to provide rehab and hydration support
	Supported by the fire department, city provides supportive resources/staff time
	Community newsletters highlight CERT work throughout the city
	Emergency preparedness resources are created to be easy to read and act upon
	NTP is created to be grassroots in nature and funded by the community
	CERT/NTP members are encouraged to practice community drills on a regular basis
	NTP encourages creation of neighborhood staging areas
	NTP embraces RYLAN and Neighborhood Watch programs
	NTPs are operating in 3 out of 4 bureaus in LA
Challenges	CERT NTP organizers had to become a 501c(3) to navigate liability
	The city does not share resident contact information with CERT/NTP
	City staff often have a high turnover
	Community organizer's navigate a confusing and vague relationship with city departments
	Community apathy toward emergency preparedness
	Outreach to non or limited English speaking communities
	Lack of social cohesion

Table 3: Successes and Challenges in Emergency Preparedness for CERT and NTP

Chapter 5: Creating a Culture of Emergency Preparedness in North Salt Lake City and Bountiful City, Utah

To better comprehend local emergency preparedness efforts in Utah, a brief and simplified understanding of how religion influences preparedness is critical. The prevalent belief in Utah is Mormonism, which stems from the Church of Latter-day Saints (LDS). Preparedness is a value of LDS teachings. Through doctrines and covenants, church members are encouraged to prepare.

> I tell you these things because of your prayers; wherefore, treasure up wisdom in your bosoms, lest the wickedness of men reveals these things unto you by their wickedness, in a manner which shall speak in your ears with a voice louder than that which shall shake the earth; but if ye are prepared ye shall not fear. (The Doctrine and Covenants of the Church of Jesus Christ of Latter-Day Saints, 1831)

According to the LDS Church, preparedness is a practice of self-reliance. Members of the LDS Church are taught principles of self-reliance both for themselves and for their families. This practice includes encouraging emergency preparedness planning. The church encourages members to establish an emergency plan for their household. Similar to municipal emergency preparedness plans, the LDS Church also has emergency plans and promotes smaller areas of their congregations, known as wards and stakes, to have plans in place (The Church of Jesus Christ of Latter-Day Saints, N.A.a). Additionally, church members are encouraged to have food stored, drinking water, and emergency supply kits (The Church of Jesus Christ of Latter-Day Saints, N.A.b).

Volunteerism is a critical practice of the LDS Church. The LDS Church structure relies on volunteer roles [14]. This culture of volunteerism becomes vital during emergency events, where church members are expected to help their fellow neighbors (Ottenhoff, 2013).

To explore local emergency preparedness in Utah, I will highlight two case studies: North Salt Lake City and Bountiful City. These cities provide excellent examples of emergency preparedness at the local scale. Both cities have readily available information tools geared to support household and neighborhood preparedness efforts and a horizontal community volunteer model, where neighbors serve as communication leaders during times of emergency.

[14] Note, the above description of the LDS Church practices and philosophy is from an outsider's perspective. My understanding of the LDS Church is limited to one interview, and what I was able to find on the internet.

North Salt Lake City, Utah

I. Background on North Salt Lake City, Utah

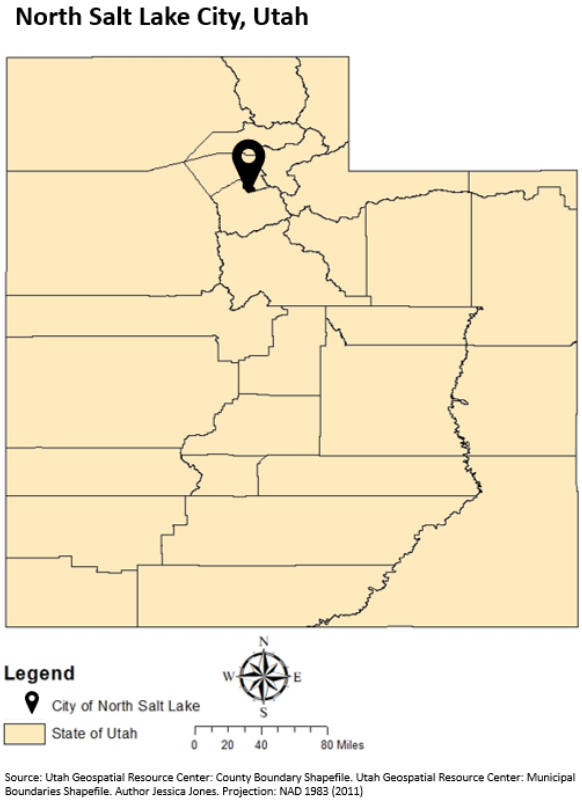


Figure 17: Map of North Salt Lake City, Utah

North Salt Lake City is in Davis County, Utah. The City is about a 10-minute drive north of Salt Lake City and the state capitol (World Population Review, 2022d). As of 2019, North Salt Lake City had a population of approximately 20,402 residents (United States Census Bureau, 2019d). City residents report a median household income of about $85,185 (United States Census Bureau, 2021d). Meanwhile, poverty rates in North Salt Lake City hover around 4% (United States Census Bureau, 2019d). Overall, the population is young, with the median age of residents being 29-30 years old (World

Population Review, 2022d). In terms of educational attainment, approximately 33% of North Salt Lake residents reported having a bachelor's degree (United States Census Bureau, 2019d). Additionally, the majority of the City's households, 79%, are households with children (Point2, 2022b). Finally, the majority of homes, about 73%, are owner-occupied (Point2, 2022b).

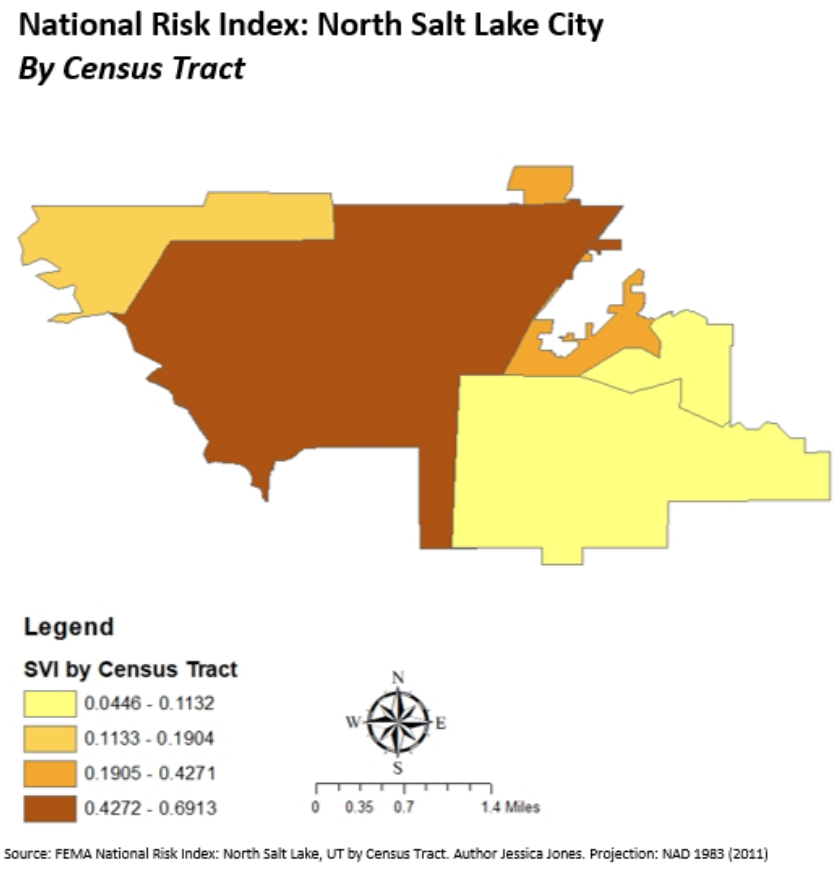


Figure 18: Social Vulnerability by Census Tract for North Salt Lake City, Utah

When reviewing demographic characteristics, it is important to identify signs of social vulnerability. As seen in Figure 18, when examining the City of North Salt Lake

by Social Vulnerability Index, many census tracts within the City boundaries indicate a low-medium score, 0.19 to 0.42, as indicated in the light to brown colors. These low scores highlight areas that are better off or potentially have more available resources. Meanwhile, the census tract denoted in brown, with a score range of 0.42 to 0.69, indicates an area with relatively high levels of social vulnerability. Residents in this area may be more vulnerable or at-risk during emergency events.

North Salt Lake spans 8.5 sq. miles. The City is between the Wasatch Mountains range and the Great Salt Lake. This geography creates a semi-humid and semi-arid landscape (Utah.gov, 2022; World Population Review, 2022). Due to its geography, North Salt Lake City is prone to various natural hazards, including winter weather, high winds, lightning, and earthquakes (FEMA, 2021b). Emergency events happen fairly often in North Salt Lake City, where the region experienced "...a fairly sizable earthquake last year…and two fairly sizable windstorms" (Peterson, 2021). As seen in Figure 19, when using the FEMA National Risk Index tool, many census tracts are denoted in light orange to red, with a risk score range of 16.77 to 31.26, which is considered light to moderate risk (FEMA, 2021b). Interestingly, the census tracts with higher social vulnerability are also at higher risk of natural hazards.

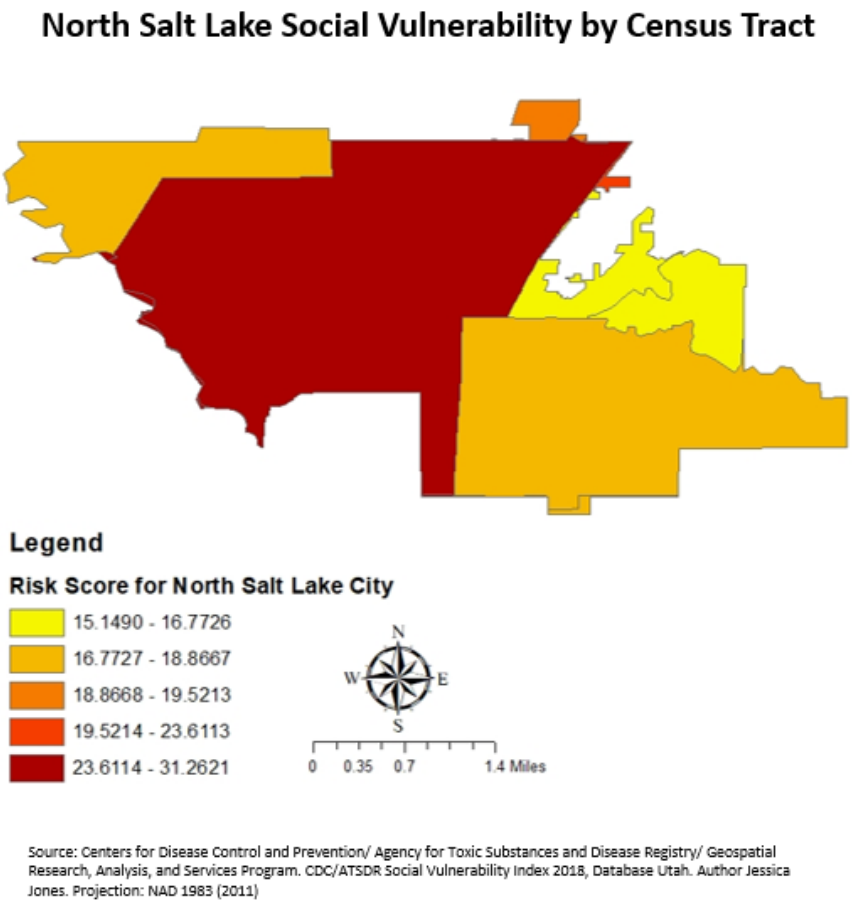


Figure 19: National Risk Index Map by Census Tract for North Salt Lake City, Utah

Furthermore, earthquakes are of primary concern for cities located in the Ogden–Clearfield metropolitan area, as the Wasatch fault line runs through metros in this area, including North Salt Lake City (Utah Geological Survey, 2022).

II. Resources and Distribution

A. 2009 Handbook

"Neighbors reaching out to strengthen Communities."
(North Salt Lake Emergency Preparedness Handbook 2009)

The North Salt Lake Emergency Preparedness Handbook titled: *Uniting Neighbors/ Citizen Corps* was created in 2009. This handbook was a passion project completed by residents (Interview with Peterson, 2021). The 2009 plan is the second edition. The handbook has three sections: a section focused on neighborhood preparedness, a section on individual/household preparedness resources, and a section on neighborhood beautification. See Appendix L for the table of contents. The 2009 handbook is comprehensive, exploring topics such as community means, asset-based community development, and community building principles and strategies.

B. The Trifold

Since 2009, North Salt Lake City emergency preparedness materials for households and neighborhoods have been revised (Interview with Peterson, 2021). The emergency preparedness manager created a trifold after receiving feedback from residents at monthly meetings that few had read the handbook and heard an interest in wanting something quick and easy to read for emergency preparedness. This trifold has easily digestible emergency preparedness information. See Appendix L for the trifold. The trifold is an inexpensive way to convey basic emergency preparedness information in a format that people would be able to understand quickly. The emergency preparedness

manager used the information from the trifold to create a revised version of the handbook in 2020.

C. The 2020 Handbook

The 2020 handbook was created by the emergency preparedness manager and a City communication officer (Interview with Peterson, 2021). The 2020 handbook is much shorter than the 2009 handbook, at 16 pages versus 49 pages. Unlike the 2009 edition, the 2020 version does not include neighborhood engagement or beautification information. Instead, the 2020 handbook focuses on individual and household emergency preparedness and contains more visual cues. See Appendix L for the table of contents. The goal of the 2020 handbook was to create an informational tool that individuals could use in addition to their first-aid kit.

The original handbook was distributed by community members and church leaders (Interview with Peterson, 2021). Before the pandemic, the 2020 handbook was distributed to all new residents via the City's utility office. When new residents register for utilities, they receive emergency preparedness information. For current residents, churches aid in distributing the emergency preparedness handbook. Resources used to support printing this handbook and the trifold come from the City's police budget, which also supports the emergency preparedness manager. The emergency preparedness manager prints the handbooks and tri-folds and supplies them to the utility office for distribution to residents. Distribution of emergency preparedness supplies such as the handbook occurs when residents reach out to the emergency preparedness manager with inquiries or concerns.

D. The Door Placard

In addition to the handbook, residents of North Salt Lake also receive door placards (Interview with Peterson, 2021). In the first iteration of the placard program, residents were provided yellow, green, and red placards. By displaying these placards, residents can help inform emergency responders and fellow neighbor leaders whether they need help or if they are okay during emergencies.

A challenge worth noting with the door placard model is that the interpretation of an emergency is subjective (Interview with Peterson, 2021). Additionally, the three-color placard system challenged residents' understanding of personal needs and their neighbors' circumstances. The revised placard system of two colors, red and green, reduces this complexity. See Figure 20. An ongoing difficulty arises when these placards blow away during high winds. To mediate this, placards can be secured with tape on the front door.

[15]

Figure 20: Emergency Door Placards for Davis County, Utah

[15] Image taken from: Peterson, M. (2022). Emergency Door Placards for Davis County, Utah. Personal Communication.

III. Block Captains

In addition to informational materials on emergency preparedness, North Salt Lake City also engages community volunteers to help coordinate and communicate neighborhood needs. These volunteer roles are known as Block Captains (Interview with Peterson, 2021). Block Captains serve as emergency communicators by communicating neighborhood needs to Area leaders. When there are no emergency events, the Neighborhood Coordinator/ Block Captain is asked to have a "situational awareness of [their] neighborhood" (Peterson, 2021). During an emergency event, Block Captains check the designated homes on their block, looking for signs of help as indicated by the emergency door placard system (Interview with Michaelis, 2021).

Block Captains also retain information on who may require extra assistance during emergency events. This information could include if neighbors require special medical devices or physical assistance to support their wellbeing. This sensitive information can then be shared with emergency responders if there is an emergency event. Block captains also collect information regarding community assets, such as identifying who in the neighborhood has a chainsaw, ATVs, and medical experience. (Interview with Michaelis, 2021).

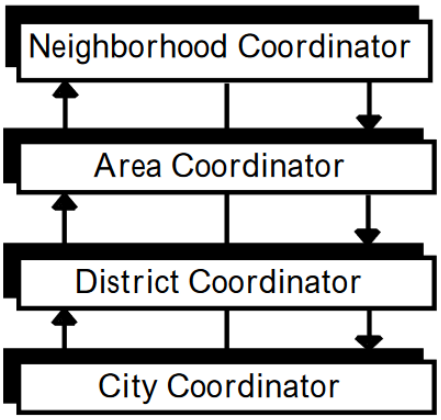
In meeting neighbors, block captains can take a copy of the emergency preparedness handbook or the trifold and door placards to each new household under their purview (Interview with Michaelis, 2021). Block captains also share information with their neighbors on preparing a 72-hour kit, including identifying food and water storage items. One block captain mentioned sharing information with neighbors on what

items can be purchased in bulk to save money. In tandem with providing information to neighbors, block captains are also encouraged to build community trust with their neighbors by helping organize social gatherings.

As one interviewee reflects:

> …with this program, it's more than just communication. It's almost a way of life to help individuals recognize and prepare, and…to have…grab bags in the case of an earthquake…or 72-hour kits where you can…sustain life (Michaelis, 2021).

Based on the 2009 Handbook, the neighborhood, area, and district coordinators are all filled by volunteers. Area coordinators "represent 20 defined neighborhood areas," while district coordinators "represent 5-12 areas within a district" (City of North Salt Lake, 2009, p.9).



[16]

Figure 21: Emergency Organization Chart from 2009 Handbook

[16] Image taken from: City of North Salt Lake. (2009). Emergency Preparedness Handbook: Uniting Neighbors/ Citizen Corps.P.9.

According to the 2009 Handbook, Area Coordinators help manage Block Captains, support neighborhood facilitation, and communicate Block Captain updates to District leaders (City of North Salt Lake, 2009).

Meanwhile, Area coordinators are often church members, identified as "[Latter-day Saints] LDS ward bishop or a designee" (City of North Salt Lake Emergency Management, N.A.). Area coordinators oversee emergency preparedness and response over some geographical regions within the City. Additionally, these volunteers meet with the emergency preparedness manager monthly and receive emergency preparedness informational materials to help distribute (Interview with Peterson, 2021).

Over the role of Area coordinators are District coordinators (Interview with Peterson, 2021). The District coordinator is staffed by church members referred to as stake presidents (City of North Salt Lake Emergency Management, N.A.). North Salt Lake has five district coordinators. District coordinators have direct access to the emergency preparedness manager during a disaster.

Currently, North Salt Lake City only utilizes the Neighborhood Coordinator/Block Captain model. The emergency preparedness manager provides training for Block Captains. Additionally, Block Captains are supplied with radios and safety vests (Interview with Peterson, 2021).

IV. SAFETY FAIR

As part of the FEMA Emergency Preparedness Grant requirement, the City of North Salt Lake must hold a safety or preparedness fair every other year (Interview with

Peterson, 2021). This fair is a collaborative effort between multiple cities and Davis County. Appendix L illustrates past programming offered at these fairs. The fair is held at movie theater complexes, churches, and schools. Sponsors have included companies, partner cities, and the state of Utah. While thousands usually attend these fairs, few North Salt Lake residents attend. Since the pandemic, the local preparedness fairs have been postponed.

V. Successes

"The idea is that we appreciate all that the City can do for us, but we also need to do a lot for ourselves." (Michaelis, 2021).

The North Salt Lake City case study highlights innovative resources and volunteer models to promote household and neighborhood emergency preparedness. One of the successes highlighted is the ability of residents to receive emergency preparedness materials when they sign up for utilities. Another highlight is the response rate with emergency practice drills. When conducting community drills, about half of all residents are said to participate by placing a green or red placard on their front door (Interview with Peterson, 2021). Meanwhile, during a significant windstorm in 2021, about half of the block captains in North Salt Lake checked in with the emergency preparedness manager.

VI. CHALLENGES

Some of the challenges identified with local emergency preparedness efforts in North Salt Lake City include resource allocation, information distribution, and evaluation of tools.

Resource Allocation

Resource allocation was identified as an issue as there is no current full-time emergency preparedness manager for the City. Additionally, there is no dedicated budget for local emergency preparedness efforts (Interview with Peterson, 2021). Instead, this position is filled by a part-time employee. The position is funded by the City's police budget and the state. Due to limited City resources, the part-time employee created the 2020 handbook on their own time.

City Relations

Navigating the relationship between the City and emergency management is a noted challenge in North Salt Lake City (Interview with Peterson, 2021). In my interview, I learned that this relationship between emergency management and the City could best be described as a love-hate relationship. While the North Salt Lake City Council supports emergency management, it does not remain a priority. Instead, support for emergency management comes when a disaster happens and then proceeds to wane when there is no pressing emergency.

Access to Information

Another challenge in emergency preparedness is uneven information distribution. While homeowners receive emergency preparedness information when signing up for utilities, renters experience a different scenario. Instead of receiving emergency preparedness information from City offices, renters may receive this information from their local church or landlords (Interview with Peterson, 2021). Renters could fall through the cracks if they are not affiliated with a church and their landlord is unaware of City resources.

Evaluation

North Salt Lake City faces a challenge in identifying if emergency preparedness materials and programs make a difference. Currently, the City does not track which neighborhoods use the materials (Interview with Peterson, 2021). Additionally, there is no evaluation of the Block Captain program in North Salt Lake City.

Keeping track of Volunteers

Relatedly are the challenges surrounding the Block Captain program. These challenges stem from infrequent use, lack of clear training materials, and difficulty maintaining contact or identifying when these neighborhood leaders move away (Interview with Peterson, 2021). Based on my interview with the emergency preparedness manager, the existing Block Captains have been deployed for only a handful of actual emergencies. Therefore, lack of mobilization may lead to apathy. In terms of training block captains, while there was an onboarding training, there has not

been any ongoing training due to limited resources. Finally, keeping track of Block Captains is challenging, especially when they move away.

Summary of North Salt Lake Efforts, UT	
Successes	History of community created emergency preparedness resources
	Emergency preparedness resources created to be easy to follow
	New city residents receive emergency preparedness materials when enrolling for utilities
	Block captain program engages residents in identifying neighborhood assets and needs
	Support by the LDS Church in promoting emergency preparedness
	The city partners with the county to put on preparedness fairs
	During a community drill, roughly half of all residents were engaged
	During a major windstorm in 2021, half of the city's Block Captains engaged with the emergency preparedness manager
Challenges	No full-time employee for emergency management
	Limited financial resources for neighborhood emergency preparedness
	Resources only provided in English
	Uneven distribution of emergency preparedness materials for those who are renters and or not associated with the LDS Church
	No evaluation of emergency preparedness resources
	Difficult to keep track of Block Captains

Table 4: Successes and Challenges in Emergency Preparedness in North Salt Lake City

Bountiful City, Utah

I. Background on Bountiful City, Utah

Figure 22: Map of Bountiful City, Utah

Bountiful City is in Davis County, Utah. The City is about an 18-minute drive north of Salt Lake City and northeast of North Salt Lake City. As of 2020, Bountiful City had a population of approximately 45,762 residents (United States Census Bureau, 2021b). Residents of Bountiful report a slightly lower median household income of about $77,823 than North Salt Lake City (United States Census Bureau, 2021b). The City's

poverty rates hover around 5% (United States Census Bureau, 2021b). The majority of residents fall between 25 and 34 years old (United States Census Bureau, 2019a). Around 34% of Bountiful residents reported having some college or an associate degree (United States Census Bureau, 2019b). Like North Salt Lake City, most of the households in Bountiful, 77%, are family households (United States Census Bureau, 2019a). Finally, most housing units are owner-occupied (United States Census Bureau, 2020c).

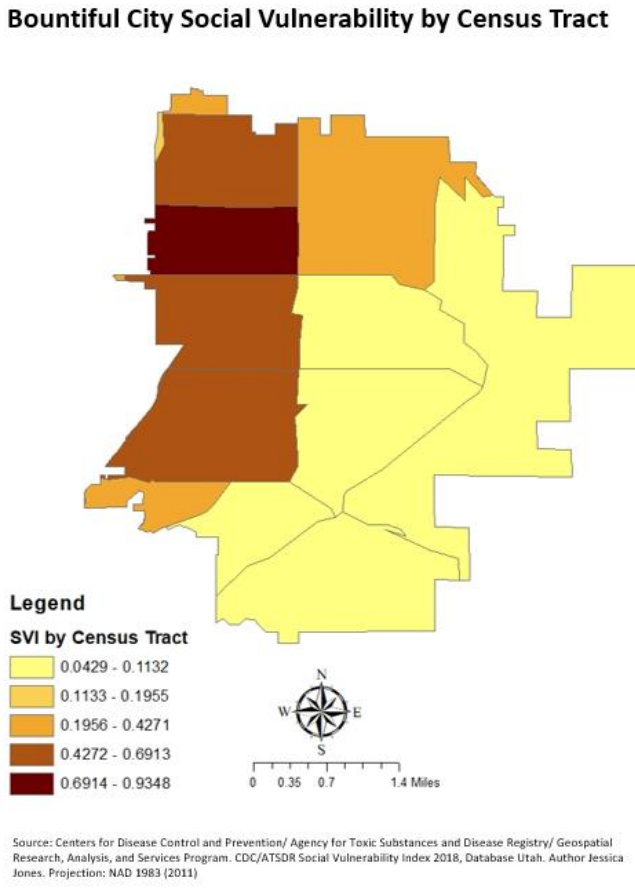


Figure 23: Social Vulnerability by Census Tract for Bountiful City, Utah

When examined by social vulnerability, higher levels of vulnerability exist along the top western border of Bountiful City, as denoted in a brown to burnt orange color with SVI

scores ranging from 0.42 to 0.93. Meanwhile, areas with lower social vulnerability, as denoted by areas in light yellow, and scores ranging from 0.04 to 0.11, can be seen along the City's southeast edge.

Slightly larger than North Salt Lake City, the City of Bountiful spans a total land area of 13.5 sq. miles (United States Census Bureau, 2021b). Like North Salt Lake City, Bountiful is between the Wasatch Mountains range and the Great Salt Lake. Due to its geography, Bountiful City is prone to various natural hazards, including avalanches, winter weather, high winds, lightning, and earthquakes (FEMA, 2021b). Based on FEMA's National Risk Index, most census tracts within Bountiful City have light risk for natural hazards, as denoted by the yellow and orange census tracts and scores of 13.37-19.52, see Figure 24 (FEMA, 2021b). Additionally, census tracts along the western half of the City denote slightly higher levels of risk as denoted in the darker orange color and the score range of 19.52 to 23.61. Based on the social vulnerability and risk to natural hazards analysis, census tracts with higher social vulnerability also have a higher risk of natural hazards. The analysis also suggests that census tracts in the City center experience low to moderate risk and have low social vulnerability rankings.

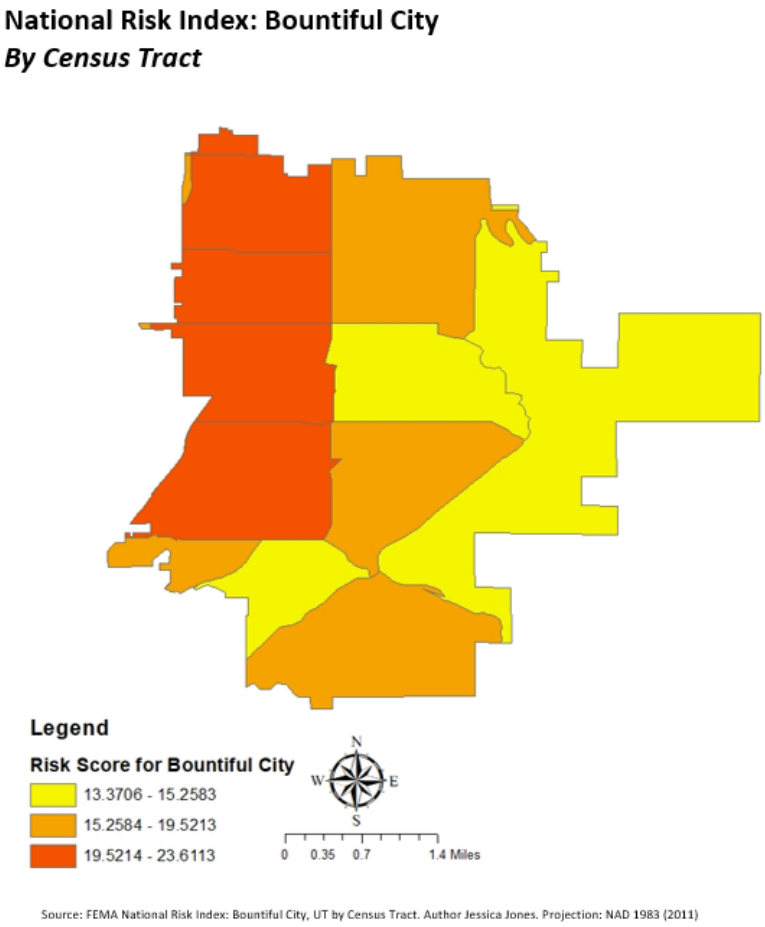


Figure 24: National Risk Index Map by Census Tract for Bountiful City, Utah

II. Bountiful Neighborhood Emergency Council

The City of Bountiful has a multi-pronged volunteer model to address local emergency preparedness and community response needs.

[17]

Figure 25: Bountiful City Volunteer Emergency Response Structure

The first layer of this model is the Bountiful Neighborhood Emergency Council (BNEPC). This council comprises of ten volunteers who have experience and training in emergency preparedness (Bountiful, 2022c). The BNEPC is responsible for

[17] Image taken from: Bountiful. (2022d). How are emergencies handled in Bountiful? https://bountifulprep.org/how-are-emergencies-handled-in-bountiful/

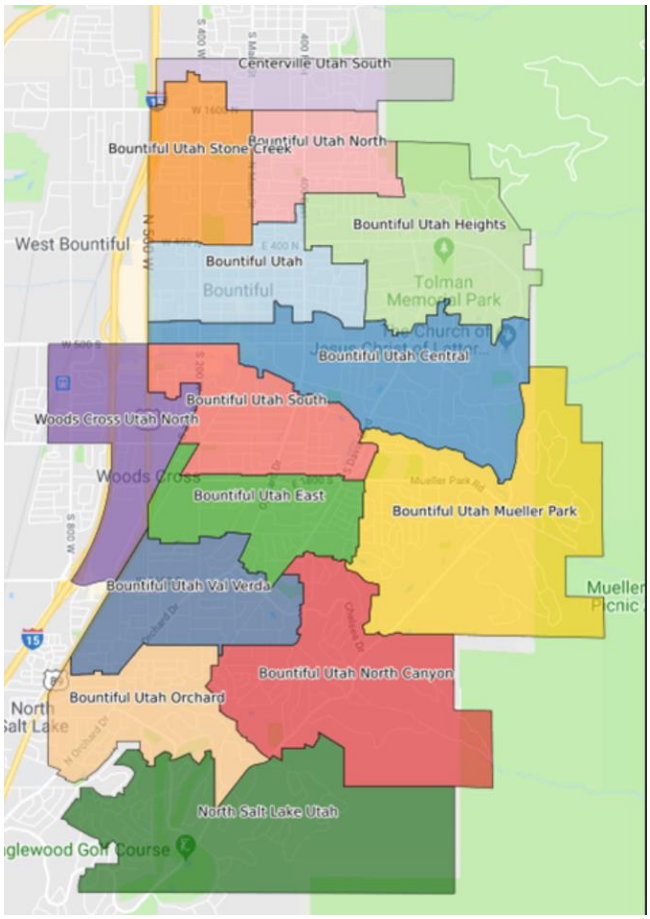
communicating with district leaders and serving as their liaison with the City (Bountiful, 2022c).

III. Neighborhood Emergency preparedness Council

One of the committees overseen by the council is the Bountiful Neighborhood Emergency Preparedness Council. This council focuses on "organiz[ing], educat[ing], and train[ing] citizens to save lives and property during a disaster" (Bountiful, 2022b). The Neighborhood Emergency Preparedness Council runs the Emergency Operations Center (EOC) within the City's police station (Bountiful, 2022c). Working within the EOC, the council "coordinate[s] with all of the districts and professional services to get the important services to where they are most needed" (Bountiful, 2022c). Additionally, the council promotes education through emergency preparedness seminars, covering topics such as water storage, fire prevention, and self-reliance. Finally, the council's web page offers downloadable fliers regarding sanitation issues during emergencies.

IV. District Leaders

In Bountiful City, District leaders are volunteer positions filled by church leaders called stake presidents (Interview with Peterson, 2021). The City of Bountiful has twelve Districts. See Figure 26. Each District contains the same number of residents.



[18]

Figure 26: Bountiful City Emergency Preparedness Districts

The LDS Church provides template emergency preparedness plans that Districts and Areas can modify to fit their needs (Interview with Abel, 2022). District and Area emergency preparedness plans are encouraged to cover the following topics: “identify likely disasters, gather critical [neighborhood] information, outline assignments and procedures, and identify emergency communication methods” (preparedness.lds.org, N.A.). District and Area plans usually stay with District and Area leaders (Interview with

[18] Image taken from: Bountiful. (2022). Maps. https://bountifulprep.org/maps/

Abel, 2022). District leaders report to the Bountiful Neighborhood Emergency Preparedness Council on service needs (Bountiful, 2022c).

V. Area Leaders

In Bountiful City, Areas are churchward boundaries. These boundaries follow specific geographical patterns and contain equal numbers of households (Interview with Abel, 2022). Area leaders are staffed by LDS bishops or other community volunteers (Bountiful, 2022a). Area leaders have multiple roles in emergency preparedness. These roles include dividing their Areas into blocks, identifying Block Captains, providing Block Captain training, and contacting Block Captains and District leaders (Interview with Abel, 2022; Bountiful, 2022a). See Appendix M for a template for Area Leaders to keep track of Block Captains.

Area leaders are also encouraged to have a "current list of all households and businesses in the area and contact information for each" (Bountiful, N.A.a). Additionally, these volunteers are encouraged to have... "a current map of the area, divided into blocks" (Bountiful, N.A.a). This information is shared with the households in their geographic area. Area leaders are also encouraged to provide "...a summary of the Area Emergency Response Plan [and] a list of households in their block and a map of the area divided into blocks" for each household under their jurisdiction (Bountiful, N.A.a). Like Districts, Areas also have emergency preparedness plans called 'Area Emergency Preparedness Response Plans' (Bountiful, N.A.a). In tandem, Areas are encouraged to have specialized preparedness plans that fit their local needs (Interview with Abel, 2022).

Area leaders are encouraged to reach out to Block Captains via "...text, phone, radio, email, or runner" (Bountiful, N.A.a). Meanwhile, Area leaders mobilize Block Captains and receive assessments during emergency events (Bountiful, N.A.a). Additionally, Area leaders also work with District leaders at the local command post (Bountiful, N.A.a).

VI. Block Captains

Under this multi-pronged volunteer model, the Block Captain role is the person with feet on the ground in their neighborhood. Area leaders help identify Block Captains. Block Captains check on 5-10 households or businesses within their community (Bountiful, N.A.e). Being a Block Captain includes keeping track of contact information for the households and companies under your purview. (See Appendix M for Block Communication Plan). In Bountiful, Block Captains identify a safe meeting place in the neighborhood for residents to go during emergency events (Bountiful, N.A.e) and identify "...any special needs of each household, as well as skills and equipment they have that could be useful following an emergency" (Bountiful, N.A.e). Area leaders provide training and informational materials on emergency preparedness and household resilience tips to Block Captains (Bountiful, N.A.a). Finally, Block Captains are encouraged to have a group text chain or email chain with their neighbors and participate in community drills (Bountiful, N.A.e).

After emergency events, Block Captains conduct an "Initial Quick Assessment" of their assigned households and businesses (Bountiful, N.A.b). Their assessment

findings are shared with Area leaders (Bountiful, N.A.d). Block Captains can be tasked with completing a follow-up assessment to identify injuries, missing persons, and infrastructure damage in their neighborhoods (Bountiful, N.A.d). See Appendix M for Block Captain Follow-up Assessment.

VII. Successes

Bountiful City's emergency management volunteer structure is commendable. This social infrastructure allows residents to be engaged and assist with education on emergency preparedness and serve active roles in reporting needs during emergency events. Additionally, residents can serve on committees that help shape emergency management programming and directly report to City leadership.

Another area to highlight is the City's materials to support volunteers in emergency preparedness and response efforts. The City has made worksheets that are easy to follow for residents and those who serve as Block Captains and Area Leaders. These worksheets help simplify and streamline neighborhood information and emergency needs. Cities like North Salt Lake and Bountiful develop unique opportunities to create a system where neighbors know one another's needs and have the tools and communication infrastructure to support one another during emergency events.

VIII. Challenges

Some of the challenges identified with local emergency preparedness efforts in Bountiful City include communication, apathy, and volunteer management.

Communication

One of the communication difficulties experienced in Bountiful include avoiding using ‘scare tactics’ to motivate people to act and prioritize emergency preparedness (Interview with Abel, 2022). To avoid using scare tactics, volunteers have created spaces to share stories of best practices in emergency preparedness. Community members can engage with these resources through online webinars and training.

Apathy

Apathy is also a challenge for local emergency preparedness efforts in Bountiful City (Interview with Abel, 2022). Since Bountiful has not experienced a major emergency event, residents may find it hard to prioritize emergency preparedness efforts over current needs. Resident leaders try to overcome this challenge by offering a variety of training to inspire engagement in preparedness efforts.

Tracking Volunteers

Like North Salt Lake City, Bountiful’s current volunteer model makes it difficult to track who serves in which role. Additional difficulties arise in keeping track of vacancies when people move away. This challenge has led the City to revise the emergency management volunteer structure.

IX. REVISIONS

Due to the difficulties of managing volunteers, the City is revising its volunteer structure (Interview with Abel, 2022). This program revision involves moving to a ‘response-based plan’ rather than a ‘people-based plan’ for emergency preparedness. The

change includes the removal of the City's Block Captain role from the volunteer emergency response structure. The City plans to produce informational materials and training that anyone could plug into during an emergency event instead of relying on a model that depends on designated volunteers. Creating plug-and-play roles avoids depending on specific individuals who may not be available during emergencies.

Summary of Bountiful Efforts, UT	
Successes	The city's emergency management response structure involves community volunteers
	The Neighborhood Emergency Council serves as a communicator between the city and District leaders
	The Neighborhood Emergency Preparedness Council provides training and runs the E
	The city provides a district map for residents to identify which area they reside in
	The LDS Church provides template emergency preparedness plans
	Districts and Areas can create localized emergency preparedness plans
	The city created easy to use template forms for Area leaders and Block Captains
	The city is modifying its Block Captain program to enable anyone to support their neighbors during emergency events
Challenges	Keeping track of volunteers
	Community apathy toward emergency preparedness

Table 5: Successes and Challenges with Emergency Preparedness in Bountiful, Utah

Chapter 6: Neighbors helping Neighbors in Seattle and Bainbridge Island City, Washington

I. Background on City of Seattle, Washington

Source: DATA.GOV: TIGER/Line Shapefile, 2016, state, Washington, Current County Subdivision State-based, 2021. Seattle GeoData, Census Tracts 2010. Author Jessica Jones. Projection: NAD 1983 (2011).

Figure 27: Map of City of Seattle, Washington

The City of Seattle is in King County, Washington. As of 2020, Seattle had a population of 741,251 (United States Census, 2020f). Based on the 2020 American Community Survey, residents reported a median household income of $134,355 (United States Census, 2020n). Meanwhile, approximately 10% of adults aged 18-64 live in poverty in Seattle (United States Census, 2020o). The median age of Seattle residents is approximately 35 years old (United States Census, 2020h). In Seattle, the predominant reported race of residents is white, at ~59%, with Asian as the second highest around

17% (United States Census 2020e). As for educational attainment, Seattle residents reported at higher rates, 37%, having a bachelor's degree (United States Census, 2020k). When looking at household composition, the majority of Seattle's households, approximately 81%, are families without children (Statistical Atlas, 2018b). As to homeownership rates in 2019, renters outnumber homeowners by 50.3% compared to 49.7% (Balk, 2021).

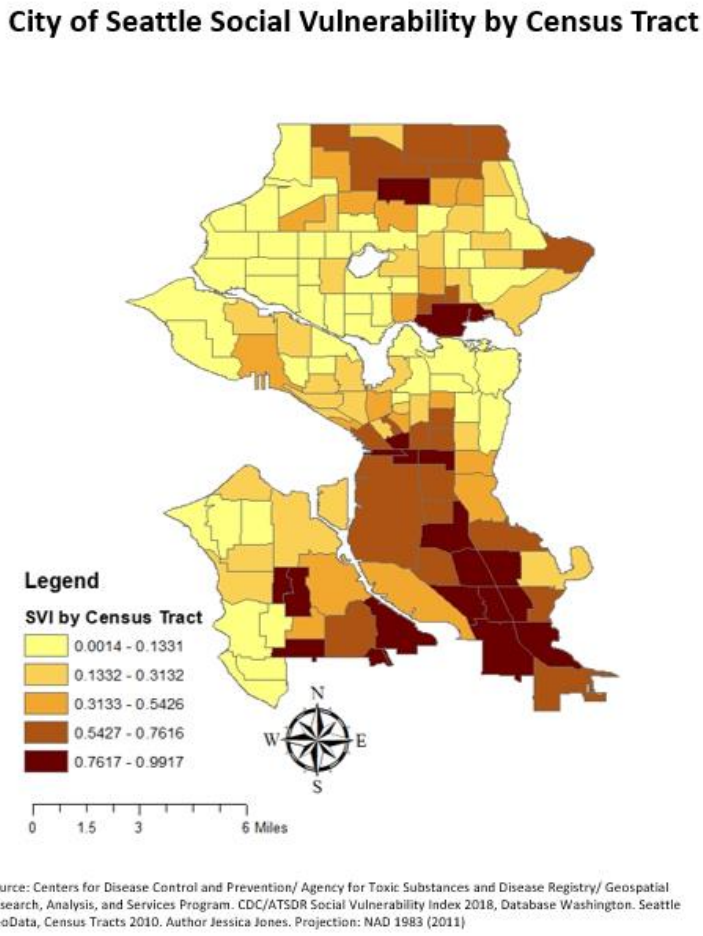


Figure 28: Social Vulnerability Index Map by Census Tract for City of Seattle, WA

As seen in Figure 28, when examining the City of Seattle by the Social Vulnerability Index, higher levels of vulnerability can be seen on the northern and southernmost parts of the municipal boundary, as denoted by the dark burnt orange color and score of 0.76-0.99. Meanwhile, the center area of the City has a low social vulnerability score, as indicated by the yellow color and a score range of 0-0.31.

The City of Seattle spans a total land area of 83.8 sq. miles (United States Census, 2020f). Seattle is nestled between Elliot Bay and Lake Washington and forests and mountain ranges. According to FEMA's National Risk Index, most census tracts within the City's boundaries are relatively high risk (FEMA, 2021b). Based on its geography, Seattle is prone to multiple hazards, including winter storms and earthquakes (Seattle, 2022c). Earthquakes are of major concern for the City, as the Seattle Fault Zone runs straight through the City center (Seattle, 2022a). With this knowledge, the City recognizes that its infrastructure, which consists of masonry buildings and bridges, is vulnerable to earthquake impacts. Additionally, the City is at risk of compounded emergency events after an earthquake which could include: "landslides, [a] tsunami, fires, infrastructure failures, and hazard materials releases…" (Seattle, 2022a).

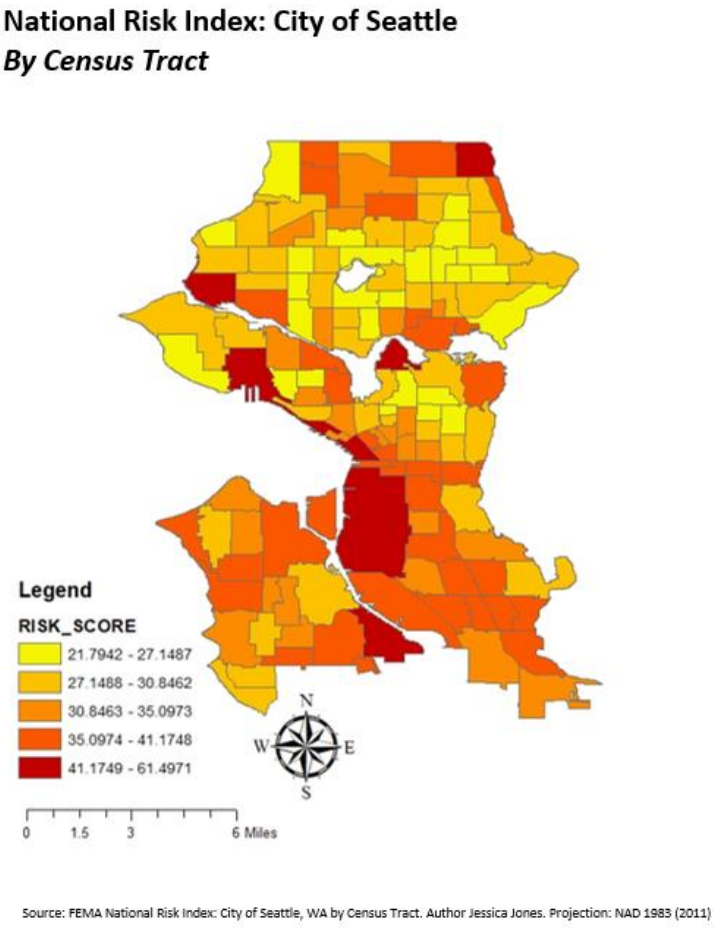


Figure 29: National Risk Index Map by Census Tract for City of Seattle, WA

As seen in Figure 29, many census tracts in Seattle rank as having a moderately high risk of natural hazards, as denoted in medium orange to red and a score range of 35.09-61.49. Unlike the SVI map, natural hazard risk is spread throughout the City.

II. Seattle Neighbors Actively Prepare (SNAP)

The Seattle Neighbors Actively Prepare (SNAP) program was created in 2009 to support household and neighborhood emergency preparedness efforts. This program evolved from the original 'Map Your Neighborhood' effort that a community member

spearheaded. The training is described as “simple” and “flexible” to “meet the needs of [each] neighborhood” (Seattle, 2022g). The focus of the SNAP program is to initiate neighbors to “work together following a big disaster” (Seattle, 2022g). The SNAP training covers a variety of topics, including general preparedness, heat, winter, and CPR (Interview with Hutton and Thach, 2021). The goal of the SNAP training is to support household emergency preparedness efforts and support neighborhood emergency preparedness. Under the SNAP program, a neighborhood is “a group of people living on the same block, in the same building, or a group of buildings” (Seattle, N.A.).

The SNAP program has three phases. The first phase focuses on meeting with neighbors to learn about emergency preparedness (Seattle, 2022g). The second phase focuses on identifying a neighborhood leader or coordinator and picking a gathering place. Finally, the third phase encourages residents to continue to train on various emergency preparedness topics, such as how to turn off utilities and how to provide basic first aid (Seattle, 2022g).

To request a SNAP training, residents go to the City’s website and fill out the request form or call the Office of Emergency Management (Interview with Hutton and Thach, 2021). After the Office receives a request, they contact their volunteer team, a group of about 8-10 trained residents who help the City staff deliver the training. Before COVID-19, City staff would provide in-home SNAP training. However, during the pandemic, training has primarily taken place online.

III. RESOURCES

A. SNAP Presentation

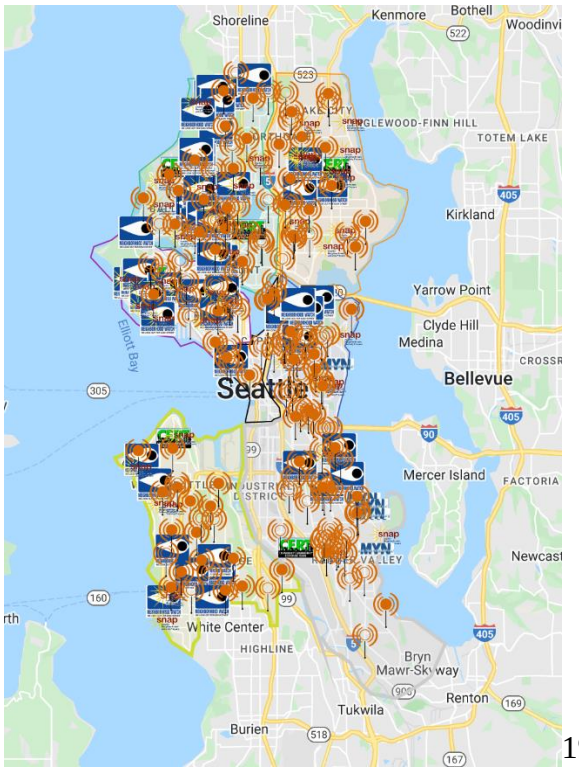
The SNAP presentation is a twenty-slide PowerPoint presentation. See Appendix N for a copy of the presentation. The slides are available for download on the City's Office of Emergency Management website. The presentation covers basic emergency preparedness information, how to plan, and how to be safe during emergency events, including COVID-19 and earthquake safety precautions (Seattle, 2022g). The presentation then details how to practice neighborhood response, including utility checks, fire safety, and first aid (Seattle Neighborhoods Actively Prepare, 2020). The SNAP presentation encourages residents to identify their community needs, such as who may need special care or assistance during an emergency event and who has children or pets. Following this, SNAP also encourages residents to "make a map" and identify the neighborhood's "meeting place" (Seattle Neighborhoods Actively Prepare, 2020). A meeting place is recognized as an area that "should be away from traffic, easy to access, accessible for those living with functional disabilities, and allow for social distancing" (Seattle, N.A.). Neighborhood maps should also include information on "who lives where [and] homes with natural gas and [water] meter locations" and where the "First Aid and Hygiene Station" are located (Seattle Neighborhoods Actively Prepare, 2020). Finally, the presentation encourages residents to sign-up for emergency alert notifications. A presenter's guide is also available online. Therefore, anyone can download and give the SNAP training. In addition to the presenter's guide, there is also a

virtual resource guide, a two-pager with links to more information and resources on the topics covered in the training.

B. SNAP Booklet: Preparing with Neighbors

The SNAP booklet is seventeen pages long. The City provides the booklet in printed form. The booklet encourages residents to be "self-sufficient following a disaster event" (Seattle, N.A.). The booklet details information on pre-and post-disaster planning at the neighborhood level. Additionally, the SNAP booklet contains documents to help with emergency planning. These forms include a neighborhood planning form, a household information form, a skills and equipment information form, a damage assessment worksheet, and a Help and Okay sign for residents to place on their homes after an emergency event. See Appendix N.

C. SNAP NeighborLink Map



[19]

Figure 30: Seattle NeighborLink Map

The SNAP program also has a map called the NeighborLink Map, linked to the Office of Emergency Management's website. Areas on the map that say SNAP indicate neighborhoods that mapped their neighborhood and have gone through the SNAP training. Meanwhile, filled-in pins represent neighborhood areas organized with a hub. Unfilled pins are potential sites for community organizing, as identified by the City. The map also contains neighborhood watch, a blue eye, and CERT icons. Organized neighborhoods that have gone through the SNAP program provide their information so

[19] Image taken from: Seattle Emergency Hubs. (2022). Seattle NeighborLink Map. http://seattleemergencyhubs.org/seattle-emergency-neighborlink-map/

that a new SNAP logo can be added to the City map (Seattle Emergency Hubs, 2014b). Additionally, residents are encouraged to search the map to find other organized residents near them (Seattle Emergency Hubs, 2014b).

D. Other Training

The Office also provides emergency preparedness training on various topics, including weather-related safety information and further training related to first aid (Thach, 2021). The Office also supports a Community Safety Ambassadors Program. These ambassadors provide emergency preparedness training in languages other than English (Interview with Hutton and Thach, 2021). The Office works with community-based organizations to promote emergency preparedness information and training. Seattle's Office of Emergency Services is also working to provide materials in multiple languages. Emergency preparedness materials are available in 19 languages ("Amharic, Burmese, Cambodian, Simplified Chinese, Traditional Chinese, English, Hindi, Japanese, Korean, Laotian, Oromo, Russian, Somali, Spanish, Swahili, Tagalog, Thai, Tigrinya, Vietnamese") (Seattle, 2022b). Finally, City staff tailor the training to be more straightforward and hands-on (Interview with Hutton and Thach, 2021).

The Seattle Office of Emergency Management is currently working to implement tracking measures for the SNAP training (Interview with Hutton and Thach, 2021). The Office utilizes geospatial tools such as ArcGIS to record where they have conducted SNAP training. This spatial tool helped the Office identify that SNAP training primarily happened in well-resourced communities. Staff acknowledges that they need to do more

activity in the City's southern portion, which is under-resourced in the City. “We know that we’re not going to ever be the best voice in some communities” (Hutton, 2021). Partnering with community-based organizations (CBOs) provides the Office with greater reach into communities that may distrust the government, not speak English, and maybe be under-resourced.

The Office of Emergency Management does not receive City funding for outreach and education. Currently, the Office uses grant money to support CBO emergency preparedness outreach. These grants come from the Urban Area Security Initiative grant and the King County Public Health Department (Interview with Hutton and Thach, 2021). Additionally, staff gets creative to find grant funding opportunities to support these efforts. Upon community requests for more engagement, the Office created two Outreach and Training Specialists positions to support the SNAP program.

IV. SUCCESSES

The Seattle Neighborhoods Actively Prepare Program serves as another example of a municipal emergency preparedness program that is adaptable and multifaceted in its approach. Since 2009, over 15,000 residents have received SNAP training (Interview with Hutton and Thach, 2021). Like LA’s RYLAN program, staff or community members can deliver the SNAP training. To assist with broader outreach efforts, staff connect with community-based organizations. Additionally, staff engages a volunteer base to help

deliver SNAP training. Furthermore, related to adaptability is the diverse funding that staff has found to support SNAP efforts.

SNAP materials are also worth recognition. The City offers emergency preparedness materials in multiple languages to support greater accessibility. In tandem, the City utilizes a lot of imagery in its educational materials to simplify the vital information they are trying to relay. The City also provides residents with other topical preparedness and response training. Additionally, the NeighborLink Map resource should be recognized as it is an innovative way for residents to find organized groups near them.

Like LA, under SNAP, neighborhood areas become defined by community residents. This level of resident empowerment can help foster local engagement in emergency preparedness. In addition to neighborhood areas being defined, SNAP also provides template worksheets for residents to identify assets and resident needs in their community.

V. CHALLENGES

The following is a compilation of some of the barriers that the Seattle Neighborhoods Actively Prepare Program experiences.

Household Training vs. Neighborhood Training

"...it's rare to see a block get to that point" (Seattle Resident, 2021).

One of the challenges with the SNAP training is that residents are not ready to be organized at the block level when they request the training. According to one volunteer trainer, "...a lot of times [residents] sign-up for training for their neighborhood, but really

what their neighborhood needs is household preparedness" (Seattle Resident, 2021). From the volunteer's perspective and experience are ready to organize with their neighbors (Interview with a Seattle Resident, 2021).

Demographic Challenges

Another challenge the Office faces is that those who request the SNAP training tend to be "well-resourced" and already have organized neighborhoods (Seattle Resident, 2021). The Office is trying to prioritize under-resourced communities for emergency preparedness training. However, it may be hard to target these communities as primary concerns such as feeding their household can outweigh putting food aside for a future emergency event (Interview with a Seattle Resident, 2021).

Additionally, the training does not always fit the needs of those who live in multi-family dwelling units. There are often significant differences in what apartment residents can do when storing materials and accessing utilities (i.e., being able to shut off water and gas). To mediate this gap, a volunteer trainer is trying to create emergency preparedness materials to support residents who live in multi-unit complexes.

Staffing Challenges

The Office of Emergency Management also faces staffing challenges. The Office has two outreach specialists for a population of close to 800,000 people. To mediate this, the Office engages with CBOs and community volunteers. This outreach helps the office spread emergency preparedness awareness and provide SNAP training.

Expectations

Community expectations of what emergency preparedness should include can also be a challenge. Staff recount that "...the way you plan for a road trip is not the way we plan for an emergency, it's not like an itinerary" (Hutton, 2021). The community has provided feedback wanting detailed information regarding emergency preparedness, which can be impossible for emergency staff. In my interview, staff recounted situations where the community asked which emergency professionals would be assigned to their areas (Interview with Hutton and Thach, 2021). Instead of providing hyper-specific information, the Office focuses on general emergency preparedness information. This information sometimes receives feedback that the training is too general from residents who want more.

"...we give them very general information, we don't give them a to-do list, and there is no follow-up, …we're giving them vague information and telling them to figure it out" (Seattle Resident, 2021).

Challenges with the Training

In tandem with providing general information for neighborhood organizing around emergency preparedness and response, this can be seen as a challenge and a strength. There is a perception that the SNAP PowerPoint presentation provides little guidance on organizing neighbors around emergency preparedness. The training does not define roles. While the SNAP program calls for creating a neighborhood coordinator and identifying roles and responsibilities, there are no examples in the educational materials as to what this entails. Due to this, trainers allow residents to discuss and shape their plans. Under this organic approach, a volunteer cites that they have seen residents

identify resources in their neighborhood, such as identifying those with medical training and identifying who has a generator. A volunteer notes that identifying neighborhood resources may lead to residents becoming dependent on certain people to be home and available during emergencies that may not happen in real life (Interview with a Seattle Resident, 2021). Another challenge with the training is simulating disasters. Staff note that "it is hard to simulate the realities of an earthquake until it actually happens" (Hutton, 2021).

After the initial SNAP presentation, there is no follow-up with residents unless residents reach out. "We go in and give this presentation, and we never hear from them again" (Seattle Resident, 2021). It is unclear whether the resident's follow-up (Seattle Resident, 2021). Additionally, a volunteer cited that there is no follow-up with the volunteer trainers on how the training went. Relatedly, City staff have not monitored volunteers giving this training.

Engagement with Volunteer Trainers

Relatedly, engagement with volunteer trainers appears to be limited. While the City holds training for the SNAP volunteers, the level of training that volunteer trainers receive is minimal. Additionally, there has been no follow-up training (Seattle Resident, 2021). Feedback has also been a challenge. Based on perception, volunteer feedback is not incorporated in training revisions (Thach, 2021; Hutton, 2021). Additionally, there was no clear communication channel when volunteers received questions from residents or opportunity for volunteer trainers to learn together.

Language Access

While expanding language access is a priority for the City of Seattle, staff still struggle to provide information to non-English speakers. Currently, the SNAP booklet is only available in English. With community and CBO support, staff can provide training in languages other than English. However, the SNAP program is only promoted in English (Interview with Hutton and Thach, 2021).

Evaluation

Evaluating progress can be difficult. Before the pandemic, staff would survey residents after the training to gather feedback. A QR code can be found on SNAP training materials to direct residents to a short survey. However, collecting resident feedback was at a standstill during the pandemic. Over time, it is unclear how feedback has influenced or changed the presentation and training. Additionally, while the City tracks the number of people who have received the SNAP training, there is no tracking of the number of

neighborhoods actively using the SNAP program.

Summary of SNAP Efforts in Seattle, WA	
Successes	Training covers a wide range of topics
	Volunteers or residents can conduct SNAP trainings
	Neighborhood assets and needs are identified
	Neighborhood area is mapped
	The city works with CBOs to promote SNAP programming
	Emergency preparedness materials are provided in 19 languages
	The city maps where SNAP trainings have been held
Challenges	Household emergency trainings are requested more often than neighborhood
	Well-resourced communities tend to request training more often
	Trainings are geared for single-family dwellings
	The city has a limited number of staff dedicated to this program
	The trainings provide general information
	There is no follow-up after initial SNAP training
	Volutneer trainers have limited ability to shape the training
	SNAP Handbook is only available in English
	Evaluation of residents' experiences of the SNAP training were put on hold

Table 6: Successes and Challenges for the SNAP Program

VI. Seattle Emergency Communication Hubs

"And so it was kind of like that...it just stared at you in the face...people want to come together and want to help each other, they need a place to do that" (Barker, 2021).

Seattle's Emergency Communication Hubs (aka Hubs) developed shortly after the 2001 Nisqually earthquake and after major windstorms in Seattle around 2006 (Interview with Barker, 2021). Around 2007, a group of residents engaged in emergency preparedness discussions after recognizing the need for community members to be first responders. In the formation of Hubs, community groups focusing on local emergency preparedness came together with the support of City staff. This communication went on for a handful of years until the Hub concept came into being around 2008.

Hubs are “grassroots and volunteer-led” to promote neighborhood emergency preparedness at the local scale (Seattle Resident, 2021). Hub organizers recognize that first responders will be limited and pulled in many directions after an emergency event. Hubs are therefore created to harness and enhance what will come naturally after a disaster event, neighbors helping one another (Seattle Emergency Hubs, 2022b). Hubs embrace this and focus on “gather[ing] and shar[ing] information and to match needs and resources,” as well as to help “manage volunteers and provide education/emergency preparedness information” (Seattle Emergency Hubs, 2021a). Hub locations are outside areas free from at-risk falling debris, such as parks, gardens, and parking lots (Seattle Emergency Hubs, 2021a). For a Hub to be created, a community meeting place has been identified, a hub captain has stepped up, and a group of neighbors communicates on emergency preparedness and runs practice drills (Interview with Barker, 2021).

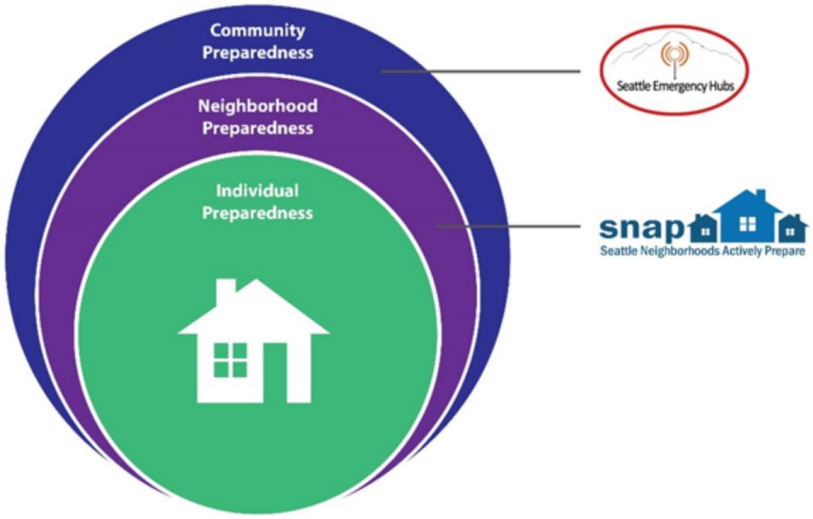


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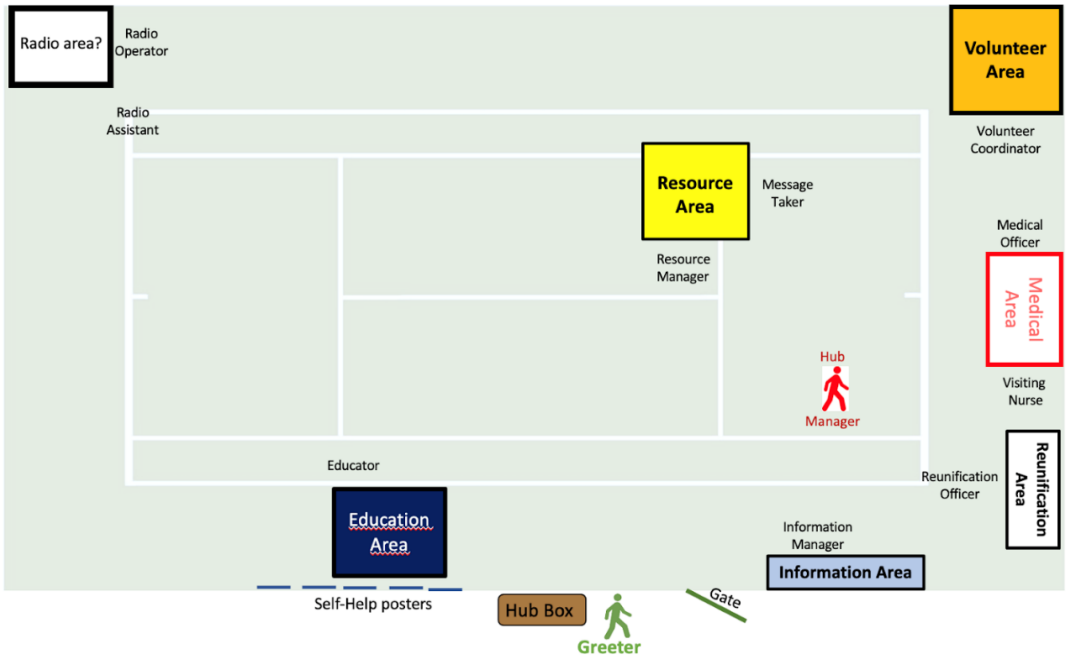
Figure 31: Levels of Preparedness, Seattle, WA

Hubs are a component of the City of Seattle's emergency preparedness framework. Where the SNAP training provides information at the household and neighborhood level, Hubs take this to the next level and activate community members to help one another. Hubs focus on an "all power out situation," i.e., situations where utilities are down and people need help (Interview with Barker, 2021). Organizers describe Hubs as being able to provide care and resources in the 0-10 days after an emergency event (Seattle Emergency Hubs, 2022b).

[20] Image taken from: Seattle. (2022d). Prepare your Neighborhood. Emergency Management. http://www.seattle.gov/emergency-management/prepare/prepare-your-neighborhood



[21]

Figure 32: Example Layout of a Hub

The idea is to make Hubs easy, low tech, and for the informational supplies in the hub boxes to be accessible and actionable. Figure 32 is an example of what a Hub can look like. Most simply, a Hub is a combination of service stations. Hubs are created to be fluid and adaptable to changing needs. Organizers stress personal and neighborhood preparedness, as Hubs can only succeed if individuals are prepared at the household level (Interview with Seattle Resident, 2021).

> But if you know...that your family will get by, then everybody in your family is now a helper to everybody else (Barker, 2021).

[21] Image from: The Seattle Emergency Hub Network.

Hubs started with backpacks with emergency gear. Volunteers then moved to have boxes located outside individual homes. Currently, the organization has moved to put boxes at neighborhood gathering locations aka their designated Hubs. Hub boxes usually contain the following items: a canopy, bull horn, posters, folding tables, caution tape, whiteboards, a quick start guide, in-depth job descriptions, an educator book [and] forms to capture information" (Seattle Emergency Hubs, 2022b).

[22]

Figure 33: Hub Box, Seattle, WA

[22] Image from: The Seattle Emergency Hub Network

[23]

Figure 34: Contents of a Hub Box, Seattle, WA

The box also usually contains a map of the neighborhood that volunteers can mark to identify open and closed areas due to the emergency event (Seattle Emergency Hubs, 2022b). The education book provides general information that may be helpful, knowing that the internet may be down. The forms in the box include a "need, have lost, found form, a volunteer form [and] radio forms" (Seattle Emergency Hubs, 2022b). The box also contains pre-printed posters that include information on potable water tips, hazards, food storage, communication tips and strategies, and sanitation tips (Seattle Emergency Hubs, 2022b). See Appendix O for hub posters.

Additionally, the box contains a laminated form for volunteers to help those who do not speak English and are hearing impaired. Hub boxes do not include food and water; instead, residents are encouraged to have two-week supplies in their homes (Seattle Emergency Hubs, 2022b). Hub locations are not donation sites; instead, volunteers encourage residents to inform the resource center of what supplies they have so that

[23] Image from: The Seattle Emergency Hub Network

volunteers can help match needs (Seattle Emergency Hubs, 2022b). In tandem with the Hub box, residents are encouraged to bring supplies to ensure their comfort when running the Hub. This could include food, water, and a jacket to carry to their neighborhood Hub location (Seattle Emergency Hubs, 2022b).

"Everyone is a potential volunteer" (Seattle Resident, 2021).

Hubs are staffed with volunteers who serve twelve pre-identified roles. These roles include: "a greeter, an information officer, a resource manager, a volunteer coordinator, an education officer, a radio assistant, a radio operator, a hub manager, a message manager, a medical officer, a visiting nurse, and a reunification officer" (Seattle Emergency Hubs, 2022b). Descriptions of the volunteer roles and duties can be found below.

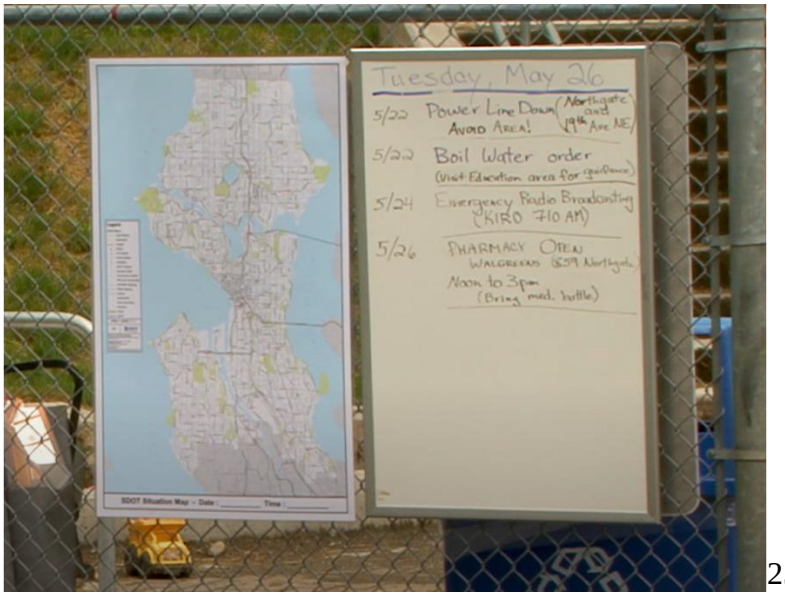
- Greeter: Stands at the Hub entrance and oversees directing people to service areas. The greeter should have a calm and welcoming demeanor.
- Information Officer: In charge of staffing the information area. This position writes updates on the Hub whiteboards. To communicate information effectively, they must have good handwriting. See Figure 35 for an example.
- Resource Manager: This position manages the resource area. They oversee matching neighborhood resources with needs. See Figure 36 for an example.
- Volunteer Coordinator: This position helps manage volunteers and organizes work parties. Additionally, they help collect and organize volunteer forms and work closely with the education officer.
- Education Officer: This position staffs the education area. They help residents walk through the information found on the pre-printed posters and navigate information in the Hub education book.
- Radio Assistant: This position serves as the liaison to the radio operator. The radio assistant helps write messages that need to be sent out over the radio and helps prioritize these messages. This role also logs all radio messages coming in and out of the Hub radio.
- Radio Operator: This position receives radio messages and documents them in the correct form. The operator then gives these messages to the

radio assistant. Additionally, the operator is the only one to send messages out [24].

- Hub Manager: This position acts like the director or the CEO of the whole Hub operation. This role has a big picture view. They help assign roles, designate shifts, monitor the flow of information, monitor volunteers, handle Hub emergencies, respond to questions from the City, and try to anticipate problems.
- Message Manager: This position serves as a scribe. They help neighbors fill out forms, as well as help direct neighbors to appropriate service areas within the Hub.
- Medical Officer: This position helps manage the first aid station. This station oversees basic first aid treatments, helps direct medical volunteers, coordinates patient movement, and also helps monitor disease outbreaks.
- Visiting Nurse: This position works outside of the Hub. They provide care in people's homes and help educate neighbors on how to provide care. This position records actions taken and helps to anticipate resident needs.
- Reunification Officer: This position staffs the reunification area. The Reunification Officer is the main point of contact when neighbors have lost a loved one. This position helps organize volunteers for a search party. Hub organizers work with Seattle school districts to match reunification information with Hub information.

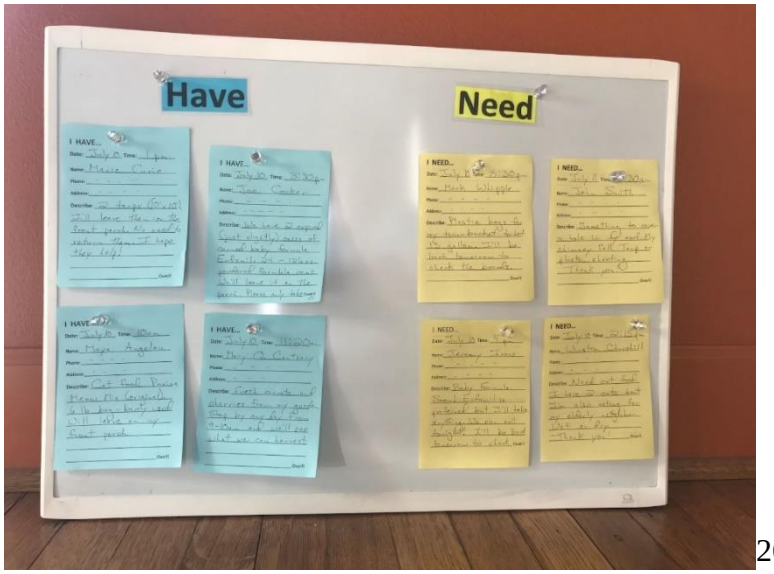
(Role descriptions paraphrased from Hub 101 Training)

- [24] Note that each active Hub can communicate with others across the City through the Ground Mobile Radio service. This radio communication capacity is critical to communicating needs, warnings, and other urgent messages during times of emergency.



[25]

Figure 35: Hub Information Officer Area



[26]

Figure 36: Example of Resource Manager Area

[25] Image from: The Seattle Emergency Hub Network
[26] Ibid.

To delineate between the volunteer roles, each Hub can have its own flavor. For example, some volunteers wear vests with the volunteer role labeled on their back. Meanwhile, others wear lanyards or baseball caps that are marked for the different volunteer roles.

VII. RESOURCES

Seattle Emergency Hubs has a website that provides information on emergency preparedness. The website has a calendar that displays emergency preparedness training, Hub 101's, and practice drills (Seattle Emergency Hubs, 2014a). The Hub website also has a page dedicated to each active neighborhood Hub; these pages list preparedness resources and act as a blog site where neighbors can post about their emergency preparedness work. Additionally, the organization also provides fliers on basic preparedness information. Organizers have worked to have one of these fliers translated into 6+ languages to aid in outreach to non-English speaking communities (Interview with Barker, 2021). Finally, the website has links to training that are posted on YouTube.

With support from a researcher from the University College London, the Hub Network worked with a mobile application called Survey 123 (Interview with Barker, 2021). This mobile app provided residents with the capability to map resources in their community. One Hub organizer explained that they could use the app to pin down locations in their neighborhood where residents could access services during an emergency event. For example, this could include a store where residents could pick up pet carriers or places where they could take a shower after an emergency event.

Hubs also have the NeighborLink Map as another tool to outreach and connect with interested residents. The map displays active hubs and areas not yet activated that could serve as potential gathering sites around the City. Interested residents can click on activated hubs, as denoted by the filled-in drop pin, to find out more about organized residents in their locale.

Community members primarily fund hubs. In 2020, the Seattle Emergency Hubs received funding support from the City's Department of Neighborhoods. In the same year, the organization created its first GoFundMe and raised $6,077 (Seattle Emergency Hubs, 2021b). This funding is used to support the cost of translating their materials, outreach efforts, website costs, and Zoom expenses (Interview with Barker, 2021).

In addition to grassroots funding, the Hub relies on grassroots outreach. This outreach includes working with church congregations, attending community meetings, and tabling at community events. Relatedly, Seattle Emergency Hubs sometimes receive press coverage.

VIII. Successes

The Seattle Emergency Hub Network serves as an example of how emergency preparedness and response can work at the grassroots level. Currently, there are 66 active hubs within the City of Seattle. In addition, training, practice drills, and the acquisition of emergency preparedness supplies are community-led and sourced. Hub organizers engage on a network basis, working with their neighbors to practice drills and working with other organizers to train. Along the lines of social connection, Hubs can connect neighbors

across the City thanks to ham radio operators. These radio operators provide critical communication of needs and relay existing conditions after an emergency event.

The Hub model is adaptable. Instead of relying on specific volunteers or residents to be present during an emergency event, Hubs are organized so that anyone can serve in the twelve identified roles, as long as they can follow the directions in the Hub box. Additionally, Hubs are designed with the idea that broadband could be unavailable during an emergency event. Therefore, information that might be helpful for an emergency is pre-printed and stored in the box. In tandem, the Hub box contains a handbook filled with extraneous emergency information and easy-to-follow posters on topics such as water, food, and sanitation, to name a few.

Finally, worth recognition is the fact that the Seattle Emergency Hub Network has played critical roles during trying times. During the COVID-19 Pandemic, the Hub Network used spreadsheets to identify neighborhood needs and to help provide resource support (Interview with Barker, 2021). Organizers used a template from 'recovers.org' to share information and resources among residents on a digital grassroots platform. Meanwhile, during the heatwave in 2021, "Hub captains used their skills and became amplifiers of emergency messaging," sharing information on how to be safe during the heat (Barker, 2021).

IX. CHALLENGES

Some of the challenges identified with local emergency preparedness efforts for the Seattle Emergency Hub Network include navigating City relations, identifying funding, neighborhood organizing, and using technology.

Working with the City

"There's very little crossover…between the hubs and the city" (Seattle Resident, 2021).

City staff view Hubs as community creation, and there is a perception that Hubs could be considered a "flash in the pan" (Seattle Resident, 2021). By treating Hubs as a community thing, Hub organizers and volunteers could be excluded from City decision-making that could impact local emergency preparedness and response efforts. Additionally, there is a minimal crossover between the SNAP program and Hubs. SNAP training materials mention hubs sparingly.

A significant challenge with the Hub format is how the city will interact with these community groups during an emergency event. One Emergency Management staff points out, "I think the big question mark in terms of the City to the Hub is what, if anything, will the EOC be asking for from those Hubs during an emergency" (Hutton, 2021). Finally, there have been no emergency events to activate the City to call on the Hubs for help (Interview with Hutton and Thach, 2021).

Funding

"You need to figure out some way to budget so that the community can work with the community" (Seattle Resident, 2021).

Another challenge for Hubs is funding. Being grassroots, Seattle Emergency Hubs receive limited funding from the City. Hubs are primarily run by a small community-funded budget. Due to this, Hub organizers struggle to finance outreach efforts as well as funding translation support. With little resources dedicated to advertising, one volunteer suspects that "less than 1% even know about...Hubs" (Seattle Resident, 2021).

Hub Purpose

Another challenge for Hubs is the perception by residents that the purpose of a Hub is to buy and store emergency supplies (Interview with Barker, 2021). This notion is incorrect. Hub organizers stress individual and household preparedness and denote Hubs as being places where neighbors can gather and provide service support to one another. To help clear this misperception about depending on resources to save the day, Hub organizers recommend and focus on neighborhood organizing as a critical first step in hub formation. Once residents organize, the discussion about creating a hub box with basic supplies and information can occur.

Technology

While Hub organizers have access to the mobile app, Survey 123, it comes with some challenges (Interview with Barker, 2021). The first challenge is that the mobile application relies on internet access. To rely on this resource during an emergency event, residents would need to download the excel spreadsheet from the app before losing broadband access. Additionally, based on a discussion with a Hub organizer, only a few Hub volunteers are using this mobile application. Currently, there are discussions by City

agencies about using the Survey 123 app to identify other City resources and needs during emergency events.

Summary of Hub Efforts in Seattle, WA	
Successes	Hubs are recognized in the city's emergency preparedness framework
	Hub information is designed to be low-tech and easy to understand
	Community drills are encouraged
	Organizers are encouraged to seek out emergency preparedness training
	Volunteer roles are clearly delineated and designed to be filled by anyone
	66 active hubs located throughout the city
	Hub organizers shared critical information during the pandemic and heatwave
Challenges	There is little crossover with the SNAP program and the Hub program
	Lack of clarity of how city will partner with hubs during emergencies
	The Hub Network is primarily funded by community organizers
	Purpose of hubs is often mistaken for stockpiling emergency supplies
	Mobile App created for Hub organizers relies on internet access

Table 7: Successes and Challenges in Emergency Preparedness for the Hub Network

The City of Bainbridge Island, Washington

I. Background on the City of Bainbridge Island, Washington

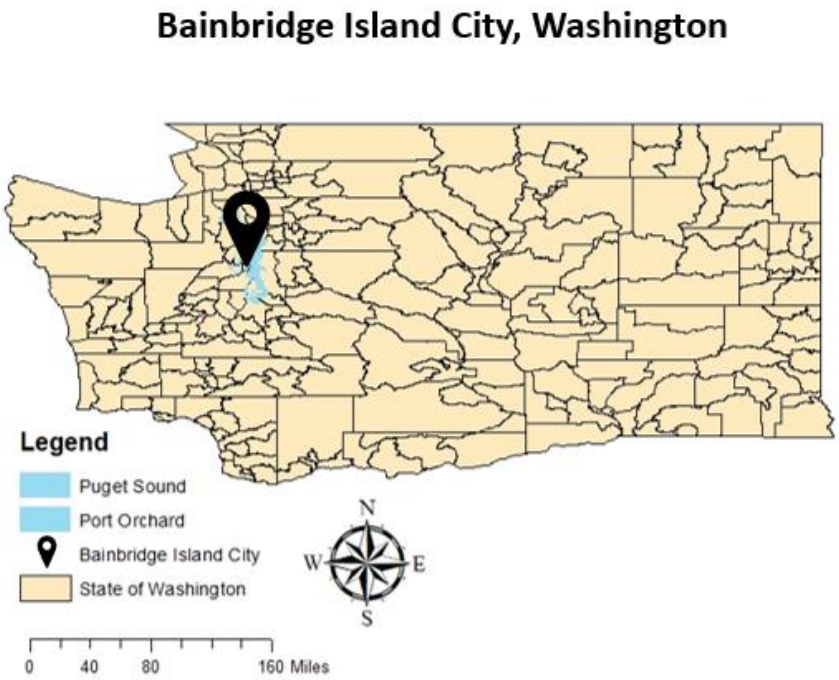


Figure 37: City of Bainbridge Island, WA

The City of Bainbridge Island is in Kitsap County, Washington. As of 2020, Bainbridge Island had a population of 24,825 (United States Census, 2021a). As of 2020, residents report a higher median household income of $125,861 than what is reported in Seattle (United States Census, 2021a). Additionally, fewer residents live in poverty, approximately 4%, as compared to 10% in Seattle (United States Census, 2021a). The

median age of Bainbridge Island residents is 50.3 years old (World Population Review, 2022b). The predominant race of residents is white, at approximately 90% (United States Census, 2021a). As for educational attainment, City residents reported higher rates, 73%, of having a bachelor's degree than residents in Seattle (United States Census, 2020j). Similar to Seattle, most City households, about 72%, are households without children (Point2, 2022a). Additionally, homeownership rates outnumber renters, around 79%, compared to about 21% (World Population Review, 2022b).

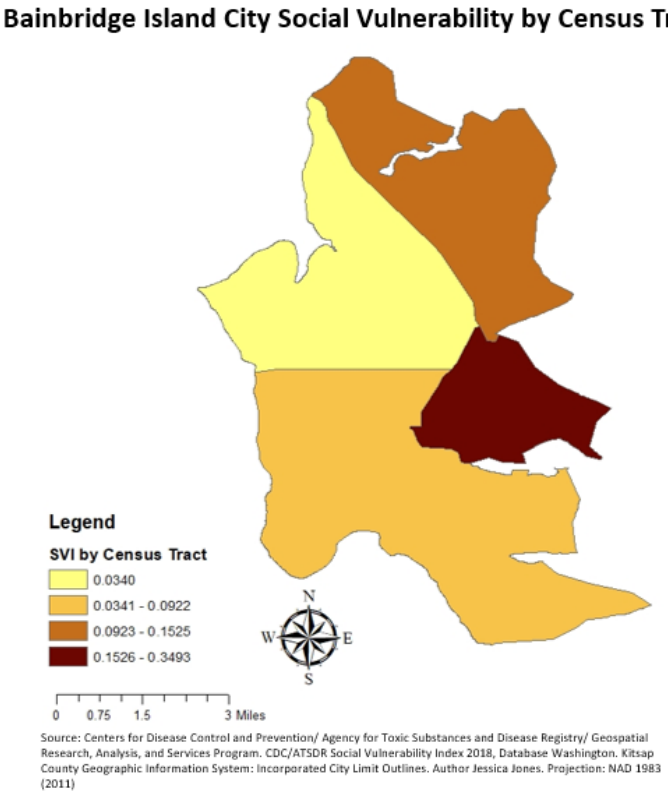


Figure 38: Social Vulnerability by Census Tract for the City of Bainbridge Island, WA

As seen in Figure 38, when examining the City by the Social Vulnerability Index, there is a mix of vulnerability scores throughout the island's census tracts. These varying

scores are denoted by the shades of orange, brown, to burnt orange. Only one census tract, located on the southeast portion of the island, has a somewhat high ranking in social vulnerability, as denoted by the dark burnt orange color and score of 0.15 to 0.34. However, it is essential to note that this high social vulnerability score is much lower than many of the other cities reviewed in this research.

The City of Bainbridge Island spans a total land area of 27.6 sq. miles (United States Census, 2022a). The City is between two water bodies, Port Orchard and Elliot Bay (City of Bainbridge Island, 2021). The island has one bridge that connects it to the Seattle metro area. Bainbridge Island is located 30 minutes by ferry from Seattle, Washington. According to FEMA's National Risk Index, half of the island's census tracts have a relatively high-risk score, and half have a relatively moderate risk score for natural hazards (FEMA, 2021b). Based on its geography, Bainbridge Island is most at risk of earthquakes, coastal flooding, tsunamis, and landslides (City of Bainbridge, 2022a). Like Seattle, the City recognizes earthquakes from the Seattle Fault as leading to potential "catastrophic" disasters and "millions of dollars in critical infrastructure and private property damage" (City of Bainbridge, 2022a).

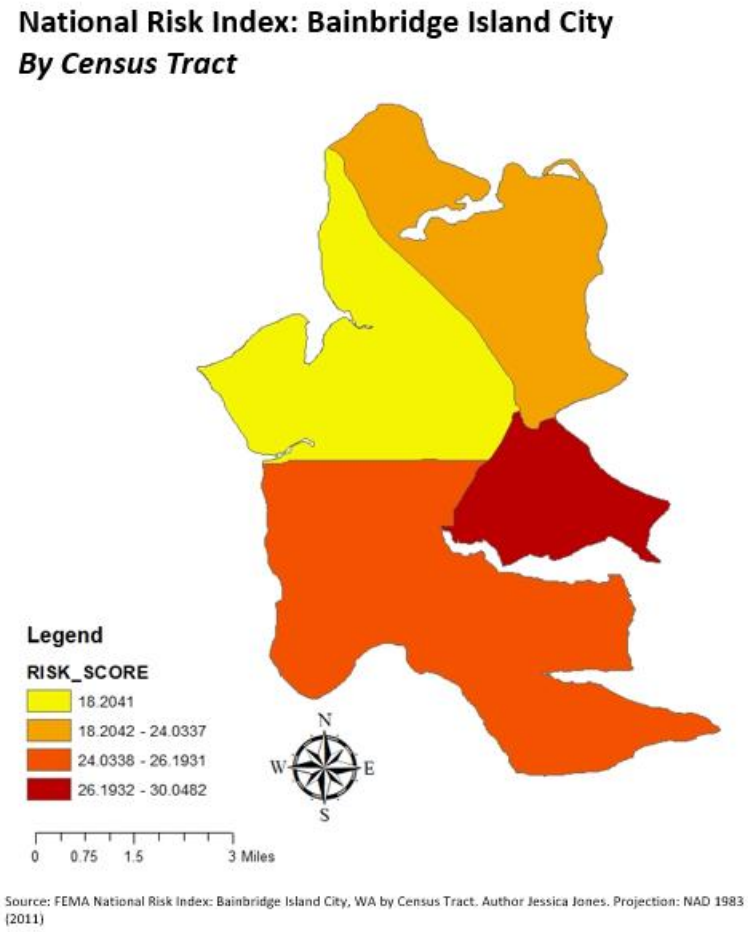


Figure 39: National Hazard Risk Index by Census Tract for the City of Bainbridge Island, WA

As seen in Figure 39, when using the FEMA National Risk Index tool to identify areas of risk to natural hazards within Bainbridge Island, the risk to natural hazards by census tract appears to vary. For Bainbridge, a moderate risk score is denoted in red, with a score range of 26.19 to 30.04.

II. BAINBRIDGE PREPARES

Bainbridge Prepares describes itself as a "collaborative blend of individuals, organizations, and local government…to make [Bainbridge Island] ...more resilient through mutual aid among residents" (Bainbridge Prepares, 2022e).

[27]

Figure 40: Emergency Management Strategic Planning Organization Chart

Bainbridge Prepares was created in 2010 (Interview with James, 2021). Bainbridge Prepares originates from FEMA's Whole Community Approach. After a significant earthquake, island residents would be cut off from the mainland, and support from professional emergency responders would be limited. The organization aims to make Bainbridge Island City "the most prepared town in Washington state" (Bainbridge Prepares, 2022a). The organization seeks to empower residents to take care of one

[27] Image taken from: Bainbridge Prepares. (2022t). Teams. https://bainbridgeprepares.org/teams/

another so that “professional first responders can focus on…[the] community’s core infrastructure” [during emergency events] (Bainbridge Prepares, 2021).

Figure 40 illustrates how Bainbridge Prepares is embedded in the City’s emergency management infrastructure/programming. Bainbridge Prepares provides a backbone to City and fire support services. This crossover support by the organization includes providing Firewise training and supporting Kitsap County by taking on the CERT organization.

Bainbridge Prepares has nineteen volunteer teams to help embrace emergency preparedness and response efforts throughout the City; see the list below for volunteer teams (Interview with James, 2021). Each team has about ten volunteers, with the Medical Reserve Corps, Wildlife First Responders, and CERT having over a hundred volunteers.

The teams and their tasks are listed below:

- **Access & Functional Needs:** This team supports vulnerable populations such as “elders, low-income residents, people with disabilities, homeless, and more” (Bainbridge Prepares, 2022b). To provide care, volunteers partner with social work agencies and related organizations.
- **Business Continuity:** This team works with the City’s downtown business association and the local chamber of commerce to support businesses in creating continuity and emergency plans (Bainbridge Prepares, 2022f).
- **Child Safety & Family Reunification:** This team works with youth organizations and schools to create a family reunification center on the island (Bainbridge Prepares, 2022j).
- **Emergency Auxiliary Radio Service:** This team works to create communication systems accessible to island residents during emergencies (Bainbridge Prepares, 2022h). As of January 2021, this team had 39 volunteers (City of Bainbridge Island, 2021).
- **Community Emergency Response Team:** This team supports island residents' emergency preparedness training and response efforts (Bainbridge Prepares,

2022g). As of January 2021, this team had 83 volunteers (City of Bainbridge Island, 2021).

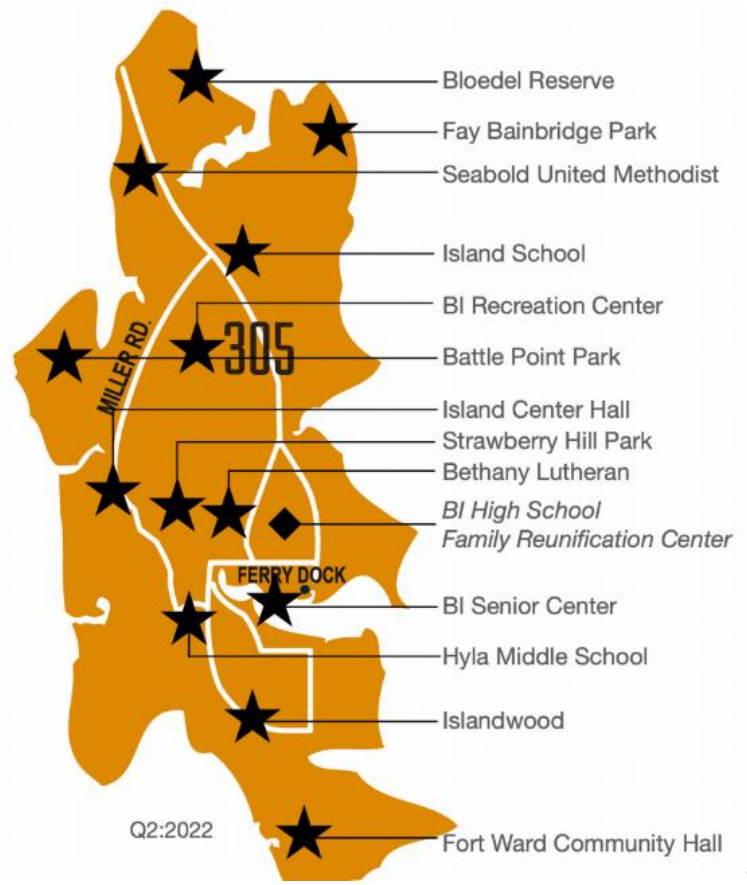
- **Community Outreach & Training:** This team supports community engagement efforts around emergency preparedness and response. They operate "...from a place of love- not fear" to motivate residents to act (Bainbridge Prepares, 2022k).
- **Disaster Hubs:** Bainbridge Prepares' founder/board chair identified disaster hubs as a hub and spoke model, where map your neighborhood are the spokes that report to "a central hub" (James, 2021). These are spaces where residents can go and seek temporary shelter, information, and services, including medical care, after an emergency event (Bainbridge Prepares, 2022p). Disaster hubs are placed in areas where "everybody on the island will naturally want to walk, usually within two miles of their home" (James, 2021). After the placement of these disaster hubs, a secondary goal is to surround them with "…many strong Map Your Neighborhood installations" (James, 2021). Currently, the island has twelve designated areas marked as disaster hub locations. See the stars on the map below, Figure 41. Thanks to the ham radio operator club, disaster hubs will also allow residents to communicate needs to the City's emergency operations center through HAM radio operators.
- **Domestic Animal Care:** This team partners with animal care specialists and veterinarians to create a "24/7 strategic care plan for...domestic animals" (Bainbridge Prepares, 2022c).
- **Emergency Medical Responders:** This team is comprised of volunteers who receive Wilderness First Responder training. These volunteers can provide medical aid after an emergency event (Bainbridge Prepares, 2022i).
- **Executive:** This team oversees operations and the volunteer management of Bainbridge Prepares.
- **Flotilla:** This team supports emergency transportation efforts by providing support via volunteer-owned ships and boats (Bainbridge Prepares, 2022l). As of January 2021, this team had 33 volunteers (City of Bainbridge Island, 2021).
- **Food, Water & Sanitation:** This team helps to educate and inform residents on best practices in storing food and water for emergencies. The team also supports gardens for food resilience (Bainbridge Prepares, 2022m).
- **Interpretation:** This team provides interpretation support services (Bainbridge Prepares, 2022n)**.** The Interpretation team supports language access during drills. This team provided support during the COVID-19 vaccine clinics.
- **Map Your Neighborhood:** This team supports residents in the 'Map Your Neighborhood' training. Prior to the formation of Bainbridge Prepares, the City of Bainbridge created a short-term contract to conduct the 'Map Your Neighborhood Program' (Interview with James, 2021). Once this contract expired, Bainbridge Prepares' Founder/Board Chair, Scott James, incorporated the Map Your Neighborhood program into Bainbridge Prepares. In Bainbridge, mapped

neighborhoods are areas with twenty or so households. The ‘Map Your Neighborhood’ training has neighborhood captains identify all the adults in their designated twenty households. This training informs residents on household preparedness and emergency neighborhood organizing. Personal information is collected at this training, identifying neighbors' needs and assets. This information stays with the organized residents. Additionally, each adult receives a “flipchart” containing what to do during an emergency event after the ‘Map Your Neighborhood’ training (Interview with James, 2021). Under Bainbridge Prepares, neighborhood captains report directly to Bainbridge’s emergency management coordinator. The emergency management coordinator creates a neighborhood map for each organized neighborhood. See Figure 42 for a map of organized neighborhoods in Bainbridge Island City, as denoted by a blue outline. Training for the map your neighborhood program can be found online or through the Bainbridge public library (Interview with James, 2021; Bainbridge Prepares, 2022o). Since the creation of Bainbridge Prepares, about 30% of the City’s neighborhoods have become organized under the ‘Map Your Neighborhood’ program.

- **Medical Reserve Corps:** This team comprises of retired or active medical professionals who can provide medical aid to residents during a disaster or emergency event (Bainbridge Prepares, 2022i). As of January 2021, this team had 233 volunteer doctors and nurses (City of Bainbridge Island, 2021).
- **Psychological First Aid:** This team comprises of certified volunteers in Psychological First Aid training. These volunteers can provide mental health and well-being support (Bainbridge Prepares, 2022q).
- **Ready Congregations:** This team supports faith-based organizations' emergency preparedness, response, and recovery planning (Bainbridge Prepares, 2022r).
- **Resource Acquisition & Deployment:** This team works with the City’s emergency operations center to help match needs and resources throughout Bainbridge Island after an emergency event (Bainbridge Prepares, 2022s).
- **Wellness:** The wellness team supports volunteers to prevent and reduce volunteer burnout. The team provides wellness information and:

  > chiropractic care, acupuncture, naturopathic care, massage, stress management, aromatherapy, homeopathy, and a particular focus on providing support for infants and pregnant/breastfeeding mothers, including lactation consultation, labor, and delivery, and nursing (Bainbridge Prepares, 2022t).

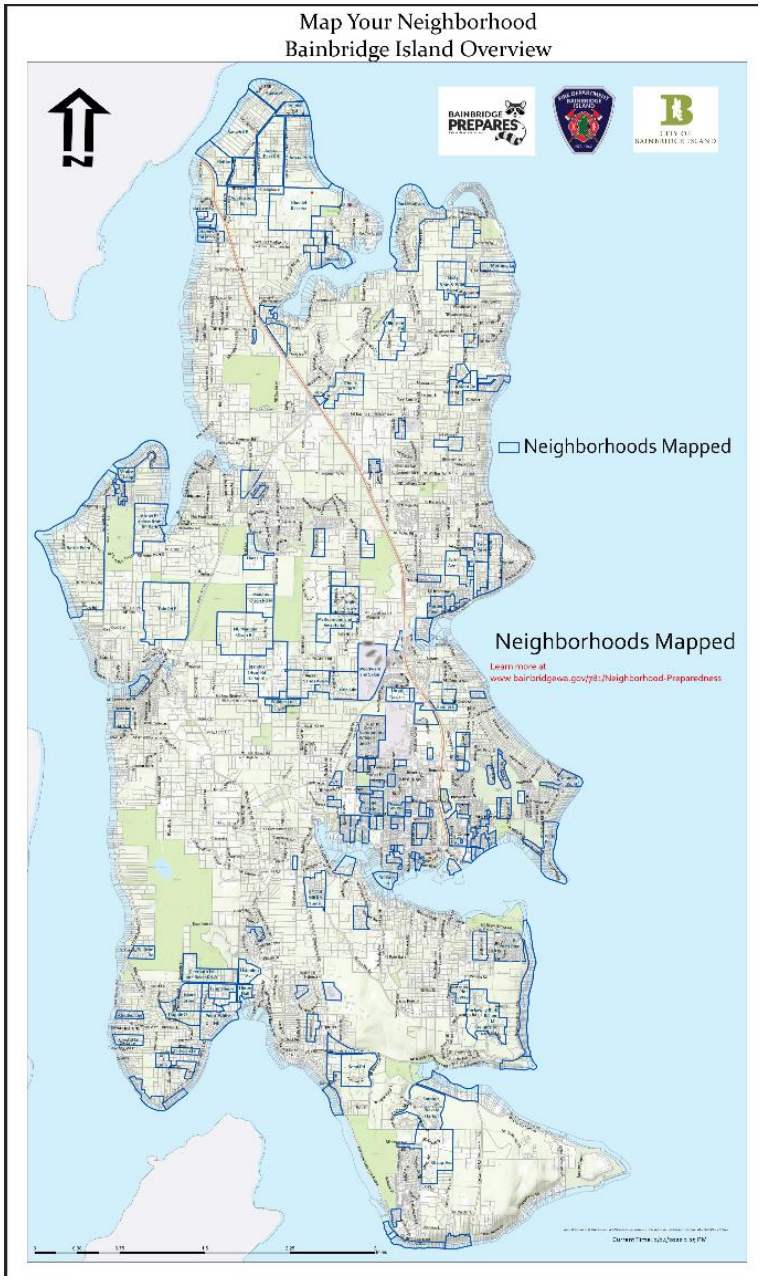
  As of January 2021, this team had 29 volunteers (City of Bainbridge Island, 2021).



[28]

Figure 41: Locations of Disaster Hubs, Bainbridge Island City, WA

[28] Image taken from: Bainbridge Prepares. (2022p). Our Disaster Hub Program. https://bainbridgeprepares.org/teams/hubs/



[29]

Figure 42: Map Your Neighborhood, Bainbridge Island City, WA

[29] Image taken from: The City of Bainbridge. (2022). Neighborhood Preparedness. https://www.bainbridgewa.gov/781/Neighborhood-Preparedness

To qualify as a volunteer, interested residents must complete an application and have a criminal history background check (City of Bainbridge Island, 2022c). Volunteers can serve in multiple teams, but the organization encourages volunteers to stick to "one post-disaster team" (James, 2021).

III. Resources

Bainbridge Prepares provides a diverse set of emergency preparedness resources to island residents (Interview with James, 2021). The organization has a website that provides a variety of resources. These resources include emergency preparedness information, training modules, a calendar of events, and links for more information and support resources.

In partnership with the City and the fire department, Bainbridge Prepares also creates educational materials to support household and neighborhood emergency preparedness. One such resource is the Household Readiness Assessment. See Appendix P. The Household Readiness Assessment provides households with the tools to identify their level of preparedness for a potential emergency. Households are recognized for being prepared with a certificate and a Bainbridge Prepared sticker by the City's emergency management coordinator (City of Bainbridge Island, 2022b).

More important than its technological resources are Bainbridge Prepares' human resources. The Founder/Board Chair practices the "Always Be Recruiting approach" or the ABR approach (James, 2021). To quote Scott James on volunteer recruitment, "...ideally you have half a dozen folks who are non-stop beating that ABR drum, trying to

attract new attention from potential volunteers, partners, and donors" (James, 2021). Additionally, to enhance the organization, the founder recruits Executive Directors from related City organizations and social work agencies as Team Leads which expands outreach and resources for Bainbridge Prepares. These Executive Directors bring along the volunteers from their respective organizations.

The Founder/ Board Chair has been the primary funder of Bainbridge Prepares (Interview with James, 2021). Recently, the organization received grants from the Medical Reserve Corps and from their Rotary. The organization also accepts in-kind support. Additionally, to further support their efforts, the organization has merchandise, clothing, and accessories for sale.

IV. Successes

Bainbridge Prepares has experienced much success for being a grassroots organization. First off, the organization has a sizeable volunteer base of about 630 residents as of 2021. During the COVID-19 Pandemic, this large volunteer base ran hub-like vaccine clinics for island residents. The learnings captured from running vaccine clinics have helped volunteers refine disaster hub planning practices. As of October 2021, Bainbridge Prepares volunteers have donated 32,000 hours of service to the City (Bainbridge Prepares, 2021).

Additionally, volunteers are recognized for their work. During the COVID-19 Pandemic, volunteers who had served between 20 and 100 hours were recognized with a challenge coin. The coin displays the logos of the three supporting organizations of

Bainbridge Prepares on one side and “thank you for your COVID response” on the other side (James, 2021).

[30]

Figure 43: Challenge Coin

Another area of success is the partnership Bainbridge Prepares has with the City. The City supports and recognizes Bainbridge Prepares as part of its emergency management response efforts. Bainbridge Prepares is mentioned in City materials, and often you see emergency preparedness materials that include both the City and the organization's logos. Additionally, the executive director of Bainbridge Prepares and the City’s Emergency Management Coordinator work closely with one another.

Finally, Bainbridge Prepares is expanding its work outside of the City boundaries. The organization is working at the regional scale on emergency preparedness efforts with

[30] Image taken by: Scott James

the Emergency Management Advisory Committee (EMAC) (Interview with James, 2021). EMAC's participant list includes Bainbridge Prepares, the City of Bainbridge Island, the City's Fire Department, Kitsap County Health Department, Kitsap County Emergency Management, Washington State Department of Transportation, and tribal representatives.

V. CHALLENGES

Some of the challenges identified with local emergency preparedness efforts for Bainbridge Prepares include City relations, navigating insurance liability, collecting personal information, and dealing with volunteer burnout.

Seeking City Support

One of the significant challenges Bainbridge Prepares organizers have encountered is getting support from the City (Interview with James, 2021). Early on, when the organization was just beginning to gain ground, the City government changed from a strong mayor form of government to a City manager form of government. This change was challenging for Bainbridge Prepares, where it became difficult for the organizers to get attention from the City manager. However, the organization received immediate support from the City's fire department. It took six years of advocacy work for the City of Bainbridge to finally become a partner of Bainbridge Prepares. While City support has been a journey for Bainbridge Prepares, the organization has greatly shaped emergency preparedness operations within the City. Thanks to Bainbridge Prepares' organizer's advocacy efforts, in 2018, the City hired an Emergency Management

Coordinator and, over time has made it into a full-time position (City of Bainbridge Island, 2021).

Seeking Nonprofit Status

Bainbridge Prepares organizers have navigated liability insurance throughout their emergency preparedness work (Interview with James, 2021). Instead of individuals taking on the liability, the organizers have sought nonprofit status. Bainbridge Prepares was housed under the nonprofit organization Sustainable Bainbridge. Over time, Bainbridge Prepares formed a nonprofit under the fiscal sponsor of the Kitsap Community Foundation. As of this writing, the organization has gained its 501-c (3) status.

Collecting Personal Information

"...everything stays in the neighborhood" (James, 2021).

Collecting personal information, including needs and assets, was a challenge for Bainbridge Prepares' organizers (Interview with James, 2021). Organizers explored creating a database to centralize neighborhood information. Unfortunately, the database caused qualms within the community as there were concerns about sharing this information with third parties such as the City. Additionally, Bainbridge organizers attempted to use a template from recovers.org to "collect all the information from each neighborhood, [including] who has what skills, who has what gear, who has what special needs" (James, 2021). However, this became difficult to identify and specialize on which information residents were comfortable sharing with "the fire chief, police chief, City

manager, and the neighborhood captain" (James, 2021). Based on this experience, organizers decided that personal information should stay within each organized neighborhood.

Volunteer Burnout

Another challenge Bainbridge Prepares' organizers face is "volunteer burnout" (Interview with James, 2021). The founder/board chair always recruits new volunteers to mitigate volunteer burnout. Additionally, the Wellness Team supports this effort. The Wellness team "cares for the caregivers," those with medical training and ham operating skills. This team is comprised of volunteers who possess backgrounds and training in fields such as psychiatry, social work, and coaching.

Summary of Bainbridge Prepares, Bainbridge Island, WA	
Successes	Bainbridge Prepares is part of the city's emergency management
	As 2021 630 residents were engaged with the organization
	30% of the city's neighborhoods have gone through the 'Map Your Neighborhood' Program
	Bainbridge Prepares has 19 volunteer teams
	A regional committee was created to support emergency preparedness at a larger scale
	Bainbridge Prepares has been financially supported by community organizations
Challenges	It took many years before the city supported Bainbridge Prepares
	Bainbridge Prepares organizers had to become a 501c(3) to navigate liability
	Community concerns with collecting personal information from residents
	Volunteer burnout

Table 8: Successes and Challenges in Emergency Preparedness for Bainbridge Prepares

Chapter 7: Recommendations for the City of Austin, Texas

I. Background on City of Austin, Texas

The City of Austin is in Travis County, Texas. As of 2020, Austin had a population of 965,872 residents (United States Census, 2020a). Austin area[31] residents report a median household income of $75,752 in 2020 (United States Census Bureau, 2020m). About 11.2% of adults aged 18 through 64 years old live in poverty in the Austin area [32] (Huber, 2019). The median age of Austin residents is 33.7 years old (United States Census Bureau, 2020g). In Austin, the predominant reported race of residents is white, at 47%, with Hispanic or Latino as the second highest at 32% (United States Census Bureau, 2020d). In terms of educational attainment, Austin residents reported at higher rates, 49.3%, have "some college or [an] associates degree" (United States Census Bureau, 2020i). Additionally, the majority of the City's households, 73.6%, are households without children (Statistical Atlas, 2018c). Finally, the majority, 54.5%, of homes are renter-occupied (United States Census Bureau, 2020p).

[31] Austin area data includes data from Travis, Williamson, Hays, Bastrop and Caldwell counties in Texas.
[32] Austin area includes data from Travis, Williamson, Hays, Bastrop and Caldwell counties in Texas.

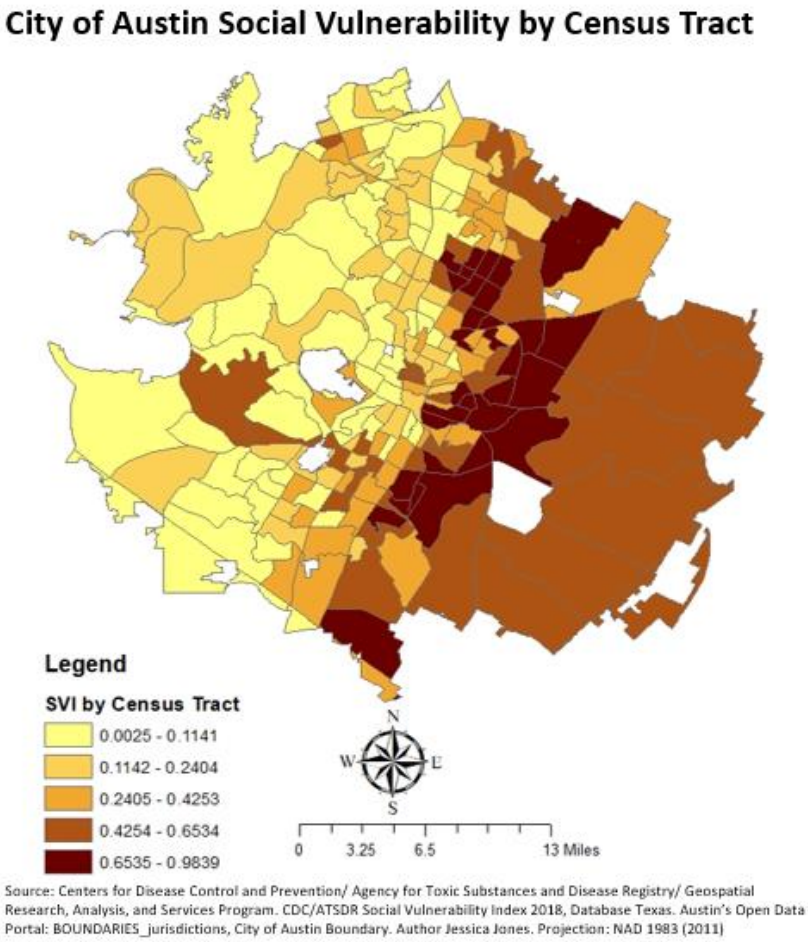


Figure 44: Social Vulnerability Map of City of Austin, TX

Figure 44 illustrates higher levels of vulnerability along the City's eastern side, with a score range of 0.65 to 0.98, and are denoted in burnt orange color. Meanwhile, most of the City's west side has a low social vulnerability, a score of 0 to 0.24, and is denoted in a light-yellow color.

The City of Austin spans a total land area of 319.9 sq. miles (World Population Review, 2022a). The City's topography ranges from flat Blackland prairie to limestone hills (topographic-map.com, N.A.). According to FEMA's National Risk Index, census

tracts within the City's boundaries experience a relatively low risk of natural hazards. Hazards that the City is at risk to include hail, winter weather, lightning, riverine flooding, strong wind, and tornadoes (FEMA, 2021b). The City of Austin considers flooding "the most serious hazard" for residents (austintexas.gov, 2022).

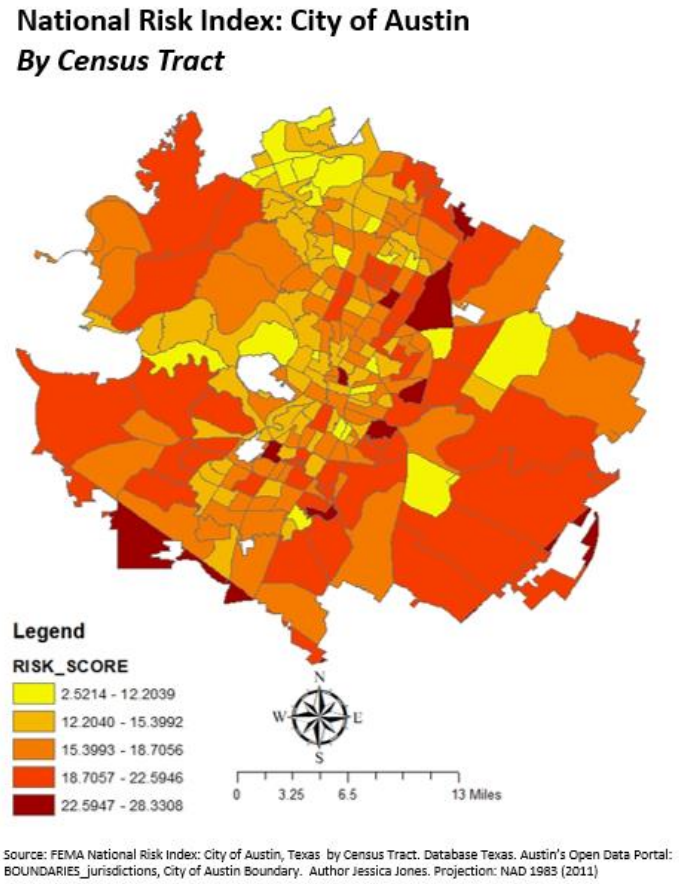


Figure 45: National Risk Index Map of City of Austin, TX

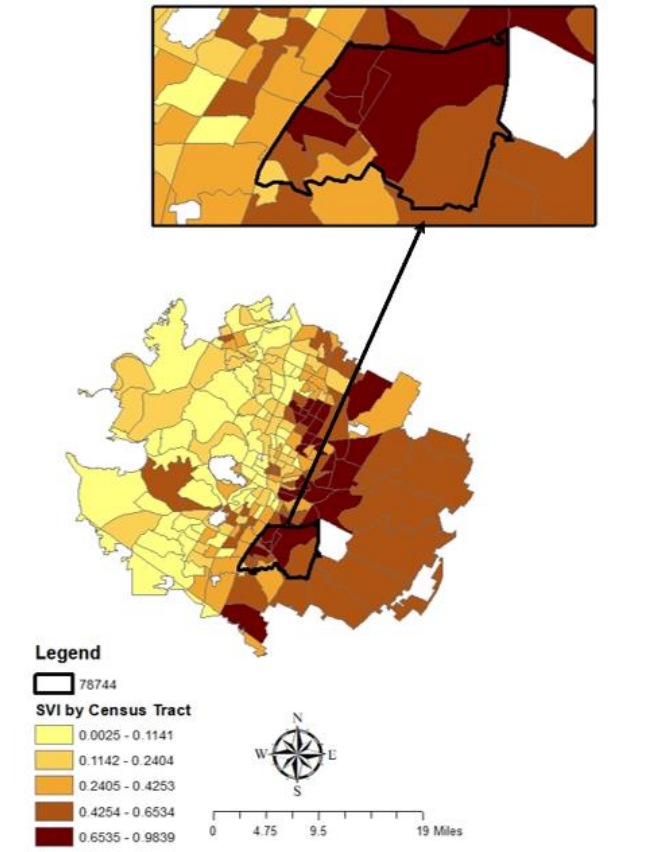
Unlike the SVI map, when using the FEMA National Risk Index tool, see Figure 45, the City of Austin's risk of natural hazards is more evenly spread-out. I denote census tracts of low to medium risk in yellow and orange, with a score range of 2.52 to18.70.

Meanwhile, census tracts with a moderate level of risk, score range of 22.59-28.33, are denoted in red.

II. Local Emergency Preparedness Efforts

Local emergency preparedness training and programming have varied throughout the history of emergency management in Austin, TX. For this research, we will focus on the partnership with the Department of Homeland Security and Emergency Management (HSEM) and Go Austin Vamos Austin (GAVA), a local nonprofit organization. GAVA focuses on driving health equity initiatives for the 78744, 78745, 78752, 78753, and the 78758 Austin zip codes. GAVA works with residents and empowers them to support the development of healthier and more sustainable communities.

In 2020, GAVA partnered with City agencies, other nonprofits, and researchers from the University of Texas at Austin to produce programming and resources for their constituents around emergency preparedness and resilience. These resources included the creation of a preparedness guide for the Dove Springs neighborhood. The Dove Springs Neighborhood is in the 78744-zip code. This zip code area has a median household income of ~$41,721, roughly twenty thousand less than the City of Austin (United States Zip Codes.org, 2022). Meanwhile, only 45% of Dove Springs residents own their homes, compared to 48% of households renting (United States Zip Codes.org, 2022). Austin's 78744 zip code area has faced many challenges. These challenges include high crime rates to damaging and traumatic flooding events (KUT 90.5, N.A.).



Source: Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2018, Database Texas. Austin's Open Data Portal: BOUNDARIES_jurisdictions, City of Austin Boundary. . Austin's Open Data Portal: Boundaries: Zip Code Tabulation Areas, 2021. Author Jessica Jones. Projection: NAD 1983 (2011)

Figure 46: Social Vulnerability in the 78744 Zip Code

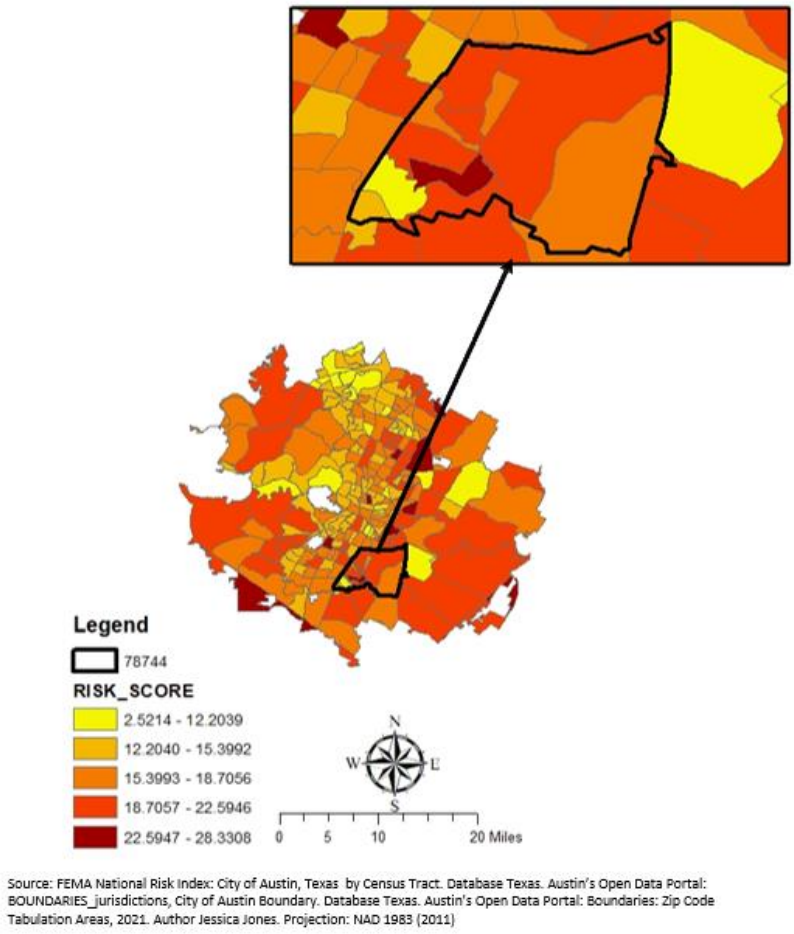


Figure 47: National Risk Index in the 78744 Zip Code

As the maps above demonstrate, the 78744-zip code has areas that experience high levels of social vulnerability and areas ranked as having a moderate risk of natural hazards.

III. Dove Spring Preparedness Guide

The Dove Springs Preparedness Guide was created to be a user-friendly resource covering emergency preparedness basics. These basics include essential phone numbers, mobile applications to download, and specific information on preparing, responding, and recovering from floods, fires, power outages, and heatwaves. The guide was distributed

to residents starting in August of 2021. Since then, I have worked with the same community and City partners to develop an additional flier that could be included in the handbook covering winter safety basics, based on experiences from Winter Storm Uri. Austin community members and City staff continue to collaborate to expand resources and create programming for neighborhood emergency preparedness efforts

IV. POLICY RECOMMENDATIONS

This section seeks to advance Austin's neighborhood emergency preparedness efforts through a list of policy recommendations that are based on the case studies reviewed.

1. **Focus on Household Emergency Preparedness.** All the case studies represented in this research provide information and training on how to prepare your household for an emergency. Hub organizers in Seattle prioritize household emergency preparedness as the foundation to successfully organize Hubs, as we will only be able to help one another after we have availed ourselves.
2. **Adopt a Neighborhood Peer Training Model.** In Los Angeles and Seattle, City staff struggle to engage and inform residents on neighborhood emergency preparedness efforts. No City has a staff large enough to adequately engage and train all its residents on emergency preparedness. Therefore, the most sustainable programs identified in this research are those where neighbors cultivate and empower one another to prepare and organize for emergencies.
3. **Partner with Community-Based Organizations.** Seattle and the City of Bainbridge Island, Washington, work with community-based organizations to promote emergency preparedness. Seattle utilizes CBOs to help provide emergency preparedness training. By using trusted CBOs, Austin's emergency management can achieve more targeted outreach to vulnerable/hard-to-reach populations.
4. **Identify Neighborhood Assets.** North Salt Lake City, Utah, and Los Angeles, California, encourage residents to identify neighborhood assets, including chainsaws, ATV ownership, and medical training. By identifying neighborhood assets and capacities, residents can better support one another. Note that issues may arise if the person you relied on is unavailable during the emergency event. With this in mind, when making a resident capacity inventory list, there should be a caveat that tools or skilled individuals may not be available or accessible during emergency events. Therefore backup plans are needed.
5. **Identify Neighborhood Needs.** North Salt Lake City and Bountiful, Utah, Los Angeles, California, and Seattle and the City of Bainbridge Island, Washington

encourage residents to identify individual needs in their neighborhoods, including mobility assistance, critical equipment power requirements, or any other disability limiting a resident's ability to care for themselves during an emergency event. The case studies included in this research illustrate that this information usually stays with the residents. Additionally, this information can aid neighborhood leaders in identifying households to prioritize during emergencies.

6. **Identify a clear line of communication with the City.** When an emergency arises, residents need a clear line of communication with emergency professionals. Volunteer emergency management structures such as those seen in Bountiful, Utah, illustrate a clear communication chain between the feet on the ground or block captains and the City's emergency operations center, emergency professionals, and the City government.
7. **Identify Funding to Support Neighborhood Emergency Preparedness Efforts.** Most of the case studies reviewed in this research identified a lack of funding for neighborhood emergency preparedness, barring their ability to fully support this work. While this research identifies models where community members fund these preparedness efforts themselves (through the purchase of equipment and licenses), there must be a balance in funding neighborhood emergency preparedness efforts. It is recommended that the City of Austin work in partnership with CBOs and neighborhood organizations to identify funding mechanisms that support emergency preparedness efforts.
8. **Provide Specialized Volunteer Opportunities.** The Bainbridge Prepares case study illustrates a model of engaging residents on various emergency preparedness-related topics. Instead of serving as a general volunteer, Bainbridge Prepares offers volunteers nineteen different teams to choose from, including animal care, food, water and sanitation, and volunteer wellness, to name a few. By providing residents with a menu of options to engage in, the City can keep residents engaged in emergency preparedness activities. Additionally, recognizing the need to support volunteer wellness, along with the need for acknowledgment is essential to keep a program sustainable.
9. **Define a Neighborhood Area.** The RYLAN Program in LA, the SNAP program in Seattle, the 'Map Your Neighborhood' program in Bainbridge Island, and the emergency response structure found in Bountiful support residents in identifying their own neighborhood areas. While each municipality takes its own spin in defining how many households should be included in a neighborhood area, the general rule of thumb is the number of households resident leaders can reasonably check and keep track of during an emergency event. The City of Austin emergency management should encourage neighborhood residents to identify their neighborhood areas when developing neighborhood emergency plans and resources.
10. **Create a Map of Resources.** The searchable map feature hosted on the City of Seattle's website allows residents to find organized SNAP and Hub networks in

their neighborhood area. This feature is an excellent tool for identifying organized neighborhoods.

11. **Support Engagement in Socially Vulnerable Neighborhoods.** The case studies highlight barriers to outreach to non-English speaking neighborhoods due to limited resources. Additionally, it is hard to crack the code on engaging those in emergency preparedness that are struggling with obtaining basic necessities. The City of Austin should work with vulnerable communities to identify how best to provide emergency preparedness support in these areas.
12. **Have Materials and Programming available in Multiple Languages.** The majority of case studies in this research provide emergency preparedness materials in languages other than English. Bainbridge Prepares takes this to a whole new level by having a volunteer team that provides interpretation support. It is not enough to just translate materials; programming also needs to be accessible to non and limited English speakers.
13. **Create Low-Tech and User-Friendly Emergency Preparedness Materials.** Instead of focusing efforts on designing mobile applications- which can fail during broadband blackouts or be too complicated for those who lack technical skills, Austin should consider creating simple materials. For example, anyone can fill the role of a Hub volunteer position as long as they can follow the manual in the Hub box. The manual describes the volunteer roles, how to set up the Hub, and other important information in simple, easy-to-follow steps. Additionally, Hub materials are created based on the assumption that there will be limited to no broadband access. Therefore, Hubs also have an educational book in each box containing extraneous information that may be helpful during emergency events.
14. **Create materials that are Accessible to Multi-unit Dwellings.** These case studies demonstrated that often household emergency preparedness information is geared toward single-family homes. Multi-unit residents and renters require more specialized information regarding accessing utilities, storing emergency items, and identifying safe places to evacuate. In tandem with having materials that are geared to multi-unit residents, the City also needs to ensure that these materials are well promoted and easy to access.
15. **Adopt a Placard System.** Both North Salt Lake and Bountiful Utah, Seattle Washington, and LA's CERT Neighborhood Team program all have placard templates for residents to inform one another if they are okay or need assistance during an emergency. A simple sign saying help, or I am okay, supports residents to be able to help one another and can be used to inform emergency professionals which households may require attention.
16. **Support Community Drills.** When we practice together, we learn together. Most of the programs reviewed in this research supported the idea of having community members conduct practice drills with one another. The City of Los Angeles supports practice drills by providing scenarios for neighbors to practice and sending out drill warnings using their everbridge alert system to residents'

> phones. Austin's emergency management should look into providing this kind of support to neighborhoods.

Taken together, these policy recommendations aim to guide a more sustainable, holistic, and collaborative practice of emergency management in Austin, Texas.

V. Conclusion

This research illustrates that neighborhood emergency preparedness efforts look drastically different across the United States. These efforts can be top-down, City-led, or grassroots in nature.

> And the researchers find that what has been repeated over and over again, people come together, they want to help... It is repeatable, completely repeatable, and if you're ready to harness that, you know, your resilience just increases incredibly (Barker, 2021).

These case studies capture stories of resilience. All across the country, residents are stepping up to train and help prepare themselves and their fellow neighbors for future emergencies. In these case studies, we see narratives of neighbors identifying critical assets in their communities and identifying those who need extra help. Together, this information and training empower them and foster strong connections that can make a difference during an emergency event.

By examining levels of social vulnerability and risk to natural hazards, we see that each City examined in this research exhibit patterns of varying vulnerability and risk. Not surprisingly, those involved in emergency preparedness work identified perceptions of natural hazard risk in their geographic areas and often used this as a driver for their work.

In comparison, social vulnerability was often perceived as a challenge when it comes to outreach efforts and not as a driver for emergency preparation efforts.

These narratives also illustrate that there is still much work to be done to realize FEMA's Whole Community Approach. Each case study revealed barriers to neighborhood emergency preparedness efforts. These barriers include overcoming apathy, navigating limited financial resources, experiencing the push and pull relationships between the community and the City, and working with little outreach support.

In Seattle, Bountiful, and Los Angeles, I heard narratives describing apathy as a challenge in neighborhood emergency preparedness work. Apathy arises due to a lapse in emergency events, leading residents to prioritize other things besides preparedness efforts. Municipalities and community groups can mediate this by focusing on community organizing, offering training on a diverse range of topics, and practicing drills with one another.

In every case study, limited financial resources arise as a barrier to neighborhood emergency preparedness. While there are no dedicated funding streams for neighborhood emergency preparedness work, each case study reviewed in this research fills this funding gap differently. Some have sought the Urban Areas Security Initiative grant to support this work, while others have run community fundraisers.

Finally, another major challenge in neighborhood emergency preparedness is establishing a working relationship between the City and the community. Narratives from Los Angeles, Seattle, and Bainbridge Island illustrate everyday tensions between

community programming and City agencies. These case studies share narratives of City staff who struggle to recognize and work with community-grown initiatives. Additionally, these case studies illustrate that positive working relationships can develop between community members and City agencies with determination and time. The Neighborhood Team Program in Los Angeles embraces the city-led RYLAN programming and Neighborhood Watch, consolidating these training to make it easier for residents to engage in emergency preparedness and response programming. Meanwhile, Bainbridge Prepares successfully advocated for a full-time emergency management coordinator, which, once filled, has since helped institutionalize the organization into the City's emergency management response program.

Despite these challenges, there are signals that neighbors helping one another during trying events can succeed. During the COVID-19 Pandemic, Bainbridge Prepares volunteers ran 85 vaccine clinics for Bainbridge Island, supporting the administration of 28,500 vaccines (James, 2021). Meanwhile, in Seattle, Hub volunteers served as "amplifiers for community emergency messaging" during the pandemic and the 2021 heatwave (Barker, 2021). In Los Angeles, a RYLAN team activated during a ten-hour power outage (Interview with Gonzalez, 2021). And in North Salt Lake City, roughly half of all residents participate in community drills (Interview with Peterson, 2021). By acknowledging these challenges and learning from the best practices, these case studies help further localized emergency preparedness efforts. As one engaged resident noted,

> You just got to be prepared to help one another. I mean, we are all in this world together…so the only way we are going to survive in any way is to help one

another. And if we could love one another, that would be even better (Peters, 2022).

Successes in Neighborhood Emergency Preparedness Efforts							
	Bainbridge Island City	Bountiful	Los Angeles CERT NTP	Los Angeles RYLAN	North Salt Lake City	Seattle Hubs	Seattle SNAP
Resources are designed to be easy to follow/ low-tech	X	X	X		X	X	
Resources are provided in multiple languages	X		X	X		X	X
Diversified training (1)	X		X	X		X	X
Training is multi-modal	X		X	X		X	X
Training can be community-led	X	X	X	X		X	X
Partnership with CBOs/ faith-based orgs	X			X	X		X
Identification of neighborhood assets	X	X		X	X		X
Identification of ability challenges	X	X		X	X		X
Neighborhood area mapped	X			X			X
Neighborhood encouraged to create a response plan		X		X			
Community drills encouraged			X	X	X	X	
Community program is recognized by the city	X	City Program	X	City Program	City Program	X	City Program
Clearly delinated volunteer roles	X	X		X	X	X	X
Volunteer recognition	X						
Report mechanism in place from neighborhood level to city when there is an emergency	X	X			X		
Neighborhood groups have been activated during an emergency event	X		X	X	X		
The Program has been revised		X	X	X	X		
The Program has been evaluated	X			X		X	X
Access to diversified funding (2)	X			X		X	X
Engagement at the regional scale	X				X		

33,34

Table 9: Successes from Neighborhood Emergency Preparedness Programs

([33]) By diversified training, I mean emergency training focused on other topics beside household and neighborhood preparedness.

([34]) In this case, access to diversified funding sources include sources outside of municipal financial support.

Challenges in Neighborhood Emergency Preparedness Efforts							
	Bainbridge Island City	Bountiful	Los Angeles CERT NTP	Los Angeles RYLAN	North Salt Lake City	Seattle Hubs	Seattle SNAP
Training/Resources is geared for single-family households					X		X
Training is general							X
Training/Resources are only provided in English					X		X
Limited staffing				X	X		X
City staff turnover			X				
Seeking support from the city	X		X		X	X	
Limited to no resources for translators				X		X	
Limited to no follow-up				X			
Limited to no program evaluation					X		X
Limited funding				X	X	X	
Outreach to vulnerable communities			X	X	X		X
Limited marketing/outreach support				X		X	
Collecting personal information	X		X	X			
Keeping track of volunteers		X			X		
Volunteer burnout	X						
Navigating liability by seeking 501c(3) status	X		X				
Residents not ready for neighborhood organizing							X
Lack of social cohesion			X				
Distrust of government				X			
Community expectations							X
Community apathy		X	X				

Table 10: Challenges from Neighborhood Emergency Preparedness Programs

Chapter 8: Research Limitations

There are some limitations in the research methods worth noting. First, due to the COVID-19 Pandemic, most of the interviews I conducted happened over the phone or through Zoom. Digital interviews can have drawbacks. First, it is difficult to read body language during digital interviews. Second, digital interviews require technical literacy (both by the interviewer and the interviewee). Finally, interviews conducted digitally can also cause a reduction in the conversational nature of the interview.

Another limitation in this research is how I identified interviewees. In this research, it was often the case that municipal staff recommended and connected me to known/active community members. Therefore, the community members I interfaced with were not randomly selected, creating a bias in the interview process. All the community members I interfaced with were highly involved in emergency preparedness efforts, and the majority interviewed worked closely with municipal staff on said efforts.

My understanding of the municipal and community emergency preparedness programs should also be a noted research limitation. These programs are more dynamic and complex than can be captured and described in research. Throughout the COVID-19 Pandemic, my ability to interface with these programs was restricted. Therefore, my understanding of these programs comes directly from websites, online resources, a handful of interviews, and a couple of site visits.

Finally, it should be noted that my geospatial visualizations relied upon 2010 census tract boundaries. I utilized the 2010 census boundary lines because both the CDC and FEMA used them to calculate social vulnerability and risk to natural hazards. With this in

mind, visualizations of vulnerability and risk to natural hazards should be understood as an image in time and ever-evolving rather than something rigid and non-changing.

Appendix

A. Interview Guide for North Salt Lake City and Bountiful City, Utah

Primary Purpose: To understand how the Personal & Neighborhood Emergency Preparedness Handbook works.

***Introduction*:** Thank you for agreeing to participate in this interview. The information you provide will remain confidential. I will seek your explicit permission to use quotes. This interview should run for 30-40 minutes. Feel free at any time to skip questions that you do not feel comfortable answering. Also, at your wish, you can stop the interview at any point. Do I have your permission to record this interview?

Ask if would like to remain anonymous- give choice

First Question: Can you describe your current role with the City of North Salt Lake City/Bountiful City?

How have you worked to address emergency preparedness and response in North Salt Lake City/ Bountiful City?

1. **Creation of the Personal & Neighborhood Emergency Preparedness Handbook**

Can you tell me…

- What led to the creation of the 'Uniting Neighbors/Citizen Corps Handbook' and the 'Family Emergency Preparedness Basics Handbook'?
- How were these handbooks created?
  - How did the City allocate resources for this project?
  - Which stakeholders were involved?
  - How long did it take to create these handbooks?

1. **Neighborhood Engagement**

Can you tell me…

➢ How were these handbooks shared with City residents?

➢ Do you know which neighborhoods have adopted or use the Uniting Neighbors/Citizen Corps Handbook' and the 'Family Emergency Preparedness Basics Handbook'?

- How is household/neighborhood adoption tracked/measured?

1. **Outcomes**

➢ Has the City dedicated any resources beyond these handbooks to aid household and neighborhood preparedness?

- If yes, can you please describe to me what these resources are and where they have been located, i.e., in specific neighborhoods?

➢ Have the Uniting Neighbors/Citizen Corps Handbook' and the 'Family Emergency Preparedness Basics Handbook been evaluated since it was created?

- Has there been any data collected to determine whether this planning effort has been effective?

➢ Have the ‘Uniting Neighbors/Citizen Corps Handbook' and the 'Family Emergency Preparedness Basics Handbook' been updated?

If yes, can you describe the reason for the update and the updating process?

***Final Questions*:**

➢ Is there anything regarding emergency preparedness and response that you would like to share that we have not had a chance to discuss yet?

➢ Do you have any recommendations on who else I should reach out to regarding this topic in North Salt Lake City or Bountiful City, other cities/ statewide?

***Closing Speech*:** Thank you for participating in this interview on neighborhood preparedness and planning. The vital information that you shared will contribute to emergency preparedness scholarship. Please feel free to follow up if you have any questions or concerns.

B. Interview Guide for City of Los Angeles RYLAN Program

Main Purpose: To understand how the Personal & Neighborhood Emergency Preparedness works in the City of Los Angeles.

***Introduction*:** Thank you for agreeing to participate in this interview. The information you provide will remain confidential. I will seek your explicit permission to use quotes. This interview should run for 30-40 minutes. Feel free at any time to skip questions that you do not feel comfortable answering. Also, at your wish, you can stop the interview at any point. Do I have your permission to record this interview?

Ask if would like to remain anonymous- give choice

First Question: Can you describe your current role with the City of Los Angeles?

How have you worked to address emergency preparedness and response in Los Angeles?

1. **Creation of the Neighborhood Emergency Preparedness Plan and the RYLAN Program**

Can you tell me…

- What led to the creation of the Neighborhood Emergency Preparedness Plan and the RYLAN Program?
- How was the handbook/supporting materials created?
  - How did the City allocate resources for this program?
  - Which stakeholders were involved?
  - How long did it take to create this handbook/supporting resources?

1. **Neighborhood Engagement**

Can you tell me…

➢ How were these handbooks/resources shared with City residents?

➢ Do you know which neighborhoods have adopted or used the RYLAN program? If so, how many?

- How is household/neighborhood adoption of emergency preparedness tracked/measured?

1. **Outcomes**

➢ What have been the successes of the RYLAN Program?

- Have there been any challenges with the RYLAN Program?
- Has the City dedicated any resources beyond the RYLAN program to aid household and neighborhood preparedness?

  - If yes, can you please describe to me what these resources are and where they have been located, i.e., in specific neighborhoods?

➢ Have the emergency preparedness resources such as the 'Emergency Preparedness Guide' been evaluated since it was created?

➢ Have the resources been updated? If so, how was this updated information communicated and shared with the community?

***Final Questions*:**

➢ Is there anything regarding emergency preparedness and response that you would like to share that we have not had a chance to discuss yet?

➢ Do you have any recommendations on who else I should reach out to regarding this topic in LA, other cities/or statewide?

***Closing Speech*:** Thank you for participating in this interview on neighborhood preparedness and planning. The vital information that you shared will contribute to emergency preparedness scholarship. Please feel free to follow up if you have any questions or concerns.

C. Interview Guide for Los Angeles CERT Team

Main Purpose: To understand how the Personal & Neighborhood Emergency Preparedness works in the City of Los Angeles. Specifically looking at CERT and the Neighborhood Team Program.

***Introduction*:** Thank you for agreeing to participate in this interview. The information you provide will remain confidential. I will seek your explicit permission to use quotes. This interview should run for 30-40 minutes. Feel free at any time to skip questions that you do not feel comfortable answering. Also, at your wish, you can stop the interview at any point. Do I have your permission to record this interview?

Ask if would like to remain anonymous- give choice

First Question: Can you describe your current roles with the City of Los Angeles?

How have you worked to address emergency preparedness and response in Los Angeles?

1. **Creation of the CERT teams in LA and the Neighborhood Team Program.**
   Can you tell me…

   o What led to the creation of the CERT and the Neighborhood Team Program in LA?

   o How does CERT and the Neighborhood Teamwork with the City of Los Angeles?

   How are City resources allocated to support this work?

- I saw that the Neighborhood Team is run by the Community Disaster Preparedness Foundation. Can you share with me how this organization came about and how it works with the City to support emergency preparedness?

  - Which stakeholders were involved in creating the Neighborhood Team?

  - How is the neighborhood team program working? Across the Bureaus do you see any differences?

1. **Neighborhood Engagement**

Can you tell me…

➢ How is the CERT program and neighborhood team program shared with City residents at large? Different languages? Apts vs. single-family homes?

➢ Do you know roughly how many neighborhoods have CERT or Neighborhood Teams?

- How is household/neighborhood adoption of emergency preparedness tracked/measured?

1. **Outcomes**

➢ What have been the successes of the CERT/Neighborhood Team Program?

- Have there been any challenges with the CERT/Neighborhood Team Program?

➢ Have the program materials been evaluated since they were created?

➢ Have the resources been updated? If so, how was this updated information communicated and shared with the community?

***Final Questions*:**

➢ Is there anything regarding emergency preparedness and response that you would like to share that we have not had a chance to discuss yet?

➢ Do you have any recommendations on reading materials focused on household or neighborhood preparedness that have shaped your work/focus?

***Closing Speech*:** Thank you for participating in this interview on neighborhood preparedness and planning. The vital information that you shared will contribute to emergency preparedness scholarship. Please feel free to follow up if you have any questions or concerns.

D. Interview Guide for SNAP Program, City of Seattle

Main Purpose: To understand how the educational materials and outreach to best prepare residents and neighborhoods for emergency preparedness. I have looked at municipalities that have produced Personal & Neighborhood Emergency Preparedness Handbooks or Guides. Today's focus is on the SNAP program, training, community hubs, and other resources.

***Introduction*:** Thank you for agreeing to participate in this interview. The information you provide will remain confidential. I will seek your explicit permission to use quotes. This interview should run for 30-40 minutes. Feel free at any time to skip questions that you do not feel comfortable answering. Also, at your wish, you can stop the interview at any point. Do I have your permission to record this interview?

Ask if would like to remain anonymous- give choice

First Question: Can you describe your current role with the City of Seattle?

How have you worked to address emergency preparedness and response in Seattle?

1. **Creation of the Personal & Neighborhood Emergency Preparedness Handbook/ Other programs**

Can you tell me…

- o What led to the creation of the SNAP/ Community Emergency Hub program?
- o How were these programs created?
  - ▪ How did the City allocate resources for this project?
  - ▪ Which stakeholders were involved?
  - ▪ How long did it take to create these programs?

1. **Neighborhood Engagement**

Can you tell me…

- ➢ How were these programs shared with City residents?

- ➢ Do you know which neighborhoods have adopted or used the programs?
    - ○ How is household/neighborhood adoption tracked/measured?

1. **Outcomes**

- ➢ Has the City dedicated any resources beyond these programs to aid household and neighborhood preparedness?
    - ○ If yes, can you please describe to me what these resources are and where they have been located, i.e., in specific neighborhoods?
- ➢ Have the programs been evaluated since it was created?
    - ○ Has there been any data collected to determine whether this planning effort has been effective?
- ➢ Has the program been updated?

If yes, can you describe the reason for the update and the updating process?

***Final Questions*:**

- ➢ Is there anything regarding emergency preparedness and response that you would like to share that we have not had a chance to discuss yet?
- ➢ Do you have any recommendations on who else I should reach out to regarding this topic in North Salt Lake, and other cities/ statewide?

***Closing Speech*:** Thank you for participating in this interview on neighborhood preparedness and planning. The vital information that you shared will contribute to emergency preparedness scholarship. Please feel free to follow up if you have any questions or concerns.

E. Interview Guide for City of Seattle SNAP Engaged Resident

FOCUS: SNAP PROGRAM

Main Purpose: To understand how the educational materials and outreach to best prepare residents and neighborhoods for emergency preparedness. I have looked at municipalities that have produced Personal & Neighborhood Emergency Preparedness Handbooks or Guides. Today's focus is on the SNAP program in Seattle.

***Introduction*:** Thank you for agreeing to participate in this interview. The information you provide will remain confidential. I will seek your explicit permission to use quotes. This interview should run for 30-40 minutes. Feel free at any time to skip questions that you do not feel comfortable answering. Also, at your wish, you can stop the interview at any point. Do I have your permission to record this interview?

Ask if would like to remain anonymous- give choice

First Question: Can you describe your current role with the City of Seattle's SNAP program?

How have you worked to address emergency preparedness and response in Seattle?

1. **Creation of the SNAP program**

Can you tell me…

- What led to the creation of the SNAP program?
- How was the program created?
  - How did the City allocate resources for this project?
  - Which stakeholders were involved?
  - How long did it take to create the SNAP program?

1. **Neighborhood Engagement**

Can you tell me…

- ➢ How was the SNAP program shared with City residents?
- ➢ Do you know which neighborhoods have adopted or used the programs?
    - ○ How is household/neighborhood adoption tracked/measured?

1. **Outcomes**

- ➢ Has the City dedicated any resources beyond this program to aid household and neighborhood preparedness?
    - ○ If yes, can you please describe to me what these resources are and where they have been located, i.e., in specific neighborhoods?
- ➢ Have the programs been evaluated since it was created?
    - ○ Has there been any data collected to determine whether this planning effort has been effective?
- ➢ Has the program been updated?

If yes, can you describe the reason for the update and the updating process?

***Final Questions*:**

- ➢ Is there anything regarding emergency preparedness and response that you would like to share that we have not had a chance to discuss yet?
- ➢ Do you have any recommendations on who else I should reach out to regarding this topic in North Salt Lake, other cities/ statewide?

***Closing Speech*:** Thank you for participating in this interview on neighborhood preparedness and planning. The vital information that you shared will contribute to emergency preparedness scholarship. Please feel free to follow up if you have any questions or concerns.

F. Interview Guide for City of Seattle Resident

FOCUS: Hub Program

Main Purpose: To understand how the educational materials and outreach to best prepare residents and neighborhoods for emergency preparedness. I have looked at municipalities that have produced Personal & Neighborhood Emergency Preparedness Handbooks or Guides. Today's focus is on the HUB program in Seattle.

***Introduction*:** Thank you for agreeing to participate in this interview. The information you provide will remain confidential. I will seek your explicit permission to use quotes. This interview should run for 30-40 minutes. Feel free at any time to skip questions that you do not feel comfortable answering. Also, at your wish, you can stop the interview at any point. Do I have your permission to record this interview?

Ask if would like to remain anonymous- give choice

First Question: Can you describe your current role with the City of Seattle's HUB program?

How have you worked to address emergency preparedness and response in Seattle?

1. **Creation of the HUB program**

Can you tell me…

- What led to the creation of the HUB program?
- How was the program created?
  - How did the City allocate resources for this project?
  - Which stakeholders were involved?
  - How long did it take to create the SNAP program?

1. **Neighborhood Engagement**

Can you tell me…

➢ How was the HUB program shared with City residents?

- ➢ Do you know which neighborhoods have adopted or used the programs?
    - ○ How is household/neighborhood adoption tracked/measured?

1. **Outcomes**

- ➢ Has the City dedicated any resources beyond this program to aid household and neighborhood preparedness?
    - ○ If yes, can you please describe to me what these resources are and where they have been located, i.e., in specific neighborhoods?
- ➢ Have the programs been evaluated since it was created?
    - ○ Has there been any data collected to determine whether this planning effort has been effective?
- ➢ Has the program been updated?

If yes, can you describe the reason for the update and the updating process?

***Final Questions*:**

- ➢ Is there anything regarding emergency preparedness and response that you would like to share that we have not had a chance to discuss yet?
- ➢ Do you have any recommendations on who else I should reach out to regarding this topic in Seattle, other cities/ statewide?

***Closing Speech*:** Thank you for participating in this interview on neighborhood preparedness and planning. The vital information that you shared will contribute to emergency preparedness scholarship. Please feel free to follow up if you have any questions or concerns.

G. Interview Guide for Bainbridge Island

Main Purpose: To understand how the educational materials and outreach to best prepare residents and neighborhoods for emergency preparedness. I have looked at municipalities that have produced Personal & Neighborhood Emergency Preparedness Handbooks or Guides. Today's focus is on the programming happening in Bainbridge Island.

***Introduction*:** Thank you for agreeing to participate in this interview. The information you provide will remain confidential at your wish. I will seek your explicit permission to use quotes. This interview should run for 30-40 minutes. Feel free at any time to skip questions that you do not feel comfortable answering. Also, at your wish, you can stop the interview at any point. Do I have your permission to record this interview?

Ask if would like to remain anonymous- give choice

First Question: Can you describe your current role to address emergency preparedness and response at Bainbridge?

1. **Creation of preparedness resources.**

Can you tell me…

- o What led to the creation of the Bainbridge Map Your Neighborhood program?
- o How were these programs created?
  - ▪ Did the City allocate resources for this project? What was the role of the City in supporting this work?
  - ▪ Which stakeholders were involved?
  - ▪ How long did it take to create this program?
- Did this program need to be adjusted to fit Bainbridge? If so, how?

1. **Neighborhood Engagement**

Can you tell me…

➢ How was map my neighborhood shared with residents?

- How is neighborhood defined? (20 families on a street)

○ How is the adoption of household/neighborhood preparedness measures tracked/measured?

- How has map my neighborhood been practiced?

Challenges

What are some challenges to organizing neighborhoods for emergency preparedness? Barriers?

1. **Outcomes**

➢ Has the City dedicated any resources to support this work?

○ If yes, can you please describe to me what these resources are and where they have been located, i.e., in specific neighborhoods?

➢ Have the programs been evaluated since it was created?

○ Has there been any data collected to determine whether this planning effort has been effective?

➢ Has the program been updated?

If yes, can you describe the reason for the update and the updating process?

***Final Questions*:**

➢ Is there anything regarding emergency preparedness and response that you would like to share that we have not had a chance to discuss yet?

- Any literature recommendations?

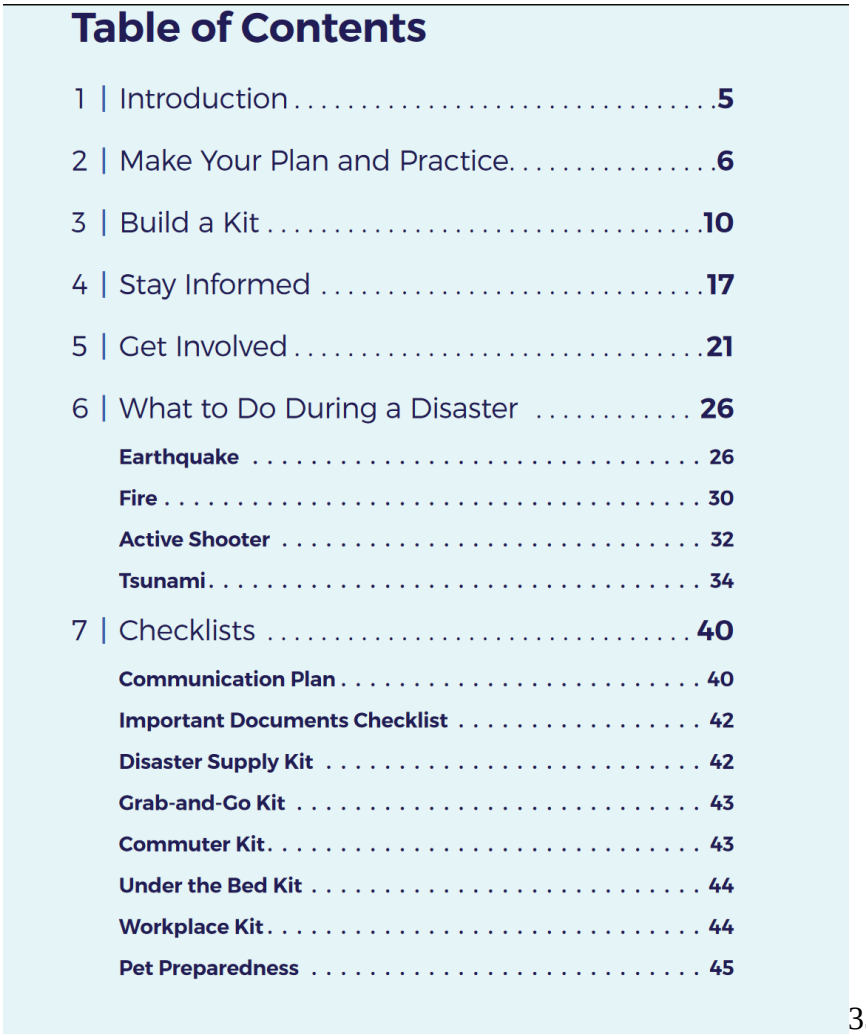
➢ Do you have any recommendations on who else I should reach out to regarding this topic other cities/ statewide?

***Closing Speech*:** Thank you for participating in this interview on neighborhood preparedness and planning. The vital information that you shared will contribute to emergency preparedness scholarship. Please feel free to follow up if you have any questions or concerns.

H. Comparison Table of Neighborhood Emergency Preparedness Guides

Guide/ Handbook	Are You Prepared? City of North Salt Lake Handbook	City of Knoxville Program Guide Neighborhood Emergency Preparedness Plan	City of Los Angeles Emergency Preparedness Guide	North Salt Lake Emergency Preparedness Handbook Uniting Neighbors/Citizen Corps	SNAP: Preparing with Neighbors Participant Guide
Family Preparedness	X	X	X	X	
Infant/Elderly Information	X			X	
Build a Kit	X	X	X	X	X
Water Storage	X		X	X	
Food Storage	X		X	X	
Utility Shut Off	X			X	X
First Aid Basics	X			X	
Emergency Phone Numbers		X		X	
Earthquake Tips	X		X	X	
Fire Tips			X	X	
Power Outage				X	
High Winds				X	
Active Shooter			X		
Thunder & Lightning				X	
Floods	X			X	
Tsuanmi			X		
Chemical Emergency				X	
Nuclear Attack				X	
Burglary					
Create a Neighborhood Plan		X	X	X	X
Pet Preparedness	X		X		

I. Table of Contents



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[35]

Figure 48: City of Los Angeles Preparedness Guide Table of Contents

[35] Image taken from: City of Los Angeles. (N.A.a). City of Los Angeles Emergency Preparedness Guide. Emergency Management Department. P. 21. https://www.google.com/url?q=https://www.readyla.org/sites/g/files/wph1731/files/2021-04/%2520rylan-emergency-preparedness-guide-english-digital.pdf&sa=D&source=docs&ust=1650755823221379&usg=AOvVaw2qAX16UP2ONF9P0fSmDNvc

J. Community Newsletter Example

OSB Floor Watch is a monthly recap of events & happenings that have taken place in the South Bureau area of operations including ***Battalions 6, 13, and 18***. Where possible, we have added photo/web/video links for additional content. All entries come from our ***BUREAU JOURNAL***. ***Unless specifically mentioned, events do not take place at LAFD fire stations. They are listed here to simply show the DISTRICT where the event took place. For past editions of Floor Watch, go to www.facebook.com/groups/ladisasterplan/***

NOVEMBER 2021-SUPER SIZE ME!!!!

COVER PHOTO OF THE MONTH: THE HOLLYWOOD CHRISTMAS PARADE 2021

New CERT Commander Dustin Gates is seen here with the Field Operations Team working 2021's Hollywood Christmas Parade. The parade, in actuality, is the first and last major event we have worked this calendar year. Read more about the parade on Page 22. Seen here with the captain are (kneeling & left to right) Kevin Sprout, Martin Rumpf, and Reeyan Raynes. Standing from left to right are Patrick Botz-Forbes, Manuel Hernandez, Erik Clarke, Mona Gerecht, Ben Goldfarb, Mary Davidson, Andrew Grundig, and Yours Truly. Not pictured: Michael Sproule.

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Figure 49: City of Los Angeles CERT Floor Watch Newsletter front cover example

36 Image taken from: CERT-LA. (2022d). OSB Floor Watch. Personal Communication.

K. CERT Neighborhood Team Program Household Signs

[37]

Figure 50: CERT NTP Help Sign

[38]

Figure 51: CERT NTP Okay Sign

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[37] Image taken from: Neighborhood Team Program- Los Angeles. (2022). Help Sign. https://www.ntp-la.org/documents/

[38] Image taken from: Neighborhood Team Program- Los Angeles. (2022). Okay Sign. https://www.ntp-la.org/documents/

L. Emergency Preparedness Resources in North Salt Lake City, Utah

Additional information and Resources

City of North Salt Lake
Website: www.nslcity.org
Facebook: www.facebook.com/northsaltlake
Twitter: @nslchat

South Davis Metro Fire:
www.sdmetrofire.org

Sign up for Code Red (to receive critical communications, from evacuation notices to missing child alerts.):
http://www.daviscountyutah.gov/sheriff
or at www.nslcity.org

Other Resources

The American Red Cross
http://www.redcross.org

Be Ready Utah
www.bereadyutah.gov

Utah Department of Public Safety
http://dem.utah.gov

Are you Ready? An In-Depth Guide to Citizen Preparedness (FEMA)
http://www.fema.gov/media-library/assets/documents/7877

State of Utah Information Line
"211"
Connects people with important community services and volunteer opportunities

City of North Salt Lake

Mayor
Len Arave

City Council
James Hood
Brian Horrocks
Matt Jensen
Ryan Mumford
Stan Porter

City Manager
Barry Edwards

Police Chief
Craig Black

Emergency Manager
Marty Peterson

Fire Chief
Jeff Bassett

City of North Salt Lake Emergency Management

in conjunction with
NSL Uniting Neighbors
North Salt Lake Police
South Davis Metro Fire District

"Don't Get Left in the Dark"
Disaster Basics for Residents

City of North Salt Lake
10 East Center Street
North Salt Lake, UT 84054
(801) 335-8700
www.nslcity.org

City of North Salt Lake Emergency Management

General Information

Natural disasters such as flood, fire, earthquake, tornado and windstorms affect thousands of people every year.

Know what your risks are and prepare to protect yourself, your family and community.

Recognizing an impending hazard and knowing what to do to protect yourself and your family will help you take effective steps to prepare beforehand and aid recovery after the event.

What to Do Now to Prepare for a Disaster?

1. Have a Family Plan

- Identify a meeting location for all family members to meet.
- Know what your place of employment will do in the event of a disaster.
- If you have children, be familiar with their school emergency plans.
- If you have an older adult in a care facility be familiar with the facility's emergency plans.
- If you have a family member or a friend who has specific needs; prepare in advance to meet those needs.

2. Put Together a Supply Kit

- Prepare an emergency kit to include two weeks of: food, water, prescription medication and other over-the-counter medication such as Ibuprofen or Acetaminophen for fever and pain.
- The kit should also include: list of medications and dosages, list of important phone numbers, cell phone chargers, flash lights, battery operated radios, batteries, and other items that are important for your basic survival needs.
- For more specific information, see: **www.ready.gov.**

3. Plan for Obstacles

Plan to overcome ostacles such as not having access to emergency responders when 911 is dialed.

- Which neighbors can you contact?
- Do you know who your Neighborhood Coordinator (block captain) is? They have access to the resources that may be able to assist you.
- In a disaster the Area Coordinator (LDS ward bishop or designee) will eventually have access to District Coordinator (stake president) who will have access to the City Coordinator. The City will be prioritizing responses and resources based on input from districts, not necessarily individuals.

What to Do During a Disaster

(and in a disaster that exceeds the resources of our Police and Fire Departments.)

- Find safe area with no leaking gas (shut off meter if leaking.)
- Conserve water and shut off leaks.
- **Text** instead of using phones to call.
- Gather resources and coordinate into Community Emergency Response Teams (CERT).
- Listen to radio or use internet and social media resources for information.
- Signal First Responders:(visible colors in windows)
  Red = Stop Here
  Yellow = Need Assistance
  Green = OK for now.

In the City of North Salt Lake, we encourage all to become educated and think about what can be done to more safely survive a disaster. It is not a matter of if, but when.

[39]

Figure 52: Trifold- Don't Get Left in the Dark- Disaster Basics for Residents

[39] Images taken from: City of North Salt Lake. (N.A.). Trifold: "Don't Get Left in the Dark".

UNITING NEIGHBORS/CITIZEN CORPS

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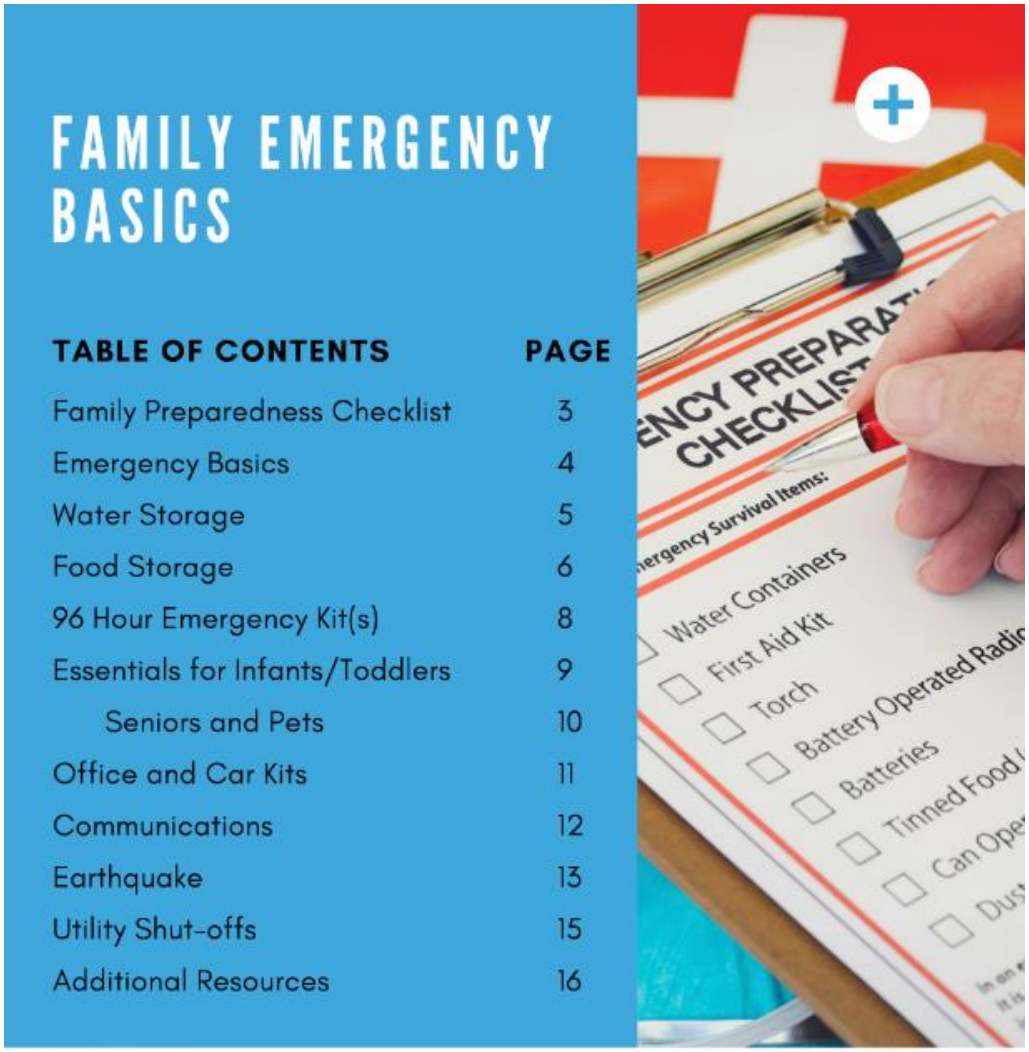
Table of Contents
(Cont.)

40

Figure 53: Table of Contents from 2009 Handbook: Uniting Neighbors/ Citizen Corps

[40] Images taken from: City of North Salt Lake. (2009). Emergency Preparedness Handbook: Uniting Neighbors/ Citizen Corps.



FAMILY EMERGENCY BASICS

TABLE OF CONTENTS **PAGE**

CHECKLIST
Water Containers
First Aid Kit
Torch
Batteries

DISCLAIMER

This booklet includes the most current thoughts of experts and others with experience in emergency preparedness, emergency response, and neighborhood security. It is provided as a community service only, and in no way is presented as a comprehensive or exhaustive source of emergency preparedness information. Individuals are encouraged to be wise, use good judgement, and adhere to government guidelines and recommendations.

Document sources include: Be Ready Utah; Salt Lake County Emergency Management; and the Federal Emergency Management Agency (FEMA).

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Figure 54: Table of Contents from 2020 Handbook: Are You Prepared

[41] City of North Salt Lake. (2020). Are you Prepared? https://www.nslCity.org/630/Emergency-Preparedness-Handbook

[42]

Figure 55: 2016 Preparedness Fair Flier

[42] Image taken from: Davis County Moms. (2016). South Davis County Preparedness Fair. https://daviscountymoms.com/2016/09/south-davis-county-preparedness-fair/

M. Area and Block Captain Resources, Bountiful City, Utah

Bountiful Neighborhood
Emergency Preparedness Committee

BOUNTIFUL
EST. 1847

Area Communication Plan

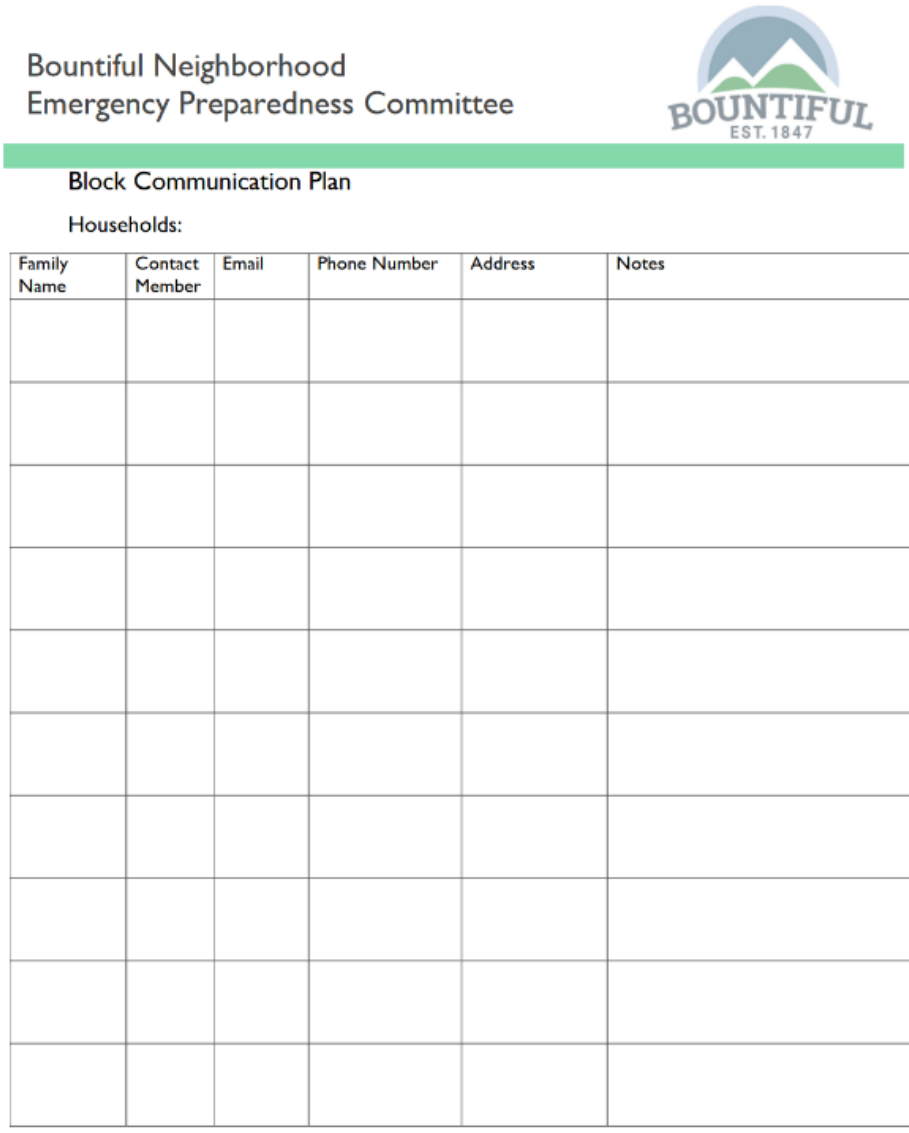
Blocks:

Block Captain	Email	Phone Number	Streets Covered	Notes

[43]

Figure 56: Template Form for Area Leaders to keep track of Block Captains

[43] Image taken from: Bountiful. (2022a). Area Leaders. https://bountifulprep.org/area-leaders/



Bountiful Neighborhood
Emergency Preparedness Committee

BOUNTIFUL
EST. 1847

Block Communication Plan

Households:

Family Name	Contact Member	Email	Phone Number	Address	Notes

[44]

Figure 57: Template Form for Block Captain Communication Plan

[44] Bountiful. (N.A.d). Block Communication Plan. Bountiful Neighborhood Emergency Preparedness Committee. https://www.google.com/url?q=https://www.bountifulprep.org/wp-content/uploads/2018/08/block-comm.pdf&sa=D&source=docs&ust=1650763892494837&usg=AOvVaw37KSOHld57F_eRtxGPS8Fq

Bountiful Neighborhood
Emergency Preparedness Committee

BOUNTIFUL
EST. 1847

Block Captain Follow Up Assessment

This form is to be filled out as a "follow-up" assessment, after an "initial quick assessment" has been completed and a report made to the Area Coordinator (see "Block Captain responsibilities").

Pre-fill name, address and contact information for your block and maintain one prepared form per household for use during an emergency.

Return completed forms to the Area Emergency Preparedness Coordinator or Area Incident Commander if the coordinator is unavailable.

Date: _____ Time: _____ a.m. /p.m.

Household/Business Name:

_____

Address:

_____

Best Contact Phone Number/s:

_____

Person You Contacted for assessment:_____

Names & conditions of persons injured, missing, transported, trapped or deceased:

_____

_____

_____

_____

45

[45] Bountiful. (N.A.c). Block Captain Follow Up Assessment. Bountiful Neighborhood Emergency Preparedness Committee. https://www.bountifulprep.org/wp-content/uploads/2018/08/block-captain-follow-up.pdf

Bountiful Neighborhood Emergency Preparedness

Family Relocating? Yes / No Where? (contact name, address and phone #)

_____

Damage to Structure: (Check One Status)

No Damage

Affected- Still habitable with some damage

Minor Damage – Uninhabitable - repairs needed but can be made livable quickly

Major Damage – Structural Damage – long term repairs needed

Destroyed – Total loss/collapse of structure

Utilities: Gas: On/Off Water: On /Off Electricity: On/Off

Describe Structural Damage & Hazards (i.e. roof, windows, plumbing, chemical, downed trees, fires, blocked roads, gas leaks, water damage, downed power lines):

_____

_____

_____

_____

_____

_____

_____

Block Captain:_____ _____

Phone Number: _____

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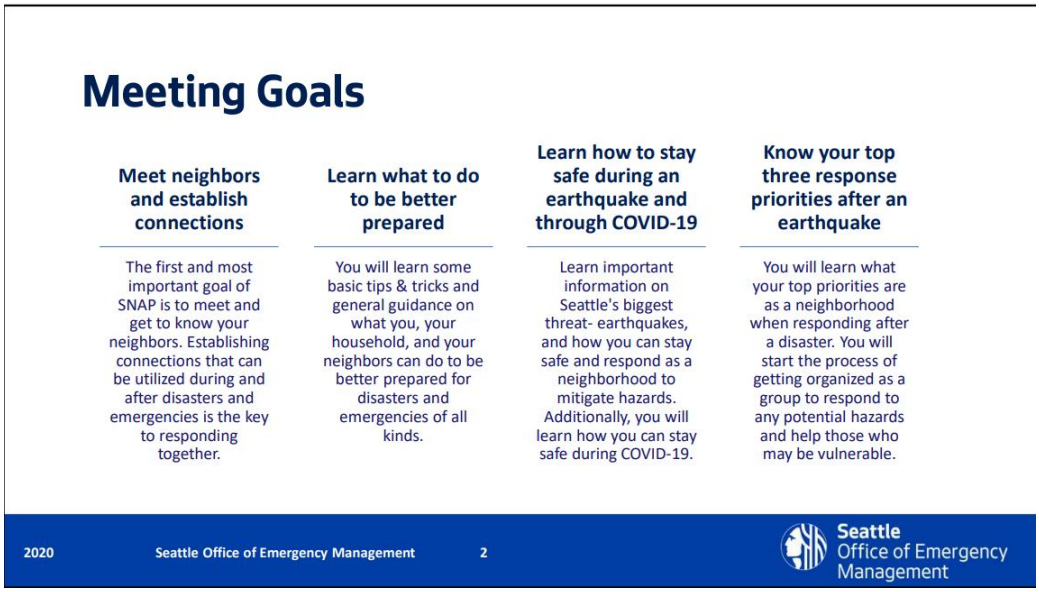
Figure 58: Template Form for Block Captain Follow-Up Assessment

[46] Ibid.

N. Seattle Neighborhoods Actively Prepare Resources, Seattle, Washington

1



47

[47] Seattle Neighborhoods Actively Prepare. (2020). SNAP Presentation. http://www.seattle.gov/emergency-management/prepare/prepare-your-neighborhood/seattle-neighborhoods-actively-prepare#onlinetoolkit

Introduce Yourself

- Who are you?
- Where do you live?
- Why are you here?

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Seattle Office of Emergency Management

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Life Safety Essentials

1. Water
2. Food
3. Staying warm & dry
4. Safe Light Source
5. Personal sanitation products

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Seattle Office of Emergency Management

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[48] Ibid.

Custom Items

A custom item is anything that is unique to you and your situation that you will want to ensure is kept in emergency stock or in a safe place in case of emergency. Examples of these may include:

- Medications and medical health insurance program information
- Copies of personal information (virtual and/or physical)
- Comfort items
- Connections - Phone numbers, names, addresses and other forms of contact for important people in your life including family, friends, neighbors, caseworkers, etc.

A Note on Life Safety Essentials and Custom Items:

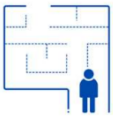
Some disasters will require preparation and storage of certain items such as water and food. Others, such as the COVID-19 pandemic, will not require the storage or hoarding of these supplies as it can be reasonably assumed that access to grocery stores and clean water will be maintained. Be prepared for earthquakes, but do not hoard emergency items or take more than you reasonably need.

5

Make a Plan

Meeting Place

Determine a meeting place for if you and your household need to evacuate your home. Determine a meeting place for your building or neighborhood in case of a larger disaster.



Evacuation Routes

Make sure everyone in your household is familiar with multiple evacuation routes from your home or building.

Planning in Advance

Know emergency plans at your children's school, your place of work, and in your neighborhood.

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[49] Ibid.

Communications Plan

Neighborhood Meeting Place

Choose a place to meet in your neighborhood that is familiar, safe, away from traffic, and easy to access for those who may have functional disabilities and where you can maintain safe social distancing.

Traditional Emergency Contact Lists

Keep written lists of important emergency contacts. Consider an out-of-area contact for your household in case phone services are overwhelmed in your area.

Social Media and Video Calling

In certain emergencies, social media and video calling can be a lifeline between you and those you care about most. Look for free and easy-to-use video chatting services such as FaceTime, Facebook Messenger Video, WeChat, and WhatsApp.

7

Stay Informed

ALERT SEATTLE

Get AlertSeattle messages by *signing up online at* ***alert.seattle.gov*** or text ***ALERTSEATTLE to 62783*** to opt-in to free emergency alert text notifications.

Follow City departments on social media.

@oemseattle
@alertseattle
@cityofseattle

Tune into local television, if available.

Use emergency radio stations to stay up-to-date on information:

AM 710
AM 1000
FM 97.3
FM 90.7

Seattle Emergency Hubs

Find your nearest Community Emergency Hub as a resource for information following a disaster. You can find yours by visiting the Neighborlink Map here:
https://bit.ly/2ZD2f2j

50

[50] Ibid.

COVID-19 Guidance

Wear a face covering whenever in public or leaving your home. Face coverings are **mandatory in public statewide as of June 25, 2020.**

Continue practicing good hygiene habits, such as washing your hands for at least 20 seconds each time you leave and return home. If you are out and do not have access to handwashing, use hand sanitizer.

Stay home if you have any underlying medical conditions that may make you more susceptible to complications from COVID-19.

Gather with no more than 5 people for recreational activities outside of your household per week.

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Helping Your Neighbors During COVID-19

Use our Hello Neighbor card to offer assistance to neighbors. While COVID-19 is still present in our community, it is important for those most vulnerable to stay at home. Offer to go grocery shopping or run other errands for those remaining at home, or simply offer to check-in with a regular phone call. A little bit goes a long way!

Download the card here. Other languages are available at the link above.

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51 Ibid.

When the ground shakes…

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After the Earthquake

Check yourself and those in your household

Check your home, unit, or building and personal property for damage

Place your Help/OK sign in your window or on your door and dress for safety

Go to your neighborhood meeting spot

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[52] Ibid.

Top 3 Neighborhood Response Priorities

Control Utilities and Prevent Fire

After that: Damage Assessment (Homes, streets, utilities)

Check on People (Search and Rescue)

After that: Communications (Listen to radios and connect with your nearest Community Emergency Hub)

Take Care of Injuries (First Aid)

After that: Shelter and Take Care of Each Other

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Organizing for Success in Advance

Identify a SNAP Coordinator(s) and a SNAP Contact(s)

Determine Roles and Responsibilities

- Utility Control Team
- Search and Rescue Team
- First Aid Team/Hygiene Team

Determine a Meeting Place

[53]

[53] Ibid.

Head Start

Who has children, pets, lives alone, or works from home?

Who has special needs?

Who has special skills?

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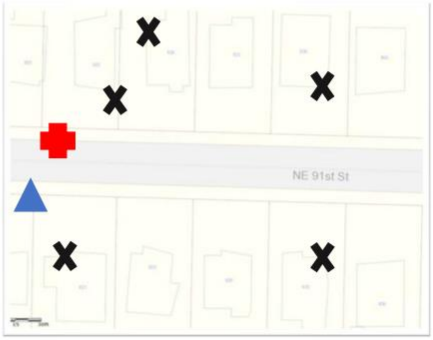
Make a Map

Neighborhood Map

Idea: Create a map of your neighborhood - Mark your meeting place, who lives where, homes with natural gas and the meter locations.



Meeting Place
Gas Meters
First Aid Station

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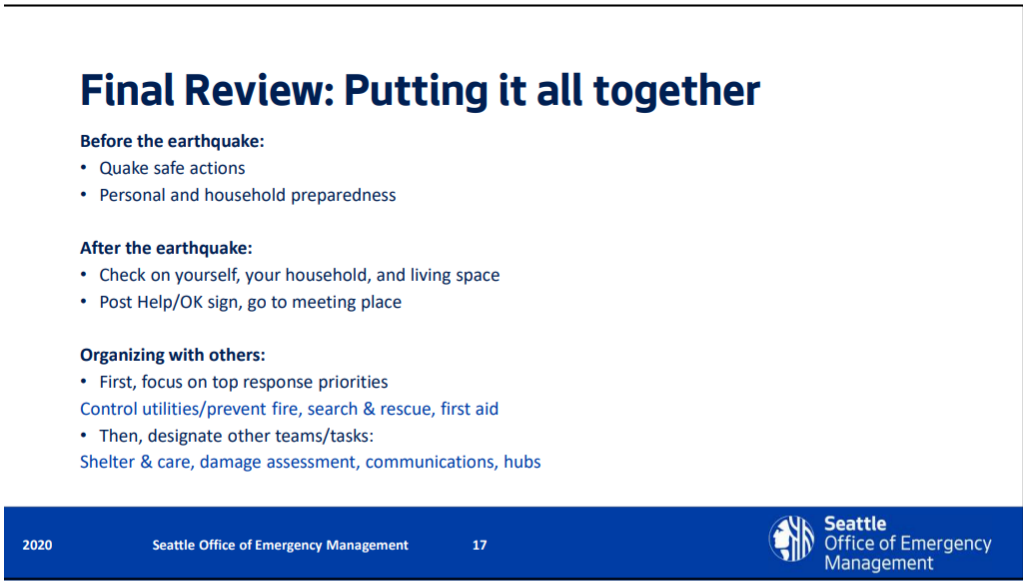
[54] Ibid.


Final Review: Putting it all together
Before the earthquake:
• Quake safe actions
• Personal and household preparedness
After the earthquake:
• Check on yourself, your household, and living space
• Post Help/OK sign, go to meeting place
Organizing with others:
• First, focus on top response priorities
Control utilities/prevent fire, search & rescue, first aid
• Then, designate other teams/tasks:
Shelter & care, damage assessment, communications, hubs
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Office of Emergency
Management

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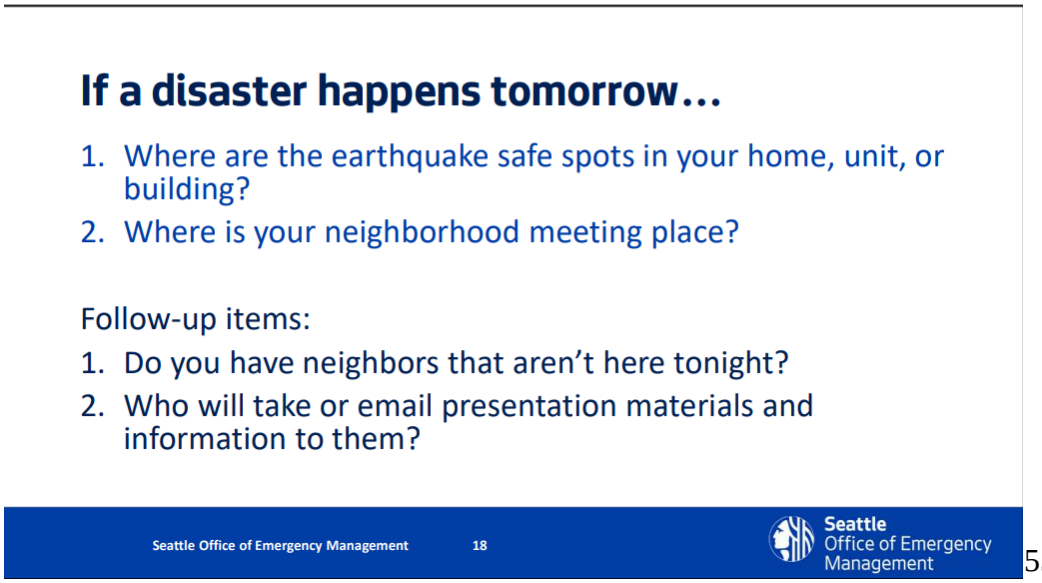
If a disaster happens tomorrow…
1. Where are the earthquake safe spots in your home, unit, or building?
2. Where is your neighborhood meeting place?
Follow-up items:
1. Do you have neighbors that aren't here tonight?
2. Who will take or email presentation materials and information to them?
Seattle Office of Emergency Management
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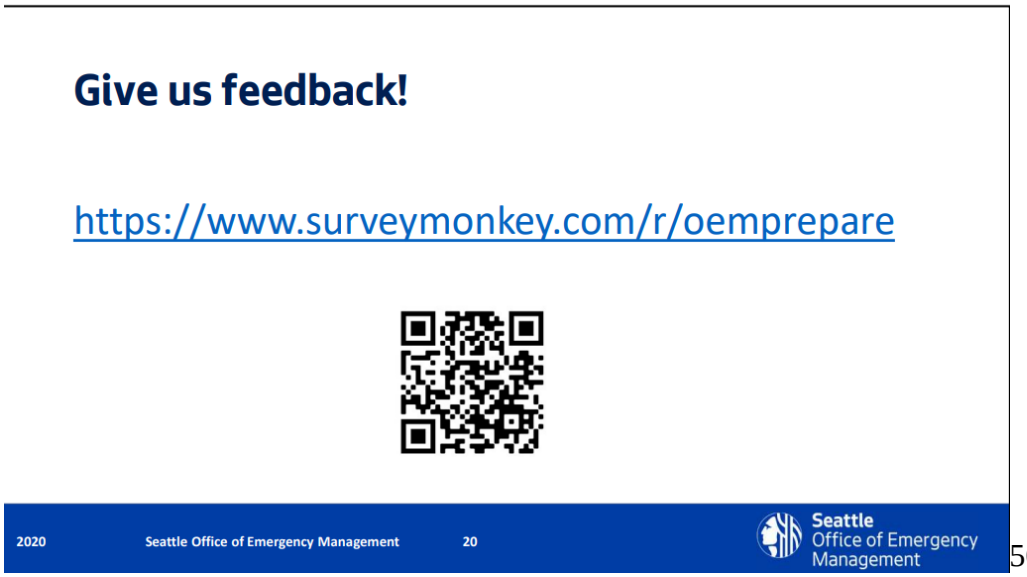
Office of Emergency
Management

55

55 Ibid.

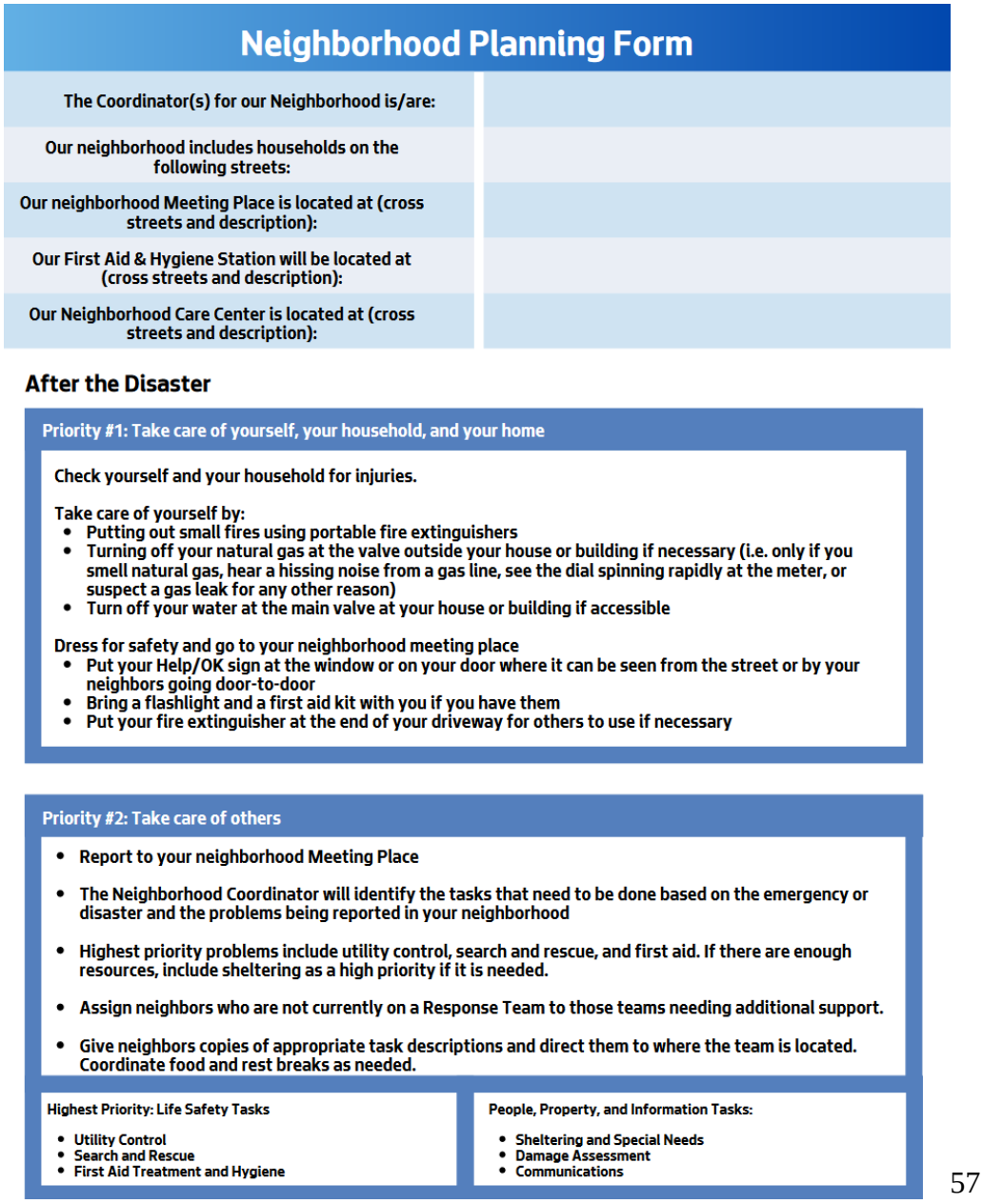
.9



[56]

Figure 59: SNAP Presentation

[56] Ibid.



Neighborhood Planning Form

The Coordinator(s) for our Neighborhood is/are:	
Our neighborhood includes households on the following streets:	
Our neighborhood Meeting Place is located at (cross streets and description):	
Our First Aid & Hygiene Station will be located at (cross streets and description):	
Our Neighborhood Care Center is located at (cross streets and description):	

After the Disaster

Priority #1: Take care of yourself, your household, and your home

Check yourself and your household for injuries.

Take care of yourself by:
- Putting out small fires using portable fire extinguishers
- Turning off your natural gas at the valve outside your house or building if necessary (i.e. only if you smell natural gas, hear a hissing noise from a gas line, see the dial spinning rapidly at the meter, or suspect a gas leak for any other reason)
- Turn off your water at the main valve at your house or building if accessible

Dress for safety and go to your neighborhood meeting place
- Put your Help/OK sign at the window or on your door where it can be seen from the street or by your neighbors going door-to-door
- Bring a flashlight and a first aid kit with you if you have them
- Put your fire extinguisher at the end of your driveway for others to use if necessary

Priority #2: Take care of others

- Report to your neighborhood Meeting Place
- The Neighborhood Coordinator will identify the tasks that need to be done based on the emergency or disaster and the problems being reported in your neighborhood
- Highest priority problems include utility control, search and rescue, and first aid. If there are enough resources, include sheltering as a high priority if it is needed.
- Assign neighbors who are not currently on a Response Team to those teams needing additional support.
- Give neighbors copies of appropriate task descriptions and direct them to where the team is located. Coordinate food and rest breaks as needed.

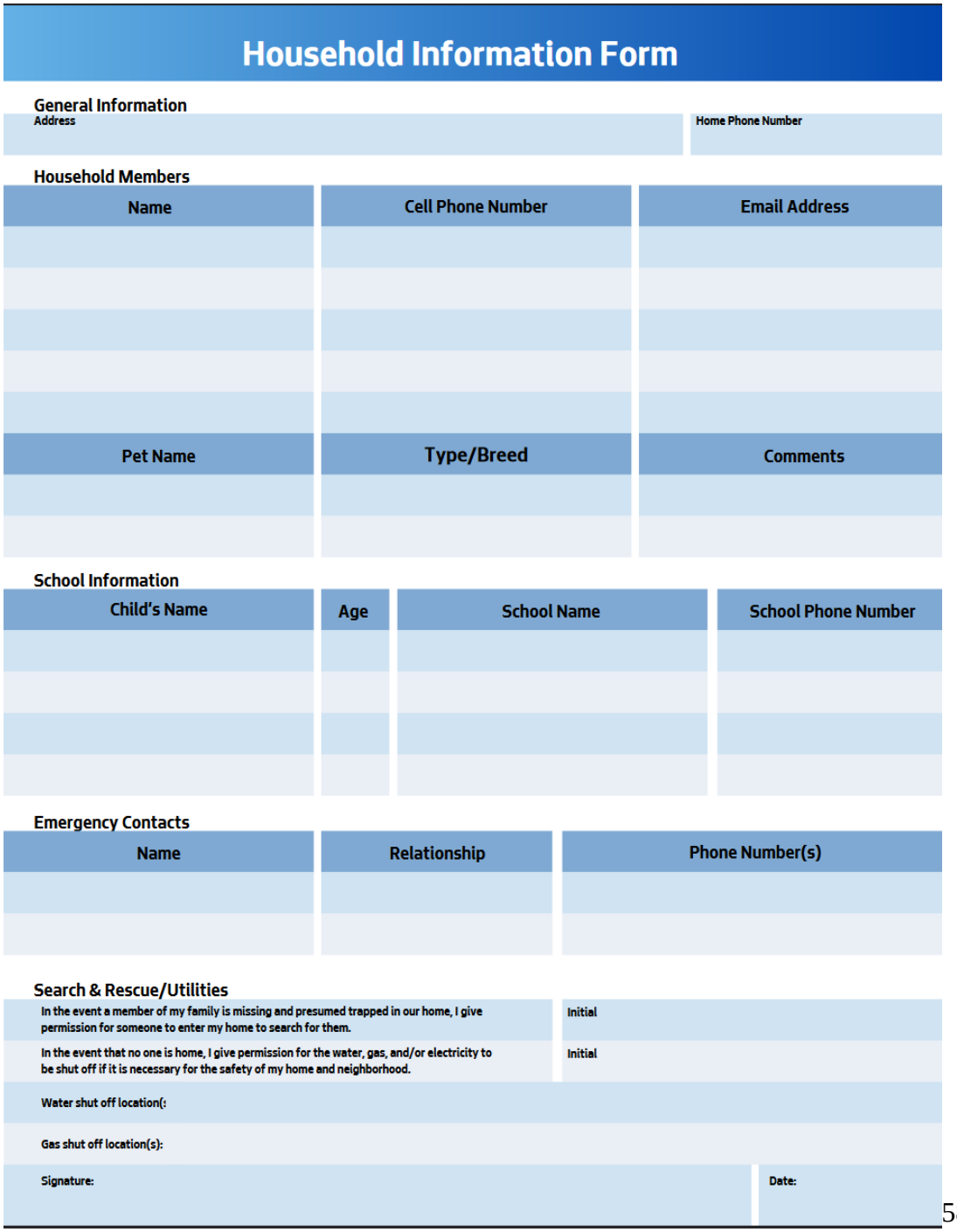
Highest Priority: Life Safety Tasks
- Utility Control
- Search and Rescue
- First Aid Treatment and Hygiene

People, Property, and Information Tasks:
- Sheltering and Special Needs
- Damage Assessment
- Communications

[57]

Figure 60: SNAP Planning Form

[57] Image taken from: Seattle. (N.A.). SNAP: Seattle Neighborhoods Actively Prepare- Preparing with Neighbors Participant's Guide. Office of Emergency Management. https://www.google.com/url?q=http://www.seattle.gov/documents/Departments/Emergency/SNAP%2520Preparing%2520with%2520Neighbors.pdf&sa=D&source=docs&ust=1650806852396471&usg=AOvVaw2uC-aFiRQPI7B7gKKujP1W



Household Information Form

General Information

Address	Home Phone Number

Household Members

Name	Cell Phone Number	Email Address

Pet Name	Type/Breed	Comments

School Information

Child's Name	Age	School Name	School Phone Number

Emergency Contacts

Name	Relationship	Phone Number(s)

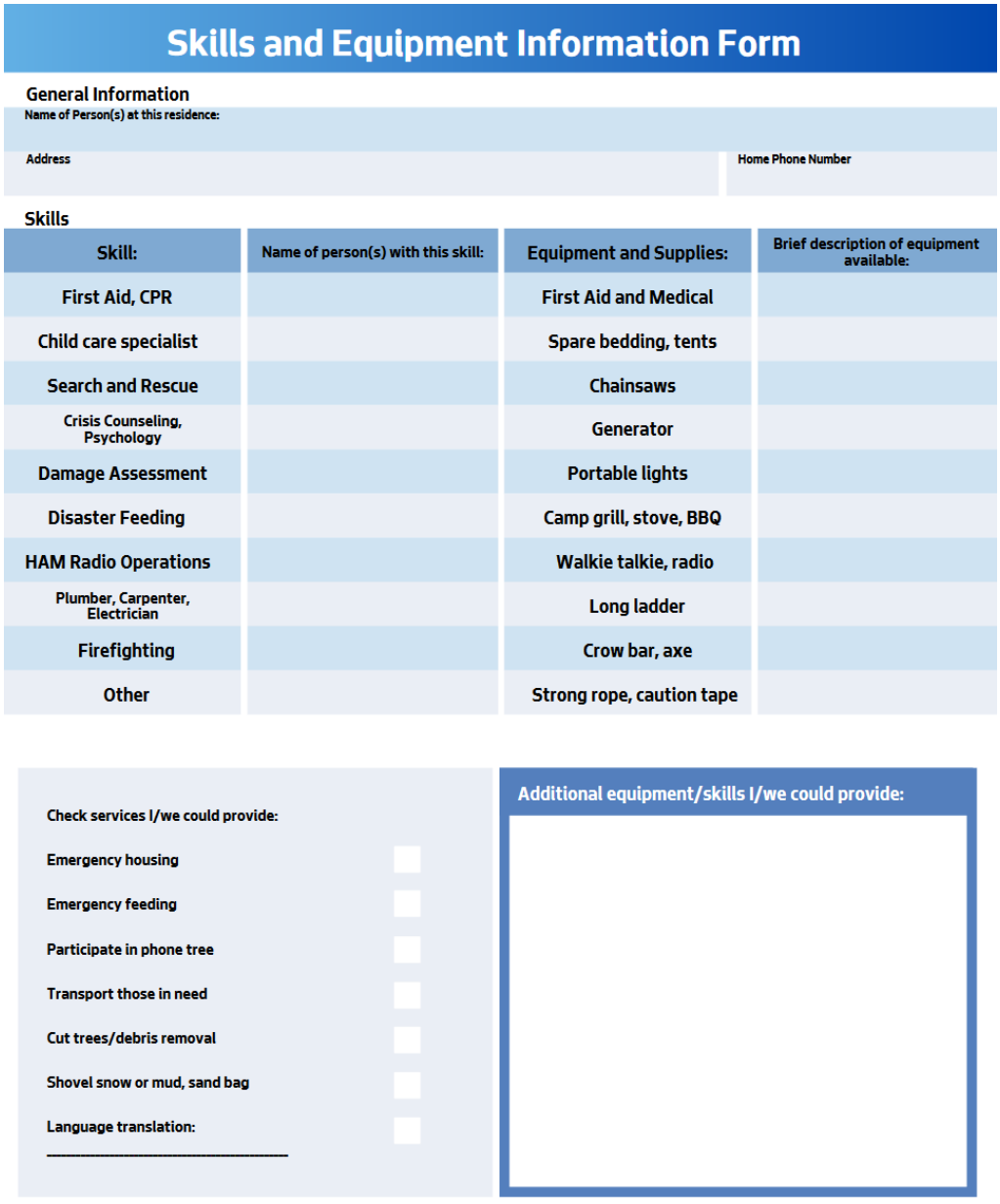
Search & Rescue/Utilities

In the event a member of my family is missing and presumed trapped in our home, I give permission for someone to enter my home to search for them.	Initial
In the event that no one is home, I give permission for the water, gas, and/or electricity to be shut off if it is necessary for the safety of my home and neighborhood.	Initial
Water shut off location(:	
Gas shut off location(s):	
Signature:	Date:

[58]

Figure 61: SNAP Household Information Form

[58] Ibid.



Skills and Equipment Information Form

General Information

Name of Person(s) at this residence:

Address

Home Phone Number

Skills

Skill:	Name of person(s) with this skill:	Equipment and Supplies:	Brief description of equipment available:
First Aid, CPR		First Aid and Medical	
Child care specialist		Spare bedding, tents	
Search and Rescue		Chainsaws	
Crisis Counseling, Psychology		Generator	
Damage Assessment		Portable lights	
Disaster Feeding		Camp grill, stove, BBQ	
HAM Radio Operations		Walkie talkie, radio	
Plumber, Carpenter, Electrician		Long ladder	
Firefighting		Crow bar, axe	
Other		Strong rope, caution tape	

Check services I/we could provide:

- Emergency housing
- Emergency feeding
- Participate in phone tree
- Transport those in need
- Cut trees/debris removal
- Shovel snow or mud, sand bag
- Language translation: _____

Additional equipment/skills I/we could provide:

59

Figure 62: SNAP Skills and Equipment Information Form

[59] Ibid.

During a Disaster

Below is a sample Damage Assessment worksheet that can be completed for a street or building. This will serve as documentation of damage in the neighborhood.

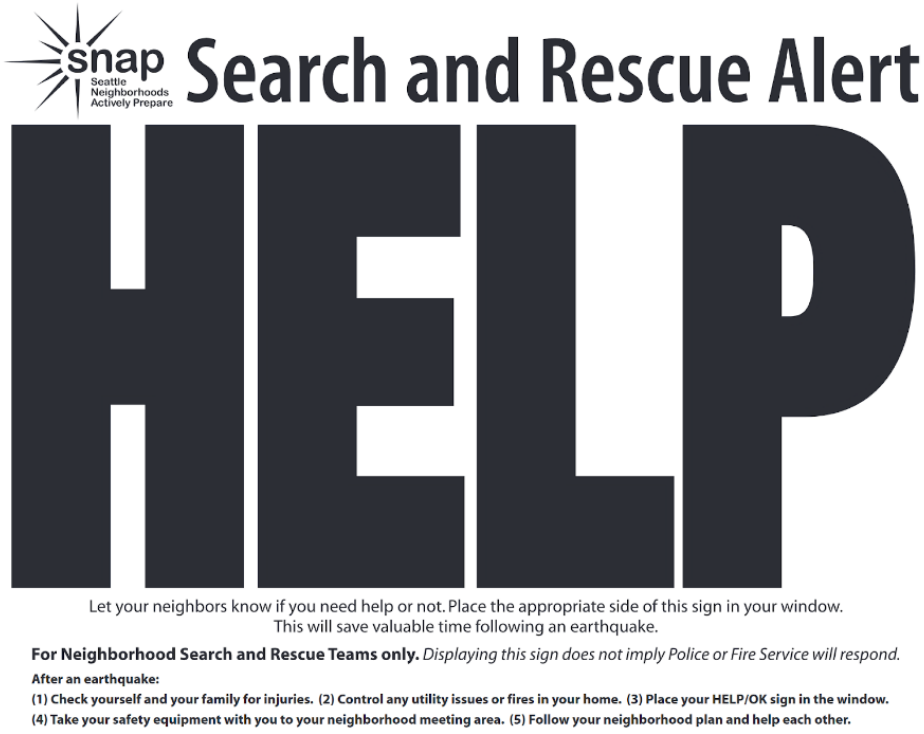
House/Unit Number:	Name of Family (if known)	Type of dwelling	Damage/Problem

Other neighborhood hazards/damage:

60

Figure 63: SNAP Damage Assessment Form

60 Ibid.



[61]

Figure 64: SNAP Help Sign

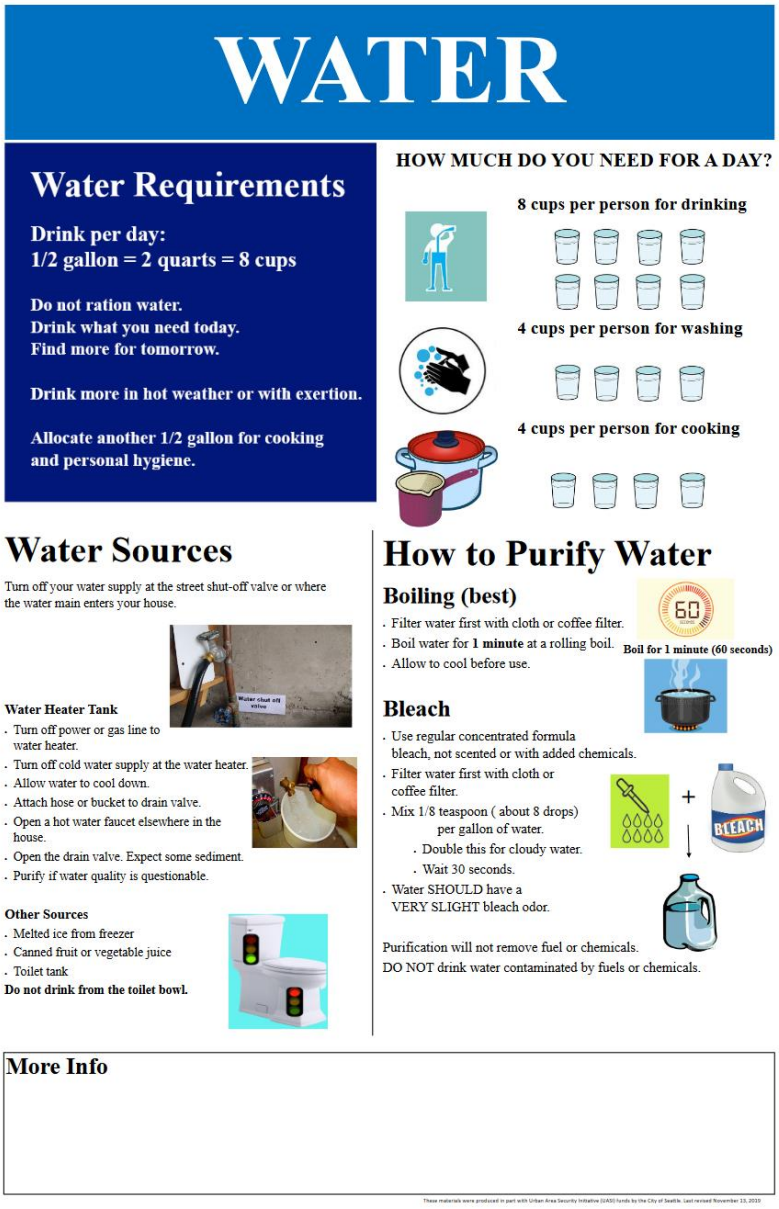
[61] Seattle. (2022d). Help Sign. Seattle Neighborhoods Actively Prepare. http://www.seattle.gov/emergency-management/prepare/prepare-your-neighborhood/seattle-neighborhoods-actively-prepare#onlinetoolkit

62

Figure 65: SNAP Ok Sign

62 Seattle. (2022e). Ok Sign. Seattle Neighborhoods Actively Prepare. http://www.seattle.gov/emergency-management/prepare/prepare-your-neighborhood/seattle-neighborhoods-actively-prepare#onlinetoolkit

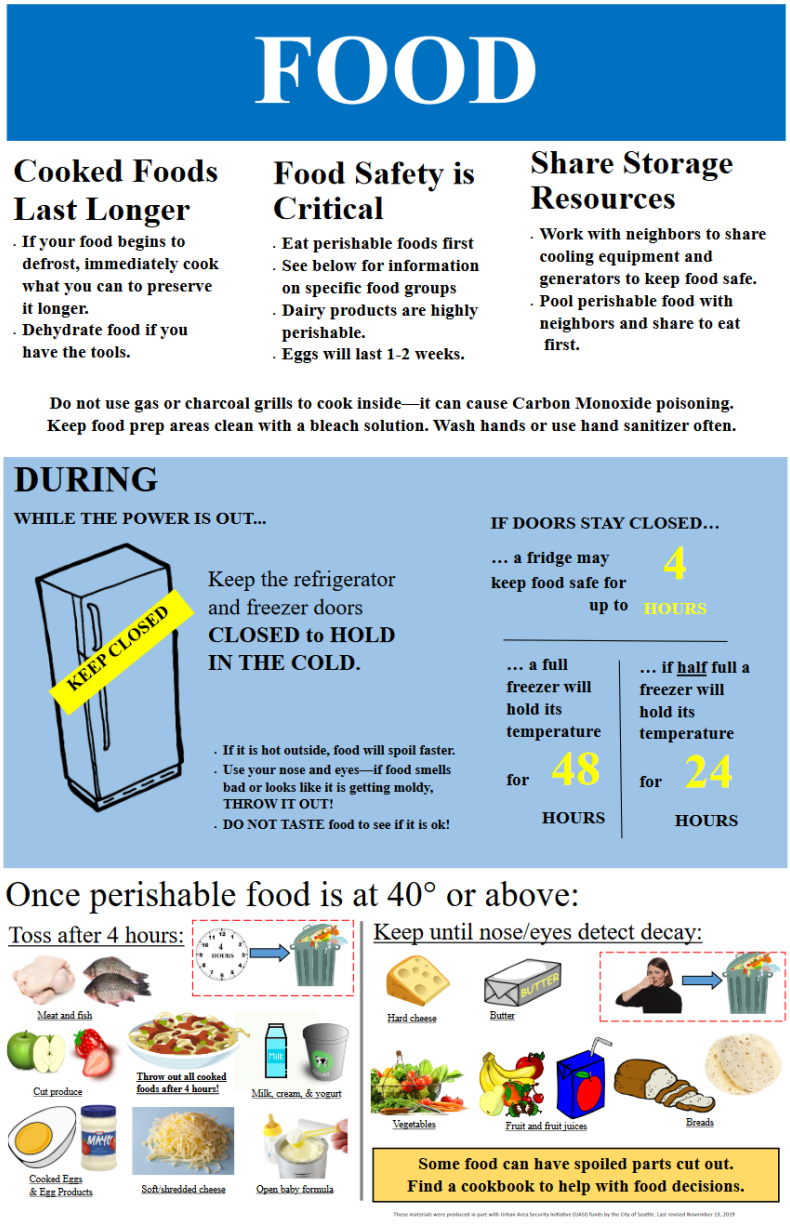
O. Seattle Emergency Hub Network Resources, Seattle, Washington



[63]

Figure 66: Hub Poster: Water

[63] Seattle Emergency Hubs. (2022). Self Help Posters. http://seattleemergencyhubs.org/



64

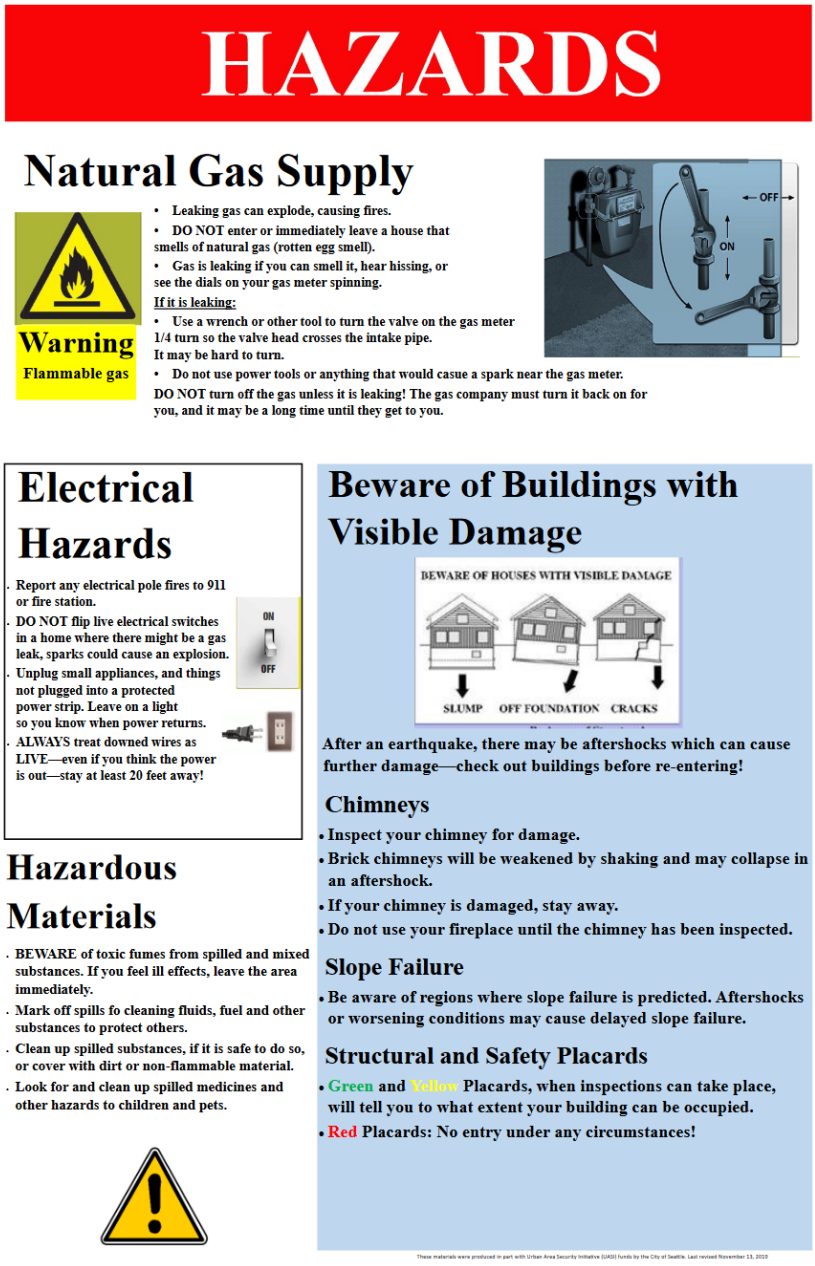
Figure 67: Hub Poster: Food

64 Ibid.

65

Figure 68: Hub Poster: Sanitation

[65] Ibid.



[66]

Figure 69: Hub Poster: Hazards

[66] Ibid.

67

Figure 70: Hub Poster: Communication

67 Ibid.

Are you "Bainbridge Prepared"? - Household Readiness Assessment

EMERGENCY SUPPLIES	
	POINTS
Food (1 week = 4 points, 2 weeks = 8 points, 3 weeks or more = 15 points)	
Water – 1 gallon of water per person per day (including pets) and/or way to filter & treat water (1 week = 4 points, 2 weeks = 8 points, 3 weeks or more = 15 points)	
Fire Extinguisher on each level of house (5 points)	
Backup Lighting (flashlights, lanterns, headlamps) w/batteries stored separately (5 points)	
Emergency Power (generator) (5 points)	
Prescriptions/Medical Supplies (5 points)	
Copies of Key Documents and Emergency Cash (5 points)	
Go Bag/Evacuation Kit (5 points)	
Emergency Supplies at Work (5 points)	
Emergency Supplies in Car (5 points)	
Shoes & Hard Hat Under/Next to Bed (5 points)	
Emergency supplies for pets (5 points)	
Emergency Toilet & Sanitation (5 gallon buckets, heavy trash bags, kitty litter/sand, hand sanitizer) (5 points)	
TOTAL POINTS	**/ 85**

COMMUNICATION & PLANS	
	POINTS
Emergency Communication Plan and Contact List (5 points)	
Family Reunification Plan and Meeting Points (5 points)	
Signed up for COBI Nixle Alerts (5 points)	
TOTAL POINTS	/ 15

TRAINING	
	POINTS
CPR/1st Aid Training (5 Points)	
Stop the Bleed Training (5 Points)	
Fire Extinguisher Training (5 Points)	
TOTAL POINTS	/ 15

EXTRA CREDIT	
	POINTS
Community Emergency Response Team (CERT) Member (5 points)	
Wilderness First Responder (WFR) Certification (5 points)	
Ham Radio Operator (5 points)	
Map Your Neighborhood Participant (15 points)	
Bainbridge Prepares Volunteer/Team Member (5 points)	
TOTAL POINTS	/35

Add It Up!

Household Readiness Assessment Total:

(150 total points possible)

WHAT IS YOUR RANKING?

BAINBRIDGE PREPARED: 90+ **

ALMOST THERE: 80 – 89

DON'T STOP NOW: 70-79

YOU CAN DO IT: 60-69

BETTER GET GOING: 50-59

UH OH!: 0 – 50

**** If you scored more than 90 points, submit this form with your name and email address to Anne LeSage, Emergency Management Coordinator, at alesage@bainbridgewa.gov to receive your official "Bainbridge Prepared" Household Certificate and Sticker**

[68]

Figure 71: Bainbridge Household Readiness Assessment

[68] Images taken from: The City of Bainbridge Island. (2022). Personal Preparedness. https://www.bainbridgewa.gov/749/General-Preparedness

Q. Site Visit Summaries

LA City 2021 Mass Care and Shelter Exercise

Date: Thursday, December 9, 2021

Location: Northridge Recreation Center, 18300 Lemarsh Street, Los Angeles, CA 91324

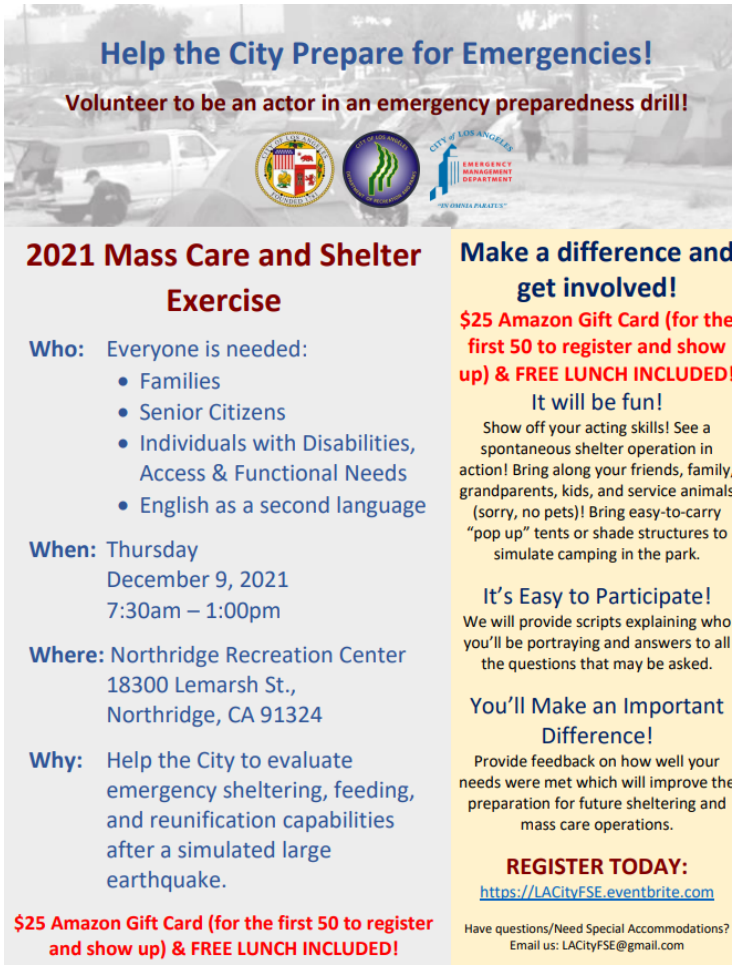


Figure 72: Event Flier

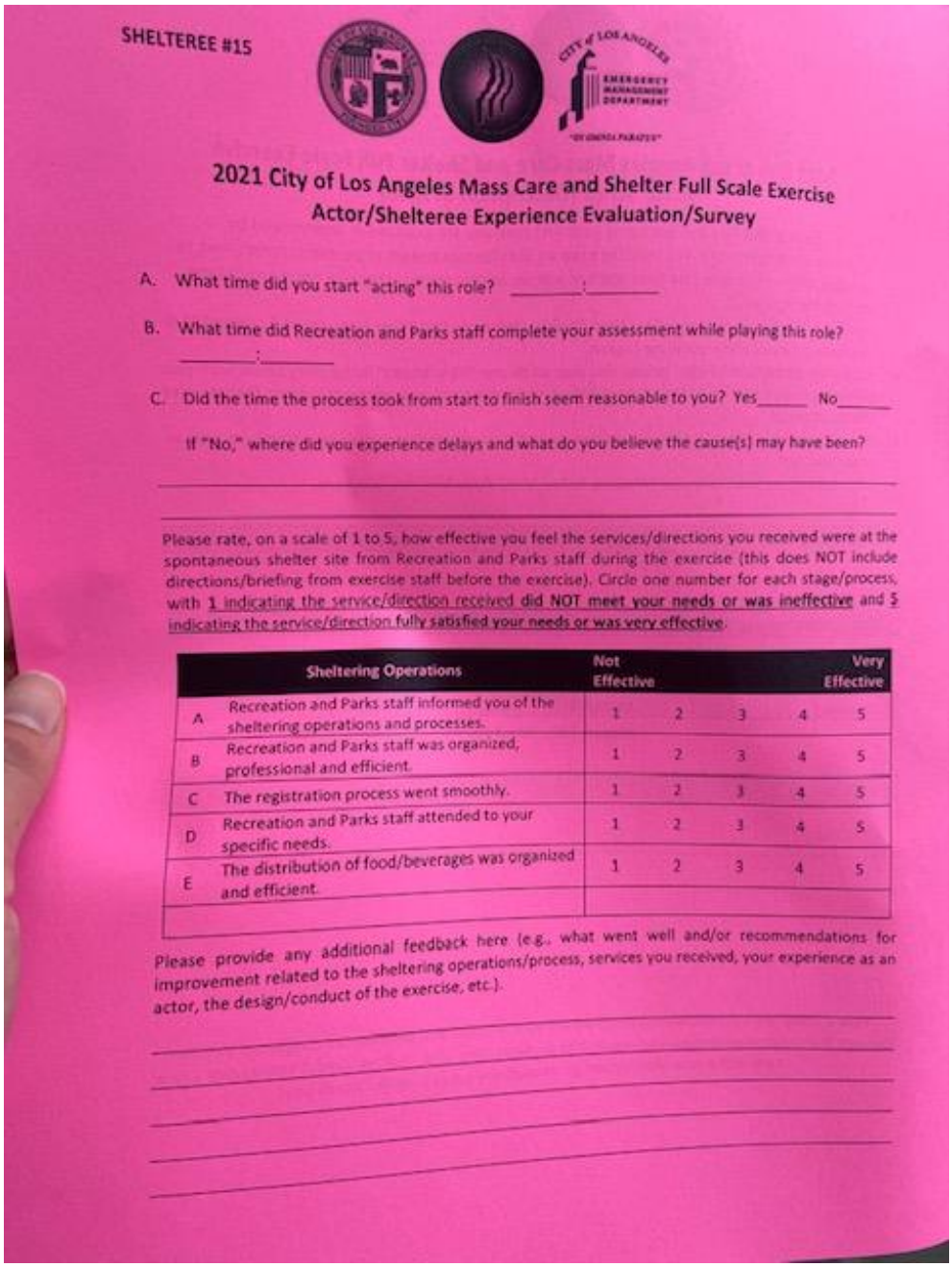
I participated in a Mass Care and Shelter Exercise in Northridge, CA. The purpose of this event was for the City's Parks and Recreation Department to practice spontaneous sheltering. In a disaster, the Parks and Recreation Department would be put on the spot,

like other City agencies, to be ready to provide support to disaster victims, especially in earthquake events.

The spontaneous sheltering event focused on an earthquake disaster scenario. The scenario was based on a large earthquake similar to the Northridge earthquake. The event took place at a park and recreation site where tents were set up in a field, and City staff and the media team were set up on the adjoining basketball courts.

I participated in the event as an actor. I was one of around 20 volunteers that day. There happened to be more City staff onsite than community volunteers. Most of the volunteers were CERT members or connected to Red Cross.

I was given pre-made scripts that detailed character/victim profiles of folks impacted by the earthquake as an actor. See Figure 73 for an example of the pre-made script.



SHELTEREE #15

2021 City of Los Angeles Mass Care and Shelter Full Scale Exercise
Actor/Shelteree Experience Evaluation/Survey

A. What time did you start "acting" this role? _____:_____

B. What time did Recreation and Parks staff complete your assessment while playing this role?
_____:_____

C. Did the time the process took from start to finish seem reasonable to you? Yes_____ No_____

If "No," where did you experience delays and what do you believe the cause(s) may have been?

Please rate, on a scale of 1 to 5, how effective you feel the services/directions you received were at the spontaneous shelter site from Recreation and Parks staff during the exercise (this does NOT include directions/briefing from exercise staff before the exercise). Circle one number for each stage/process, with 1 indicating the service/direction received did NOT meet your needs or was ineffective and 5 indicating the service/direction fully satisfied your needs or was very effective.

	Sheltering Operations	Not Effective				Very Effective
A	Recreation and Parks staff informed you of the sheltering operations and processes.	1	2	3	4	5
B	Recreation and Parks staff was organized, professional and efficient.	1	2	3	4	5
C	The registration process went smoothly.	1	2	3	4	5
D	Recreation and Parks staff attended to your specific needs.	1	2	3	4	5
E	The distribution of food/beverages was organized and efficient.	1	2	3	4	5

Please provide any additional feedback here (e.g., what went well and/or recommendations for improvement related to the sheltering operations/process, services you received, your experience as an actor, the design/conduct of the exercise, etc.).

Figure 73: Actor/Shelteree Experience Evaluation/Survey

Meanwhile, it was the duty of the Parks and Recreation Department, in support of the fire department and police department, to help care for the victim actors.

[69]

Figure 74: Volunteer Actors engaging with City staff at Mass Care and Shelter Exercise

Care in this sense involved staff members coming out to where the volunteer actors were gathered and practicing the process of victim in-take. This process included taking down actor names, asking actors if they needed medical assistance, and inquiring about other needs. If actors noted the need for medical attention, staff would call back up support to provide said assistance. After the event concluded, the staff asked for volunteer feedback,

[69] Photo taken by author.

and while there was lots of feedback received, there was no one visually taking notes. Additionally, there was no follow-up by City staff connecting volunteers to emergency preparedness information. Instead, volunteer residents were encouraged to go on the City's website to seek resources.

Participation in this event allowed me to see an example of a city practicing emergency preparedness and response efforts. This event opened my eyes to the complexity of planning disaster resource zones/sites. The park that the City chose to hold the event, while tucked into a suburb, was hard to get to. The restrooms on site were in ill repair, and with it being a cold rainy day, there was little reprieve from the weather. As a pseudo-victim, I had the opportunity to experience what it might be like to wait to receive help from the City. I often waited 20-30 minutes before a staff member would inquire about my condition. Then after taking down my information, there was often no follow-up. City staff members appeared to handle the scenario in a clumsy manner, where they often did not know what questions to ask the volunteers and did not follow up with the pseudo-victims. There was also noted struggle of staff not knowing how to attend to pseudo-victims who were blind or deaf. Overall, this event allowed me to have feet on the ground in Los Angeles, experience City response efforts, and interface with CERT-LA volunteers, where I was able to secure an additional interview from this site visit.

2022 Be Ready Utah Expo
Date: Friday, February 25, 2022
Location: Mountain America Exposition Center, 9575 State Street, Sandy, UT 84070

Figure 75: Event Flier

I participated in 2022 Be Ready Utah Expo in late February 2022. The purpose of this event was to provide resources and general emergency preparedness training for Utah residents. The event was put on by Utah's emergency management agency in collaboration with university and health partners. The expo had over a hundred booths. Some were

educational-focused, and others were retailers trying to sell emergency preparedness supplies and equipment. The event catered to all ages and had educational materials geared from the novice to the professional. Additionally, attendees were provided tote bags to collect emergency preparedness handouts.

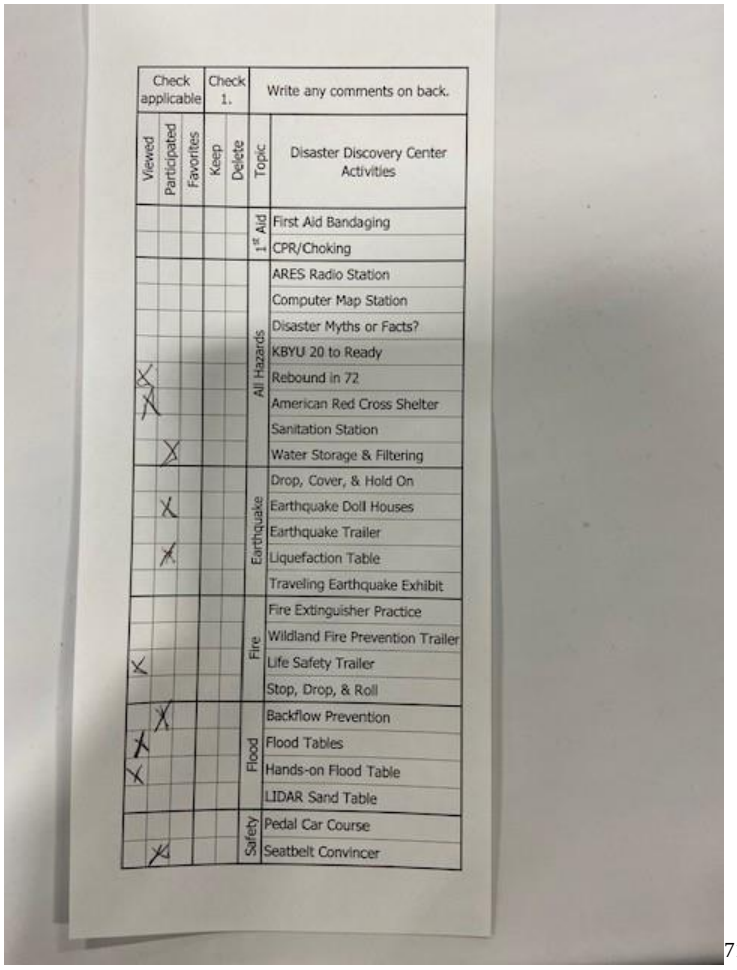
[70]

Figure 76: Inside the Be Ready Utah Expo

At the event, I attended workshops on neighborhood preparedness, how to build a disaster supply kit, an emergency communications workshop, and a keynote talk on the LA Northridge earthquake. These workshops provided great general emergency preparedness information. I also participated in the expo's escape room, which ran through a scenario on

[70] Photo taken by author.

creating an emergency kit and grab bag. In addition, I also participated in the expo, a scavenger/educational hunt that guided attendees through a series of booths on personal and home safety tips for a variety of natural disasters.



Check applicable			Check 1.		Write any comments on back.	
Viewed	Participated	Favorites	Keep	Delete	Topic	Disaster Discovery Center Activities
					1st Aid	First Aid Bandaging
						CPR/Choking
					All Hazards	ARES Radio Station
						Computer Map Station
						Disaster Myths or Facts?
						KBYU 20 to Ready
X						Rebound in 72
X						American Red Cross Shelter
						Sanitation Station
	X					Water Storage & Filtering
					Earthquake	Drop, Cover, & Hold On
	X					Earthquake Doll Houses
						Earthquake Trailer
	X					Liquefaction Table
						Traveling Earthquake Exhibit
					Fire	Fire Extinguisher Practice
						Wildland Fire Prevention Trailer
X						Life Safety Trailer
						Stop, Drop, & Roll
	X				Flood	Backflow Prevention
X						Flood Tables
						Hands-on Flood Table
X						LIDAR Sand Table
					Safety	Pedal Car Course
	X					Seatbelt Convincer

[71]

Figure 77: Be Ready Utah Expo Scavenger Checklist

Overall, by attending the Be Ready Utah Expo, I saw emergency preparedness educational efforts on a large scale. It was very cool to see the state invest so many

[71] Photo taken by author.

resources to create and support a culture of emergency preparedness. Finally, I also had the opportunity to meet my interviewee from Bountiful City at the event and conduct an interview.

HUB 101 Training
Date: Thursday, March 17, 2022
Location: Zoom
I had the opportunity to attend an online Seattle Emergency Hub training. The training had around 50 participants plus the main speakers. Attendees were primarily Seattle residents who were hub organizers or interested in supporting a hub in their neighborhood area. During this training, organizers described how to create a hub, a hub's function, how and when to activate it, and the twelve volunteer roles (greeter, information officer, volunteer coordinator, education officer, radio assistant, radio operator, hub manager, message manager, medical officer, visiting nurse, and reunification officer) that make a hub run. After running through general information about hubs, the organizers put folks into breakout rooms of about 12 people. We were provided a list of scenarios in these breakout rooms and practiced the Hub volunteer roles.

During this event, I listened to the general presentation and then practiced the volunteer role of greeter in my assigned breakout room. I found the exercise of practicing volunteer roles very helpful. It was helpful to work together as a group to figure out how our roles would respond and work together to provide services to support neighbors under different disaster scenarios.

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