

Hidden Vulnerabilities:
Exploring the Potential Impacts of a Disaster on Marginalized Communities in East San
José, California

A Project Report
Presented to
The Faculty of the Department of Anthropology
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Master of Arts in Applied Anthropology

By
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The Undersigned Graduate Committee Approves the Project Report Titled

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California


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ABSTRACT

This partnership between San José State University (SJSU), the United States Geological Survey (USGS), and Amigos de Guadalupe Center for Justice and Empowerment (AdG) is a community science project to involve the public in disaster risk assessments. Collaborating with community members on disaster research strengthens both community and scientific knowledge, therefore, promoting meaningful solutions to critical social issues and their root causes. Immigrants have unique experiences with hazards, vulnerability, and disasters. Their multi-layered marginalization and daily struggles to navigate a foreign country can often be intensified in an emergency. Conventional approaches to scientific research and disaster, risk reduction, and response and recovery programs often neglect the needs and concerns of immigrants, therefore putting them at greater risk. This project aims to amplify immigrant voices by highlighting their primary concerns and proposed solutions regarding hazards and vulnerability to disasters, with the goal of contributing to more inclusive disaster planning.

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CHAPTER 1

AMIGOS DE GUADALUPE, THE HAYWIRED SCENARIO, AND THE CITIZEN SCIENCE PROJECT

Introducing the Project

I collaborated with Amigos de Guadalupe Center for Justice and Empowerment to explore how immigrant communities in the Bay Area perceive and experience hazards and vulnerabilities to disasters. My graduate research project is one of several designed to contribute to the Community-Based Participatory Hazard and Vulnerability Assessment, an initiative facilitated by Dr. A.J. Faas from San José State University and Dr. Anne Wein from the United States Geological Survey (USGS). The HayWired Scenario examines the potential impacts of a major earthquake along the Hayward Fault in the East Bay Area. Part of the scenario addresses how disasters can accelerate preexisting gentrification and exclusion trends, therefore, further disadvantaging already marginalized communities (Johnson et al. 2020, 87). The scenario report also highlights how socioeconomic disparities, housing quality, and access to resources shape communities' vulnerability and long-term resilience after an earthquake. Though it does not explicitly address historical issues with modern emergency procedures in the East Bay, it does emphasize the need for more inclusive disaster planning (Wein et al. 2021). The current disaster policies often cause more harm because the scientists and government officials develop emergency plans (either intentionally or unintentionally) without direct input from the people they intend to serve. To help bridge this gap, I partnered with Amigos de Guadalupe Center for Justice and Empowerment (hereafter, "Amigos" or "Amigos de Guadalupe"), a community-based organization located in East San José, California, that serves low-income, underrepresented populations (including immigrants) in the Bay Area.

Project Deliverable and Research Question

This study had two primary objectives: (1) to understand how hazards and vulnerability to disasters are understood and experienced by historically marginalized communities; and (2) to contribute to disaster risk-reduction efforts by encouraging information exchange between USGS scientists and the public. In my project, I had one research question: How are hazards and vulnerability to disasters understood and experienced by immigrants in low-income communities? To answer this question, I conducted a series of focus groups with eight to twelve people, associated with Amigos, who matched my target population criteria. In these focus groups, I invited each research partner to verbally respond to a series of questions, developed by Dr. A.J. Faas, Dr. Anne Wein, and Jhaid Parreno during the pilot study of this research (Faas et al. 2021).

Using Adobe Express, I created an interactive webpage of a comprehensive report of my findings from the four workshops/focus groups. I presented this deliverable to my research partners, at Amigos, in my final workshop. The webpage includes post-hazard and emergency response images, statistical tables, and census data retrieved from the USGS HayWired Scenario. It also includes the primary themes of hazards and vulnerabilities—as well as solutions proposed—that my research partners highlighted during our discussions. I also included helpful links to additional resources (i.e. emergency preparedness, legal, etc.) for immigrants, which are translated into the primary language of my research partners to ensure accessibility.

Project Goals

The four goals of my research include:

- I. Facilitating information exchange between immigrants living in low-income communities along the Hayward Fault and USGS scientists and developers of the HayWired Scenario;

- II. Incorporating community knowledge in disaster assessments;
- III. Identifying vulnerabilities in disaster response and recovery; and
- IV. Promoting inclusive disaster research, policy development, and emergency planning, advocating for the representation of underrepresented communities, including immigrants.

Project Report Roadmap

My project report has three chapters. In the following pages of this chapter, I introduce my partner organization, Amigos de Guadalupe. I then related the project origin and the history of emergency planning in the Bay Area. Next, I delve into the broader significance of this research through examples in existing literature. Lastly, I discuss how I overcame challenges in securing my partnership and outline the methods I used to analyze my qualitative data. Chapter Two is formatted as a stand-alone article for the *Practicing Anthropology* journal. Here, I outline my collaboration with my partner organization, and summarize the primary hazards and vulnerabilities identified during the *Phase I* workshops/focus groups with Amigos guests. I also discuss the solutions my community partners proposed that could help the USGS improve their methods in future assessments, as well as guide local government and non-profit procedures for crisis response and disaster relief. In Chapter Three, I discuss additional information that my research partners proposed in the final workshop—which was not addressed in Chapter Two—the limitations I experienced while conducting my research, and implications for future research.

Introducing the Partner Organization

Amigos de Guadalupe is a non-profit organization located in East San José, California. The

organization was founded in 2012 by Executive Director, Maritza Maldonado, who is the daughter of Mexican immigrants. Her passion for education and serving underrepresented communities inspired her to develop an organization that provides a variety of quality services and programs to the Mayfair neighborhood. These services include interim housing (including Safe Park sites) for low-income and unhoused individuals and their families, rental assistance, immigration and legal services, free citizenship and English Second Language classes (ESL), after school programs for the youth, mental health services, and organizing work to better serve and strengthen the community (AdG n.d.).

Project Origin

The HayWired Scenario

The HayWired Scenario was developed by USGS scientists and collaborators in 2018 to determine the potential impact of a magnitude 7.0 earthquake along the Hayward Fault, located in the San Francisco Bay Area in Northern, California (USGS 2018; UC Berkeley n.d.). This study develops from understanding the impact of the last major earthquake to occur on the Hayward Fault in 1868 and emphasizes the connections between infrastructure, communities, and the economy (USGS 2018; UC Berkeley n.d.). The fault is a part of the San Andreas Fault system and runs roughly parallel to the San Andreas Fault line on the eastern side. It extends about 74 miles from the southern region of San José, northward through the East Bay Hills to San Pablo Bay. Some cities on or near the fault line include San José, Fremont, Hayward, Oakland, Berkeley, San Leandro, and Richmond. The HayWired Scenario accounts for both physical hazards like fires and floods, as well as socioeconomic risks to improve disaster preparedness and response (Faas and Parreno 2024). Given the uncertainty of earthquakes and their subsequent effects, HayWired improves readiness by enhancing the ability to forecast the

impacts of this ecological phenomenon.

Filling the Gaps in the HayWired Scenario

After the completion of the HayWired study, Drs. Faas and Wein launched a three-phase research framework to promote reciprocal knowledge exchange between underrepresented communities in the Bay Area and the HayWired research team. This effort includes workshops to identify risks, innovative mitigation strategies, and integrating findings to improve future hazard assessments. Prior to my research project, Dr. Faas and former graduate student, Jhaid Parreno, conducted a pilot study with two community-focused organizations in San José, the Billy De Frank LGBTQ+ Community Center and the Community Emergency Response Team in San José's historic Japantown (Faas et al. 2021). This study established a foundation for future disaster researchers. *Phase I* consists of four workshops designed to collaborate with communities along the Hayward Fault, providing insight into how they define, experience, and understand disasters. The goal is to initiate a community-driven conversation about the hazards and vulnerabilities affecting people in these communities, which can help identify the gaps in existing knowledge related to this topic. *Phase II* focuses on co-developing applied research questions with community partners and translating the insights and gaps identified in *Phase I* into real-world solutions. Lastly, in *Phase III*, all researchers of this assessment join with our community partners to present the new information collected from the previous phases, and determine the next steps for improving future assessments. Additionally, the developers of the HayWired Scenario are also invited to participate in the conversation.

A Brief History of Emergency Preparedness and Response in the Bay Area

Anthropologists in disaster research have identified a trend where emergency preparedness and response efforts often overlook the needs of the people they intend to serve. This issue has

led to policies that exacerbate the targeted community's unique vulnerabilities to hazards (Faas n.d., 2016; Marino et al. 2020). The United States Geological Survey is one government agency, within the Department of the Interior, working to address this concern. The USGS HayWired scenario models the potential impact of a magnitude 7.0 earthquake on the Hayward Fault, located in Northern California's Bay Area. This initiative aims to contribute to the broader body of knowledge on emergency planning. By encouraging public involvement, developers of this scenario aim to improve emergency response strategies to better prepare residents of this region for such a major seismic event (Hudnut et al. 2018). Critiques (from researchers) of the scenario highlighted that marginalized groups of the Bay Area are not accurately represented. This discrepancy arises from USGS's reliance on census block group data—which is outdated and incomplete—to gather information about vulnerable communities in this region (Johnson et al. 2020). This lack of representation exemplifies broader systemic issues rooted in disaster planning overall.

Consequently, the displacement of marginalized communities—whether due to a hazard, such as income disparities, earthquakes, wildfires, aging infrastructure, or public health crises like COVID-19—coincides with a lack of state financial support. This support is crucial for building stable infrastructure and developing procedures to reduce hazardous effects, enabling these communities to better cope with and recover from disasters (Faas 2023b; González 2020; Maldonado et al. 2013). The absence of such support creates a snowball effect, leading to impoverishment, negative health impacts, and loss of place, social identity, and cultural practices (Emanuel 2017; Vox 2021).

The San Francisco Bay Area: Hazards and Immigrant Influence

The Bay Area is renowned for its diverse population and several hazards. The region is

susceptible to seismic activity because it sits on seven major fault zones (Faas n.d.). Additionally, climate change has led to extreme temperatures, prolonged dry seasons, and irregular storm patterns, causing an increase in wildfire occurrences (ABAG 2022; ClientEarth 2022; USGS n.d.). These hazards negatively impact surrounding communities. For example, nearly 45 percent of the Bay Area population are immigrants (Bay Area Census 2000). Despite their significant presence, these groups are often left out of disaster planning efforts.

In the HayWired scenario, even those who are represented in the scenario were not involved in shaping the knowledge used to assess risks. This exclusion has led to significant gaps in disaster preparedness and response strategies. Immigrants in this region are especially vulnerable to experiencing extreme effects of a hazard. Since they face multiple layers of marginalization—experiencing challenges navigating life in a new country—disasters can intensify these difficulties and highlight inequities (IIBA n.d.). Addressing these gaps in knowledge is essential to ensuring that risk reduction efforts are effective and equitable for all.

Literature Review

Disasters, Hazards, and Vulnerabilities

The underlying causes of a disaster, according to disaster anthropologists, are historical, sociocultural, political, and economic factors (Faas 2023a). Furthermore, researchers have found that marginalized communities are often more susceptible to experiencing extreme effects of disasters. This vulnerability stems from socioeconomic disparities, unequal resource distribution, power imbalances, and political neglect—all of which limit access to essential resources and hazard-mitigated living spaces. As a result, these communities face significant barriers in preparing for, responding to, coping with, and recovering from disasters (Faas et al. 2021; Oliver-Smith 2022; Stanford and Bolin 2020). In disaster studies, vulnerability is described as a

systematic issue where historical decisions about city planning and social inequalities—like the placement of communities in known hazardous areas (e.g., atop active fault lines)—exacerbates those communities’ exposure to hazards. When hazards and vulnerability collide, this creates a disaster (Faas 2016; Faas et al. 2021).

Issues in Emergency Response and Recovery

In 2017, Hurricane Maria ravaged Puerto Rico, demonstrating how catastrophes can impede the recovery of marginalized communities. Many residents were left without power for months as the hurricane destroyed the country’s electrical grid. Access to essential resources became scarce as the U.S. was slow to respond with aid and direct international trade was restricted due to the 1920 Jones Act (Ficek 2018; González 2020). The issues in emergency response that many immigrants experience are similar to Puerto Rico’s case: discrimination, exclusion from aid, language barriers, and false narratives accusing them of being indolent and dependent on government assistance (González 2020; Marino and Lazrus 2015).

Migration and Displacement

In disaster anthropology, disaster-induced migration and forced displacement are current topics of concern. However, the distinction between displacement and migration when discussing climate change, hazards, and disasters is unclear (Faas 2023a, 2023b, 2016; Marino and Lazrus 2015). By gaining an understanding of immigrant perspectives on these topics, anthropologists can work toward defining that distinction. In the Polynesian island nation of Tuvalu, climate change is one driver of migration and forced displacement. However, Heather Lazrus (2009) and Elizabeth Marino (2015) stress that climate change is not the only reason for displacement; a false media narrative of pointless preservation methods for the island influenced residents to abandon their homeland. Yet, migrating is challenging because foreigners in their host country

do not have the same rights as citizens, creating barriers to accessing resources such as employment (Farbotko et al. 2012; Marino and Lazrus 2015; United Nations 2012).

Research Methodology: Confirming My Project and Partnership

Overcoming Outreach Challenges

At the start of this graduate program, it was unclear how my research project would look. I was certain that I wanted to do something with disasters and the Latin American community, either locally or abroad, but did not understand where to begin; the idea of creating a project out of thin air seemed intimidating. Due to limited funding, time, and after multiple conversations with my graduate advisor, Dr. A.J. Faas, I decided to join Dr. Faas's research team for a project he was leading with Dr. Wein.

Now that I had a foundation for my research, the next step was to find a community partner for collaboration. Given that Dr. Faas's project focused on communities in the East Bay of the San Francisco Bay Area, this significantly helped narrow my search for a community partner. I began with an internet search of non-profit organizations in the Bay Area. I looked for cultural, disaster relief, and immigration organizations that served immigrants, refugees, and/or asylum seekers. Once I compiled a list of potential partner organizations and a point of contact, I began sending emails and making phone calls to briefly introduce myself and my research. After an unsuccessful initial round of outreach, I developed a one-page project proposal—thanks to an idea presented by my cohort mate, Juan Carlos Aguirre. This proposal, designed with vibrant colors and an image of a world map, outlined my project description, objectives, timeline, and contact information. Upon the second round of outreach via email, I used the same introduction message but also attached my proposal for my contacts to have a better understanding of my project and its significance. Additionally, Faas and Aguirre had each recommended an

organization they were familiar with, and thought might be a good fit for my project, so I included them in my list of contacts.

I had two different organizations interested in meeting with me, both of which were those recommended by Faas and Aguirre. I held virtual and in person meetings with the executive director of these organizations and ultimately secured a partnership with both. Since I could not manage two partners, I had to choose one. As a precaution, I waited until after the First Year Review to officially tell the other organization of my decision not to move forward with the partnership. Luckily, Dr. Faas had another graduate student who could take on the organization I did not choose. Two weeks after my First Year Review was approved—which mentioned my original community partner organization—I received an email from the executive director of that organization explaining that she would not be able to move forward with our collaboration due to limited time, availability, and personnel support. With only a couple months left of the Spring 2023 semester, I scrambled to find a new partner. By the third round of outreach, I had exhausted most of my options for organizations in the East Bay that aligned with my criteria. I reconnected with a few organizations and Dr. Faas recommended I reach out to former graduate students for assistance.

Securing a Partnership

Eventually, I contacted Mayra Cerda, who is a Lecturer in the SJSU Anthropology Department, a graduate of the SJSU Applied Anthropology M.A. program, and the Senior Director of Programs at Amigos de Guadalupe. The mission, vision, and community which Amigos served, aligned with my personal values and academic objectives, making it an ideal organization with which I was proud to collaborate. I shared with Cerda my one-page project proposal, a resume, and a brief write-up of my goals for the project, methods, timeline, and what

support I would need from the organization. She passed my information on to her executive director, Maritza Maldonado, who was interested in meeting me for further discussion. While waiting for confirmation from Maldonado for an initial meeting date and time, I sent follow-up emails to the other organizations as a precaution. Ultimately, I confirmed the partnership with Amigos de Guadalupe!

First Site Visit at Amigos de Guadalupe

After establishing a date and time with Maldonado's assistant, Felisha Carrasco, I researched as much about Amigos as I could in preparation for my initial site visit. On Tuesday, May 16, 2023, I arrived at the main office of Amigos de Guadalupe 15 minutes prior to my 2pm appointment. As I walked into the office, I noticed the walls were full of vibrant colors and tapestry. I was greeted by the receptionist, who told me to sign in, have a seat and someone would be with me soon. She also offered me a snack, which made me feel welcomed. Soon after, I met Jimmy Lopez, the Director of Casitas de Esperanza—one of multiple interim housing locations associated with Amigos' Unhoused Program. After getting a tour of the main office, Lopez and I drove to the Casitas de Esperanza site for another tour and to learn more about Amigos as a whole. I asked Lopez questions about his background and journey of how he started working at Amigos. I also met some of the other staff members who worked at the Casitas site, including an onsite case manager for the families and two logistics organizers. After my meeting with Lopez, I was eager to meet Maldonado in person and more of the Amigos family. Since I was confident that this partnership was solid, Dr. Faas informed me that another one of his graduate students, Gabrielle Fall, was having difficulties finding a partner organization. So, we agreed to bring Fall onto the project with Amigos to work with multiple marginalized groups within the organization.

Summer Internship

Throughout the summer of 2023, I continued to reach out to other directors in the Unhoused Program and conduct site visits with Fall. We met with Jeremy Barousse, the Director of Policy and Organizing at Amigos, who became my main point of contact. We also attended community meetings at the different interim housing sites to introduce ourselves and present our research to Amigos guests directly. After confirming with Barousse that I would conduct my focus group workshops at the main office and Fall would conduct hers at one of the off-site interim housing locations, we branched off to work with our individual research partners within Amigos. I worked with Barousse to coordinate the dates and times for each of the four workshops, which were held at the main office over the span of three months. Once the dates for my workshops were confirmed, Fall and I developed flyers for our respective set of workshops. With the help of my significant other, Abel Rios, and Cerda, I translated my flyers into Spanish to ensure accessibility, as many of the Amigos guests are immigrants from North and South America. To improve outreach efforts, I shared my flyers, via email, with all staff members of the Unhoused Program and emphasized that I was interested in working with immigrants.

Phase I: Workshop/Focus Group Breakdown

The first workshop focus group was an introduction to my project and its significance. The second workshop covered *Hazards* that my research partners identified as a threat in their communities. In the third workshop, my partners and I discussed *Vulnerabilities*. The last workshop was the debrief. After analyzing the data collected during our discussions in the second and third meetings, I synthesized my results into a comprehensive report using Adobe Express. As my deliverable to Amigos, I created an interactive webpage to present a findings report to my community partners and Amigos staff.

Research Methods

This research project is a qualitative, ethnographic study. To conduct my research, I utilized the following data collection and analysis methods:

- *Phase I - Workshop Focus Groups:* I directed four immigrant-centered, hybrid focus group workshops with guests who are associated with Amigos de Guadalupe Center for Justice and Empowerment. The workshop focus groups elicited collective feedback from a group of 8-12 participants to gather information about immigrant experiences and concerns with hazards in the Bay Area, the social aspect of vulnerability, collective and public action to address them, and their needs during emergency response operations.
- *Coding and Domain Analysis:* I hand-typed all of my workshop notes into a Google Doc for future analysis. Also, I used Otter.ai to transcribe the audio recordings from each workshop, then copied and pasted the transcription into the Google Doc. To analyze the data, I utilized the Ctrl + F function to identify key terms—including identification of which marginalized groups are considered most vulnerable in certain circumstances. I then color-coded these terms based on the themes discussed in the workshops. By transcribing and coding the conversations with my research partners, I identified prevalent themes across each discussion, further enhancing the qualitative aspect of my research.

CHAPTER 2

HIDDEN VULNERABILITIES: EXPLORING THE POTENTIAL IMPACTS OF A DISASTER ON MARGINALIZED COMMUNITIES IN EAST SAN JOSÉ, CALIFORNIA

Abstract

Immigrants in low-income communities are one of many groups who have historically been excluded from emergency planning. These groups experience acute forms of vulnerability *and* greater exposure to environmental hazards. This is often compounded by a lack of understanding—by policymakers, disaster scientists, and other city officials—of the needs, concerns, assets, and vulnerabilities of this population. In partnership with Amigos de Guadalupe Center for Justice and Empowerment in San José, California, I conducted four focus groups with immigrant community members to discuss hazards and vulnerability from their perspectives. In the process, I learned how safety concerns, access to resources, leadership, discrimination, and increasing living costs not only constitute hazards but are exacerbated in crisis situations. We also discussed how social vulnerabilities influence their ability to prepare for, respond to, and recover from disasters. Through this community-centered approach, I aim to bridge a gap in knowledge between disaster researchers and the public, to aid in developing inclusive disaster preparedness and response strategies.

Keywords: marginalized communities, hazards, vulnerability

Introduction

Disasters encompass both physical elements (e.g., *earthquakes*, *wildfires*, and *floods*) and social factors (e.g., *community infrastructure*, *social support systems*, and *economic conditions*) that impact people's lives in different ways based on their life experiences, socioeconomic status,

and overall environment. Immigrants in the Mayfair district of San José, California are one of many marginalized groups who are more susceptible to experiencing the extreme effects of a disaster, due to the hazards and vulnerabilities that uniquely affect this population. Through a series of four hybrid workshop focus groups with immigrant community members (whom I refer to as “community partners” or “research partners”) at the Amigos de Guadalupe Center for Justice and Empowerment (hereafter, “Amigos”), we discussed the hazards and vulnerabilities that would further complicate their ability to prepare for, respond to, and recover from a disaster. These workshops mark the initial phase of a broader community-based science project led by Dr. A.J. Faas at San José State University’s (SJSU) Department of Anthropology and Dr. Anne Wein at the United States Geological Survey (USGS). The objective is to integrate the perspectives of underrepresented communities in hazard and disaster vulnerability assessments.

The HayWired Scenario

The HayWired Scenario was developed by USGS scientists and collaborators in 2018 to determine the potential impact of a magnitude 7.0 earthquake along the Hayward Fault, located in the San Francisco Bay Area in Northern, California (United States Geological Survey 2018; University of Berkeley Seismology Lab n.d.). This study develops from understanding the impact of the last major earthquake to occur on the Hayward Fault in 1868 and emphasizes the connections between infrastructure, communities, and the economy (United States Geological Survey 2018; University of Berkeley Seismology Lab n.d.). The fault is a part of the San Andreas Fault system and runs roughly parallel to the San Andreas Fault line on the eastern side. It extends about 74 miles from the southern region of San José, northward through the East Bay Hills to San Pablo Bay. Some cities on or near the fault line include San José, Fremont, Hayward, Oakland, Berkeley, San Leandro, and Richmond.

The HayWired scenario is one model of a hazard and related vulnerabilities which influenced a community-focused conversation about other hazards and vulnerabilities affecting people in various communities. To spearhead this discussion, SJSU anthropologist, Dr. A.J. Faas has been collaborating with Dr. Anne Wein from the USGS on the Community-Based Participatory Hazard and Vulnerability Assessment (San José State University 2019). Prior to this partnership, USGS disaster scientists retrieved preliminary data about the different vulnerable communities in the Bay Area using census block group data (Johnson et al. 2020). This information, however, does not accurately represent the current population due to outdated and missing data.

Prior to my research project, Faas and former graduate student, Jhaid Parreno, conducted a pilot study with two community-focused organizations in San José, the Billy De Frank LGBTQ+ Community Center and the Community Emergency Response Team in San José's historic Japantown (Faas et al. 2021). Parreno's research established the foundation for future graduate projects with Faas by providing a finalized set of workshop questions designed for community-based hazard and vulnerability studies. I used these questions in my workshop/focus groups with my community partners. In addition to my research partners being Amigos guests who are immigrants in low-income or interim housing in the Mayfair district, another graduate student, Gabrielle Fall, also collaborated with Amigos guests in the interim housing program. Together, we presented our project to the masses and then branched off to work with our individual community partners within Amigos.

Community-Based Participatory Hazard and Vulnerability Assessment

The Community-Based Participatory Hazard and Vulnerability Assessment has three phases. *Phase I* involves collaborating with people in various communities to gain insight into how they define, experience, and understand disasters. The goal is to initiate a community-driven

conversation about the hazards and vulnerabilities affecting people in these communities, which can help identify the gaps in existing knowledge related to this topic. *Phase II* focuses on co-developing applied research questions with community partners and translating the insights and gaps identified in *Phase I* into real-world solutions. Lastly, in *Phase III*, all of the researchers of this assessment join with our community partners to present the new information we've collected. Additionally, the developers of the HayWired Scenario are invited to participate in the conversation—as one example of hazards and vulnerabilities among others—to foster the development of reciprocal knowledge exchange about hazards, vulnerabilities, and disaster risk reduction. The overall objective of this citizen science project is to ensure that people who are underrepresented in disaster studies, yet often experience disasters at a significantly worse rate, have an opportunity to contribute knowledge about their own communities and experiences.

Amigos de Guadalupe Center for Justice and Empowerment (Amigos)

Amigos is a non-profit organization located in East San José, California. The organization was founded in 2012 by Executive Director, Maritza Maldonado, who is the daughter of Mexican immigrants. Her passion for education and serving underrepresented communities inspired her to develop an organization that provides a variety of quality services and programs to the Mayfair neighborhood. These services include interim housing (including Safe Park sites) for low-income and unhoused individuals and their families, rental assistance, immigration and legal services, free citizenship and English Second Language classes (ESL), after school programs for the youth, mental health services, and organizing work to better serve and strengthen the community (Amigos n.d.).

Connecting and Facilitating

For phase one of my research project (which consisted of four hybrid workshops/focus

groups), I collaborated with Amigos guests, most of whom were men and women from Mexico, Venezuela, and Honduras. Almost every guest was a parent and the length of time they had been living in the United States ranged anywhere from two months to over twenty years. Knowing that most people in attendance would be primarily Spanish speakers, I made sure to create flyers for each workshop in English and Spanish, which I emailed to Amigos staff members two weeks, one week, and a couple days prior to each workshop. I also printed a handful of consent forms, workshop protocols, and worksheets for the third meeting in both languages. Since my intermediate Spanish skills are not strong enough to conduct a workshop entirely in Spanish, I recruited my friend and fellow graduate student, Juan Carlos Aguirre, to translate. In the first meeting, I introduced the project. In the second and third meetings, I discussed with my community partners what hazards and vulnerabilities they considered to be a threat to their livelihood; their concerns focused more on hazards and vulnerabilities that impact their daily lives rather than an environmental phenomenon, such as an earthquake, wildfire, flood, or other event-based disaster. Finally, in the fourth meeting, I presented a summary of my overall findings from the previous workshops to the community partners and Amigos staff, and invited them to correct and guide the facts and my interpretations.

Research Methodology

This study has two primary objectives: (1) to understand how hazards and vulnerability to disasters are understood and experienced by historically marginalized communities; and (2) to contribute to disaster risk-reduction efforts by encouraging information exchange between USGS scientists and the public. In my project, I had one research question: How are hazards and vulnerability to disasters understood and experienced by immigrants in low-income communities? To answer this question, I conducted a series of focus groups with eight to twelve

people, associated with Amigos, who matched my target population criteria. In these focus groups, I invited each research partner to verbally respond to a series of questions, developed by Dr. A.J. Faas, Dr. Anne Wein, and Jhaid Parreno during the pilot study of this research (Faas et al. 2021).

Workshop 1: Introduction and Project Overview

The first meeting was both humbling and a learning experience. Despite weeks of planning and anticipation, I had only one participant in attendance, a working mother of two who had emigrated from Venezuela to the United States nearly 20 years ago. Additionally, Gabbie Fall, my project team member, came to support me and brought with her two large pizzas and a tray of salad to accompany the water and supplies I had prepared. Since I had one person in attendance, I provided a brief overview of the project and decided to skip the initial discussion questions for this workshop. I thanked my participant for taking time out of her busy schedule to meet with me and asked her to spread the word to her friends. Since we had plenty of leftovers, as a small gesture of appreciation, Gabbie and I offered her one of the pizzas to take home and share with her two children.

Though the turnout for the first workshop was underwhelming, I saw it as an opportunity to regroup rather than as a failure. I reflected on my outreach strategies and decided to refine my approach. I utilized a snowball technique, leveraging the connections I had built during the summer of 2023 with Amigos staff and guests. To maximize my outreach efforts, I sent a mass email with a more compelling message and attached eye-catching flyers highlighting the free food, gift cards, and raffle prizes that would be offered at the next workshop. I knew the emphasis on “free stuff” might attract more attendees while making participants feel welcomed and valued for their time. In the email, I briefly explained my project, provided the date and topic

of the next workshop and encouraged all recipients to spread the word.

Workshop 2: Hazards

My persistence paid off. On September 19, 2023, eight community partners arrived for the second workshop, filling the room with energy and diverse perspectives! As people trickled in, I greeted each attendee with a warm welcome and told them to help themselves to the delicious food from La Perla Taqueria (located in East San José). As people began settling in their seats, I passed around a sign-in sheet and consent forms (translated in English and Spanish) detailing the larger project with USGS, informing every individual that their participation in the focus group workshops is completely voluntary, and that audio recording of each meeting would take place with their approval. Once everyone was settled, I thanked them for making time in their busy schedules to attend and began the meeting with introductions, which included an ice breaker to get everyone engaged. To start, I told my research partners my name, where I am from, my occupation, and an interesting fact about myself. I then handed it over to Juan Carlos to introduce himself. Prior to continuing around the room in this manner, I asked for verbal consent to begin audio recording. I emphasized to my research partners that these recordings would be used to ensure I accurately referenced each participants' place of origin and other relevant details in my final report (excluding any identifiable information). Everyone gave their approval and the introductions resumed. We laughed, nodded, and connected over personal stories, creating a sense of camaraderie that set the tone for the rest of the meeting. With the room now buzzing with familiarity, I transitioned into the next segment of the workshop.

This segment involved verbally providing everyone with a brief explanation of the USGS HayWired project, to help them understand how my research fits into the broader study and the significance of their contribution as community partners. Next, to ensure we were all on the same

page, using a whiteboard, I outlined four categories of hazards: *Environmental*, *Technological* (including other technological hazards as a result of environmental degradation), *Biological*, and *Social*. Then, one category at a time, I asked the group to brainstorm examples of each hazard (See Table 1).

Table 1: Types of Hazards

Hazard	Examples
Environmental	Fires, Earthquakes, Floods, Hurricanes, Volcanoes, Tornadoes
Technological (<i>including those that result of environmental degradation</i>)	Pollution (from factories or cars), Deforestation, Chemical spills, Pesticides, Soil degradation
Biological	Infectious diseases (caused by viruses or bacteria, such as Cholera or COVID-19)
Social	Substance abuse (sharing syringes, drug use), Poverty (e.g., hunger, homelessness, displacement), Crime and Violence

After discussing the broader aspects of these hazards, I asked the group to identify the different hazards that they recognize within their communities. The group eagerly contributed, drawing from their lived experiences to fill the board with insights. Participants shared stories of theft, fears for their children's safety, struggles with accessing essential resources, and frustrations over the lack of accountability in local governance. This collaborative effort not only enriched the discussion but also highlighted the importance of local knowledge in understanding how different people perceive and experience disasters. As we grouped the mass list of hazards into five primary themes, I was enlightened by what my research partners had defined as hazards affecting their daily lives (See Table 2).

Table 2: Amigos de Guadalupe Hazards

Themes	Examples
Safety and Insufficient Police Presence	Poverty, Drugs, Theft, “[Fear] of leaving home at night or walking down the street,” fear for safety of children
Lack of Access	<p>(1) Essential resources (e.g., food and water, medical care, shelter, “communication of mass alerts and warnings in multiple languages”, reliable transportation, financial assistance, a quality education)</p> <p>(2) Information (e.g., disaster preparedness information and education, emergency planning workshops, resource locations)</p> <p>(3) Community empowerment spaces at the micro and macro levels (e.g., community centers, “youth centers to inspire young people to get involved in positive activities to better their community” and provide opportunities to broaden their horizon)</p>
Lack of Leadership and Accountability	<p>(1) Inconsistency of neighborhood maintenance in neutral spaces (e.g., “clearing [of] brush and trash that could pose as a fire hazard”, tree maintenance to avoid damage to power lines and other infrastructure)</p> <p>(2) “No concern for the quality of life and environment of low-income communities in East San José” (no accountability for pollution maintenance, illegal dumping, pet maintenance, etc.)</p>
Inequality and Discrimination	<p>(1) Sense of feeling “invisible” or “disregarded by people in power”</p> <p>(2) Lack of understanding the needs and concerns of East San José residents (making assumptions rather than taking time to ask questions)</p> <p>(3) Unequal treatment and concern for these communities (viewed as less important than other groups due to language barriers, religion, immigration status, etc.)</p>
Increasing Cost of Living	Financial instability, housing insecurity, negative impacts on physical and mental health due to economic pressures.

In the final segment, I asked a series of questions related to the five themes presented in *Table 2*. Some of the questions had already been answered during the creation of the mass list of hazards, so, for the sake of time, we skipped over those questions¹. When asked how long the hazard had been a feature in their community, there was a collective, “TOO LONG!” or “YEARS!” response. When asked who is most affected by these hazardous conditions and why,

¹ See Appendix D in complete project report for full list of workshop questions

their responses ranged from children and the elderly, to disabled people, to undocumented immigrants and unhoused individuals. I then asked whether anyone is working on reducing or eliminating this hazard or the risk it poses, and many initially replied, “No.” but then others said that organizations such as Amigos are working to empower the underrepresented communities in the area. Lastly, when asked what they would like to see done to reduce or eliminate this hazard, in no particular order, their responses included, “a better police presence”; “more accountability of government officials”; “reduced cost of living”; “more care and concern for people no matter their race, religion, documentation status, age, or capabilities”; and “more workshops like this.”

By the end of the workshop, my community partners had not only identified critical hazards in their communities, but also voiced actionable ideas for addressing these hazards. Their suggestions ranged from increasing police presence and holding government officials accountable to creating more inclusive, community-focused workshops. The sense of empowerment in the room was undeniable, and I left the meeting feeling optimistic about the potential of community-led solutions for issues impacting marginalized populations globally.

Workshop 3: Vulnerabilities

In the context of disaster research, the term *vulnerability* describes how a “hazard becomes a disaster when it encounters a vulnerable society” (Parreno 2021, 22). During the vulnerabilities focus group, on October 3, 2023, I had my research partners pair off to conduct a group exercise. There were seven people in attendance, so we had two groups of two and one group of three for a total of three groups. Each group was given a worksheet that asked them to identify the people in their community who would experience the greatest challenges in accessing or commanding essential resources in different phases of a disaster. These phases included: *Anticipation and Prevention, Response and Coping, and Recovery*. I informed them that they would have twenty

minutes to complete each phase and that during the process of identifying the most vulnerable people, it is important that they also explain *why* they chose those individuals. Once each group completed all the phases on paper, we came together to discuss their responses.

Anticipation and Prevention

For the Anticipation and Prevention phase, my research partners identified children, undocumented and documented immigrants, elderly, low-income individuals, and people experiencing homelessness as groups who would have the greatest difficulty accessing resources and information. There was also an important discussion about how children of immigrants, who have special needs, are especially vulnerable due to a difficulty in accessing special needs care and other healthcare services because their parents are not U.S. citizens. Additionally, one research partner expressed how the wage disparity and lack of financial resources (e.g., “living paycheck to paycheck and working multiple jobs to survive”) could hinder preparing for potential disasters, because they do not have enough time and their attention is consumed by dealing with their day-to-day issues. These groups would likely also experience the greatest difficulties in improving home structures and reducing exposure to hazards.

Response and Coping

During the Response and Coping phase, my research partners identified people who may not have internet access (e.g., children, unhoused people, and the elderly), those without transportation (i.e. dependent on public transit), low-income people, immigrants, and people with disabilities as groups who may experience difficulties in finding adequate shelter and access to basic resources. When asked why these groups would have the greatest difficulties in accessing reliable hazard and disaster information, every research partner agreed that children, elderly, and unhoused people would have the greatest challenges because they are less likely to have internet

or access to technology. When asked who would have the greatest challenges in accessing basic resources and why, the group mentioned immigrants and unhoused people, because they may not have the necessary documentation to receive specific services, which can put them at the bottom of the list of people to help. Next, we addressed who would have difficulties finding transportation and shelter in the event of an evacuation, and why, my research partners noted that children, disabled individuals, and unhoused people would, due to needing additional assistance, scarcity of shelters in the area, and financial barriers. On the topic of evacuation, my partners highlighted that elderly residents, disabled people, and those who are unhoused would experience the greatest challenges in evacuating during an emergency, because they may need additional assistance, thus slowing down the evacuation process.

Recovery

For the Recovery segment of the worksheet, my research partners noted that undocumented immigrants, low-income individuals, unhoused people, and those struggling with substance abuse will have the greatest challenges finding new employment, new housing, accessing health care (including mental health care) and other aid following a disaster. Their reasoning was because these marginalized groups often face discrimination. Also, they may not have the necessary documentation (e.g., SSN), financial means, nor the same options and/or rights as others, and are often disregarded. Immigrants and people with physical or sensory disabilities already face challenges navigating the world in times of peace, meaning those challenges are exacerbated in times of crisis.

Amigos Vulnerability Priorities

My community partners highlighted five vulnerability priorities:

- I. *Equal Treatment*: Assistance and guidance for all who need it before, during, and after a crisis, no matter their ethnic background, nationality, age, capabilities, religion, gender, economic status, etc.
- II. *Disaster Resource Centers in Community*: For refugees and survivors (pre and post disaster), access to resources in multiple languages, shelter, food, medical care, etc.
- III. *Community-centered disaster workshops*: Conducted in places where people naturally gather (e.g., schools, churches, community/youth centers, libraries, etc.)
- IV. *Evacuation or Emergency Action Plan (EAP)*: Implemented in neighborhoods, which could encourage community building (e.g., assembly/meeting point, roster for roll call, assigned roles for volunteers in the neighborhood)
- V. *Improved Urban Planning*: Better infrastructure to withstand environmental hazards.

Related Vulnerabilities

The primary vulnerabilities my research partners highlighted as being related were the lack of housing and limited access to information via technology. They recognized that unhoused individuals often have difficulty accessing computers, TVs, or other electronic devices. This lack of access makes it difficult for them to stay informed about critical resources or events.

Workshop 4: Findings Presentation

For the debrief workshop, the room was filled with more than 20 people! All the previous guests attended and some brought their friends and family. Also, many of the Amigos staff members, A.J., Juan Carlos, Gabbie, and my significant other, Abel Rios attended in support of the research and to help facilitate when needed. I presented a summary of everything my community partners and I discussed in the previous workshops. I explained the key themes that we identified and solicited their feedback to ensure I grasped their perspectives, experiences, and

emotions accurately. The room was filled with a sense of community. I was quite nervous in the beginning seeing all the people, but so happy to be able to work with such a supportive group. Seeing how important this research project was to my community partners, it reminded me why I chose to pursue a career in anthropology. Though the final workshop was the longest, everyone was kind and patient. At one point, A.J. and Mayra Cerda—an Amigos staff member who helped me secure my partnership with Amigos—stepped in to help translate since much of the scientific language in my presentation required subject specific Spanish skills. We had many laughs, passed around cups of coffee to help people stay engaged, and had a very productive final workshop.

Project Deliverable

For the fourth workshop, I created an interactive webpage of my research findings using Adobe Express. The webpage includes post-hazard images, statistical tables, and census data from the USGS HayWired Scenario. In addition, it highlights key themes of the hazards, vulnerabilities, and proposed solutions discussed with my research partners. I also included accessible links to additional resources (e.g., emergency preparedness, legal support), which I translated into the primary language of my research partners. This webpage can be added to the Amigos de Guadalupe website as a resource for past, present, and future Amigos guests.

Reflection

Immigrants in low-income communities face multiple layers of marginalization. Navigating the day-to-day aspects of living in a new country is already difficult, and trying to do so in an emergency only exacerbates these challenges. The HayWired Scenario is a model based on the impacts of earthquake and fire hazards, which were mentioned in the discussions with my research partners at Amigos de Guadalupe, however, they were not identified as among the top

hazards of concern for my partners. Instead, my research partners highlighted that safety, a lack of access to essential resources, poor leadership, discrimination, and the rising cost of living posed as daily hazards people faced within their community. With these hazards being their top concern on a daily basis, it is scary to think about what they would have to do in a mass emergency situation. Immigrants provide a unique perspective and reinforcing the connection between the community and disaster researchers can not only enrich relationships and expand intellectual merit among people of varying backgrounds and levels of expertise but also help identify gaps in knowledge.

The demographic statistics in the HayWired Scenario were developed by scientists using census block group data to examine the physical and social impacts of disasters. Though there is some census data for non-English speakers in the scenario, it is outdated and does not accurately represent the reality. Furthermore, while there is some record of undocumented people in census data, there are limitations to obtaining a complete representation of how this group is affected due to missing data. One possible limitation is the reluctance of undocumented people to speak with outsiders for fear of being deported or experiencing negative encounters with police and other authority figures. This issue is magnified by the 2025 deportation policies and inhumane treatment of documented and undocumented individuals under the Trump Administration. Though this concern was not explicitly addressed during the workshops with my community partners, the current political climate raises an additional hazard: immigrant-serving relief organizations could be targeted by Immigration and Customs Enforcement (ICE), therefore exacerbating the existing chaos and confusion often associated with disasters. This community-focused science project is extremely important because underrepresented groups deserve to contribute to the emergency planning research and procedures that are meant to serve

them. Collaboration and communication between diverse groups can bring about new skills and understandings that provide an opportunity for growth, promote mindfulness toward the wellness and safety of the community, and encourage diversity, equity, and inclusion.

CHAPTER 3

PROJECT REFLECTIONS, LIMITATIONS, AND FUTURE IMPLICATIONS

Project Takeaways

Reflecting on insights from discussions with my research partners at Amigos de Guadalupe, I gained a deeper respect for immigrants and a better understanding of the multiple layers of marginalization they face. Their daily struggles, which are amplified in times of crisis, became more explicit. In the following pages, I address some aspects of our discussions that I was unable to include in previous chapters. I also highlight insights I discovered while gathering resources to include in my deliverable to Amigos. I discuss research limitations and benefits. I explore the broader implications of my findings for future research and policy. Finally, I provide recommendations for improving community engagement in disaster preparedness, and suggest next steps for phase two.

Additional Insights

During the feedback portion of my findings presentation, many of my research partners expressed concern for their pets in an emergency. Immigrants already face unique barriers when ensuring their family's safety in an emergency, and having a pet further complicates evacuation and sheltering. Pet owners often consider their animals as members of the family. Additionally, cultural beliefs may reinforce the deep responsibility they feel to protect their animals, often viewing their safety and well-being as just as important as the human family members. Unless they are a certified service animal—trained to aid their owner with a disability—there is a limited amount of emergency shelters and other public places that will allow animals. This limitation forces immigrants to choose between seeking safety and staying with their pets. Financial constraints limit options for pet transportation, boarding, and veterinary care. Language

barriers and misinformation can hinder one's ability to navigate available resources, while fears of deportation—especially since the 2025 deportation policies went into effect—may deter undocumented immigrants from seeking assistance. The disruption of support networks and access to resources leaves immigrants and their pets in a vulnerable situation. Addressing these concerns requires inclusive emergency planning to ensure that immigrants and their pets are accounted for and not forced to separate in a crisis.

While gathering informational emergency resources for immigrants—which I included in the “Helpful Links” section of my interactive webpage deliverable to Amigos—I discovered a discrepancy in the availability of emergency resources guides in multiple languages. Many resources for immigrants in the Bay Area were only available in English or in two or three other languages. Even though the disaster-related websites had capabilities in changing the language of the website content, the linked resources (i.e., PDF guides of disaster assistance services for immigrants) were often only available in English. I had some success finding Spanish versions of the emergency guides; however, the lack of accessibility for non-English speakers was deeply concerning.

While meeting with coordinators of disaster response organizations in the beginning of my research, I learned about the emergency alert messages (called WEAs or Wireless Emergency Alerts) that are sent to mobile devices in targeted areas. These coordinators had conducted multiple emergency-related workshops with marginalized communities and shared with me their findings. They enlightened me that the alert and warning messages sent to immigrant communities in the Bay Area do not meet their needs or expectations. Currently, the messages are only sent out in English. The U.S. government's existing alert and warning system is not able to manage multiple languages due to having a limited number of characters and no capabilities to

do real-time translation. Though a department has been established to begin addressing this issue, progress has been slow. There are county-specific emergency response apps available for residents to opt-in to receive alerts, but they are poorly publicized and still have language limitations (Hovey and Collins 2023). Addressing the challenges immigrant communities face in emergencies—including pet ownership, language barriers, and fears of deportation—requires meeting with these affected humans and listening to their needs and concerns. Regardless of their citizenship status, immigrants are human beings and deserve basic human rights.

Research Limitations and Benefits

Limitations in graduate research are inevitable and can arise from various factors. The limitations I faced included time constraints, adequate funding, resource availability, and methodological challenges. Because my research focused on marginalized communities near the Hayward Fault, I was limited to partnering with community organizations in the East Bay Area. At first, this helped narrow my search to not feel so overwhelmed by too many options. But, through multiple phases of outreach, my options quickly diminished.

Additionally, at first, workshop attendance was low. After adjusting my outreach efforts, participation improved. However, there was no way to ensure attendees would arrive on time, and every meeting ran over schedule. To respect my research partners' time, I would often rush through or skip parts of the workshop. While I am grateful for all the financial support I received through fellowships and grants, I wish I could have compensated my research partners more for their time and contributions. Lastly, working with immigrants from North and South America presented a language barrier. Though I have intermediate Spanish skills, I am not proficient enough to conduct a workshop entirely in Spanish, especially when discussing disaster-specific content. This limitation hindered my ability to develop a rapport as I had hoped. I do, however,

appreciate my community partners for their patience and willingness to engage despite these challenges.

Integrating the lived experiences of low-income, immigrant communities into emergency planning frameworks enhances cultural relevance and increases accessibility. It also promotes inclusivity and trust between marginalized populations and emergency management agencies. These benefits contribute to more effective preparedness and response efforts. Capturing firsthand perspectives about how immigrants perceive and experience disasters helps disaster researchers identify systemic barriers—such as limitations in language and access to essential resources, safety concerns, and financial constraints. This knowledge leads to more equitable resource distribution and targeted policy improvements. Also, utilizing community voices to inform emergency planning ensures policies accurately represent the needs of the people they are intended to serve. Incorporating community voices also strengthens resilience by leveraging informal support networks and encouraging mutual aid. By prioritizing inclusivity, emergency planning becomes more responsive to the unique challenges faced by immigrant populations; it ensures that preparedness efforts are effective as well as ethical and community-driven. Ultimately, capturing these lived experiences leads to more just and comprehensive disaster response strategies that protect and empower vulnerable communities.

Implications for Future Research

Based on the insights and limitations discussed, future research could focus on improving multilingual disaster communication, addressing barriers to resource access for immigrants, investigating the neglect of marginalized groups in disaster research, and exploring ways to incorporate pet safety into emergency planning. Research on language barriers in emergency communication could focus on enhancing real-time translation capabilities in alert systems to

ensure information is accessible to all communities in their native languages. This research could also evaluate how immigrant communities, with their diverse cultural backgrounds and languages, interpret and respond to disaster warnings. Understanding these responses will help tailor messaging to be more effective by reducing the risk of confusion and ensuring all individuals take appropriate action in an emergency.

Addressing barriers to resource access for immigrants in the Bay Area should be a priority in future studies. Research could examine systemic obstacles—such as legal status, financial constraints, and technological barriers—that hinder immigrants from accessing critical disaster assistance. Understanding these challenges could inform policies that improve access and equity in crisis response, ensuring marginalized groups get the support they need.

Given the emotional and cultural significance of pets, future research can explore ways to incorporate pet safety into emergency planning. This research could involve developing more pet-friendly shelters and transportation options. State and local emergency management agencies, in coordination with organizations like FEMA and animal welfare groups, should develop and implement policies that ensure pet owners can protect both themselves and their pets in an emergency.

Lastly, future research should investigate the disregard of marginalized groups in disaster studies, specifically examining why certain communities are often excluded from emergency planning and response processes. Investigations can include exploring historical and political aspects that marginalize these groups, and the consequences of exclusion on disaster preparedness, response, and recovery. Understanding the factors behind this oversight will allow for a thorough analysis of power dynamics in disaster policy-making. It will also help identify strategies to ensure marginalized individuals are active contributors throughout disaster research

and planning. Addressing this issue is necessary to create fair and inclusive crisis response systems that serve all populations, particularly those most at risk.

Recommendations Moving Forward

Improving Community Engagement in Disaster Research

To improve community engagement in disaster preparedness, it is important to build strong partnerships between emergency management agencies (e.g., USGS) and local community organizations that serve marginalized groups. This rapport can be built through conducting community-led workshops/focus groups like mine to enhance disaster planning and decision-making processes. Second, outreach efforts should be tailored to the specific characteristics of immigrants and low-income populations (e.g., language preferences and cultural beliefs) to ensure that information is accessible and relevant. Outreach can include offering resources in multiple languages, hosting more community-based workshops and employing community leaders to distribute information. Third, creating opportunities for hands-on involvement in disaster preparedness can empower communities to take ownership of their own safety and strengthen social cohesion. Organizing neighborhood drills, training programs, and even getting kids involved are great ways to build solidarity and teach the youth about the importance of teamwork. Lastly, it is essential to provide clear and practical guidance on accessing disaster assistance, addressing financial and legal obstacles, and ensuring that all members of the community, including pets, are considered in emergency plans. By adopting these approaches, emergency management systems can foster more inclusive, resilient communities that are better equipped to face catastrophes.

Next Steps: Phase Two

After a conversation with Caroline Ammon Yıldız (SJSU Applied Anthropology M.A.

alumna), I had the idea of creating an ArcGIS StoryMap deliverable. Due to time constraints, I was unable to bring this idea to fruition. A potential next step for phase two could be an elevated version of my interactive webpage deliverable using ArcGIS software. Developing a GIS-based or mobile friendly map that highlights essential resources can increase accessibility. Examples of resources to include in the map can be locations of emergency shelters, food distribution centers, legal aid services, and culturally relevant community organizations. This tool can also include real-time updates on disaster relief services during emergencies, ensuring people have timely and accurate information.

Final Thoughts

At the start of this research project, I was overwhelmed by uncertainty and imposter syndrome. I questioned why immigrants would trust me—a U.S.-born researcher—to tell their stories. I had never experienced the struggle of moving to a new country, navigating unfamiliar systems, or overcoming language barriers. Even though we shared some common ground as members of marginalized groups, I worried that my efforts to amplify their voices would fall short. However, as I engaged with my research partners at Amigos de Guadalupe, listened to their experiences, and worked alongside them, I found a deeper connection than I had anticipated. Their openness and willingness to share their realities reshaped my perspective and reinforced the importance of this work. In the end, I am grateful for the trust we built and optimistic about the impact of accurately representing immigrants in this research. I hope that these insights will contribute to more inclusive emergency planning and response efforts in the Bay Area, ensuring that the voices of those most affected by disasters are not only heard but actively shape the solutions.

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APPENDIX A: DEFINITIONS

1. Amigos guest:

A person who is receiving or seeking services from the Amigos de Guadalupe Center for Justice and Empowerment non-profit organization.

2. Research/Community partners:

The Amigos guests who participated in the *Phase I* workshop discussions.

3. Workshop/Focus Group/Meeting:

These terms are used interchangeably throughout the report to refer to gatherings where I and my community partners engaged in intensive discussions and activities regarding disasters, hazards, and vulnerabilities in the San Francisco East Bay Area.

APPENDIX B: TIMELINE AND ETHICAL CONSIDERATIONS

Original Timeline Example:

Date	Tasks
January – April 2023	Preparation: <ul style="list-style-type: none"> • Build rapport with partner organizations. • Plan structure of hybrid focus-group/workshop. • Draft interview questions.
May – August 2023	Data Collection: <ul style="list-style-type: none"> • Schedule and conduct focus groups/workshops and interviews. • Attend social gatherings to collect visual data. • Gather statistical, resource, and narrative information for virtual story map with partner assistance.
September – December 2023	Data Analysis and Write-up: <ul style="list-style-type: none"> • Completion of data collection. • Initiate data analysis. • Begin write-up of findings. • Begin transcribing data to include in virtual story map.
January – February 2024	Write-up and Transcription: <ul style="list-style-type: none"> • Continuation of research project report with feedback from SJSU faculty. • Continuation and finalization of virtual story map.
February – March 2024	Virtual Story Map Preparation: <ul style="list-style-type: none"> • Organize all resources and transcriptions being used for story map. • Coordinate with partners to set date for virtual story map launch on organization website.
April – May 2024	Final Report and Delivery: <ul style="list-style-type: none"> • Complete the final project report and make available to partners. • Virtual story map goes live on partner website.

Ethical Considerations

Though I worked with human subjects, due to the nature of my research project, I did not need to obtain SJSU IRB approval. Any and all personal information gathered from the focus groups were securely maintained and curated by me. None of the raw data was shared with Amigos de Guadalupe or other parties. This report contains curated information that does not expose the identities of my research partners.

APPENDIX C: ONE-PAGE PROJECT PROPOSAL



Prepared by Chyna M. Lee
on January 04, 2023

PROJECT DESCRIPTION

As an Anthropologist in training, I am researching how immigrants in the Bay Area understand and experience hazards and disasters. Engaging with multi-layered marginalized groups will highlight the challenges these communities may face in times of crisis, thereby allowing for the development of more inclusive policies and procedures related to emergency response and recovery.

PROJECT OBJECTIVES

- To understand how hazards (earthquakes, wildfires, floods, viruses, etc.) and vulnerability to disasters are understood and experienced by immigrants in the Bay Area
- To support disaster risk reduction by encouraging information exchange between scientists and historically-marginalized communities to develop more inclusive emergency response and recovery procedures

PROJECT TIMELINE

- June 2023 - Initial meeting & confirm partnership
- Summer 2023 – Internship & volunteer research begins
 - June-August 2023 – Site visits & Initial Data Collection
 - August-September 2023 – Focus Groups/Workshops
- October 2023 - Interpretation of Data & Revisions (with partner input)
- November 2023 – Finalize Data Analysis
- December 2023 – Prepare final deliverable
- Spring 2024 – Final Report/Deliverable to partners and stakeholders

Contact: Chyna M. Lee
E: chyna.m.lee21@gmail.com

APPENDIX D: WORKSHOP QUESTIONS & PHOTOS

Part 1: Hazard List and Discussion

We would now like to begin with a discussion of the different hazards you recognize in your community.

1. What hazards do you currently see (or foresee) affecting the [COMMUNITY NAME] community and environment? *Free list anything.*
2. Now, among the hazards we have listed, which are the five top priorities to address in your community? *Let each person vote for top 5, choose 5 with highest votes.*
3. Now, let's learn a little more about these priority hazards. *Ask the following for each:*
 - What danger does this present? How does (or could) this hazard affect people?
 - Could this potentially contribute to a disaster in your area? How so?
 - What is the cause of this? That is, where does it come from or how is it produced?
 - How long has this hazard been a feature in your community or environment?
 - Who is most affected by these hazardous conditions? Why?
 - Is anyone working on reducing or eliminating this hazard or the risk it poses?
 - What would you like to see done to reduce or eliminate this hazard?

Parte 1: Lista de peligros y discusión

Ahora nos gustaría comenzar con una discusión sobre los diferentes peligros que usted reconoce en su comunidad.

1. ¿Qué peligros ven (o prevén) actualmente que afectan a la comunidad y el medio ambiente de [NOMBRE DE LA COMUNIDAD]? *Lista cualquier cosa.*
2. Ahora, entre los peligros que hemos enumerado, ¿cuáles son las cinco principales prioridades en su comunidad? *Deje que cada persona vote por los 5 primeros, elija los 5 con mayor votación.*
3. Ahora, aprendamos un poco más sobre estos peligros prioritarios. Pregunte lo siguiente para cada uno:
 - ¿Qué peligro presenta esto? ¿Cómo afecta (o podría) este peligro a las personas?
 - ¿Podría esto contribuir potencialmente a un desastre en su área? ¿Cómo es eso?
 - ¿Cuál es la causa de esto? Es decir, ¿de dónde viene o cómo se produce?
 - ¿Cuánto tiempo lleva este peligro presente en su comunidad o entorno?
 - ¿Quién es el más afectado por estas condiciones peligrosas? ¿Por qué?
 - ¿Alguien está trabajando para reducir o eliminar este peligro o el riesgo que plantea?
 - ¿Qué le gustaría que se hiciera para reducir o eliminar este peligro?

Part 1: Vulnerability Worksheet

This worksheet is meant to help us identify those most affected by social vulnerability in your community and to learn about how these vulnerabilities are produced. We've organized this around different phases of disaster, including anticipation and prevention, response and coping, and recovery. For each one, please identify who in *your community* would experience the greatest challenges in accessing or commanding key resources and to help us understand why that is. In the interest of time, please try to complete each of the three sections within twenty minutes.

Anticipating and Preventing Disaster

1. Who in your community would experience the greatest challenges in:
 - a. Accessing reliable information about hazards and the risks of harm from them? Why?
 - b. Improving the structural conditions of their homes to be more hazard resistant (e.g., seismic retrofitting, flood proofing)? Why?
 - c. Reducing their exposure to hazards in their environment? Why?
 - d. Compelling government agencies to reduce hazards and risk in their environment? Why?

Response and Coping

2. Who in your community would experience the greatest challenges in:
 - a. Accessing reliable hazard and disaster information (e.g., preparation, warning systems)? Why?
 - b. Evacuating in the event of a disaster? Why?
 - c. Finding transportation in the event of an evacuation? Why?
 - d. Finding adequate shelter in the event of an evacuation? Why?
 - e. Accessing basic resources (e.g., food, water, clothing) in the event of an evacuation? Why?
 - f. Accessing sufficient financial resources in the event of an evacuation? Why?

Recovery

3. Who in your community would experience the greatest challenges in:
 - a. Finding new employment following a disaster? Why?
 - b. Finding new housing following a disaster? Why?
 - c. Accessing health care? Why?
 - d. Accessing mental health care? Why?
 - e. Accessing aid following a disaster? Why?
 - f. Having their voices heard by political leaders and government agencies? Why?
 - g. Generally getting their life back on track? Why?

Now we would like to consider the range of vulnerabilities you have identified and answer a few questions. *Ask permission and audio record conversation. Take notes on projector screen or white board.* We will take just 25 minutes to try and address a few questions.

- Looking at your worksheets, what vulnerabilities do you feel are especially important to address?
- What vulnerabilities, if any, do you see as being related?
- How would you like to see vulnerability addressed in your community? What would you like to see done?
- Whose responsibility do you think it is to reduce or eliminate these vulnerabilities?

Thank everyone present for their time and contributions. Collect all worksheets. Remind everyone that we will meet again in [DATE] to solicit their feedback on our findings and the process of participating.

Parte 1: Hoja de trabajo de vulnerabilidad

Esta hoja de trabajo tiene como objetivo ayudarnos a identificar a los más afectados por la vulnerabilidad social en su comunidad y aprender cómo se producen estas vulnerabilidades. Hemos organizado esto en torno a diferentes fases del desastre, incluida la anticipación y prevención, la respuesta y el afrontamiento, y la recuperación. Para cada uno, identifique quién en su comunidad experimentaría los mayores desafíos para acceder o disponer de recursos clave y ayúdenos a entender por qué. Por razones de tiempo, intente completar cada una de las tres secciones en veinte minutos.

Anticipación y Prevención

1. ¿Quién en su comunidad experimentaría los mayores desafíos en:
 - a. ¿Acceder a información confiable sobre los peligros y los riesgos de sufrir daños derivados de ellos? ¿Por qué?
 - b. ¿Mejorar las condiciones estructurales de sus hogares para que sean más resistentes a los peligros (por ejemplo, modernización sísmica, protección contra inundaciones)? ¿Por qué?
 - c. ¿Reducir su exposición a los peligros de su entorno? ¿Por qué?
 - d. ¿Obligar a las agencias gubernamentales a reducir los peligros y riesgos en su entorno? ¿Por qué?

Respuesta y afrontamiento

2. ¿Quién en su comunidad experimentaría los mayores desafíos en:
 - a. ¿Acceder a información confiable sobre peligros y desastres (por ejemplo, preparación, sistemas de alerta)? ¿Por qué?
 - b. ¿Evacuar en caso de un desastre? ¿Por qué?
 - c. ¿Encontrar transporte en caso de una evacuación? ¿Por qué?
 - d. ¿Encontrar un refugio adecuado en caso de una evacuación? ¿Por qué?
 - e. ¿Acceder a recursos básicos (por ejemplo, alimentos, agua, ropa) en caso de una evacuación? ¿Por qué?
 - f. ¿Acceder a recursos financieros suficientes en caso de una evacuación? ¿Por qué?

Recuperación

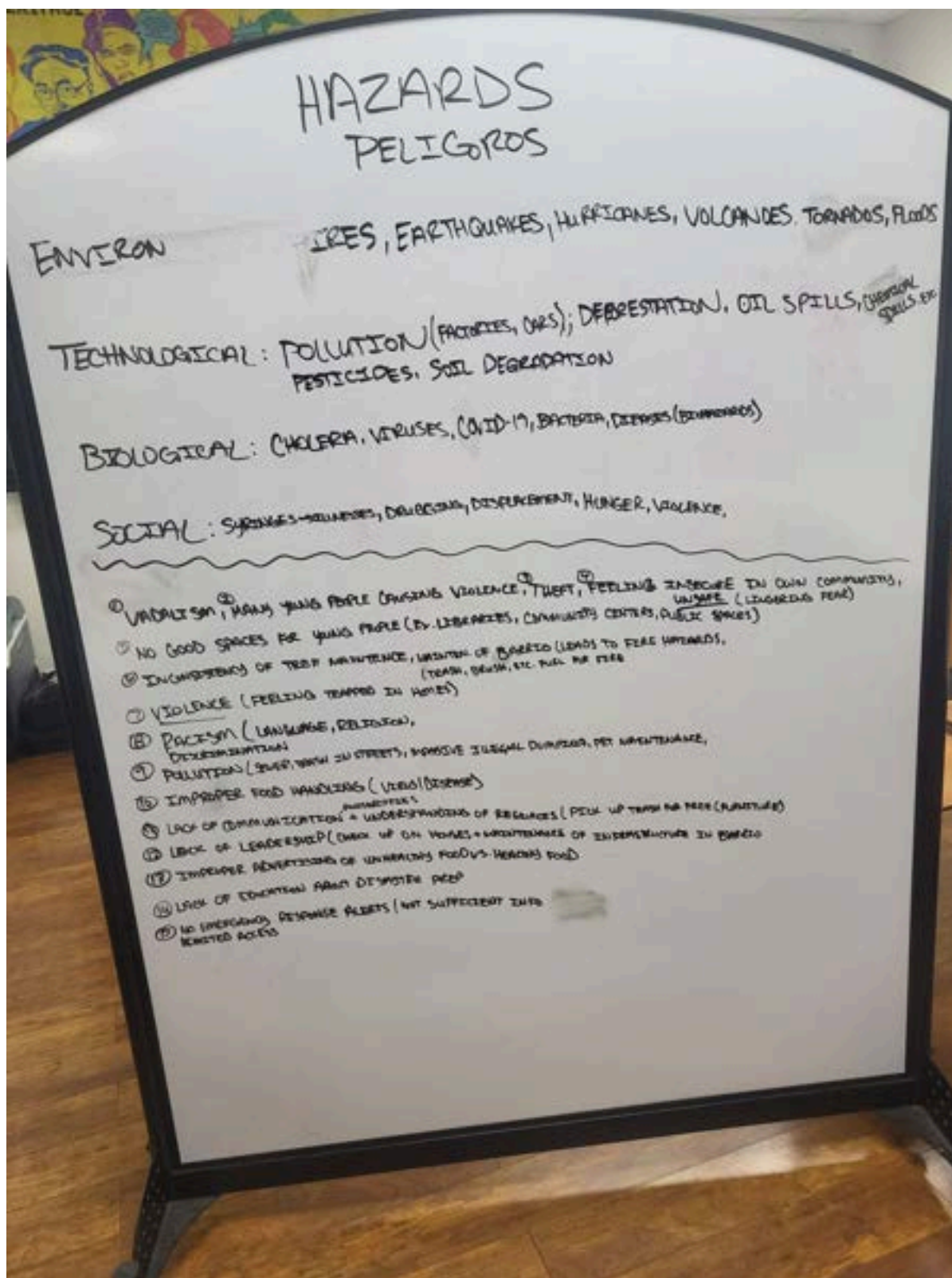
3. ¿Quién en su comunidad experimentaría los mayores desafíos en:
- ¿Encontrar un nuevo empleo después de un desastre? ¿Por qué?
 - ¿Encontrar nueva vivienda después de un desastre? ¿Por qué?
 - ¿Acceder a la atención sanitaria, incluso a la salud mental? ¿Por qué?
 - ¿Acceder a la ayuda de las instituciones después de un desastre? ¿Por qué?
 - ¿Que sus voces sean escuchadas por los líderes políticos y las agencias gubernamentales? ¿Por qué?
 - ¿En general, recuperar su vida? ¿Por qué?

Parte 2. Acción

Ahora nos gustaría considerar la variedad de vulnerabilidades que ha identificado y responder algunas preguntas. *Pida permiso y grabe la conversación en audio. Tome notas en la pantalla del proyector o en la pizarra.* Nos tomaremos solo 25 minutos para intentar responder algunas preguntas.

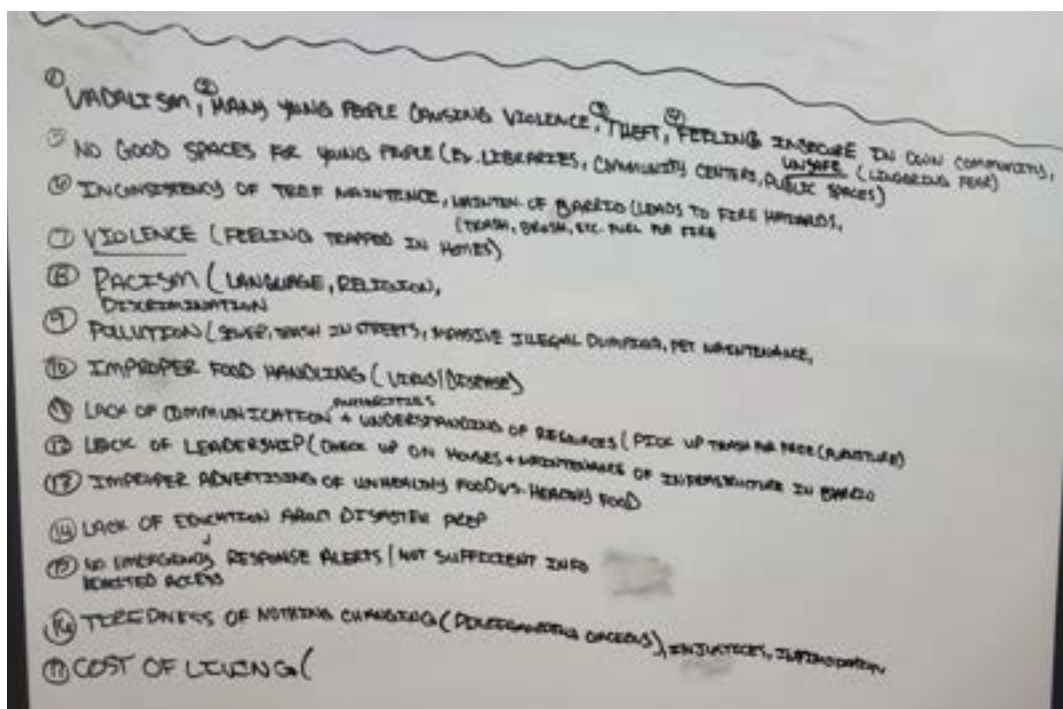
- Al observar sus hojas de trabajo, ¿qué vulnerabilidades creen que son especialmente importante abordar?
- ¿Qué vulnerabilidades, si las hay, considera que están relacionadas?
- ¿Cómo les gustaría que se abordara la vulnerabilidad en su comunidad? ¿Qué te gustaría que se hiciera?
- ¿De quién cree ustedes que es la responsabilidad de reducir o eliminar estas vulnerabilidades?

Agradezca a todos los presentes por su tiempo y contribuciones. Recoge todas las hojas de trabajo. Recuerde a todos que nos reuniremos nuevamente en [FECHA] para solicitar sus comentarios sobre nuestros hallazgos y el proceso de participación.



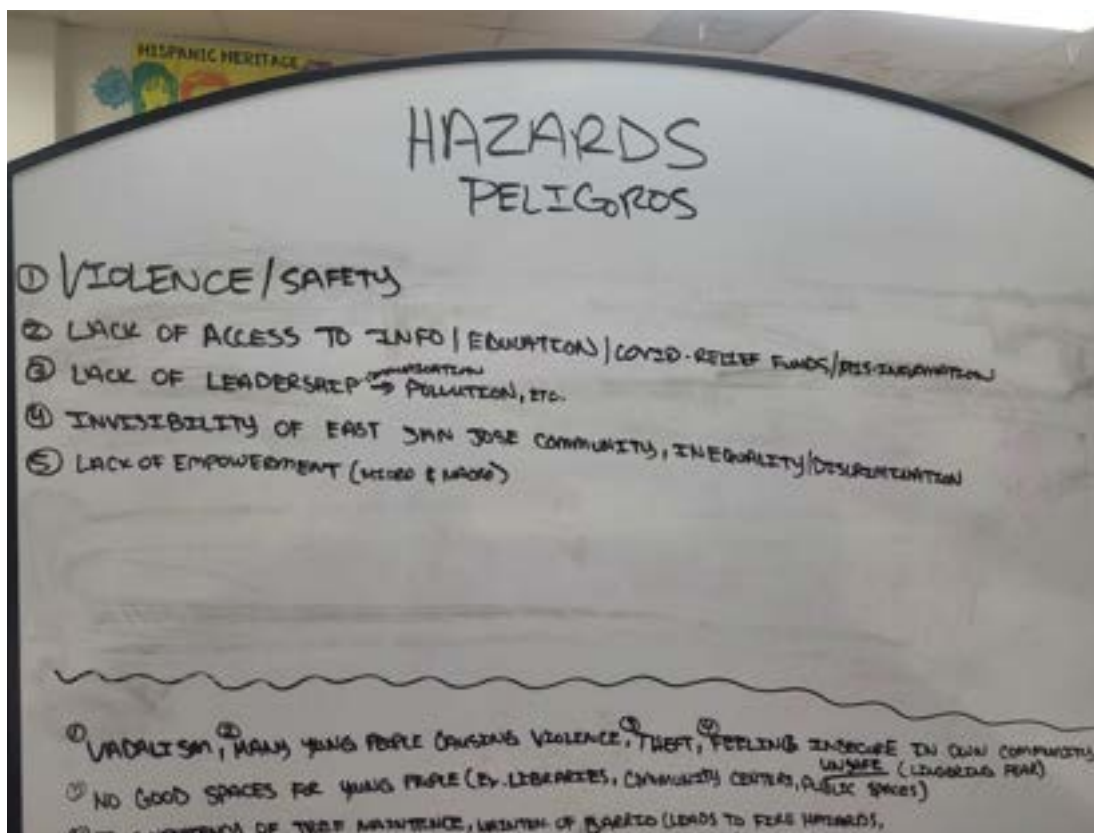
Workshop discussion responses on whiteboard

Photo by Chyna M. Lee



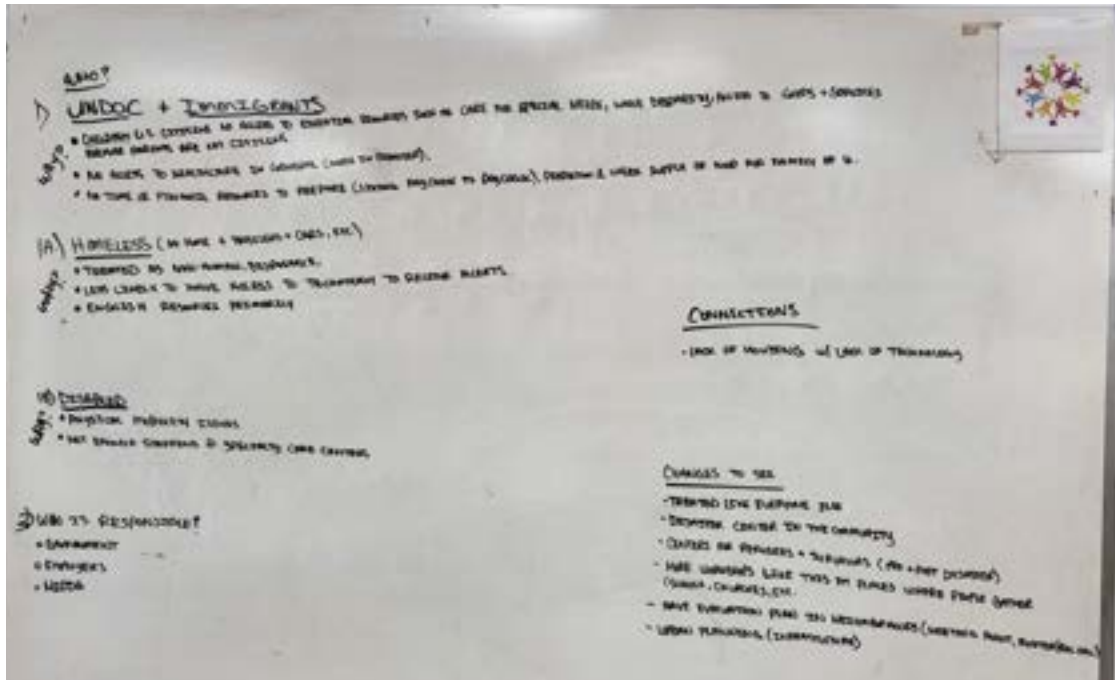
Workshop discussion responses on whiteboard

Photo by Chyna M. Lee



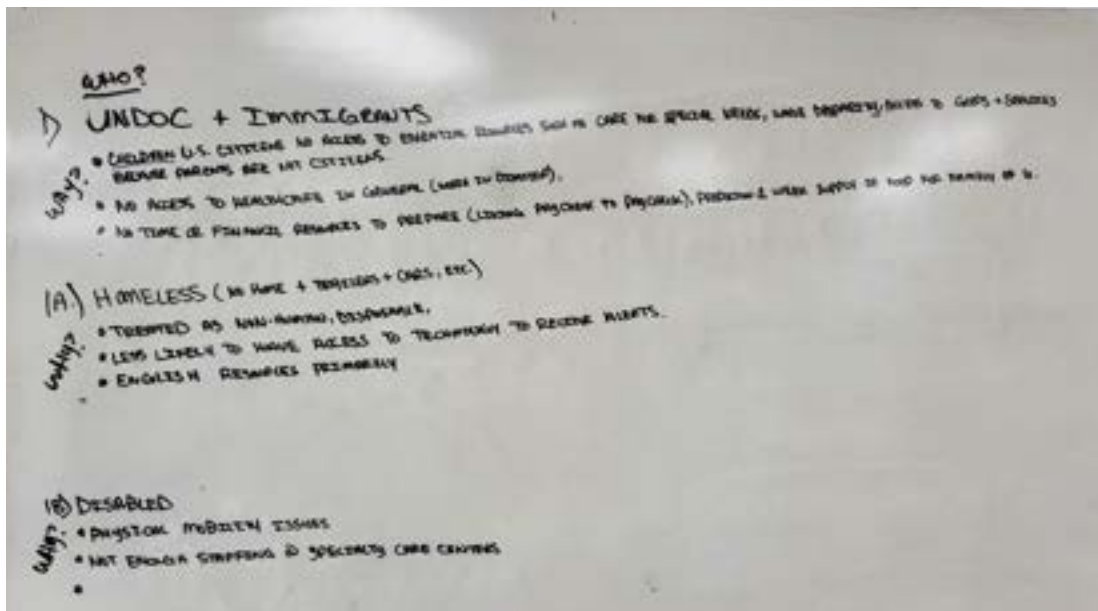
Workshop discussion responses on whiteboard

Photo by Chyna M. Lee



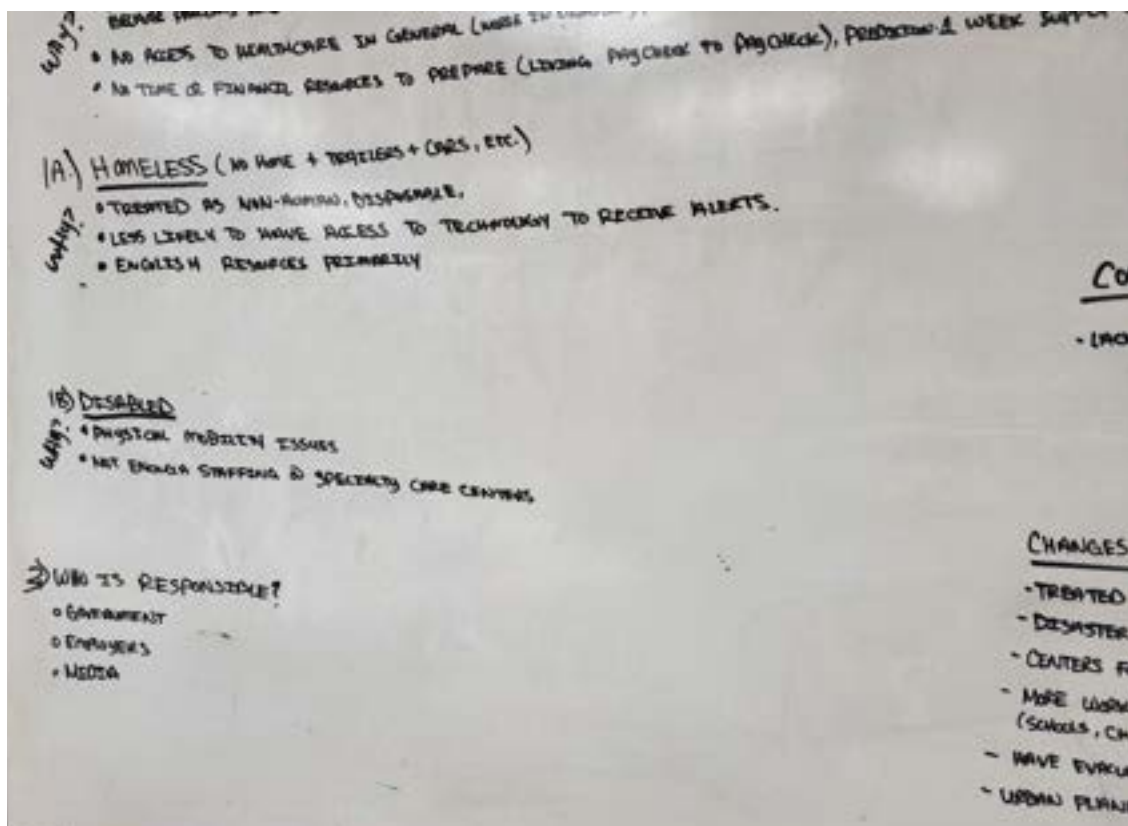
Workshop discussion responses on whiteboard

Photo by Chyna M. Lee



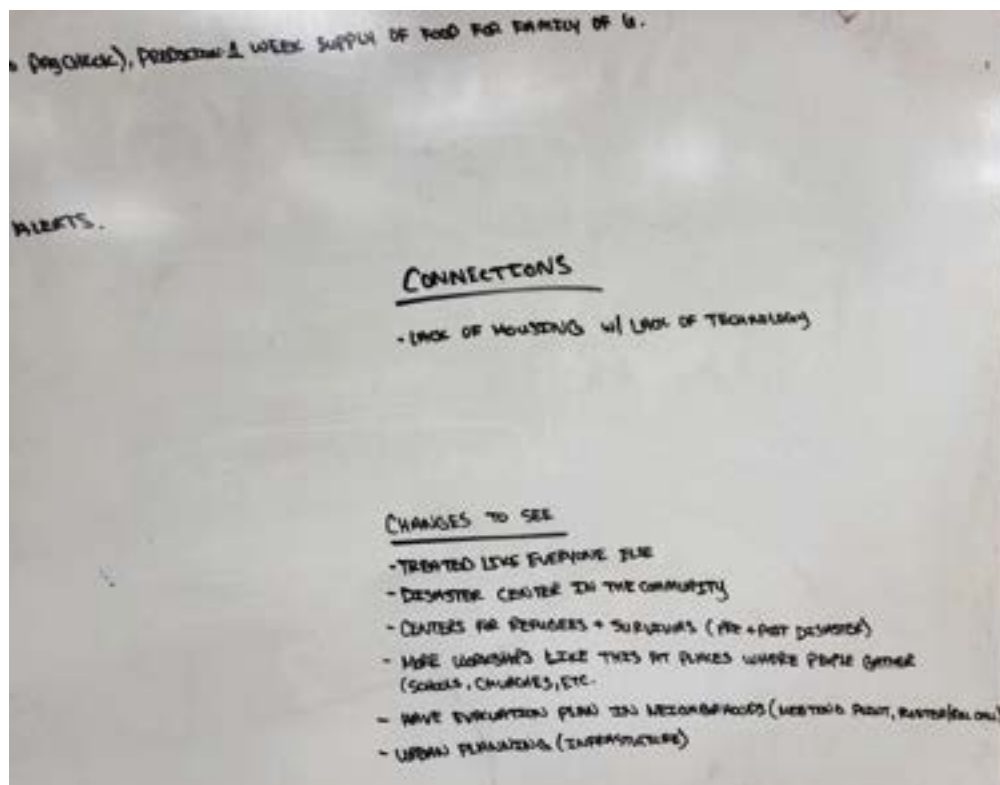
Workshop discussion responses on whiteboard

Photo by Chyna M. Lee



Workshop discussion responses on whiteboard

Photo by Chyna M. Lee



Workshop discussion responses on whiteboard

Photo by Chyna M. Lee

APPENDIX E: AMIGOS DE GUADALUPE PHOTOS



Amigos de Guadalupe Main Office.

Reference: <https://www.amigoscenter.com/>



Amigos de Guadalupe Executive Director, Maritza Maldonado. Photo by Lorraine Gabbert, San José Spotlight
<https://sanjosespotlight.com/one-womans-quest-to-transform-east-san-jose-maritza-maldonado-amigos-de-guadalupe/>



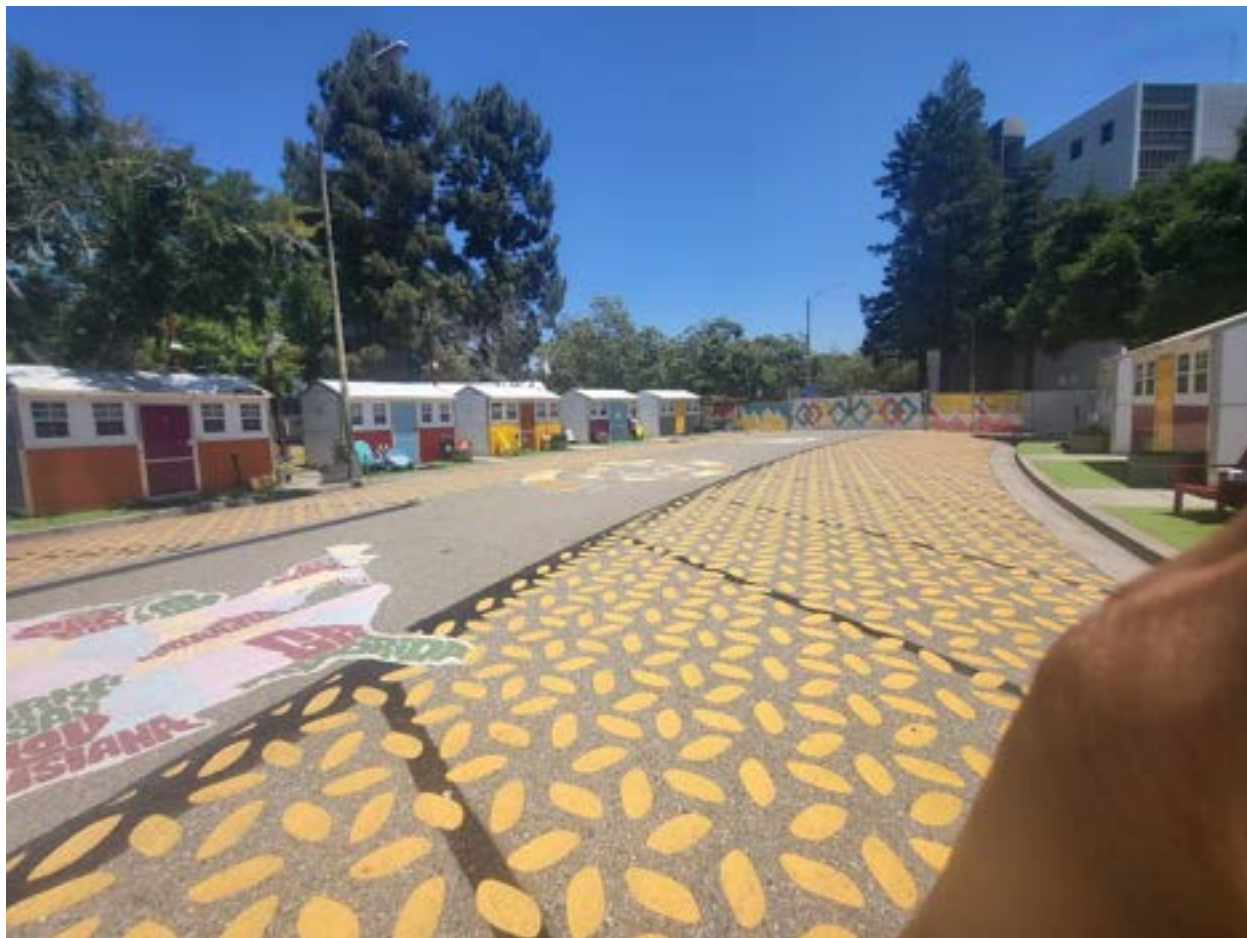
First Amigos site visit at Casitas de Esperanza.

Photos by Chyna M. Lee



Casitas chalk U.S. Map

Photo by Chyna M. Lee



Casitas main street

Photo by Chyna M. Lee



Casitas neighborhood

Photo by Chyna M. Lee



Casitas mobile laundry facility

Photo by Chyna M. Lee



Casitas mobile shower & bathroom

Photo by Chyna M. Lee



Casitas neighborhood

Photo by Chyna M. Lee



Casitas tiny homes

Photo by Chyna M. Lee



Casitas tiny home unit 16, sleeps 4.

Photo by Chyna M. Lee



Casitas tiny home, vacant unit bunk beds

Photo by Chyna M. Lee



Casitas de Esperanza picnic area

Photo by Chyna M. Lee



Casitas de Esperanza community garden

Photo by Chyna M. Lee



Casitas de Esperanza community garden & lounge area

Photo by Chyna M. Lee



Casitas de Esperanza lounge area

Photo by Chyna M. Lee



Safe Park Program, a part of the interim housing program at Amigos. Reference: <https://www.amigoscenter.com/safe-park>

APPENDIX F: MEET THE AUTHOR



Chyna M. Lee (chyna.m.lee21@gmail.com) is a graduate of the M.A. Program in Applied Anthropology at San José State University (SJSU). Her graduate research focused on working with immigrants in low-income communities in San José, CA to contribute to a community science hazard and vulnerability assessment, in the context of disaster research. This project was led by a partnership between the United States Geological Survey (USGS) and SJSU's Department of Anthropology. Chyna earned her B.A. in anthropology from San Diego State University (SDSU) in 2016. During her undergraduate studies, Chyna developed extensive field and laboratory training from research projects conducted in Belize, Peru, Cuba, Illinois, and various parts of California. One year post graduation, Chyna enlisted in the United States Marine Corps (USMC). She honorably served four and half years of active duty, completing her active service as a non-commissioned officer (E-5, Sergeant). Chyna then served another four years as a reservist, while continuing her education at SJSU. In addition to her previously mentioned affiliations, Chyna has held multiple leadership roles as an Assistant Lab Manager for the Veterans Curation Program (VCP) in San Mateo, CA. She completed a summer internship as a Field Archaeologist Supervisor with the Center for American Archeology (CAA) and was a Historical Tour Guide at the Museum of Us (MoU) in San Diego, CA. Additionally, Chyna is the co-editor of two published books by entrepreneur and school counselor Areva Denise Neely.