

AN ABSTRACT OF THE THESIS OF

Katherine A. Stanton for the degree of Master of Arts in Applied Anthropology presented on September 3, 2020.

Title: Building Resilient Oregon Coastal Communities: Reimagining Critical Facilities through Latinx Sense of Place

Abstract approved:

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Abstract

This paper examines equitability of critical facilities within resilience planning efforts and how it relates to accessibility and utilization for Latinx community members along the Oregon coast in relation to natural hazards including the Cascadia Subduction Zone. Interviews and focus groups were conducted with emergency management personnel and Latinx coastal community members in Newport City and Clatsop County regarding their perceptions of critical facility values and locations, in order to create an inclusive sense of place. The interviews and focus groups were analyzed and used to identify necessary changes within resilience planning efforts that will improve resilience levels for Latinx community members along the Oregon coast. This research finds that current resilience planning focus and efforts regarding critical facilities are not meeting the needs of Oregon Latinx coastal community members, creating inequitable access and utilization in times of need. This paper identifies Latinx determined critical facilities and their associated values resulting in various suggested improvements for equitable accessibility and utilization. This research is meant to expose systemic issues in resilience planning efforts regarding critical facilities, not to catalog cultural differences. A critical facility according to FEMA, provides services and functions essential to a community, especially during and after a disaster (FEMA, n.d.).

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Building Resilient Oregon Coastal Communities: Reimagining Critical Facilities
through Latinx Sense of Place

by
Katherine A. Stanton

A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Arts

Presented September 3, 2020
Commencement June 2021

Master of Arts thesis of Katherine A. Stanton presented on September 3, 2020.

APPROVED:

Major Professor, representing Applied Anthropology.

Director of the School of Language, Culture, and Society

Dean of the Graduate School

I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Katherine A. Stanton, Author

ACKNOWLEDGEMENTS

The author expresses sincere appreciation to my family, friends, professors, committee members, peers, the OCF team and most importantly the participants and community contacts who made this research possible. Thank you to the OSU Anthropology department and the Oregon Sea Grant: Envisioning Oregon Coastal Futures project for funding.

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DEDICATION

I dedicate this document to all of the participants and my family.

Introduction

In response to the 1989 Loma Prieta earthquake, Oregon has realized a need for improving disaster planning, therefore an Oregon Seismic Safety Policy Advisory Commission (OSSPAC) was established in 1991 (OSSPAC, 2018). OSSPAC published a *Mass Care and Mass Displacement after a Cascadia Subduction Zone Earthquake* report in 2018, stating that the 2013 Oregon Resilience Plan (ORP) focuses “primarily on Oregon’s infrastructure and critical and essential facilities.” (p. 4). The ORP includes the 2012 *Oregon Resilience Planning Overview*, which cites critical facilities as; emergency operation centers, police and fire stations, healthcare facilities, primary and secondary schools (K-12, College, and University), government administration/services facilities, emergency shelters, residential housing, community retail stores, financial/banking and vulnerable buildings (p. 283) – these locations will be referred to as government-predetermined locations.

Resilience preparedness efforts in Oregon focus on protecting these government-predetermined locations in a tiered approach including “strengthening existing critical facilities that are already outside of the tsunami zone” and to “relocate critical infrastructure outside of the tsunami zone” (OSSPAC, 2013, p.66) both of which require substantial time and funding. While these facilities are undoubtedly important to protect, there is a lack of focus regarding sense of place for typically marginalized communities in increasing resilience and decreasing vulnerability. Therefore, we must consider that not all community members will access or utilize them in the same way.

This difference in utilizing these places can be attributed to a lack of trust due to historical discrimination of marginalized communities by government authorities who are choosing these facilities and running efforts to protect them. If Latinx coastal communities’ perceptions of what should be considered a critical facility isn’t gathered and implemented within disaster planning efforts, then Oregon will be left with a large and prominent disparity of access to resources specific to individual needs.

Fussell et al. (2018) describes some of the pitfalls of inequitable access to critical services on the part of marginalized communities: “In a disaster situation, unauthorized immigrants-and

even authorized immigrants with family and friends who are unauthorized-may disengage and avoid seeking help from first responders, law enforcement officers, and emergency health care providers, out of fear that they may be reported to federal immigration enforcement officials or because they believe that they do not qualify for such services” (p. 1618).

Therefore, reevaluating critical facility protection efforts to include facilities determined by Latinx coastal communities themselves will provide higher resilience levels for Oregon coastal communities as a whole. The critical facilities and associated values identified by Latinx coastal community members through sense of place (SOP) theory can additionally be identified throughout other communities due to found common characteristics. OSSPAC acknowledges inadequate leveraging of community assets, leaving Oregon unprepared for mass care and mass displacement needs following a Cascadia event (OSSPAC, 2018). By assuming a universal agreement of which places are critical to a community in disaster, it can only be expected that some groups’ perspectives within communities are not considered. This is why exploring sense of place on the Oregon coast with Latinx communities is imperative for disaster risk reduction (DRR) efforts.

This paper examines sense of place within Latinx community-determined critical facilities through identified values and locations and aims to provide suggestions of how to create equitable access and utilization within critical facilities in order to improve resilience. Therefore, the research questions are as follows:

- What locations are deemed ‘critical facilities’ by Latinx coastal residents?
- How do these community-determined locations align with the critical facilities determined by state and local agencies?
- For Latinx residents, what values are associated with these locations that create a sense of place?

The purpose of this study was not to create a universal definition and/or list of critical facilities but rather to exemplify the importance of using tailored policies within resilience planning in order to meet the needs of more community members. This research is meant to expose systemic issues in resilience planning efforts regarding critical facilities, not to catalog cultural differences. Notably, Latinx is not a term that encompasses the diversity of the

community members that participated in this research but is simply a singular descriptive commonality.

Literature Review

Risk in Landscape

It is important to differentiate between the terms hazard and disaster when discussing planning efforts. A disaster can be defined as

a process/event combining a potentially destructive agent/force from the natural, modified, or built environment and a population in a socially and economically produced condition of vulnerability, resulting in a perceived disruption of the customary relative satisfactions of individual and social needs for physical survival, social order, and meaning (Hoffman and Oliver-Smith, 2002, p.4).

Hazards can be considered “the forces, conditions or technologies that carry a potential for social, infrastructural, or environmental damage” (Hoffman and Oliver-Smith, 2002, p.4). The Intergovernmental Panel on Climate Change (IPCC) projects that within the 21st Century, climate change will exacerbate weather and climate events with increased frequency and intensity (IPCC, 2007). This includes chronic hazards such as sea level rise (SLR), and flooding, as well as acute hazards such as wildfires, and hurricanes. Over the past 10,000 years the Cascadia Subduction Zone (CSZ), which runs up the North American west coast from Northern California to Southern Canada, has experienced a magnitude 9.0 earthquake approximately every 526 years as well as magnitude 8.0

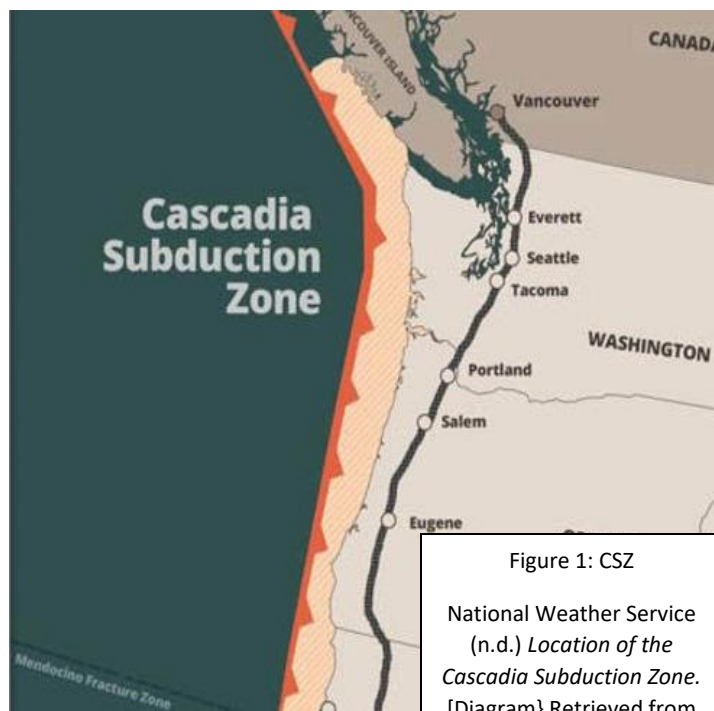


Figure 1: CSZ

National Weather Service
(n.d.) *Location of the
Cascadia Subduction Zone.*
[Diagram] Retrieved from
https://www.weather.gov/jetstream/cascadia_max

earthquakes approximately every 234 years, we are currently at 320 years past the last earthquake (Spitz, 2015). There is approximately a 33% chance that the CSZ will experience an 8.0 magnitude earthquake within the next 30 years and even more shocking is the 7-12% likelihood of a 9.0

magnitude earthquake (Goldfinger et al. 2012). A 9.0 magnitude earthquake would subsequently result in a tsunami reaching in excess of 10 meters onto coastal landscapes (Gonzalez et al. 2009).

The Oregon Coast consequently faces the threat of both chronic and acute hazards due to its locality. Oregon coastal towns are diverse in nature due to the abundance of natural resources and industries such as; agriculture, tourism, recreation, seafood, etc. As of 2016 the U.S. west coast shellfish industry alone contributes around 270 million dollars per year to the economy and supports 3200 jobs (Mabardy et al, 2016). The impact of the CSZ on coastal communities will undoubtedly be life changing for many coastal residents. These impacts will vary depending on individual circumstances at various levels. For instance, the 6.9 magnitude Loma Prieta earthquake of 1989 in San Francisco Bay area resulted in 63 fatalities, while a 7.0 magnitude in Haiti killed 300,000+ people in 2010 (Marino, 2015). Although these two earthquakes were similar in magnitude their impacts varied greatly due to individual circumstances. At a local or community level, impacts may be catastrophic for those who live or work within the inundation zone or who have less access to resources, while others may only be slightly inconvenienced due to their circumstances such as disaster preparedness or access to additional support. These varied levels of impacts relate directly to concepts of vulnerability and resilience.

Vulnerability

Most generally, beginning in the 1980s, vulnerability has been conceived as the conditions present in a community that include both exposure to hazard and the inability to cope with or adapt to those hazards in a way that prevents negative outcomes, including death, infrastructure damage, and social dysfunction (Marino, 2015, p. 24).

Vulnerability can be exemplified through both social and environmental factors from various perspectives. The combination of both social and environmental factors impacting an

individual or community increases the likelihood of vulnerability. In addition to the environmental focus of vulnerability through hazard-centric risks, exists the concept of social vulnerability which “identifies sensitive populations that may be less likely to respond to, cope with, and recover from a natural disaster. Social vulnerability is complex and dynamic, changing over space and through time.” (Cutter, Finch, 2008, p. 2301).

While this is an important aspect to consider within vulnerability, it does not explore the historical and political context and reasons *why* some populations are less likely to respond to, cope with, and recover from natural disasters. Political ecology further contributes to understanding vulnerability by focusing on power within human and environmental relationships. Additionally, “Hazard exposure is not only a matter of relationships between humans and the environment, but also, and arguably largely, a result of the relationships between groups in a society” (Faas, 2016, p. 17). Therefore, considering; a hazard-centric approach to vulnerability, as well as political ecology (human and environment power relations), and the historical and political context of why some populations are more socially vulnerable (the relationships between groups in a society), it is easy to understand the important role political decision making plays in protecting marginalized communities from various vulnerability factors.

It’s important to note the various way of attempting to understand vulnerability, due to its inherent subjectivity between various fields of studies and often times degradation to a mechanistic term. For the purpose of this paper we will focus on the various factors of social vulnerability due to; the acknowledged hazard-centric approach previously mentioned in landscape risks, and the fact that we are striving to inform how political decisions are made, leaving the social factors unaccounted for in this study. The decision of focusing on the conditions of social vulnerability is not without acknowledgment that these conditions exist due to historical disparities. Rather the decision was made due to the use of anthropological methods of working directly with community members in the present, in order to inform policy making in the future, requiring the need to study current social vulnerability conditions and related utilization of critical facilities.

The term vulnerability in this paper is used with caution and respect to those in which are identified as so. The use of this term may often be perceived as a description of someone with less agency or capability, which is not the intent of this paper. Those who may be highly vulnerable in one area must be recognized as possibly just as resilient in others.

Various social vulnerability indexes (SVIs) exist using multiple means of metrics such as income and education, in an effort to decrease vulnerability by identifying mitigation strategies such as resource assistance. With SVIs, social vulnerability can be mapped according to metrics and geographic scoring. Therefore, when considering population, migration, and economic changes it is easy to comprehend how social vulnerability is constantly changing both spatially and temporally, and why it is important to consistently work to monitor and mitigate social vulnerability by individual place. Similarly, exposure to natural hazards are constantly changing due to climate change and weather patterns which can be addressed using natural hazard mitigation planning strategies such as building seawalls or seismically safe construction. Understanding how hazard exposure and social vulnerability overlap allows predictive capabilities through modeling based on population, demographic, and hazard location and probabilities. This modeling can allow communities to increase their capacity to prepare and respond to disaster events through pre-disaster mitigation strategies that lessen hazard exposure and social vulnerability.

While social vulnerability is recognized by government entities and some futures modeling efforts, policies or strategies to address social vulnerability are rarely implemented or addressed at a level to improve preparedness efforts in order to decrease vulnerability. The Oregon Mass Care Report (2018) acknowledged that a 2018 report from the Regional Disaster Preparedness Organization (RDPO) and the Oregon Department of Geology and Mineral Industries (DOGAMI) which focused on expected Cascadia impacts in three Oregon counties “does not consider social vulnerability and how people are impacted differently based on their circumstances before the disaster. Statewide estimates of these impacts would prove extremely valuable to federal, state, local, and tribal government’s Cascadia response and recovery planning” (p. 16). Consequently, The Oregon Mass Care Report recommends that “State

Recovery Plans should include pre-disaster mitigation, especially those things that reduce social vulnerabilities” (p. 10).

Similarly, FEMA recently published a report in 2019 for the emergency management high education community called *Cultures of Preparedness* where the focus from preparedness as a universal term is expanded to include the diversity of our country by acknowledging the many cultures within. Previously FEMA was focused on implementing a culture of preparedness, without the plurality of cultures, therefore disregarding the diversity and individual needs within our country. Within this report they discuss those who experience more acute risk and harm from disasters i.e. the socially vulnerable, but it is acknowledged that the individuality of different cultures is not accounted within disaster risk reduction therefore social vulnerability is not currently being addressed by FEMA (FEMA, 2019).

“Not all communities experience a disaster in the same way or to the same degree; each undergoes a catastrophe in the context of its own profile of vulnerability” (Hoffman and Oliver-Smith, 2002, p.13). Considering that Latinx populations along the Oregon coast by counties range from 6.10% to 10.50% (United States Census Bureau, 2019) and Latinx population increased by 70% in Oregon between 2000 and 2011 (López-Cevallos, 2014) it is important to include Latinx stakeholders’ perspectives and needs within resilience planning.

Social determinants, which are typically used in public health, can exemplify how certain subgroups within a population experience resulting impacts differently causing varied levels of social vulnerability. Social determinants include; socioeconomic background, immigration status, limited English proficiency, residential location, and stigma/marginalization, to name a few (Derose et al. 2007). Latinx communities in Oregon are negatively impacted by social determinants and building resilience due to the 49% of Latinxs with less than a high school education compared to only 8.4% of non-Latinx whites and the difference in poverty rates where 29.1% of Latinos under 18 live in poverty while only 12.9% of non-Latinx whites live in poverty as well as the fact that almost 5% of this population are immigrants (López-Cevallos, 2014). “In many places, resources to support preparedness, response, and recovery initiatives for immigrant communities are scarce or nonexistent” (Fussell et al. 2018).

A social ecological model (SEM) accounts for various social determinants or impacts in individuals' lives at different levels. This includes public policy, community, organizational, and interpersonal levels which encompass and impact each other down to the individual level respectively. The SEM can be applied in disaster preparedness due to the related focus of resilience. Considering these determinants within the various SEM levels one can understand how we must approach disaster preparedness specifically tailored to individual populations and subgroups in order to ensure one group is not disproportionately advantaged or disadvantaged in times of need.

For instance; based on the Latinx *individual* (orange) knowledge, attitudes, and skills, DRR strategies can target family, friends, and social networks within the individual's *interpersonal* (blue) circle. Additionally, the interpersonal circle is targeted through *organizations* (purple) and social institutions found through *community* (green) relations and mandated by national, state, and local laws and regulations of *public policy* (red). "Social determinants of health are rarely incorporated into disaster preparedness, response, and recovery programs and policies to minimize harm to the public" (Fussell et al. 2018). Focusing on improving critical facilities using targeted methods to address social determinants and vulnerability factors is one way to address resilience within public policy using the SEM. Notably, this is a top-down approach, focusing policy and government as the highest and largest component and the individual as the lowest and smallest.



Figure 2 Social Ecological Model (Lee et al. 2017)

While “Vulnerability is the pre-event, inherent characteristics or qualities of social systems that create the potential for harm...Resilience is the ability of a social system to respond and recover from disasters and includes those inherent conditions that allow the system to absorb impacts and cope with an event” (Cutter et al. 2008, p.599). Latinx, and other socially vulnerable populations that are sensitive to hazard exposure need to increase adaptive capacity to respond to these hazard risks via individual, family and institutional mechanisms. Increasing individual and institutional adaptive capacity increases community resilience.

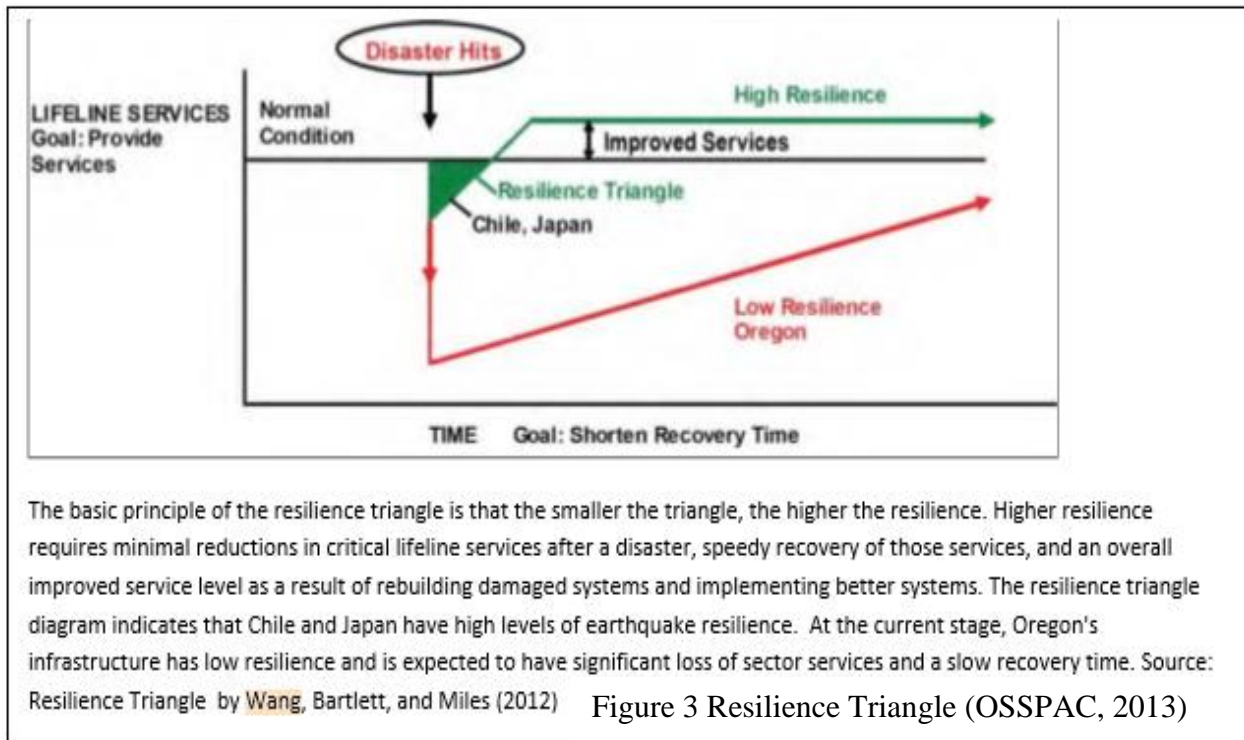
Resilience

The concept of resilience as a whole has been explained as a state of constant change with stability and flexibility along the lines of one’s capacity. The concept of resilience was first explored as ecological resilience, which can be explained using the ball and cup theory, first used by Holling in 1973 (Gunderson, 2000). Consider the systems in which we live (both ecological

and human) as a wavy line going up and down to varying degrees that constantly change. The dips in the waves can be thought of as a cup, and if we consider a ball placed on the wavy line, it would have the most stability while in the cup of the wave. Therefore, the ball is least resilient when at the top of the wave because it can easily be swayed from the slightest shift and would take a long time to get back to the top of the wave. While a ball in the cup would be considered highly resilient because it would take a rather large disruption in the wave to alter the ball's state out of the cup but would be relatively easy and quick to fall back into place in the cup. It is no coincidence that this concept can be applied in both social and ecological terms due to the similarity in systems and various possible perturbations.

We should understand that ecological communities are produced through interactions between individual components and ecosystems, similarly how human communities are formed by cultural individuality and environmental factors of their surrounding communities. "In many cases, the external environment places constraints on what is possible within a given ecological community" (Cumming, 2011 p. 113) such as political power and positionality which limits vulnerable communities' abilities to access resources and knowledge. As ecological species are removed from ecosystems due to environmental factors, their number and strength of interactions are changed due to lack of biodiversity, leaving some more vulnerable to predation than others through fragmentation and reliance on scarce resources (such as in a disaster) "We should expect particular kinds of species and possibly particular functional groups to be lost first" (Cumming, 2011 p. 180). For the sake of comparing ecosystems to human systems to find similarities of resilience, we can infer that these vulnerable ecological species can be compared to vulnerable communities within a disaster, resulting in "predation" of those communities after natural disasters have fragmented and increased reliance on scarce resources. This may seem extreme, but the comparison is not farfetched when understanding that both human systems and ecosystems are biologically grounded and are both affected by power dynamics through structural systems and management. The connections between resilience in social and ecological systems show the link between value and place respectively, creating the need to consider sense of place within resilience planning.

As previously stated, social vulnerability can be perceived in various forms therefore SVIs have different metrics depending on the analysis. Similarly, resilience has been examined using different indicators. For instance, in an effort to understand various perspectives of community resilience (which encompasses social resilience), a study was conducted with hazard researchers, emergency management practitioners, and policymakers from New Zealand asking them to finish the following phrase “A resilient community is/has...”. The most frequently mentioned social resilience attributes in the study were; community gathering place, social support, knowledge of risks and consequences, collective efficacy, and sense of community (Kwok et al. 2016). The importance of emphasizing these perspectives is to focus efforts on social resilience attributes which can recuperate social systems as soon as possible. Recuperation can be measure through impact of condition and time. Engineers use a resilience triangle to measure and depict resilience in structural settings. The larger the impact on a structure, the longer it would be expected to rebuild it, but the least amount of time would result in higher resilience. However, the focus of recuperation as quickly as possibly can inherently disregard the reason disasters strike in the first place. “If resilience is the ability of a community or society to bounce back, then have we forgotten that disasters are produced through human practices?” (Barrios, 2016, p.32). This quote exemplifies the fact that whatever situations are presently faced are inherently a result of historical decision and behavior. Therefore, if resilience planning is focused on returning back to a normal condition then the cycle would undoubtedly perpetuate future hazardous conditions. This concept is in fact depicted within the resilience triangle diagram but does not emphasize the importance of improved conditions over shorter time of recovery.



It is important to consider the varying perspectives of resilience and the temporal and spatial changes while working to improve resilience in order to include all possible factors. Combining the concepts of structural and ecological resilience as physical places and social resilience as a personal sense, allows the joint preservation of sense of place in reimagined and inclusive critical facilities.

Sense of Place

When considering SOP theory, we must understand the subject of place itself, and recognize that place is inherently related to locality, but not limited to that. Through historic use of the term *place* in geography, place has meant “an objective point on the earth’s surface that can be simply described by using coordinates” (Cresswell, 2013, p.112). Cresswell, a humanistic geographer suggests using the term *location*, instead of place, when referring to place in the previous context because of its limiting conceptual framework of place to nothing but a coordinate. Place can mean much more than location when we attach meaning behind it, which was recognized by human geographers in the 1970s according to Cresswell. Place, opposed to location “attends to

how we, as humans, are-in-the-world - how we relate to our environment and make it into place” (Cresswell, 2013, p. 113).

As Cresswell refers to *location* and *place*, Agnew, another human geographer, refers to them as *location* and *locales* respectively (1987). Agnew emphasizes the importance of considering locals’ various interactions and relations within different *locales* in order to recognize various power dynamics within the *locales*. These power dynamics can be seen through “spatially extensive division of labor and global systems of material production and distribution” (Agnew, 1987, p.27). This concept of power in *locales* exemplifies the power dynamics in place and demonstrates that a place can hold the power of political positionality.

If *locations* (as a coordinate) and *locales* (as the relation to location) are not defined by community members themselves for disaster risk reduction efforts, then they are not being allowed the power to assert their position within critical facilities, leaving them in a disadvantaged state of having to adhere to what is claimed as critical by others. By considering the sense of place within the critical facility *locales* determined by Latinx coastal community members, we can improve resilience by reimagining these places in which Latinx coastal community members self-identified with associated values.

Place attachment is a concept in relation to sense of place and explored by Low and Altman in their book *Place Attachment*, with a multidisciplinary framework (1992). Low and Altman introduce place attachment as historically being explored in fields such as anthropology, architecture, family and consumer studies, folklore, gerontology, landscape architecture, marketing, psychology, social ecology, sociology, and urban planning. However, the perspective of this book is from the study of environmental behavior where Low and Altman candidly point out that the concept of place attachment, at a broad cultural level, has historically focused on how people seek out and adapt to new situations through instability, migration, and change rather than beneficially focusing on how they affiliate and attach themselves to current locales. Included in sense of place theory, place attachment is explained as “The word ‘attachment’ emphasizes affect; the word ‘place’ focuses on the environmental settings to which people are emotionally and culturally attached” (p. 5).

Community identity research points out that “communities are imbued with public meanings and, as such, serve as symbolic locales with distinct cultural identities” (p. 259). These cultural identities are sentimental embodiments of location to cultures and losing these places they are attached to could have devastating effects. Low and Altman discuss how sense of place intersects with community sentiment in the context of place attachment to form a cohesive understanding of community perspective and feeling. These feelings are further explored through stories of place which can result in, but are not limited to; rootedness, alienation, relativity, and placelessness. By understanding the interception of place attachment and sense of place it is clear that places can have profound effects on communities when these relations are disrupted.

Understanding sense of place in relation to critical facilities can help improve equitable access and utilization to community members. By gathering sense of place through community-determined geographic locations and associated values we can focus efforts on creating a sense of place within all critical facilities to make them more inclusive.

Methods

Sampling and Outreach

Due to the large population of Latinx community members on the Oregon coast approximately 16.40% in Newport alone (United States Census Bureau, 2019), Latinx perceptions of locations and values associated with critical facilities is significant in order to reimagine inclusive critical facilities and improve resilience. Therefore, purposive sampling of Latinx community members who live on the Oregon coast, specifically in Newport city and Clatsop County, was used to target participants. Participants were identified through snowball sampling methods among social networks within the Oregon Sea Grant “Envisioning Oregon’s Coastal Futures” project, Latinx resource nonprofits, and OSU extension services. Snowball sampling, also known as chain referral method, is a “network sampling method for studying hard-to-find or hard-to-study populations” (Bernard, 2011, p.147). These populations can be hard to find and study for various reasons such as “they are stigmatized and reclusive...or even actively hiding” (Bernard, 2011, p.147). Given the current political climate, this explanation is highly relevant when attempting to recruit Latinx participants.

Outreach efforts for snowball sampling began on June 2nd, 2019 with IRB approved scripts for cold-calls, emails, and voicemails. The last logged outreach was on September 24th, almost four months later, and undoubtedly persisted beyond this documented date since data collection didn't finish until November 6th, 2019. Frustration grew throughout the summer along with the level of difficulty finding connections with Latinx community members and realizing the widespread disconnect between my extending network and potential Latinx participants. I reflected on previously successful outreach efforts targeted to Latinx community members elsewhere and attributed the current disconnect to geographic distance, as I was in Corvallis, not coastal communities. It became apparent that it was not only my outreach methods and location that weren't ideally efficient in reaching potential Latinx participants; but also, the lack of connections between the related professionals and working classes that exist along the Oregon coast. A large majority of the Latinx participants worked in seafood or tourism industries, highlighting the lack of connection and inclusion in the resilience planning process within my networks.

My privilege as an educated white woman, assuredly blinds me from recognizing these basic disconnects on a daily basis, yet here it was in front of me with my very own network of contacts. The original plan was to finish data collection at the end of August from Lincoln and Tillamook County, it was nearly three months after August that the exhaustive efforts ended with site locations of Newport City and Clatsop County. Lincoln and Tillamook counties were ideal due to proximity and existing data, yet Newport City and Clatsop County were the only locations I could find available and willing community contacts which made the project possible by bridging the gap to find participants. My contact in Newport brought all participants from within the city, while my contact in Astoria brought in participants from many surrounding areas all within Clatsop County. The only found connection to Latinx community members within Tillamook county is a Spanish language GED tutor who was interested and willing in assisting with recruitment and coordination but was already overextended and unable to take part.

Thankfully, I eventually found two key community contacts (1 in Newport and 1 in Clatsop County) who helped recruit, facilitate, and interpret interviews and focus groups. Recruitment flyers were shared with the community contacts to distribute within their Latinx community networks. Additionally, the Newport Emergency Management Office, The Lower Columbia Hispanic Council, and Newport's Centro de Ayuda posted the flyer on their social media pages. Thanks to these two community contacts who helped bridge the gap, 34 Latinx coastal community members participated in the study (See Table 1 for participant demographic information).

2 participants could only do either the focus group or mapping activity leaving us with 33 total sets of participant data despite having 34 actual participants. Children were always present and welcomed to attend, disaster preparedness coloring books and comic books were provided with other activities. All focus groups and interviews were held at familiar and comfortable places for participants. In Newport we met at a church where the offices of a Latinx resource center (Centro de Ayuda) is, as well as at the OSU Extension building when the church wasn't available. The Clatsop County focus groups were held at the Lower Columbia Hispanic Council location thanks to the community contact, participants were regular clients and comfortable and familiar with

The flyer features a header with a colorful sunburst graphic and the title 'Preparación para Desastres – Una Conversación de la Comunidad Latino'. Below the title, it specifies the target audience: 'Debes ser mayor de 18 años, identificar como Latino/a/x, y vivir en Newport.' The main body of the flyer is enclosed in a yellow border and contains the following text:

Únase a nosotros para una conversación comunidad para compartir en qué desea que se centren los esfuerzos de preparación para desastres.

- ¿En qué lugares de tu comunidad te gustaría estar protegido?
- ¿Qué quieres que haga tu comunidad en preparación para emergencias?

Septiembre 6, 13, 20 y 27, 2019 - 5:30 a 7 p.m.

Niños bienvenidos, tarjetas de regalo por participación y quédate después para cena y una clase de cocina gratis!!

Logos for Sea Grant Oregon and Oregon State University are present. Contact information for St. Stephens Iglesia is provided: 414 SW 9th St, Newport, Oregon 97365. Contact details for Katie, Beatriz, Jenna, and Debra are listed.

At the bottom, a blue box contains the text: 'Imaginando una Costa de Oregon Resiliente: Co-desarrollo de futuros alternativos para la planificación de la adaptación y la toma de decisiones. El propósito de este estudio de investigación es identificar cómo las acciones o estrategias potenciales de la comunidad para disminuir el impacto de los peligros costeros (por ejemplo, inundaciones, terremotos, tsunamis) pueden afectarlo.'

Figure 4 Outreach Flyer

that location. Additionally, 2 non-Latinx emergency management personnel participated in individual settings at their offices.

Understanding the demographics of participants is an important factor to consider when collecting data. Having the majority of participants as women can influence the findings by providing a dominantly female perspective. While it's not certain that findings would be different it is important to consider this factor.

Table 1 Participant Demographics

Participant Demographics Table 1	Newport N=15	Clatsop N=19	E.M. N=2
Gender			
Female	11	9	2
Male	2	6	
No Response	2	4	
Age			
18-29	4	2	
30-39	1	3	
40-49	7	6	
50-59	2	3	2
60-69		1	
No Response	1	4	
Education			
K-5th	1	1	
6th - 8th	4	2	
9th-12th	6	5	
Some College	1		
2 Year College	1		
Graduate Degree			1
Licenciatura	1	7	
No Response	1	4	1
Income			
<25k	7	3	
25-50	3	8	
50-75		3	1
>75	1		1
No Response	4	5	
Hospitality Industry Worker			
Yes	10	6	
No	4	11	
No Response	1	2	

Data Collection

Qualitative data was collected through semi-structured interviews and focus groups starting on June 18th and ending on November 6th of 2019. The interviews and focus groups were held mostly in Spanish but required interpretation assistance from the two community contacts due to my limited Spanish language fluency.

Interviews and Focus Groups in Data Collection

Semi-structured methods are closest to the middle of a low to high control spectrum in interviewing methodology. Semi-structured interviews follow an interview guide unlike unstructured or informal interviews. They also allow flexibility in clarification of questions, order and direction in interviewing unlike structured interviews, which are nearly identical between participants and often follow an interview schedule. An interview schedule almost guarantees complete control and consistency between participants because it guides the interviewee between possible questions and responses such as “if the participant gives this response, then go to question 10”. Choosing semi-structured methods allowed an easy flow of



Figure 5 Newport Session 2 Cooking Class, led by Community Contact seen behind counter 9-13-19

conversation being able to jump between topics if they presented themselves sooner than expected or expanding on concepts brought up by some participants and not others. Both interviews and focus group methods were used due to the uncertainty of how many participants would show up for each session. Flexibility in interviewing is necessary when attempting to understand perceptions, especially when using both English and Spanish. The same interview guide was used in both the interviews and focus groups and focused on: sense of place within critical facilities, hazard awareness, hazard preparedness, policy perception, and ending with the place attachment mapping activity. This thesis only covers sense of place within critical facilities.

Focus groups can be defined as a “research technique that collects data through group interaction on a topic determined by the researcher” (Hesse-Biber, S. N., Leavy, P., 2004). They are not only ideal for getting as many participants as possible within a limited timeframe but also because it is believed that “if the subjects belong to the same societal and cultural background... it will ensure the free flowing, open and sincere discussion among the participants” (Dilshad et al. 2013). A noted limitation of focus groups is the quantity of data collected. In a comparative study of individual interviews and focus groups it was found that two eight-person focus groups produced as many ideas as 10 individual interviews (Hesse-Biber, S. N., Leavy, P., 2004). However, quantity does not signify quality.

Both the interviews and focus groups were consensually recorded and documented in field notes and some focus groups used flip charts as a visual aide to participants and record keeping for me. As the interview and focus group’s moderator I was conscious of using probing methods such as silent probes and tell-me-more probes and avoiding leading them into specific answers. As well as actively engaging the nonverbal respondents while disengaging the more dominating verbal respondents. Adaptations were made throughout interviews and focus groups due to lessons learned, such as switching the mapping activity to the end instead of in the middle due to difficulty of getting conversation back on track and the time and effort it took to explain and assist with the activity. Additionally, after the first session felt like more of a presentation rather than a discussion with me and the project P.I. on one side and all participants on the other, I made sure that in all future sessions we sat around the same tables facing each other.



Figure 6 Newport session #1
one side presentation 9-6-19



Figure 7 Clatsop Session # 7
Round table discussion 11-6-19

Trust Building and Reciprocity in Data Collection

It is important to note that responses were given to me as a notably non-Latinx coastal community member resulting in conversations that could have gone much differently if I were; a coastal community member, Latinx, and/or Spanish fluent. Recognizing my positionality as an outsider in many aspects such as geographically, culturally and linguistically, in relation to participants, can shed light on understanding feedback to certain subjects. “Response effects are measurable differences in the responses of people being interviewed that are predictable from characteristics of the interviewers and those being interviewed” (Bernard, 2011, p. 176). For instance, a deference effect is when respondents say what they think you want to hear in order not to offend you, or the social desirability effect where they say what they think will make them look good (Bernard, 2011). I started every interview and focus group with an introduction of myself and the project in Spanish and explained my limited fluency which was meant to offer comfort to them regarding the language barrier, in an attempt to lessen the power dynamic. I spoke in Spanish as much as possible to increase comfort levels but often times had to rely on my community contacts for interpretation resulting in a notable disconnect.

As an outsider I was at a disadvantage in gaining trust which can cause hesitation in sharing candidly regarding perceived values and locations of inclusive critical facilities. Ideally trust would have been gained over months of interactions within these communities and with

participants through ethnographic fieldwork such as participant observation, but due to lack of time and geographic distance this was not very feasible. I was only able to attend one community event prior to any interviews or focus groups. I went to a family walking night in Newport with Latinx community members, some of whom ended up participating in the study. I do believe this sliver of interaction added to participation willingness and my credibility by word of mouth within Latinx coastal community members.



Figure 8 Sharing some homemade berry cobbler after our walk. 7-25-19

The limited trust I earned was mainly through the two community contacts who were both interested and concerned with this topic and were excited to assist in furthering this knowledge in order to bring attention to needs that are not being met for Latinx coastal communities in current disaster policy and planning. Having the two community contacts introduce me to participants helped build trust and break the ice as well as sharing food each session. Trust and comfort were built in Newport while sharing in the experience of learning about nutrition, how to cook the weekly recipes, and sharing a meal at the end of the night together. I always made sure to bring homemade desserts to show my gratitude as well as offering a grocery gift card to each participant. I was unfortunately not close enough to bake and bring dessert to the Clatsop County focus groups, but I was able to provide dinner for all participants prior to beginning since these were not a part of the cooking or nutrition classes as in Newport. Grocery gift cards were also provided to participants. These means of participatory

compensation were not only for the sake of building trust and breaking ice but also a form of reciprocity showing my gratitude for their sacrifice of time and shared perceptions.

In anticipation of receiving questions regarding hazards and what to do, I offered participants disaster preparedness education materials at the end of every session. In Newport I set up a table with multiple educational resources of disaster preparedness as awareness in Spanish which were provided to me by Newport emergency management personnel. In Clatsop County I handed out bags of educational resources supplied by Clatsop County emergency management personnel; only some were supplied in Spanish.

Analysis

Transcriptions, recordings and field notes of the interviews and focus groups were analyzed using inductive coding in order to identify grounded theory of how to reimagine critical facilities to be more inclusive resulting in higher resilience levels. This involved identifying thematic codes (reoccurring categories) regarding perceptions of important places to protect in times of need and their associated values (Berg and Lune, 2012). The analysis has been sent to the community contacts for member checking in order to ensure that the interpretation of community perceptions was gathered and analyzed correctly.



Figure 9 Making information packets at Emergency Management Astoria office. 11-5-19

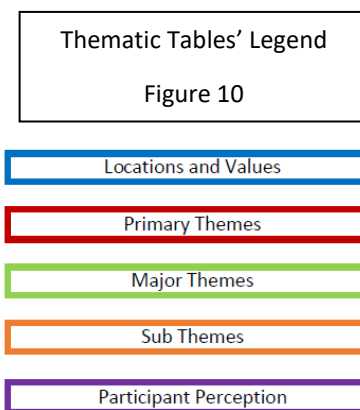
Findings

In order to answer the research questions: 1) “What locations are deemed ‘critical facilities’ by Latinx coastal residents?; 2) How do these community-determined locations align with the critical facilities determined by state and local agencies? and 3) What values are associated with these locations that create a sense of place?” the following questions were asked to all participants: 1) “*What places in your community would you go to/rely on/or wish to have protected in times of need?*”; and 2) “*Why did you or what characteristics made you choose those locations?*”

I will present results in the order of Latinx residents of both Newport and Clatsop County together due to similarity in findings, then emergency management personnel. With each, I will address the locations identified, the values behind them, and the intersection between locations and values.

Explanation of Tables

Identified locations for critical facilities and associated values determined by Latinx community members and emergency management personnel within Newport and Clatsop County were divided into primary (red), major (green), and sub themes (orange) based on the responses of participants (purple), as seen in the tables below. These themes were created as conceptual categories from participants’ responses using inductive coding methods.



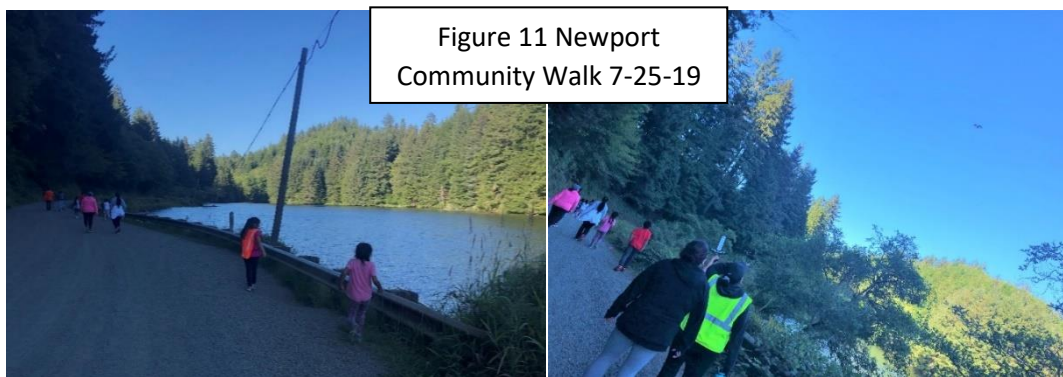
Latinx Locations (Table 2)

In order to understand the congruency between Latinx identified critical facilities which are not included within the already predetermined list of government defined critical facilities, locations were split into primary themes (red) of *community-determined locations* and *government-predetermined locations* (Table 2).

Due to the understood differences in access and utilization of critical facilities by socially vulnerable community members, it is important to consider the systemic inequalities within

current practices of determining critical facilities and how power within these locations relates to the decision-making process. Therefore, the level of public governance within locations should be accounted for, which is the reason why locations were categorized as full choice control, privileged choice control, and no choice control. *Full choice control* signifies that participants have full control of whether or not they utilize those spaces such as recreational sites and nonprofits (the associated sub themes). *Privileged choice control* is limited to those who have the luxury of choosing where they live, work and/or shop (the associated participant perceptions) due to individual circumstances determining their *livelihood* (the associated sub theme). The privileged choice control locations (homes, stores, and work) are split between the primary themes of community-determined locations and government-predetermined locations because; homes and stores are currently included in government-predetermined facilities while place of work is a community-determined critical facility. *No choice control* refers to places where the public has no control of choosing how and when to use those facilities based on emergency or required needs such as *medical facilities, emergency services, government administration and schools* (the associated sub themes - orange).

It is important to note that there are private medical and schooling facilities which would create a sense of privileged control within these themes, however only public schools and public medical facilities were referenced in these sessions therefore they were categorized as *no choice*.



Newport and Clatsop Latinx Identified Locations for Critical Facilities Table 2

Newport and Clatsop County Latinx Identified Locations of Perceived Critical Facilities										
Community-Determined Locations					Government Predetermined Locations					
Full Choice Control			Privileged Choice Control			No Choice - Government Control				
Recreation		Nonprofits		Livelihood		Medical	Emergency Services	Government Admin.	Schools	
Newport	Parks	Churches	Resource Centers	Work		Homes	Hospitals	Fire		Public Schools, Commonly the Middle School
	Beaches						Community Health Clinic	Police		
	Rec Center						Health Dept./DHS			
Clatsop County	Sport Fields	Churches	Resource Centers	Work	Stores	Homes	Hospitals	Fire Stations	City Hall	Public Schools
	Recreation Places				Restaurants	Retirement Homes				Astoria College
	Parks									
	Pools									
	Astoria Column									
	Armory									
	Beach									
	Mountain									
Movie Theatres										

Newport and Clatsop results of identified locations were combined in Table 2 due to the similarity in results. The main differences are that Clatsop listed stores, restaurants, and city hall, but did not mention police. The fact that they didn't reference police sheds light on the importance that there was only one participant in Newport who stressed police stations as a critical facility, resulting in not much of a contrast between locations regarding police.

The importance of stores and restaurants in Clatsop came from personal experience when a storm hit and the only place with electricity and warm food was a Chinese restaurant where everyone ended up eating.

“Restaurantes, sí, está bien, porque si hay un desastre y en tu casa se va la luz o algo, tienes que salir a ver dónde hay comida. Porque la vez cuando hubo el desastre de la tormenta. ¿2006, 2008? Porque era el único lugar donde había comida caliente. En el Chinese restaurante.”

Restaurants, yes, that's good because if there's a disaster and the lights go out in your house or something, you have to go and see where there's food. Because the

time when there was the disastrous storm in 2006 or 2008, because it was the only place where there was hot food, in the Chinese restaurant. (Clatsop, 11-5-19)

And City Hall was only mentioned due to the frequency and proximity (locations factors) in which a participant passes it on a daily basis.

“City hall is in the middle of the town. I'm driving around and I pass the city hall several times, more than three times during the day, and if there's any issue or disaster or not disaster, you always know there are people around it. If you have trouble, you can go there, find some help or information also.” (Clatsop 11-6-19)

It is clear from Table 2 that the locations most noted were recreational sites. These places were categorized as recreational due to the common theme of leisure and activity between them. The conversations in Newport and Clatsop regarding recreational spaces focused primarily on how these places allow for activities and keeping yourself busy. A man in Newport stressed the importance of keeping his son active and involved.

“El Rec Center, porque van a hacer deporte, especialmente mi niño que participó un poco, pero ahora mi niño es activo en el deporte y yo creo que ocupa mucho tiempo para eso.”

The Rec Center because they go to do sports, especially my son who participates. (Newport, 11-2-19)

Additionally, the conversation regarding recreational spaces was notably much more in depth and longer in Clatsop County and focused on recreational spaces as a way of literal survival in times of need, not just for activities. The interest of having wilderness survival classes was prominent, and one woman noted the importance of relying on Mother Nature for what we need when we don't have anything else.

“Muchas veces la Madre Naturaleza es la que nos da las cosas que necesitamos. Si no hay nada, puede uno aprender lo que hay en ese momento. Encontrarse uno en una situación donde no trae nada, perdió todo. Hay que buscar primero que la da, el agua, un techo. Si hay madera o árboles, hojas,

como hacían los indígenas, uno tiene que encontrar la manera de tejer, ya sea ramas.”

Many times, Mother Nature is the one who gives us the things we need. If we have nothing, once can learn what is there at that time. Finding one in a situation where they bring nothing and lost everything. You have to look first for the one who gives it, water, a roof. If there is wood or trees, leaves, as the Indigenous people did, one has to find a way to weave branches. (Clatsop County, 11-5-19)

Recreational locations along with nonprofits fall within the full choice control theme, where residents have all the power of choosing when, where and how to utilize and access these places. Majority of locations chosen as full choice control shows the importance of maintaining personal power and control within critical facilities in times of need.

The community-determined locations for critical facilities (recreation, nonprofits, and work) and government predetermined critical facilities identified in Newport and Clatsop are roughly split with about half the locations being predetermined and about half being community-determined. This shows that while participants agree with predetermined critical facilities, they also highly value the additional community-determined locations resulting in a need for additional focus on places other than predetermined locations.

Latinx Values (Table 3)

Latinx community members in Newport and Clatsop county identified various values associated with determined critical facility locations (Table 3). Values were divided into major (green) and sub (orange) themes. *Community* and *Aid* were the only two major value themes which include further sub themes of *activity, people and supplies (orange)*. The other three major themes are *in/exclusion, feelings and location factors*.

Newport and Clatsop Latinx Identified Values of Critical Facilities Table 3

Newport and Clatsop Latinx Values of Critical Facilities							
	Community		Aid		Experienced In/Exclusion	Positive Feeling	Location Factors
	Activity	People		Supplies			
Newport	Walk	Family	Dr.s	Food	No document required regarding where you're from or ethnicity (Hispanic or American)	Calm	Elevation
	Sports	Youth	Lawyers	Shower		For everyone	Not Dangerous
	Party	Ethnicity	Child Care	Clothes	Not for Everyone / Documents required regarding Nationality	Strength	Frequency
	Camp	Nice	Trained	Medicine		Comfort	Beautiful
	Swim	Share	Facilitators	Everything		Familiar	
	Participation	Good		Money		Trust	
	Education	Social		Supplies		Protected	
	Active			Equipment			
Clatsop County	Recreational Activities	Youth	Facilitation	Groceries	No discrimination Policy	Security	Location
	Entertainment	Family and Pets	Doctors	Food		Free of bullying.	Relieves Stress
	Distraction	Retirees		Supplies		Relieves Frustration	Proximity
	Dances	Important People		Water		Welcoming	Space/Big
	Communicate	Our Community and People		Everything		Fun	Routes
	Educational			Bathrooms		Happy	Frequency
	Skate			Kitchen		Protected	
	Exercise			Electricity		Relaxed	
	Health					Instinct	
	Walk					Familiar	

Again, Newport and Clatsop results were combined in Table 3 of values due to the similarity in results. Interestingly, there are far more listed values referenced by participants in comparison to the amount of locations, exemplifying the significance of values within sense of place compared to locality. It appears in Table 3, that activities, supplies, and positive feelings were the most noted values associated with critical facilities. The value of activities were categorized within community values because they were in reference to time with other people, hence the value of people included in the community value category. A Newport participant noted that walking on the beach with his family and having parties there to be social is very important to him.

“Ir a caminar a la playa. Sí, es muy bonito... mi esposa iba con mi niño a caminar... Yo pienso que eso es algo muy importante... una visita aquí a las familias, socialmente uno hacia fiestas y todo eso.”

Go for a walk at the beach. Yes, it's very beautiful...my wife was going with my son to walk...I think that's something very important...a visit here to the families, socially have parties and all that. (Newport, 11-2-19)

People as a category, was split between the values of community and aid because some people were referenced in association with being social and other people were referenced as those who provide some kind of assistance. Even pets were included within community due to the reference made of pets being their children with four paws.

“La playa es un lugar muy importante para el estrés. Se relaja, camina uno, y llevan a sus hijos a cuatro patas.”

The beach is a very important place for stress. It relaxes, one walks, and they can take their children with four paws. (Clatsop, 11-6-19)

Included in the categories of community and people is ethnicity in reference to the important emphasis participants noted in relation to having other Latinos and/or Hispanics in these locations, such as trustworthy Latinos and friendly Hispanic families.

“Una de las razones, es que hay muchos latinos en la iglesia, que sean confiables.”

One of the reasons, is that there are lots of Latinos in the church who are trustworthy. (Newport, 9-6-19)

“Este lugar es muy tranquilo y lo que me gusta es que la gente es muy amigable. Prácticamente nos conocemos las familias hispanas, nos saludamos.”

This place [a park] is very calm and what I like is that people are very friendly, we practically know the Hispanic families and greet them. (Newport, 11-2-19)

The last three quotes also exemplify the category of positive feelings (relief of stress, relax, trustworthy, calm, friendly) which were commonly noted, resulting in the perceived value of positive feelings associated within critical facilities. Positive feelings were also commonly associated with homes as stated by a participant.

“La casa de tu mamá siempre va a ser un lugar seguro”

The house of your mom is always going to be a safe place. (Newport, 9-13-19)

In regards to supplies within aid, this simply refers to actual things provided as assistance. As one participant noted, a church can provide water, bathrooms, food, and a kitchen. Hospitals were commonly noted to have supplies as well, such as medicine.

“Con respecto a nuestras comunidades es la iglesia, porque es un big building y tienen agua, tienen baños, tienen comida, cocina ahí, tienen espacio para gente si tuviera una emergencia, son bienvenidos.”

With respect to our communities is the church because it's a big building and they have water, bathrooms, food, kitchen there, they have space for people if you have an emergency, they are welcoming. (Clatsop, 11-6-19)

“En los hospitales, porque ahí tienen todas las medicinas, y doctores.”

In the hospitals, because there they have all the medicines and doctors. (Newport, 9-13-19)

Location factors simply had to do with locality of the places such as the most high spot, or proximity to home, and as previously stated the city hall due to frequency of passing.

“Close by my house you know is the church and fire department.” (Newport, 9-27-19)

“En la columna siempre hay seguridad porque siempre nos han dicho que lo más alto.”

At the column (Astoria Column) there is always security because we have always been told it's the highest. (Clatsop, 11-5-19)

“El punto más alto son los campos de fútbol. Eso es nuestro punto de seguridad. Los campos de fútbol es nuestro punto de seguridad en un desastre.”

The highest point is are the soccer fields. That’s our security point, soccer fields are our safe point in a disaster. (Clatsop, 11-6-19)

The category of inclusion and exclusion appear to be very important to participants. A woman in Newport shared a sad story of someone being refused assistance of food, clothing, and showers because they didn’t have any identification documents, and a woman in Clatsop referenced a no discrimination policy at the armory which she values for her children. This reoccurring pattern of noted inclusion and exclusion is something to be highly regarded and used to signify an ideal critical facility.

“No para todos. Una vez una americana tenía hambre y me dio tanta tristeza. Una americana llegó, tenía hambre, estaba desesperada y le dijo que, y estaba lloviendo, dicen, "No". Ella estaba desesperada y gritando, le dijo que se fuera, y ella no se quería salir. Se enloqueció la mujer y empezó a golpear, y lo sacó afuera, sí.”

Not for everyone, [a nonprofit]. One time an American woman was hungry, and it gave me so much sadness. She was desperate and told them it was raining, but they said “No” she was desperate and screaming, but they told her to leave, the woman went crazy and started beating and they took her out. (Newport, 9-6-19)

“Para mí los parques y la recreación es importante porque, como el armory, van a patinar las personas, cualquier persona. Tienen una política de no discriminación y free bullying, y son bien firmes con eso. Pienso que nuestros niños están recibiendo buenos valores de ahí, y que también es un buen lugar.”

For me the Parks and recreation is important because, like the armory, people are going to skate, whichever people. They have a policy of no discrimination and free of bullying and are firm with this. I think our kids are learning good values there and also, it’s a good place. (Clatsop, 11-6-19)

As seen in previous quotes, multiple references were made regarding exclusion due to requirement of personal documents, divulging private information in order to access and utilize some places. This experienced and observed exclusion from resources exemplifies the systemic inequalities within our institutions that aid in keeping certain people at a disadvantage and promote the ‘othering’ of marginalized communities.

Explanation of Intersectionality (Tables 4 and 5)

The intersectionality tables (Table 4 – Newport Participants & Table 5 – Clatsop Participants) combine; the locations that Latinx participants identified that they would go to, rely on and/or wish to have protected in times of need (Table 2), and the values associated with these places (Table 3) in order to identify Latinx sense of place (both location of place and relation to place) within a reimagined and inclusive critical facility. It is important to note which places are associated with certain values in order to understand how to create ideally inclusive sense of place within critical facilities for all, resulting in whole community higher resilience. The highlighted yellow boxes represent what locations and values had the most intersection. This is not a count of how many times these values or locations were referenced, but rather a count of how many different intersections were explicitly associated with the themes by participants directly.

Due to the complexity within intersectionality of values and locations, Newport and Clatsop were kept separate despite similar findings. The boxes with marked intersectionality can be noted as locations that have associated values and the boxes shaded in pink exemplify the locations which are lacking those specific values. As a reminder, the combination of location and values is what creates the sense of place, therefore the intersectionality shows where sense of place is already existing and where it is lacking.

The value theme with the most associated intersection listed from Newport, is *Community*, highlighting (literally and figuratively) the significance of focusing efforts and resources on building a sense of community within all critical facilities. The location theme with the most associated values within it is '*Community-Determined Locations and Full Choice Control*'; recreational sites, and nonprofits including churches, and livelihood (work and homes) again signifying the importance of focusing efforts and resources within these locations, which currently are not considered government predetermined critical facilities.

The finding of community as the most noted value within the Latinx community is not surprising considering the most notable observation found throughout fieldnotes was the apparent courtesy and care all participants had for one another. At the Newport nutrition and cooking classes, children were always fed first, almost everyone would always help cook and clean together and consciously make sure there was enough food for others, including bagging of leftovers to take home. One participant even offered her entire meal to a homeless veteran who wandered into the church we were at and was invited to share the meal we made. The same woman brought homemade tamales for all of us one week. Additionally, the sense of closeness observed at the community walk I was able to attend in Newport, exemplified how important community is for Latinx residents, seeing that they would all walk together three times a week.

Notably, identified privileged choice control and no choice control locations such as emergency services, medical facilities, and livelihood, with the exception of schools, show no community values associated with them, depicted by the pink shaded boxes (Table 4). This again enforces the importance of self-governance within locations in times of need. Since community is the most noted value among participants, a major disconnect is observed within privileged and no choice control locations and Latinx values, resulting in less than ideal locations for inclusive

critical facilities. This finding is most jarring when realizing that these places are the government-predetermined critical facility locations (with the exception of work). This finding exemplifies that these locations need to work on improving their sense of community in order to be more inclusive and accessible.

While the majority of predetermined locations lack a sense of community, the full choice control locations and schools are highly associated with community values. These locations could act as a model for building a sense of community within the locations who are lacking it.

Recreational, livelihood, and emergency services are not associated with aid or in/exclusion values. The lack of reference to in/exclusion within these places does not necessarily mean they are inclusive or exclusionary, it simply means it was not noted. Similarly, we can assume that emergency services do in fact have supplies available despite the lack of reference, but this may mean that participants are unaware of the supplies available or do not value them as much as other values. Since recreational sites are within the full choice control category which shows to have the most intersectionality of values, it is important to note that they are lacking in aid and inclusion. Again, the locations associated with aid available can act as a model to those who were not associated with aid in order to improve the association of that value.

Livelihood and hospitals were not associated with positive feelings which could be in reference to the lacking sense of community. We could assume that improvement of sense of community would result in more commonly associated values of positive feelings.

Lastly, nonprofits and homes were not associated with valued location factors. This finding could result in prime candidate locations of relocated critical facilities. Meaning, perhaps relocations efforts should focus on homes and nonprofits in Newport in order to increase associated value of positive location factors.

Intersectionality of Clatsop Latinx Identified Locations and Values Table 5

Intersectionality of Clatsop Latinx Determined Locations and Values	Clatsop Latinx Values of Critical Facilities										Number of Associated Intersections within each Location
	Community			Aid		Observed In/Exclusion	Positive Feelings	Location Factor			
	Activity	People	Supplies								
Clatsop County Latinx Publicly Determined Locations of Critical Facilities	Government/Pre-determined Locations	Schools	X	X	X				X		5
		Government Adults	X						X	X	4
		Emergency Services									0
		Medical		X					X		3
		Workshop	X	X	X	X	X				12
	Community-Determined Locations	Nonprofits	X	X	X	X			X	X	13
		Resort	X	X	X	X	X	X	X	X	29
			X	X	X	X	X	X	X	X	42
			X	X	X	X	X	X	X	X	42
			X	X	X	X	X	X	X	X	42
Number of Associated Intersections within each Value Theme		16	15	2	11	1	9	10			
		31	17		13						

In comparison to Newport, Clatsop participants' intersectionality of locations and values were not much different. Validating the intersectionality findings in Newport, the value theme with the most associated intersections listed from Clatsop is again, *Community*, reinforcing the significance of focusing efforts and resources on building a sense of community in all critical facilities. Similarly, the location category with the most associated intersection within it is, *Community-Determined Locations and Full Choice Control*, also reinforcing the importance of focusing efforts and resources within these locations.

Emergency services, medical facilities, and livelihood locations are again shown to lack in sense of community in addition to the Clatsop category of government administrations. In contrast to Newport, medical facilities and livelihood (work and homes) show associated community values with people. This could signify that there is more community focus for people in Clatsop than Newport within those locations. With the exceptions of aid from people in medical facilities and supplies in livelihood locations, all of the predetermined locations are lacking in aid, in/exclusion, and positive feelings. This finding is significant when considering that the majority of resources and focus are put into predetermined locations resulting in a major disconnect between public perception of community-determined locations and government-predetermined locations.

Recreational sites are not shown to intersect supplies as was seen in Newport, showing the need for improvement in this area being that it is the most location with most intersection overall. In contrast to Newport, location factor values were associated with nonprofits but not homes or emergency services. This difference in findings can show the importance of findings within different communities, such as perhaps emergency services should be a focus of relocation in Clatsop but not Newport and vice versa for nonprofit locations.



Figure 12 View from
Astoria Column 11-6-19

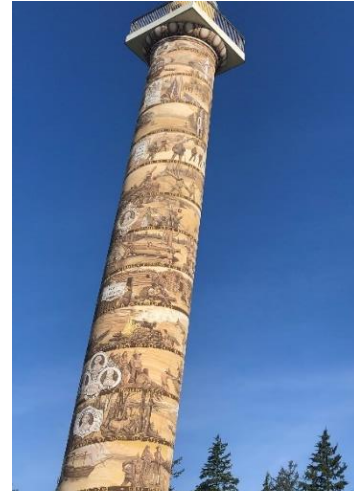


Figure 13 Astoria Column
11-6-19

Participants in one of the Clatsop focus groups reiterated their interest in survival skill classes, in order to rely on the land for their needs during a disaster, rather than seeking aid from government. A participant reflected on a traditional way of sterilizing water in Mexico with tree bark and the sun's heat and emphasized the importance of knowing what kind of plants you can eat.

“Aprender a calentar el agua con el mismo sol. En México todavía se utiliza, ponen a calentar el agua. Hay árboles que les escarban y les ponen como un popotito y ahí está chorreando. Sí es verdad, agua natural. Pero también debe uno estar informado qué plantas puede uno comer porque de verdad es peligroso.”

Learn to heat the water with the same sun. In Mexico it is still used, to heat the water. There are trees that they dig and put like a little straw and there it is dripping. It's true natural water. But one should also be informed what plants one can eat because it is really dangerous. (Clatsop, 11-5-19)

If emergency management utilized this local ecological knowledge within resilience planning, residents would be less dependent on critical facilities and more self-sufficient. It is

still the government's responsibility to provide aid, however the higher the preparation the less recovery response needed. One of the emergency management personnel acknowledged:

“We need to be responsible for ourselves. We can't expect government to help us in this situation, and the county emergency manager will point out that “We're not here to save you, you got to save yourself, you got to be prepared on your own.” You have to have some responsibility in that, and that's hard. You can hope for the best, but nobody can guarantee, and the counties and the cities and the state doesn't have money.” (Newport, 6-18-19)

While the government is in fact responsible for protecting its people, government agencies can utilize the public's knowledge to share in governance. The fact that this study found the most intersection within full-choice locations, such as recreational sites and nonprofits, suggests that self-governance is an important aspect of critical facilities. Applying local ecological knowledge within recreational spaces for disaster preparedness goes hand in hand. In an effort to alleviate the overflowing plates of emergency management, allowing shared knowledge to be included within disaster planning is a positive for all.

Additionally, removing locations from the focus of resources and efforts will reduce stress on emergency management agencies. While fire stations and departments were referenced by multiple people throughout the sessions, police stations were only mentioned by one person. “The colonized world is a world divided in two. The dividing line, the border, is represented by the barracks and the police stations. In the colonies, the official legitimate agent, the spokesperson for the colonizer and the regime of oppression, is the police officer or the soldier” (Fanon, 1963). The ORP recognizes that 86% of police stations along the Oregon coast will “most likely take 18 months or more to resume normal operations” (OSSPAC, 2013, p.79). The lack of recognition of police stations as an inclusive and valued critical facility alludes to the mismanaged resources used to protect them. If the difficulty of protecting and preparing police stations are as complicated as stated above, and not found to be acknowledged by the public as this study shows, then resilience planning efforts could possibly look to refocus resources on community-determined locations such as nonprofits.

In agreement with the gathered perceptions in this study, the Oregon *Mass Care and Mass Displacement after a Cascadia Subduction Zone Earthquake* report acknowledges that “Nonprofit organizations are also regarded as a critical part of emergency response and recovery since they provide a range of social services that are essential to the livelihood of some of our most vulnerable community members.” (OSSPAC, 2018, p.5). Yet resources are still focused more towards police stations than nonprofits. “Nonprofits...are often viewed as critical civic infrastructure. They are already embedded in our communities and their capacity for disaster resilience required further development, as Oregon continues to face the threat of major or catastrophic disasters like the CSZ earthquake” (Chikoto-Schultz et al., 2018). The importance of nonprofits to the world of disaster is acknowledged but not focused on when planning policy.

“Para mí, el lugar más importante es este, porque aquí es donde están ustedes y donde yo siempre encuentro información, porque en realidad yo nunca voy al hospital.”

For me, the most important place is this [nonprofit LCHC], because this is where you are and where I always find information because I never really go to the hospital. (Clatsop, 11-5-19)

Without nonprofits ready to help currently and in the future, many people will be at a large disadvantage and lost without the organizations they depend on. Emergency management needs to act as an agent of change and reprioritize their efforts.

“La escuela creo que es muy importante porque los hijos se están educando.”

The school I believe is very important because the kids are going to be educated. (Newport, 9-13-19)

In congruence with the Latinx findings, one of the emergency management personnel acknowledged that a lot of conversations they have with community members is about how they will go to schools and churches but then goes on to say “The school isn’t necessarily expecting or prepared for that, just like churches.” The ORP only targets schools as a phase 2 effort, taking 30-60 days to recover after the other predetermined critical facilities have been taken care of and in a Statewide Seismic Needs Assessment (SSNA) of K-12 education facilities, about 80% of

them were built before 1971 when Oregon first implemented a statewide seismic building code, increasing their chances of not being available during times of need (OSSPAC, 2013). If emergency management and OSSPAC recognize the importance and risk associated with schools as a critical facility, and the perceived value of community was associated with schools, then this is another location to focus more efforts on despite it already being a predetermined location.

“Para mí la escuela es un lugar donde creo que son un poquito más capacitados para llegar a la gente en case de desastre y que ahí yo pienso que no van a ver si tú eres hispano, tú eres americano, tú eres--Yo pienso que es uno de los lugares que nos van a apoyar a todos. En una iglesia es otro de los lugares que ... no preguntan si uno tiene este papel, si es de aquí o es de allá.”

For me a school is a place where I think they are a little more able to reach people in case of a disaster and I think they aren't going to see if you're Hispanic or American, I think it's one of those places that supports everyone. In a church is another place that doesn't ask if you have this paper, if you're from here or from there. (Newport, 9-13-19)

Emergency Management Personnel Findings

In addition to the Latinx community members, emergency management personnel were interviewed regarding their ideal sense of place within a critical facility. Below are their identified locations (Table 6), identified values (Table 7), and the intersectionality (Table 8) of locations and values.

Emergency Management Personnel Perceived Critical Facilities Table 6

Emergency Management Personnel Perceived Critical Facilities					
Emergency Management Personnel Determined Locations			Government Predetermined Locations		
Full Choice Control		Privileged Choice Control		No Choice	
Recreation	Nonprofits	Livelihood		Emergency Services	
Newport	Recreation Center	Churches		Work =	Fire Station
Clatsop		Church	Friend's Home	Work =	Emergency Operations Center

Considering only two emergency management personnel participated as opposed to 34 Latinx residents, it is understandable that there are far less locations and values identified. Interestingly, churches as a nonprofit is the only location identified by all categories of participants. While the Newport emergency management personnel identified the fire station as a location, which is an emergency services as well as her work, the Clatsop emergency management personnel identified the emergency operations center as a location which is her work. Therefore, livelihood and emergency services are not very comparable between emergency management personnel and Latinx residents. The categories missing from Table 6 in comparison to Latinx tables are; medical facilities, government administration, and schools. These unidentified locations are ironically all predetermined locations, which emergency management personnel focus on within their jobs but failed to mention as a place of importance in times of need. For example, one participant said, “The fire station because, the fire station has become my family away from my family” (Newport, 6-18-19).

Emergency Management Personnel Identified Values of Critical Facilities Table 7

Emergency Management Personnel Values						
Community		Aid		Experienced In/Exclusion	Positive Feeling	
Activity	People	Supplies				
Newport	water aerobics class	Family	Counsel	warm meal	without judgement	comfortable
		Group of women	Outreach	Childcare	free	supported
					accepted	honest
Clatsop		Family		resources		familiarity
		Community				

Emergency management personnel identified all similar values as those identified by Latinx participants, with the exception of location factors (Table 7).

The following quotes exemplify the similarities of identified locations and values between emergency management personnel and Latinx residents.

“The rec center...there's a group of women and so water aerobics class...that's one of the exercise classes that you can take for free...it's like a group of 30 women, all different shapes and sizes and nobody judges. And um, it's amazing. It's totally amazing. So, it's a really good group of women.” (Newport, 6-18-19)

“It [church] represents family and it represents, faith and community, so...I expect people will come to the church.” (Clatsop, 11-6-19)

In addition to the apparent systemic inequalities of exclusion through required documents, gender exclusion was also a part of these discussions. Considering that 20/34 Latinx participants and both emergency management personnel self-identified as female, it is clear that my outreach generated the most interest among women. The history of men primarily working within emergency management presented itself in one of the discussions I had with emergency management personnel, highlighting the historical exclusionary and discriminatory practices within emergency management.

“Women have innate skills that are really good fit for this work...those details are something that are not often missed when you are the family planner and when you're, you know, just traditional roles...historically,

you think about somebody planning everything for a family, taking care of it. It's just kind of inherent to be an emergency planner and thinking about those specific details that could be so easily missed... The way we've [emergency management personnel] always done things is not going to fix this, right? We've got to start thinking outside the box. And I think until about 10 years ago when you looked at emergency managers, it was mostly a firefighter or a cop, they were assigned it as one of their duties...What people are realizing is, it's not police and fire, it really isn't at all. You put the word emergency in a title and people expect exciting, but it's not nearly that sexy. It's communication and coordination, which is two things that women tend to be good at...There are women flourishing across the state in this field...This is a field where women can excel without a degree. And that's one of the things I love about it.” (Clatsop, 11-6-19)

The references made here to gendered exclusion again highlights the lack of equity within emergency planning and the need for expansion of inclusion. Thankfully, as noted here, the professional field of emergency management is starting to expand to women who often take on the traditional role of caretaker and planner as mentioned in the previous quote, but thinking beyond gender, emergency management needs to be expanding into communities of color, especially women of color to create more inclusive practices.

As a reminder, the combination of location and values is what creates the sense of place, therefore the intersectionality shows where sense of place is already existing and where it is lacking. Similar to Latinx community members, the emergency management personnel seem to associate the most intersection between the values of *Community, People and Community-Determined (in this case Emergency Management Personnel Determined) and Full Choice Locations* showing their shared common values (Table 8). The highlighted blue areas are the themes that were identified by Latinx community members but not emergency management personnel; schools, medical facilities, and location factors. Although schools were not identified here, awareness of this difference was later noted in the Newport emergency management personnel interview

“For some of the people it might be like the schools, you know, because they have a lot of different programs and outreach and communities. It might be, you know, I think church is a big part of the Latino population too. And I think that's going to be part of it. And I think work too.” (Newport, 6-18-19)

This quote shows that awareness of differences in utilization and access of facilities in times of need, explaining the blue shaded boxes within schools as a location.

Similar to Latinx perceptions, emergency services locations are lacking in sense of community through activities. This reinforces the need to build a sense of community through activities in emergency services. In contrast there is sense of community showing with people in emergency services, this is most likely due to the fact that emergency management personnel often work with emergency services. Nonprofits, however, do not show a sense of community in activities, highlighting the difference in utilization of these places between Latinx residents and emergency management personnel.

Aid is again lacking in recreational sites, reinforcing the need for this to be improved upon. In/exclusion was only noted by one emergency management personnel and it was not in reference to providing documentation or private information, but rather being accepted, free and not being judged. Positive feelings were associated with emergency management personnel exemplifying the need for inclusive sense of place in critical facilities.

Summary of Findings

The consistency of findings within Newport, Clatsop and emergency management personnel confirms that resources should be focused on improving the *full choice control community-determined* locations and *community and people* values due to the majority of associations of intersection related to both themes (yellow highlighted areas – Tables 4, 5, and 8). The majority of these locations are recreational sites, which are perceived to be lacking in aid. The importance of protecting recreational sites among Latinx residents was stated in many different ways, including the need for them as trauma response, explained by a Clatsop resident.

“Cuando hay un terremoto, y no se puede trabajar porque todo estamos en un caos, ¿qué estamos haciendo para ejercitar nuestro cuerpo, nuestra mente? Cosas así nos pueden distraer, como dicen, es entretenimiento que cuando uno pasa un desastre es muy traumático.”

When there is an earthquake and you can't work because everything is in chaos, what are we doing to exercise our body, out mind? Things like that [recreation] can distract us, as they say, its entertainment, when you go through a disaster its very traumatic. (Clatsop, 11-5-19)

Latinx community members in Newport and Clatsop County and emergency management personnel perceive a lack of community within predetermined critical facilities, while community-determined facilities have a very high sense of community. It is clear that Latinx communities within Newport and Clatsop County agree on the values and locations associated with ideal and inclusive critical facilities. Having this knowledge allows resilience planning efforts to become more inclusive resulting in higher resilience levels for all of Oregon coastal communities.

Discussion

Due to the profound expression of numerous values associated within community-determined and government-predetermined locations, it is undeniable that critical facilities should focus on implementing and building these values within them in order to create an inclusive sense of place. In regard to sense of place theory, the process of attachment between

person and place can be explained in psychological terms of affect, cognition, and behavior. The psychological affect with a place is the positive or negative emotional connection between people and locations. While the cognition component is built over time and creates a protective response when a place is threatened (Greer, 2019, p. 310). These two terms of how sense of place is psychologically formed through emotions and time, exemplifies the need to consider critical facilities not only as geographic locations and structures, but also a place where a relationship exists between people and place. If the two aspects of location and meaning in sense of place are not implemented within critical facilities, they cannot be considered inclusive if they disregard the inherent need of built values within them. Therefore, a critical facility must focus on improving values perceived as important to community members in order to make them more accessible, resulting in higher community resilience levels.

It is clear that a top down approach from policy to people will not benefit resilience planning as a whole when in fact we have found that people should be informing policy.

Therefore, the previously referenced social determinants should be implemented within an inside-out social ecological model, depicted in Figure 14 in order to inform policy. Had the SEM not been flipped inside out, we could consider it a bottom up approach from the individual level up to the policy level. This concept also considers vulnerability from a historical and political perspective, in understanding that traditionally, public perception through qualitative data has not been included within policy implementation. Therefore, this not only addresses the historical systemic inequalities within political systems causing social vulnerabilities within marginalized communities but also allows the opportunity to rebuild to a condition that surpasses the existing and inadequate status quo by going top down from individual to policy.

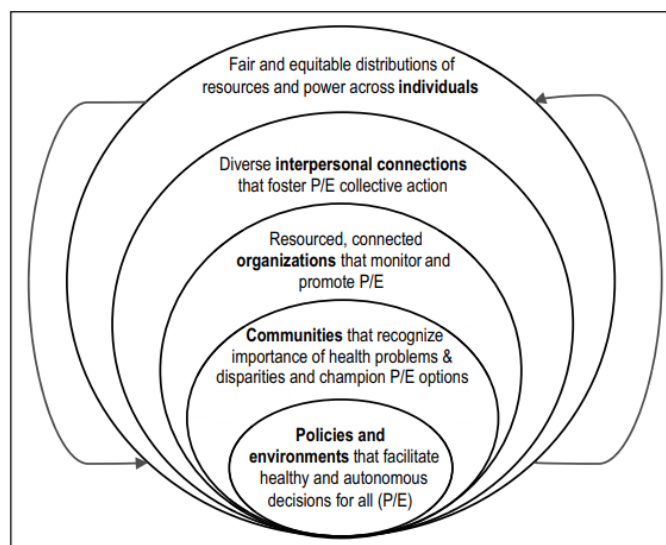


Figure 14 "Inside out" social ecological mode (Shelley et al., 2015)

The undeniable need for sense of *community* values within critical facilities due to the majority of intersection, also relates back to the social ecological model and respective social determinants. Sense of community in this study is most closely related to the interpersonal category within the social ecological model which includes family, friends and social networks targeted in order to create a more inclusive sense of place. By understanding the social determinants within the social ecological model, we can understand how interpersonal relations (community in this sense) can impact multiple layers of our systems all the way up to public policy. The importance of social network as the interpersonal level of the SEM and the category of community within this study was exemplified throughout discussions including parks and people. As one participant noted:

“Los parques...porque compartir con gente.”

Parks because it's shared with people. (Newport, 9-6-19)

Considering the previously discussed similarities of human and ecological resilience due to our biologically grounded systems, we can learn from existing methods of building ecological resilience to create more inclusive critical facility spaces. Ecological management often focuses on knowledge that comes directly from what scientists learn from the natural world regarding biology and more, so why isn't emergency preparedness grounded in what scientists learn directly from the public, (our society's biological systems)? Creating policy and planning without consultation of the public can result in possible conflict if the public doesn't agree to what is determined in the end. To avoid this conflict between planners and the public, the public should be included throughout the process, starting at the beginning.

What is learned from public participation in studies such as this can guide policy making and planning in order to create change which the public will agree and abide by. The structural systems and management in which power dynamics are most prevalent need to be rooted in public perception to avoid conflict and wasted resources and focus resulting in lower resilience.

The need for public participation in policy and planning is exemplified within the findings that most values were intersected with the *community-determined locations* rather than the predetermined locations, even by the emergency management personnel themselves showing

that the public perception does not value government-predetermined facilities as much as community-determined facilities. With all the resources and focus going to predetermined facilities, a large percentage of the population will be disadvantaged if resources and focus are not shared between other locations. This is not to say it will take more effort, but rather the effort will be shared among more people, spreading it out more evenly between communities and facilities. The idea is not to add more to emergency management personnel's plates but to share it, possibly through an emergency management liaison who could run the coordination between groups. Oregon revised Statute 401.054, Emergency Management and Services requires state agencies to designate a liaison to the Office of Emergency Management. Opening more possibilities for input from diverse stakeholders is one way to overcome the exclusionary practices of emergency and allow for democratic knowledge and science.

Processes of Building Sense of Place within Critical Facilities

Recognizing the gaps of intersectionality between perceived values and locations of critical facilities creates the opportunity to improve the accessibility and inclusivity within them.

Community and Positive Feelings: Locations which were lacking intersection with the value of community such as; medical facilities, emergency services and places of work and homes (livelihood) can improve sense of community within them by hosting public events with the activities (sports, education, parties, etc.) and people valued (family, youth, ethnicity). This could provide positive associated feelings of comfort and trust (associated positive feelings) within these facilities creating a place attachment and sense of place in order to improve accessibility and utilization in times of need, resulting in higher resilience levels.

Aid: Due to the majority of associated values within Community-Determined - Full Choice Control locations, improving the lack of aid within recreation areas should be a key focus of resources. The Newport Recreational Center, the Armory in Astoria, and other parks could improve their values of capacity to provide or store emergency aid. Since most recreational sites are government managed, the responsibility of improving aid within these locations can be a partnership between departments such as city level emergency management and city level parks or state level emergency management and state level parks etc.

For places such as emergency services who were not associated with having supplies, yet most likely do have supplies, expanding outreach efforts to Latinx communities to improve awareness of supplies is the most likely effective solution for this lack of associated values within emergency services. Targeted outreach efforts could be more Spanish language information, partnerships with local Latinx resource centers, and public events focusing on their values activities.

Homes and places of work (livelihood theme) who are lacking in aid can reference participants' listed people and supplies within aid to guide them in improving the value of aid. For instance, if a place of work or neighborhood is coordinating a public event based on participants values, to build sense of community, they could also coordinate with each other to see which people are already trained to provide aid or who has specific supplies to share and assigning the responsibility of providing that aid in times of need. Therefore, they would be building a sense of community through a gathering and building their aid by coordinating, who provides what within those locations.

In/exclusion: We should recognize the importance of in/exclusion and understand that documentation and/or private information is seen as a barrier to accessing and utilizing facilities. Therefore, a facility will not be considered inclusive or equitable if documentation or private information is required which would result in decreased resilience. To alleviate this barrier, a policy could be implemented regarding no required documentation or private information at critical facilities in order to improve equitable access, utilization and resilience.

Location Factors: The value of location factors such as elevation, proximity, frequency and aesthetics can all be used to improve locality of identified locations. As previously discussed, homes and nonprofits who weren't associated with valued location factors could be prime candidates for relocation strategies through targeted policy methods addressing hazard-centric vulnerability. This knowledge is directly applicable in relation to the previously discussed tiered approach of protecting critical facilities that Oregon uses by protecting places outside the tsunami zone and relocating those within it. The importance of gathering this information individually within communities is important to understand the specific needs of each community.

Resilience Planning Policy Recommendations

- Implement public perception of critical facilities within resilience policy and planning.
 - Include community-determined locations within the list of critical facilities in order to focus resources and efforts on improving and protecting those locations.
 - Improve values within locations in order to build sense of place increase the accessibility of critical facilities by creating place attachment.
- Avoid exclusionary practices within critical facilities.
 - Do not require personal information or documentation to access and utilize critical facilities.
 - Enforce no discrimination policies at critical facilities
 - Actively work to improve racial and gender diversity within emergency management practitioners and policy makers.

Conclusion

The community-determined locations and values associated with critical facilities should not only be considered a list of places, but also a list of lessons learned. The common values of these places represent what Latinx coastal community members themselves consider to be valuable in times of need and creates the link between place and attachment in sense of place theory.

The word ‘attachment’ emphasizes affect; the word ‘place’ focuses on the environmental settings to which people are emotionally and culturally attached...dyads, families, community members, and even whole cultures often consensually or collectively share attachments to places. In this respect, therefore, there are a variety of collective group or cultural place attachments that may transcend the unique experiences of individuals. (Low, Altman, 1992, p. 5-6).

Predetermined critical facilities are chosen for very specific reasons due to capabilities, but no matter the capability these places have, if community members don’t feel safe or welcomed, they will not utilize them, and consequently face a disproportionate disadvantage of accessibility to resources in times of need. Resilience planning resources and focus should not only be shared with the community-determined locations in preparation efforts, but also be used to add the

associated values to the predetermined critical facilities, in order to improve accessibility within what already exists, as well as expand beyond them by creating a broader place attachment between all localities protected. If we know the values of the places which community members have chosen, then we can implement those values into the predetermined critical facilities, such as not requiring any form of documentation or having other languages easily available. These characteristics and qualities that create an inclusive and equitable sense of place, are the hopeful lessons learned that need to be included in emergency management.

Disaster planning funding and efforts may be easy to perceive as scarce resources which makes emergency management efforts overwhelming. However, by extending resources to local levels and targeted needs, the burden can be lessened and shared with others in a positive way. It is important to remember that everyone's common goal is to protect as much as possible and agencies don't have to work alone but can accomplish building resilience by working together.

“Agencies must complement each other geographically, or technically, or find synergies to increase efficiency and avoid duplication... While it would be unwise to entirely invent or reinvent completely tailored programs – and far too time-consuming – it is also equally inappropriate to force a cookie cutter approach of structured and standardized solutions... An ironic challenge we are increasingly recognizing is how to leverage tragedy. As bad as things are, they also present an opportunity for real change and improvement; not just a post-disaster return to the horribly inadequate status quo... rather than the more traditional cultural anthropological tenet of preserving the status quo and allowing for organic cultural evolution, we are in fact actually the deliberate agents of change.” (Koons, 2013, p. 281)

This research is meant to reimagine critical facilities as more inclusive and equitable locations. Further work with similar methods should be done with more demographic groups in order to ensure all voices are amplified in resilience planning. The qualitative findings from this work can inform future quantitative work such as policy modeling with coupled natural and human systems by understanding the perceptions of values in choosing where to focus efforts

through policy. This can be referred to as targeted universalism. Having a universal goal of building resilience, while targeting policies to individual needs within communities.

It is important to note that I was cautioned of research fatigue on the coast regarding the CSZ, however this was not found within Latinx participants. Latinx community members notably thanked me for listening to them because according to them, they aren't often asked their opinions in regard to policy and planning. This work should not be discouraged due to research fatigue but should be broadened within other communities who may feel similar to Latinx community members.

This study advances sense of place theory regarding resilience by identifying Latinx publicly determined critical facility locations and associated values as defined by communities themselves, rather than solely by governmental agencies or other experts. Findings also inform disaster risk reduction theory and methods by exploring a more diverse group of stakeholders whose voices and perspectives are currently underexamined. The intersectionality of place and values identifies ways to create an inclusive sense of place within reimagined critical facilities. Using the created data analysis tables as a model within other communities can provide a way for others to reimagine the specific needs within their own communities. Public policy action and general resilience planning will be greatly informed with this new information regarding perceptions of critical facilities and mitigation affects resulting in adaption to meet the needs of more community members.

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