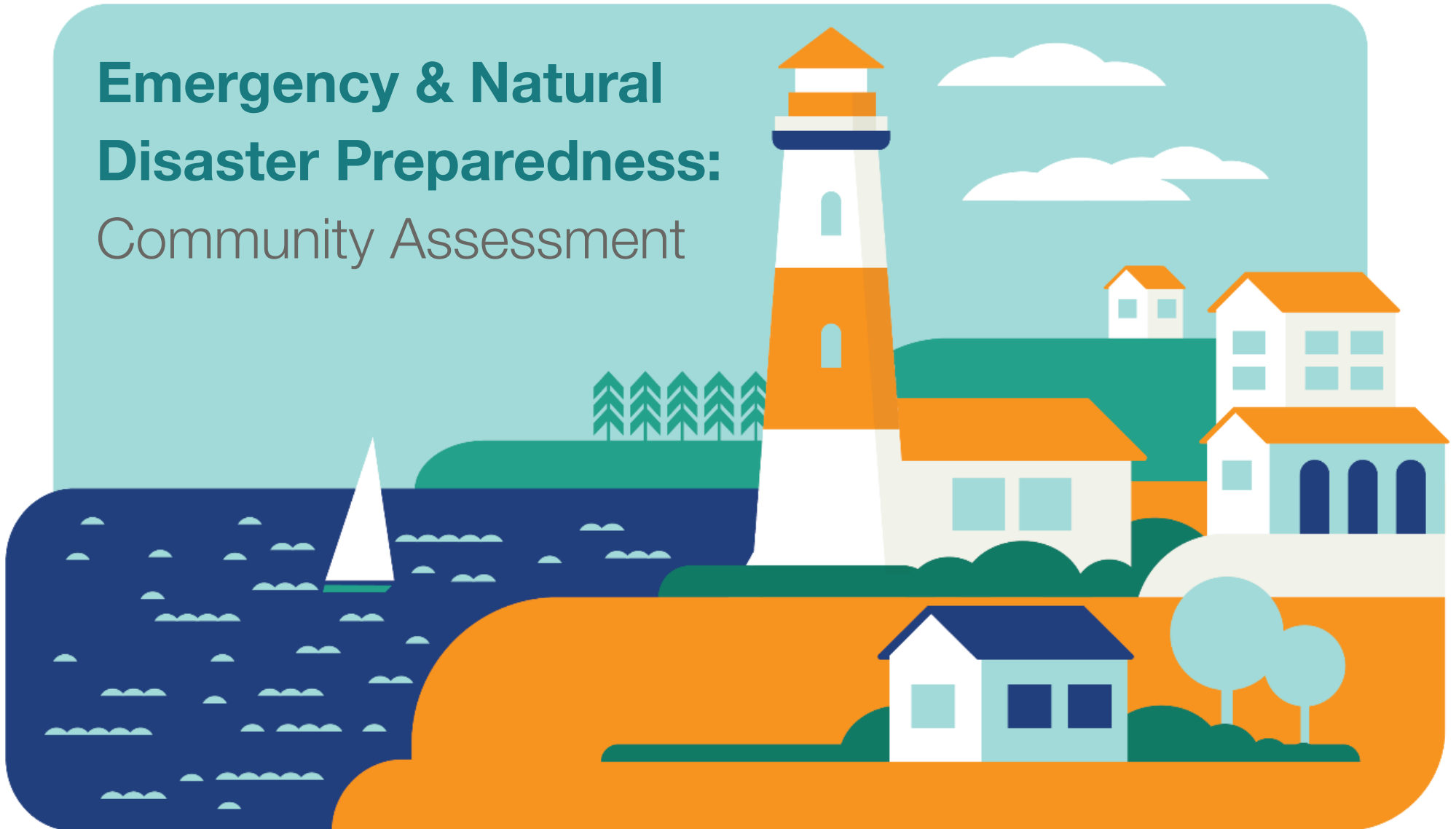




Prepared by Rede Group in September 2023

Emergency & Natural Disaster Preparedness: Community Assessment



Acknowledgments

This assessment report was produced by Rede Group on behalf of Tillamook County Health and Human Services (Tillamook HHS). We want to acknowledge and thank the many people who contributed to this assessment, including Tillamook County staff, community-based organizations, and people living in Tillamook County.

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Acronyms

2SLGBTQIA+	Two-spirit, lesbian, gay, bisexual, transgender, queer, questioning, intersex, asexual, and the + holds space for the expanding and new understanding of diverse gender and sexual identities.
CBO	Community-based organization
CERT	Community emergency response team
COPD	Chronic obstructive pulmonary disease
EOP	Emergency operations plan
PUD	Peoples' Utility District
VA	Veterans Affairs

Definitions

Exposure	Experiencing something or being affected by it because of your geographic location and/or occupation.
Disengaged youth	Youth (under 18) who are neither working nor in school, and who may be unhoused, in foster care, involved in the justice system.
Local leaders	For the purpose of this assessment, this term refers to leaders in disaster preparedness, response, and recovery at the local government level.
Manure digester	Machine that converts manure into energy that can be converted into heat and/or electricity.
Sensitivity	Being more easily influenced or affected by something.
Social vulnerability	Susceptibility of social groups to the negative impacts of natural hazards and other emergency situations.
Susceptibility	Being more likely to be influenced or harmed by something.
Vulnerable populations	In this assessment, the term ‘vulnerable populations’ is used to describe certain community members who, due to systemic inequities including but not limited to racism, ableism, and economic disenfranchisement, are more likely to experience negative health outcomes due to natural disasters.

Introduction

There are two main determinants of vulnerability to natural disasters: exposure, and sensitivity or susceptibility. Populations described as “vulnerable” to negative health outcomes related to natural disasters have higher exposure and/or sensitivity or susceptibility to natural disasters. Exposure can be increased geographically (e.g. people living in flood plains) and occupationally (e.g. outdoor workers exposed to extreme heat). Sensitivity/susceptibility can be increased by individual characteristics or pre-existing conditions that would make it difficult to respond to or recover from a natural disaster. For example, someone with COPD is at greater risk for respiratory illness due to wildfire smoke. Sensitivity/susceptibility also interacts with geographic exposure, as people living in highly polluted areas are more susceptible to health inequities as environmental conditions worsen.¹

Natural disasters are closely related to health inequities; they share many root causes and natural disasters exacerbate existing health inequities. To ensure that disaster preparation, response, and recovery are responsive to all members of the community, special attention must be paid to those populations who are most vulnerable.

Under the direction of Tillamook County Health and Human Services (Tillamook HHS), Rede Group conducted an assessment of emergency and natural disaster preparedness in the county, with a focus on addressing disparities in preparedness level and capacity among populations especially vulnerable to negative health outcomes related to natural disasters, including:

¹ See more about natural disasters and health equity in [Climate Change, Health, and Equity: A Guide for Local Health Departments](#)

- Adults/families experiencing economic insecurity
- Individuals with limited English proficiency
- Individuals with chronic conditions or disability
- Veterans
- Disengaged youth
- Individuals who identify as 2SLGBTQIA+

Local leaders in emergency response and disaster preparedness, community-based organizations (CBOs), and people living in Tillamook County participated in this assessment by sharing their experiences preparing for and responding to emergencies, and providing recommendations on increasing equity, collaboration, and coordination in disaster response activities in Tillamook County.

This report is a culmination of key findings and recommendations from the assessment.

Methods

This assessment included a review of existing emergency operations documents, interviews with CBOs and local leaders in the field of disaster preparedness and response, and a survey of community members. Data collection for the assessment was conducted from June - August 2023, and included 83 total participants across data collection methods. Rede also conducted a readiness assessment survey with Tillamook HHS to develop a baseline score across a list of competencies and characteristics of local health departments who are likely to be successful in preventing natural-disaster related health outcomes.

Document review

Tillamook HHS provided Rede with two documents to review as context for the disaster preparedness and response landscape in Tillamook County: the Emergency Operations Plan, and the Peoples' Utility District (PUD) Wildfire Mitigation Plan. Rede also identified and reviewed five additional documents, including the Multi-jurisdictional Natural Hazards Mitigation Plan, the Community Health Needs Assessment, and secondary data on natural disaster susceptibility in the county to gain further insight into past and current work in disaster preparedness, disaster response, and social vulnerability to disasters among community members. These documents, in addition to the findings from data collection, were used to develop the recommendations within this report.

Interviews with local leaders + CBOs

To understand the key disaster preparedness and response issues facing Tillamook County overall, Rede conducted interviews with local leaders in disaster preparedness and response. Rede also conducted interviews with CBOs serving vulnerable populations in the county to better understand the specific barriers experienced by vulnerable populations to prepare for and respond to disasters. A total of nine local leaders and 28 CBO contacts were identified by Tillamook HHS and invited to participate in the assessment. Between June to July 2023, Rede interviewed three local leaders and nine CBO staff, for response rates of 33% and 32%, respectively. CBO interviewees were offered a stipend for their participation in interviews.

Rede uploaded interviews to Dedoose mixed-methods software and thematically coded them. Themes that emerged from this analysis were synthesized into preliminary findings and presented to Tillamook HHS for initial feedback and co-interpretation. These themes were used to structure the key findings included in this assessment report.

Community survey

To assess the level of preparedness and additional supports desired by people living in Tillamook County, Rede surveyed community members. The survey was adapted from the CBO interview guide and fielded for three weeks from July to August 2023 in English and Spanish. The survey was open to anyone living in Tillamook County, but recruitment efforts were focused on reaching identified

vulnerable populations. To ensure these perspectives would be included, CBOs who participated in interviews were asked to support recruitment for the survey by promoting and/or distributing the survey among the populations they serve. Recruitment and promotion activities included providing access to a computer to take the survey, providing a printed copy of the survey, posting flyers in their building, sharing flyers at events, and sharing on Facebook. CBOs were offered a stipend for their time spent on recruitment and promotion activities.

Survey responses at least 80% complete were included in the analysis. The final data set contained 71 responses, including 57 responses in English and 14 responses in Spanish. Spanish survey responses were translated to English prior to analysis. The survey was analyzed using descriptive analysis and visualizations were created to aid in interpretation. Themes that emerged from this analysis were synthesized into preliminary findings and presented to Tillamook HHS for initial feedback and co-interpretation. These themes were used to structure the key findings included in this assessment report.



Readiness assessment survey

In August 2023, Rede adapted the organizational capacity assessment from the Oregon Health Authority's Climate Change Resilience Planning Toolkit² to assess readiness and capacity in Tillamook HHS for disaster preparedness and response. The Tillamook HHS Public Health Emergency Preparedness Coordinator completed the survey and submitted it to Rede for analysis. The survey was

² The original organizational capacity assessment tool from OHA can be accessed via the Climate Change Resilience and Planning Toolkit on their website: [Assessing Organizational Capacity](#)

11 questions and included items such as leadership support, staff knowledge, and available resources for disaster preparedness and response within Tillamook HHS. Each item on the survey was ranked from 1-6; a ranking of 1 or 2 defined as early capacity (learning or planning stage), 3 or 4 defined as established (working toward, but not fully achieved), and 5 or 6 defined as strong (fully achieved, sustainable).

Data collection methods and participants

Interviews	Surveys	Document Review	Readiness Assessment
			
3 Local leaders 9 CBOs	71 Community members	7 Documents reviewed	1 Completed
Total participants: 83			

Limitations

There were many strengths to this assessment, including the equity-centered approach emphasizing vulnerable populations in Tillamook County. Findings, however, should be interpreted with consideration of the limitations of this assessment.

One limitation of this assessment was low engagement from participants, resulting in difficulty with recruitment. A response rate of about 33% for local leaders and CBO interviewees is not likely to be representative. It is unclear why engagement for this assessment was low, but potential explanations include low capacity among interviewees (e.g. high workloads, competing priorities), a lack of interest or knowledge in emergency and natural disaster preparedness and response (among CBOs), or timing of the assessment (over the summer months). Furthermore, a survey of 71 community members from a general population of 27,574³ is not a representative sample, and thus these findings cannot be generalized to the county overall. Additionally, there were not enough responses to analyze by sub-population.

Another limitation was the use of convenience sampling for the community survey. It's possible that the use of this method resulted in over-representation of community members who were especially interested in disaster preparedness and/or had higher levels of preparedness.

³ This is the 2022 population of Tillamook County provided by the U.S. Census, available here: <https://www.census.gov/quickfacts/fact/table/tillamookcountyoregon/PST045222>




Findings

Natural disasters in Tillamook County

In interviews, local leaders were asked to rank the environmental health and emergency preparedness issues that were most concerning to them. Local leader interviewees generally ranked issues as highly concerning if, in their opinion, they were very likely to happen and/or likely to cause a great deal of harm. Figure 1 summarizes these rankings, with more details from local interviewees provided below.



Figure 1. Summary of environmental health and emergency preparedness concerns from local leader interviewees

 Low concern (1-2)	 Medium concern (3)	 High concern (4-5)
<ul style="list-style-type: none"> ● Disease from ticks or mosquitos ● Drought ● Extreme heat 	<ul style="list-style-type: none"> ● Pesticide exposure ● Unsafe housing conditions (mold) ● Air quality ● Wildfire + smoke ● Earthquake ● Tsunami 	<ul style="list-style-type: none"> ● Contaminated water ● Limited water supply ● Flooding ● Extreme cold

Environmental health concerns

In interviews with local leaders in disaster preparedness and response, we asked what environmental health effects they were most concerned about. Interviewees were asked to rank their level of concern from 1 (not at all concerned) to 5 (very concerned) about a list of potential environmental health concerns. Interviewees were also asked to comment on any additional environmental health concerns that came to mind.

Limited supply of drinking water

Local leader interviewees explained that because various issues can lead to contaminated water, limited supply of drinking water was a top concern.

“Drinking water, either municipal or through private wells, it's a big concern.” - Local Leader Interviewee

“Thinking about drinking water, do they have either drinking water stored or do they have filtration? So how would they access water? So food, shelter, water, sanitation. Sanitation is a big deal.” - Local Leader Interviewee

Contaminated drinking water - municipal or well-provided

Water quality is a concern for people living in Tillamook County, whether they are drinking through a private well or a municipal water system of the county.

“I think of everything from water supply, terrorist activities within water supply, sanitation into the river streams. We've had a digester, manure digester out here that's done a leak.” - Local Leader Interviewee

“Environmental health to me it's the disruption of services like water, sewer, electric, that type of thing with environmental health. The first thing that always comes to mind is water issues, especially with the flooding we get here, first thing I think of, has the water supply been contaminated, is it still intact, is it operational?” - Local Leader Interviewee

Disease from ticks or mosquitos (e.g., Lyme disease)

Local leader interviewees were not very concerned with disease from ticks or mosquitos, ranking this issue as a 1 or 2 on the scale of concern.

“I haven't heard a whole lot of issues, problems, concerns going on [regarding ticks or mosquitos].” - Local Leader Interviewee

Pesticide exposure from agriculture/forestry

Local leader interviewees were somewhat concerned about pesticide exposure from agriculture/forestry, ranking this issue as a 2 or 3 on the scale of concern. The concern for pesticides stemmed from one local leader interviewee mentioning that Tillamook County sprays pesticides to kill things harmful to plants.

“We have farms. We spray along the road for different indigenous or non-indigenous plants. So I would maybe say a three.” - Local Leader Interviewee

Unsafe housing conditions - mold

Living in a coastal environment where there is increased moisture in the air, local leader interviewees were somewhat or very concerned about the health impacts of mold. Interviewees generally ranked this issue between 3-5.

“Mold. I know that it's an issue. A place I moved out of definitely had a mold issue. I'd rate it a 25 out of 10, but I know that it is an issue here, because of being right on the coast, right on the

ocean. I know mold is a definite problem that people deal with, but most people just deal with it...When I talk with County Health, they don't test for it. If you want to test for it, you have to get out your pocketbook and find somebody to come in and deal with it.” - Local Leader Interviewee

Air quality

Concern about air quality among local leader interviewees ranged from not concerned, to acknowledging the potential of air quality getting worse and being quite concerned.

“No, we have great air.” - Local Leader Interviewee

“I think that [concern about poor air quality] is inching higher every year, so I'd probably put that as a four. Because of recent fires.” - Local Leader Interviewee

Disaster preparedness concerns

In addition to their environmental health concerns, Rede also asked interviewees to rank their level of concern on a list of natural disasters. Generally, disasters that garnered the most concern from interviewees were events that they felt were most likely to happen in Tillamook County, or that would have the biggest health impact on community members.

Wildfire + wildfire smoke

Local leader interviewees ranged from fairly to very concerned, giving ratings between 3 and 4, about the possibility of wildfires and health effects associated with wildfire smoke. Local leader interviewees mentioned that they have noticed their county environment being drier, and surrounding areas have

recently caught fire, indicating their area is predisposed to a fire in the future. One local leader interviewee pointed out that the fire doesn't have to start in Tillamook County to have devastating effects in their county.

“Having a wildfire background, I am very concerned. Even though the history isn't there, I would say to me it's at least a four, because if it does happen, it can be catastrophic. This year we haven't had measurable moisture for a couple months, which is very odd. To me it's just not fire starting here, it's coming from other counties and so it doesn't have to start in Tillamook County to affect us.” - Local Leader Interviewee

“I think wildfires would be up in there. I think things are getting drier sooner. It doesn't take much to start a fire around here anymore.” - Local Leader Interviewee

Flooding

Local leader interviewees all described flooding as a primary concern, and ranked this issue as a 5 for their area. Local leader interviewees explained that they deal with flooding very often, at least once a year.

“So we flood every year. So I mean, it's at the forefront. That's our big thing here, is we like to flood every year. Just whether you put one foot on Main Street or three or four feet on Main Street, it will flood.” - Local Leader Interviewee

Earthquake

Earthquakes were not highlighted as a primary concern for local leader interviewees, but a couple of interviewees recognized that their area could be due for one in the future.

“Again, we're in a perfect zone. But again, I don't know, it's got to be semi high. I'd say three and a half, four. I think it's still a possibility, because you have the Cascadia zone, plus you've got all the other faults that come down through the other side of the mountain. There's other faults than just that one. And earthquakes here would be devastating just because it would isolate so much area.” - Local Leader Interviewee

“We're always prepared for [an earthquake]. Hope it never happens, but we're always preparing for that.” - Local Leader Interviewee

Tsunami

Local leader interviewees ranged from somewhat concerned to very concerned about tsunamis. Interviewees explained that it is difficult to prepare for a tsunami because the probability of one is a “crapshoot,” which we inferred as random, and lacking warning signs.

“The potential is high, it's a crapshoot, is it going to happen in our lifetime? Who knows? That's what everybody plans for. So I would probably give it a four too, just because that's what gets everybody excited to get prepared...people don't realize that if the big tsunami happens, you might as well just not worry about much of anything anymore. But I could say, it gets people prepared, so we like to keep it high [as a priority]. - Local Leader Interviewee

Drought

Local leader interviewees said their concern regarding the possibility of drought is growing and becoming a more prevalent concern. Interviewees described that they believe droughts are possible, but not as much of a threat as flooding.

“Man, the concern [for drought] has been low, except for now. When people say in June, the dryness equates to late August. I mean, this year, people are taking it very seriously. Last year, with the amount of rain we had, it was like, ‘what do you mean drought?’ So to me, it would be more in the two range...It's a concern, but it's not something that's like flooding, that is going to happen every year no matter what. The drought issues can happen at any time.” - Local Leader Interviewee

Extreme heat

Local leader interviewees felt that heat was somewhat of a concern, but felt winter storms were more concerning for people living in Tillamook County. This is important to note as climate and health experts such as the Oregon Climate Change Research Institute (OCCRI) have warned that coastal temperatures are rising and that community members on the coast can experience heat-related health issues at lower temperatures.

“So heat is there, but it's not a major concern. So it's just down there around two or three also, same as with the drought. It's a concern, but it's not something that, well ‘wow, we've got to get all these cooling centers opened up and we've got to plan and have outdoor water parks for

people to go to.' The only thing with heat, why it's a problem, it draws more tourists, doubles our people that want... They think they can come here and escape the heat. So it's not the heat, it's the tourists that create the problem.” - Local Leader Interviewee

Extreme cold/winter storms

Local leader interviewees explained that Tillamook County deals more with extreme cold than extreme heat and winter storms are a high concern. Local leader interviewees highlighted freezing rain, power outages from winter storms, and dangers caused by ice and snow as common extreme weather events.

“Winter storms are a high concern. I'd put that up around a four. If you look at this last year, I mean we had major power outages. I mean we put six inches of snow on the beach in Oregon. Downtown Tillamook had a foot and a half of snow...So if you ask me right now, yeah, winter storm is pretty high, but that's not the norm. But there have been problems...especially with the ice. So I'd put it probably at four.” -Local Leader Interviewee

Information about natural disasters + emergencies

Across all data collection methods, participants discussed the most common sources of disaster preparedness and response information in Tillamook County.

Information about preparing for disasters

Respondents from the community survey indicated that they lacked knowledge and information on how to prepare for emergencies. Not having information readily available and in their language was specified as barriers to respondents' ability to prepare.

One CBO interviewee said that their organization does provide emergency preparedness activities and information to their clients.

"We prepare the staff and then also we prepare all the clients, consumers, however you identify them, also. We have handouts and pamphlets and we talk about it, and especially when we start moving into the year, like right now, that's a pretty regular conversation we have." - CBO Interviewee

Overall, CBO interviewees reported *few* resources in the community to help people prepare for and respond to an emergency. They felt there was work to do in coordinating these resources and ensuring that roles and responsibilities in emergency events were clear.

"In the two and a half years I've been here, the care facilities, the assisted living facilities, two out of three in this county closed. Actually three out of four. So all of a sudden there was a lot of elderly that had no place that they either fit or qualified for, or could afford...there's just not a lot of resources for elderly or veterans, the disabled, or very young teenagers." - CBO Interviewee

Figure 2 below shows that the most common sources people went to in order to learn about *preparing* for disasters (before they occur) were social media and community events. Many of the respondents who said they get preparedness information from "other" sources said they visited FEMA websites.

Figure 2. Social media was the most popular source for respondents seeking information about preparing for emergencies (N=71)

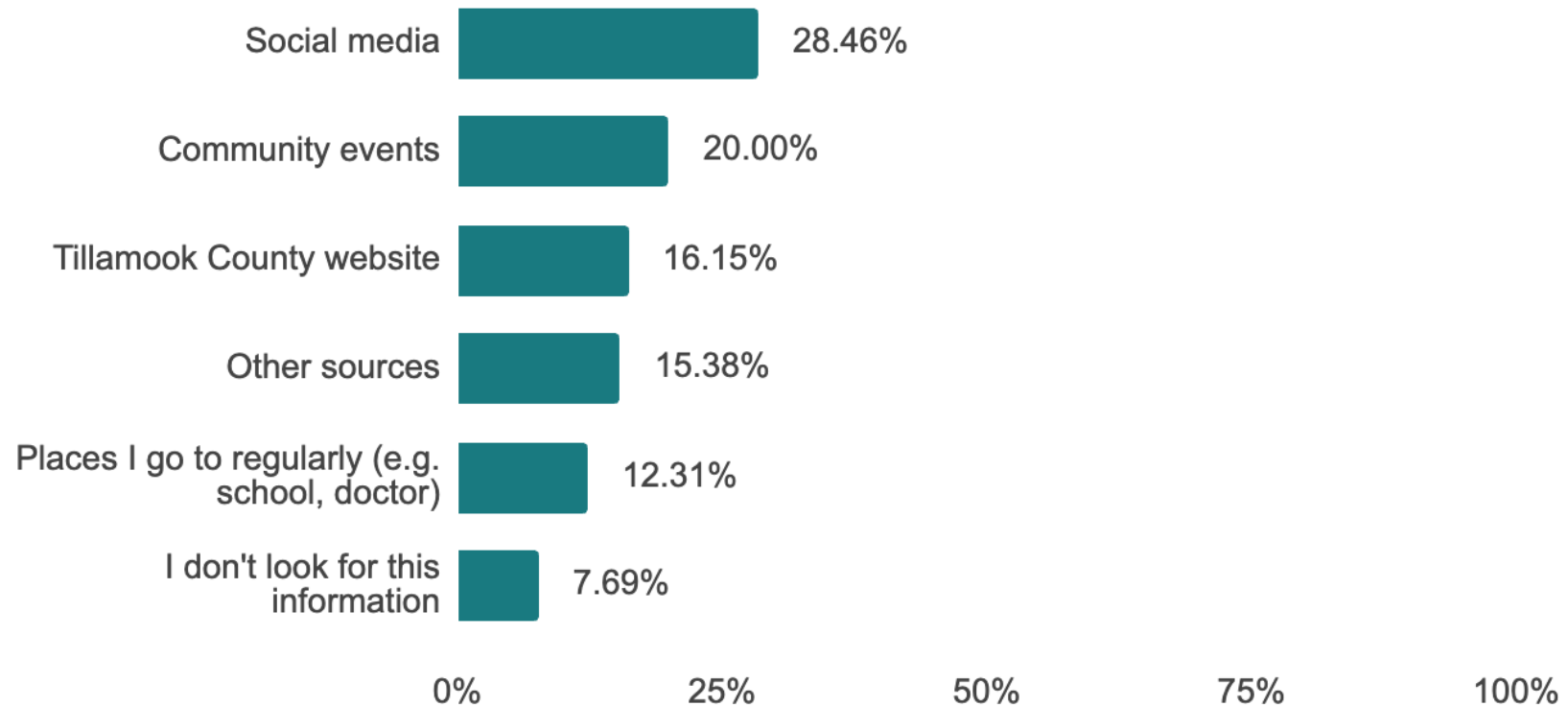
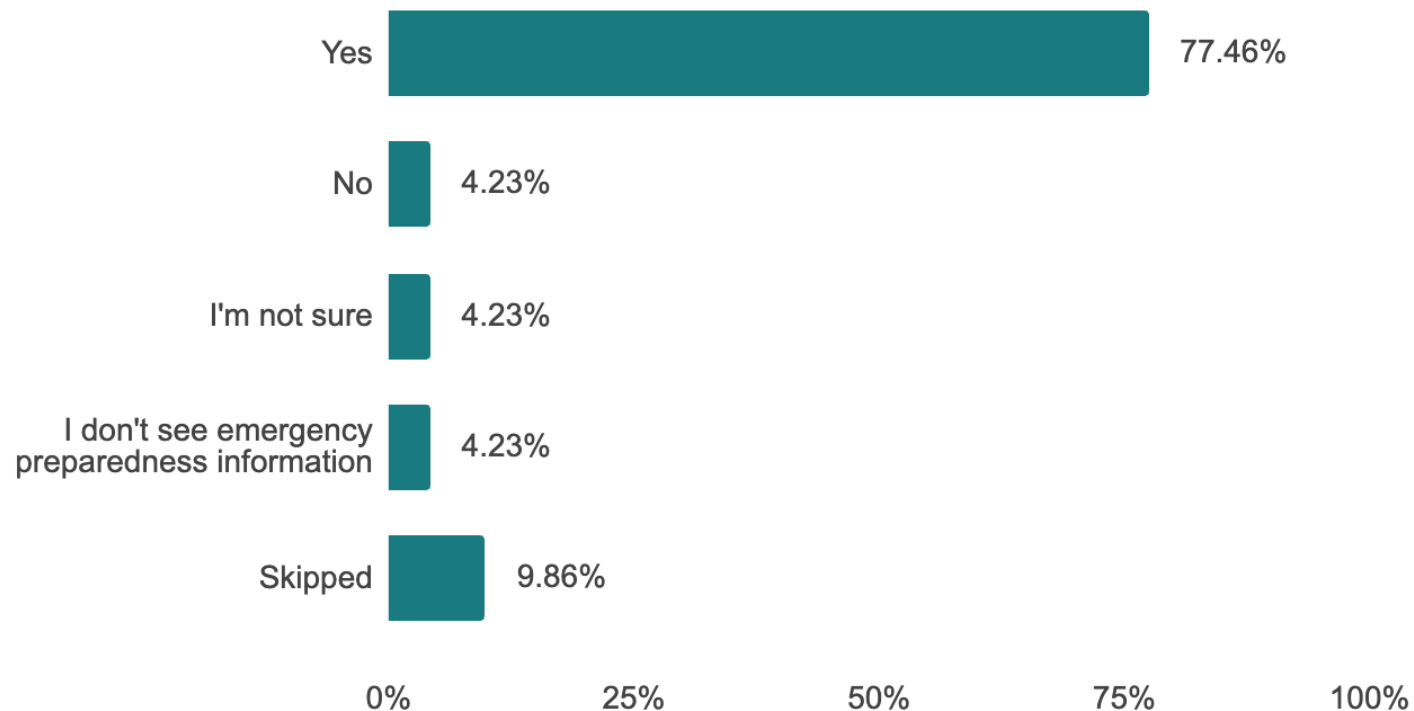


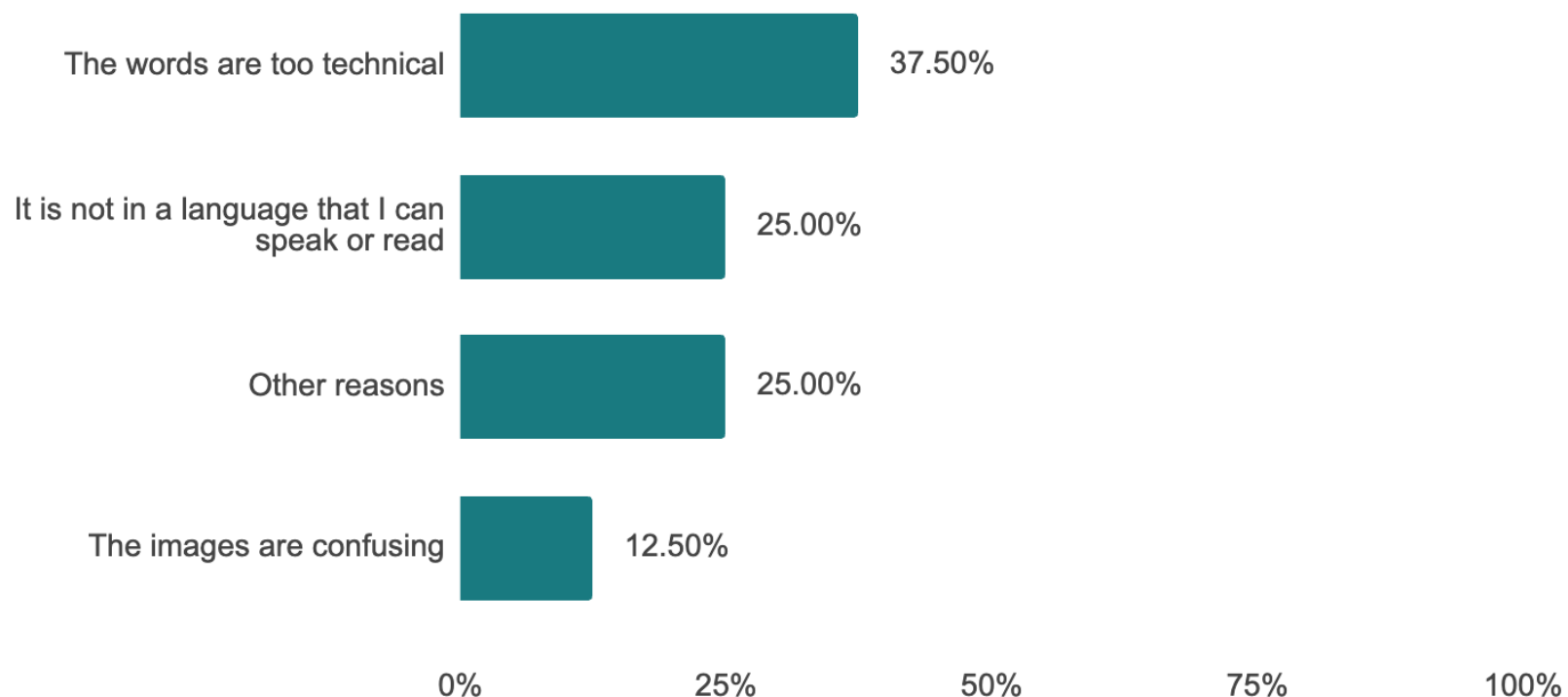
Figure 3 shows that for the majority of Tillamook County residents surveyed, emergency preparedness information was generally easy to understand.

Figure 3. When asked if emergency preparedness information was easy to understand, most respondents said yes (N=71)



As shown in Figure 4, community survey respondents who reported that emergency preparedness information could be difficult to understand cited language that was too technical or not provided in the language that they speak.

Figure 4. Of respondents who said that emergency preparedness information was difficult to understand, the most popular reason was that the words were too technical (N=8)



One CBO interviewee echoed that information in languages other than English can be hard to find.

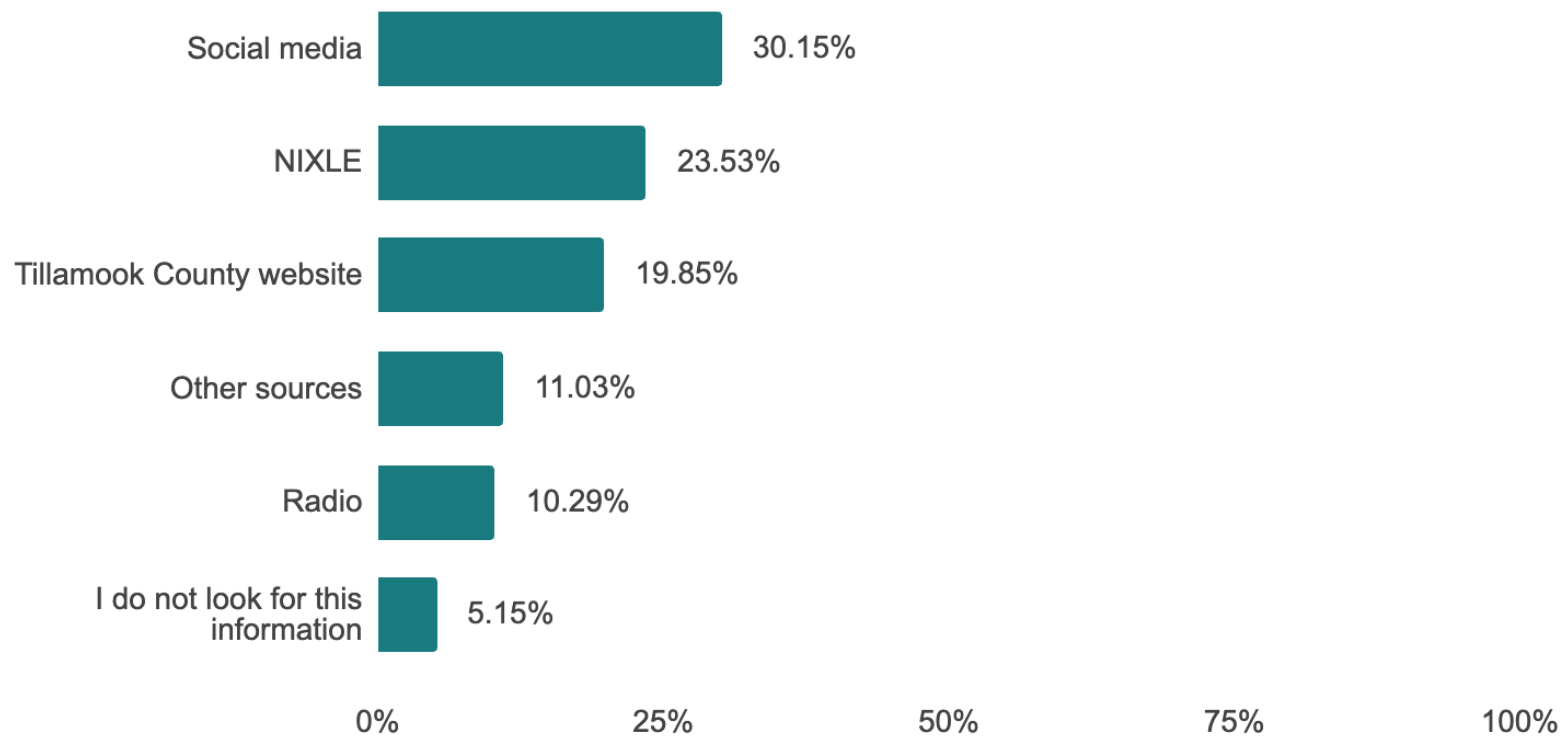
“I would say that most of this type of information that they receive comes from the schools and stuff. I don't think that there are a lot of resources in Spanish, especially for people who have

English as a second language or are limited English proficient. So I know that the schools every now and then will send out information with their kids or just the materials that their kids are learning at school. But other than that, I don't know how else they would get it.” - CBO Interviewee

Information about responding to disasters

When respondents were asked where they get information to *respond* to disasters (as they are occurring), they highlighted social media and NIXLE as the most common sources, as shown in Figure 5. Respondents who said they get information to respond to disasters from “other” sources mentioned having a close connection with their local fire chief or city emergency manager.

Figure 5. Social media and NIXLE were the most popular sources for respondents seeking information about responding to emergencies (N=71)



CBO participants told Rede that the main sources of both disaster preparedness and response information included word of mouth, social media (Facebook), and radio. CBO participants also reported seeing limited messaging in Spanish, or at least the sources are not well-established. To

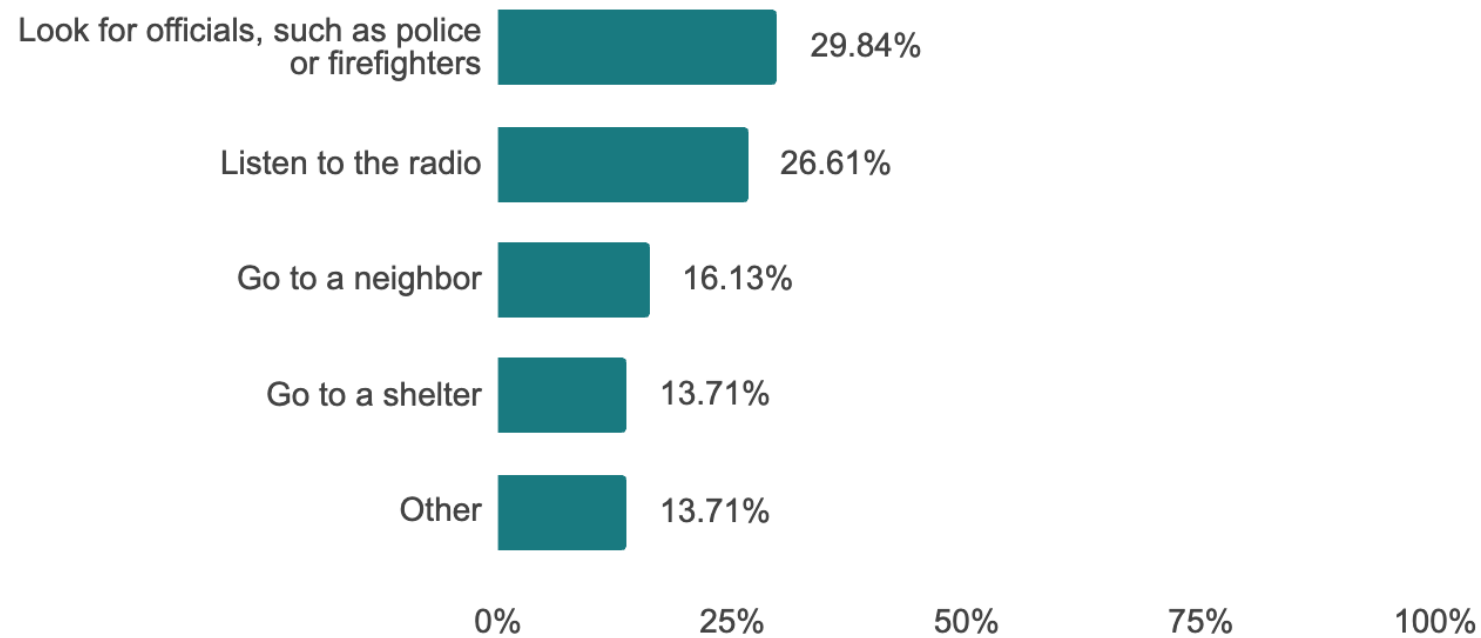
improve information dissemination during emergencies, one CBO interviewee suggested a pre-established “call chain”.

“I keep coming up with a calling chain, just knowing that everybody has, they know who's going to contact them in case of something and that that person would be in charge. So just having a network in place, even if it's... I just think about in school, it used to just be a calling chain. ‘Hey, school's closed,’ whatever it needs to be. Or a neighbor goes and checks with three other neighbors. Those are my thoughts.” - CBO Interviewee

“And definitely word of mouth, word of mouth, word of mouth, because people start talking about it before it's happening, like ‘make sure everybody's ready for this’”- CBO Interviewee

Survey respondents were asked what they would do and how they would stay informed in the case of a power outage without internet or cell phone service available. Figure 6 shows that most respondents would either be listening to the radio or tracking down an emergency official during the emergency to stay informed.

Figure 6. If there were no power, cell service, or internet, most respondents would be looking for an emergency responder during an emergency or listening to the radio, including HAM and GMRS radios, to stay informed (N=71)



Community preparedness

Plans + supplies

Preparedness plans

In interviews and surveys, how and to what degree the community was preparing/planning for an emergency and/or natural disaster was discussed.

In interviews with local leaders, all interviewees described emergency preparedness as having a plan and having everything you need. They acknowledged that this involves considering a lot of details and resources that make preparing difficult.

“Just if you needed to get up and leave your house right now, what do you need? And then when you get somewhere, do you have what you need?” - Local Leader Interviewee

In CBO interviews, organizations described wanting to be prepared and aid in the preparation of the populations they serve. CBO interviewees felt that most people they serve are likely not prepared for emergency events, with the primary reason being a lack of resources. They also mentioned frequently that there is a lack of knowledge or information (as mentioned in the above section *Information about natural disasters + emergencies*).

For the community survey, “Somewhat prepared - I know what I would need to pack but I haven’t packed it and/or I’m not sure where I would go” was the most popular answer to the question of how prepared respondents believed themselves to be. When asked what their barriers were to getting

prepared the top three answers (in order of most common) were first, a lack of information or knowledge; a lack of resources (including money to purchase supplies and space to store supplies); and time constraints to learn information, gather resources, and maintain resources. A few respondents to the community survey and CBO interviewees also mentioned lack of will to plan and think about this topic as it can bring up anxiety.

“It's one of those things that people don't want to put on the forefront of their thought process because they think, ‘oh, we'll just see what happens’...To answer your question, I really don't meet a lot of people or have conversations with people that are talking about being prepared for a natural disaster. I'm sure they're out there, but like I said, I've only met a couple and they're kind of extreme”. - CBO Interviewee

Plans for managing mental and physical health

In the community survey, respondents were asked an open ended question regarding their strategies, resources, and plans to manage their mental and physical health during a disaster. For plans in managing mental health, the most common answer was related to staying calm and dealing with it as it happens; the next was relying on support networks such as friends and families; and the third most common answer was some variation on “unsure”. Beyond those top three answers, there were a variety of answers that included seeking out mental health professionals, meditating, prayer, exercising, reading and playing games at home, “spending time outdoors,” utilizing medications, and helping out others.

To manage physical health, respondents indicated emergency preparedness actions such as preparing a supply of food and water and emergency supplies such as first aid kits in the home. Others answered less with a perspective of emergency situations posing additional threats to health and responded with variations of diet and exercise such as eating well and walking or running, and many answered that they were unsure.

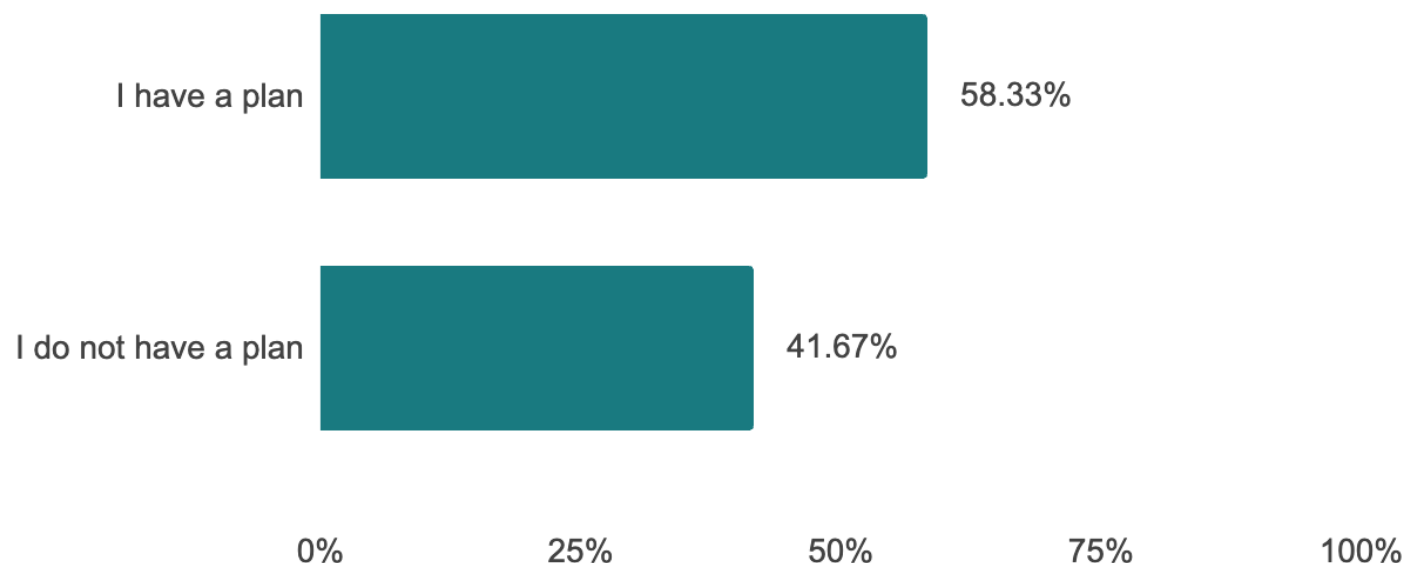
“The same that I do on a daily basis - eat well, drink lots of water, keep moving” - Community Survey Respondent

When asked what additional support they might want or need to manage mental and physical health during an emergency, the most common answers after “unsure” were related to good communication from emergency responders and knowing that emergency response planning, preparing, and response are taken care of by local leaders.

Plans for supplies

When asked if they kept emergency cash, roughly half of community survey respondents said “yes”, and over half of respondents said they typically keep a 2-week supply of medications. Those that receive medical services from Veterans Affairs (n=7, 9.86%) said they would have the medications or supplies they would need if VA services were suspended for 2 weeks due to an emergency. For the respondents that identified as a person with a chronic illness or disability (n=24, 19.72%), only about 58% indicated they have a plan to manage their condition during an emergency event (see Figure 7).

Figure 7. Among respondents that reported living with chronic illness or disability, about half also reported that they have a plan to manage their condition in an emergency (N=24)



The community survey included a lot of responses that indicated community members felt ready and/or felt that formal preparation wasn't necessary as individuals saw themselves as self-reliant, their homes as having everything they need, and their community as one that would band together to help each other out. While the CBO interviews highlighted this strong sense of community cooperation and unity, they also stated a strong desire for better preparedness, especially since many of their services would

become needed by everyone in an emergency event, such as food banks and shelters, and they did not feel prepared for that scenario.

“The problem is that when there is an emergency, everyone in the community becomes eligible for assistance at that point. So now we've gone from serving around 3,000 folks to serving 25,000, plus all of the tourists in the area.” - CBO Interviewee

The degree of public or community readiness for an emergency was ranked as a 3 out of 5 according to Tillamook Health and Human Services on their readiness assessment survey.

Shelter + evacuation

In the community survey, when asked if they have an emergency response or evacuation plan at home, over half responded “yes” (see Figure 8). However, nearly 60% of respondents reported not being aware of shelters that are/would be available during an emergency (see Figure 9).

Figure 8. Most respondents reported having an emergency or evacuation plan at home, but about one-third reported that they do not have a plan. (N=71)

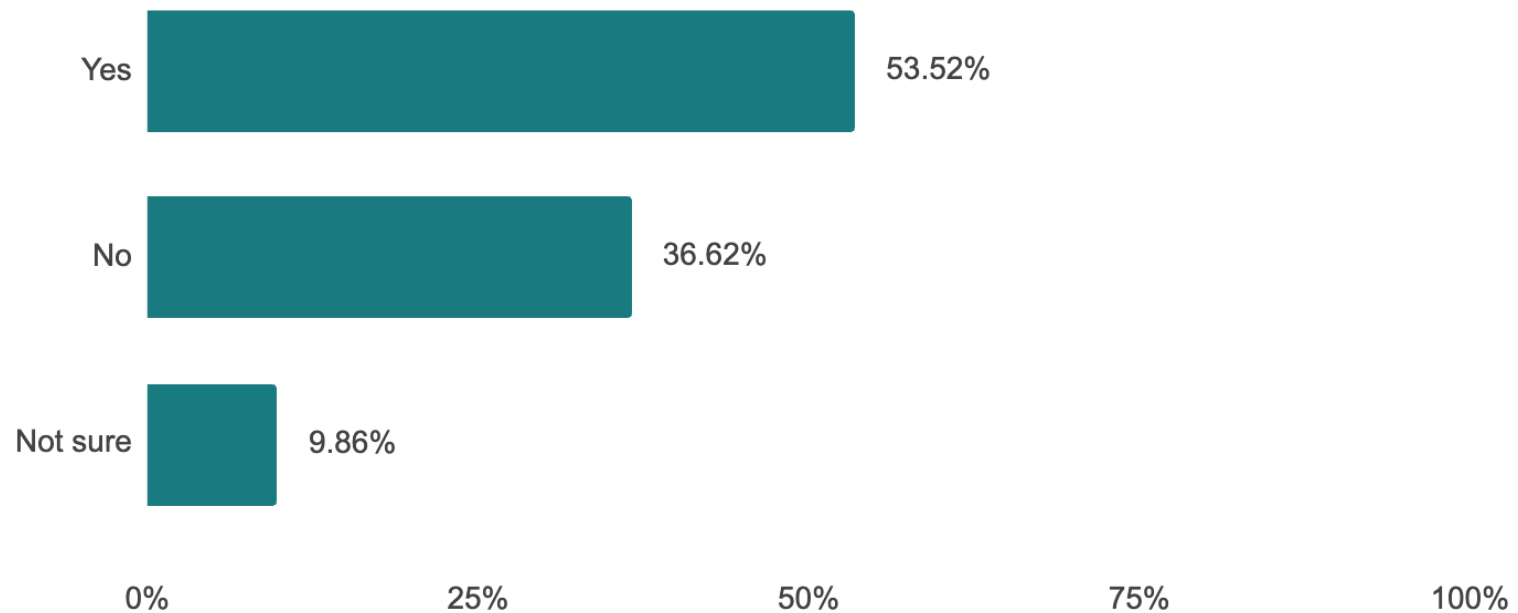
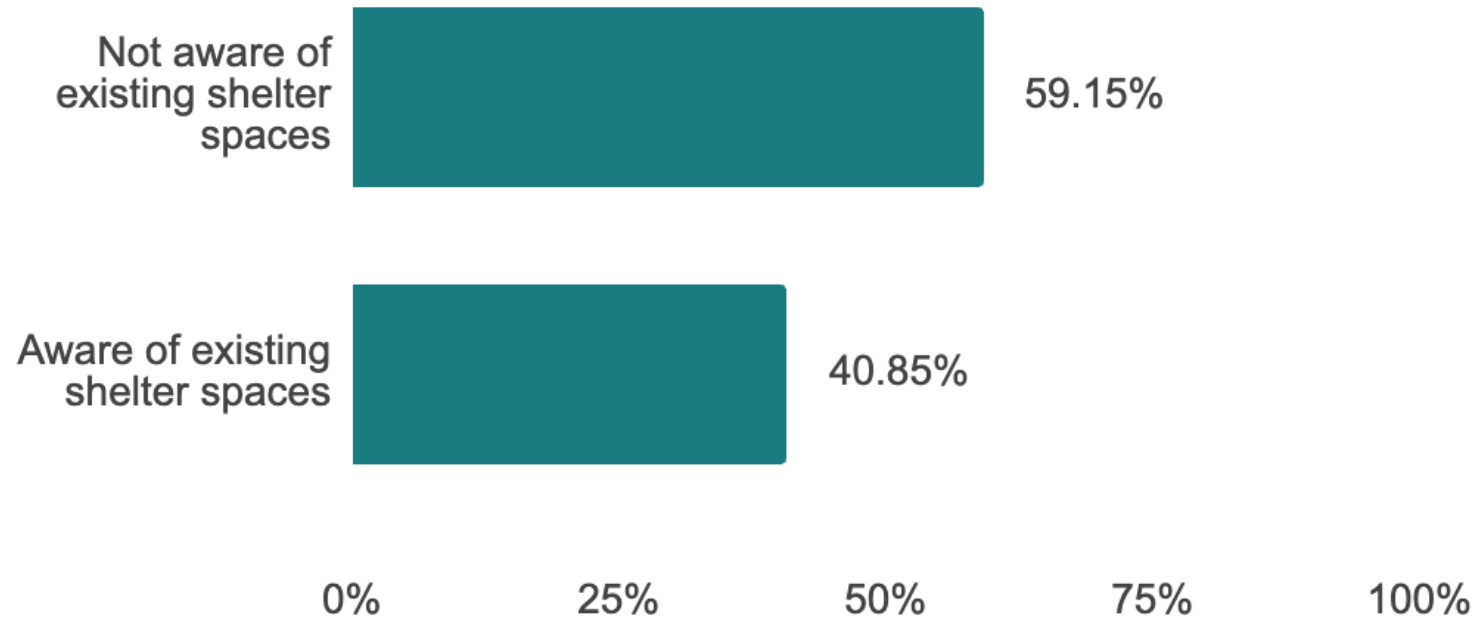


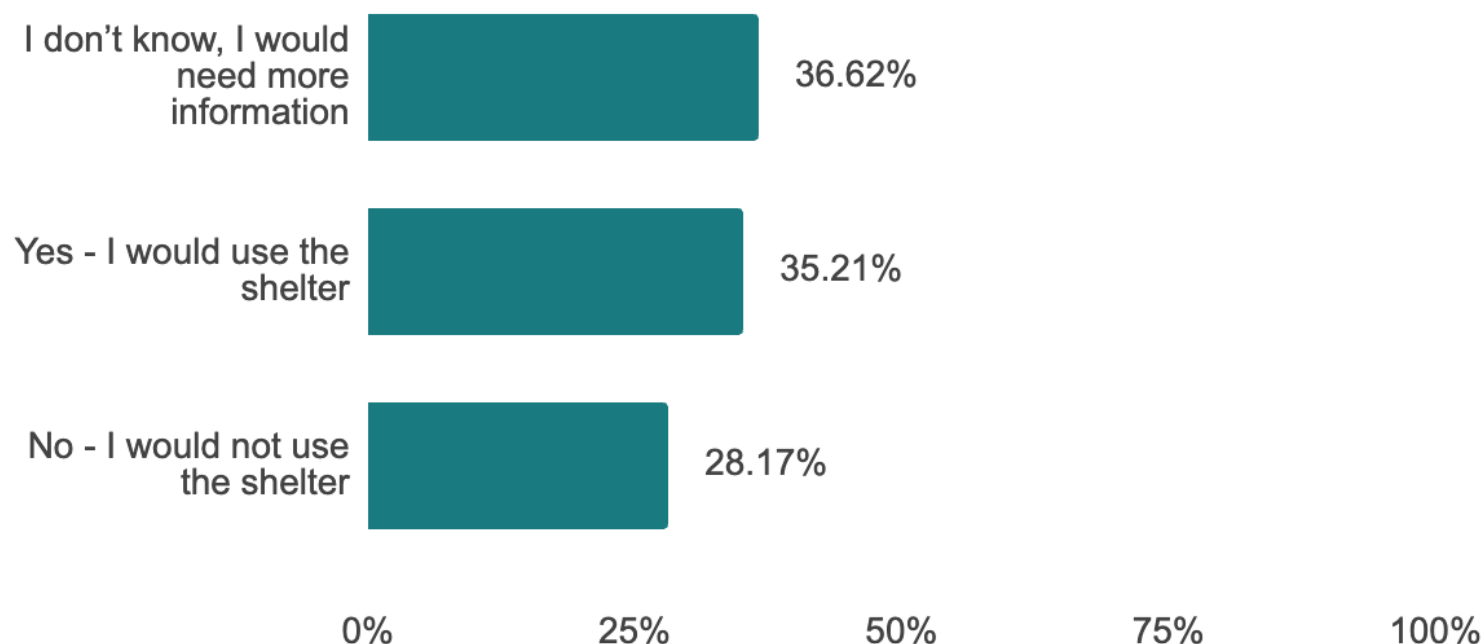
Figure 9. A little over half of respondents reported that they are not aware of shelter spaces in Tillamook County (N=71)



Community members were also asked if they would use a shelter in an emergency, slightly more than a third said “yes,” while the rest were split between being unsure and indicating “no” (see Figure 10). When asked why they would avoid a shelter, the most common answer was that people prefer to stay at home, with answers including feeling safer and more comfortable at home, and an overwhelming amount of responses indicating people felt that they had everything they needed at home in the case of

an emergency. The next most common answer was related to the location of the shelter, with answers indicating accessibility issues (for people with disabilities or lack of road access during an emergency).

Figure 10. Most respondents reported that they would use an emergency shelter provided by Tillamook County, or would want more information (N=71)



CBO interviewees expressed that, for the populations they typically serve, people may not feel safe accessing emergency services, such as a shelter, because they would be afraid of being turned away or

experiencing discrimination while at the shelter (see also *Equity considerations in preparedness + response* section).

“I see it and I hear it and I've heard stories about what used to happen and what went on at [this organization], but we've made this place a pretty safe environment as much as we possibly can for LGBTQIA+ and for any minority group that comes in here. Everybody's welcome and everybody should feel welcome. But that doesn't resonate that well with the community a lot of times.” - CBO Interviewee

Specific considerations around setting up or accessing shelters did not surface in interviews with local leaders. Local leader interviewees primarily discussed shelter as something for individuals to consider in their plans.

As far as reaching shelters and transportation in general, the majority of CBO interviewees stated that most of the people they serve rely on public transportation, so in the case of an emergency where public transportation is stopped, they would not be able to access a shelter. Walking, biking, and relying on friends and family for car rides were also mentioned as transportation methods used by people in Tillamook county; all manners of transportation that could be stopped in certain types of emergency events.

In the community survey, 87.32% (n=62) of respondents reported that they depend on their own personal car on a day to day basis and 74.65% (n=53) indicated that they have a reliable mode of transportation to evacuate to reach a shelter. In a few written responses, respondents indicated how damage to roads would impact evacuation plans.

Geographic differences

In the CBO interviews, participants frequently highlighted North County or Manzanita as an area that is well-resourced and prepared for emergencies. Their CERT program came up a couple of times as well as the go-bags that they sell, however CBO interviewees described these resources as expensive.

“In Manzanita they were pretty big with the CERT program. And they had things like triage and they had a network of people within the community. So my mom, for instance, people knew that they needed to come and check on her if there was [an emergency]. And they were pretty integrated. Don't really see that yet here. Although I know, I guess it was said at Tillamook County Wellness, they have an all call with all the different groups and there's actually an emergency preparedness group within that now.” - CBO Interviewee

“They [Northern region of Tillamook County] have a really active volunteer emergency corps...they have go-bags that they sell that are really expensive, but they're prepared, have the things that you need for so many days.” - CBO Interviewee

“Well, I keep going back to the CERT team... They had kits though for people, and it was food and something to keep you warm. And I had three of the backpacks for me and the kids. And just knowing that if I got hit with a tsunami, I could run up the hill and I knew where to go and I knew that I had this supply. It gave me a feeling of not well-being, but calmness just knowing that wasn't a big question mark...But it was expensive, that would be the other thing. I think each pack was like \$250. So that would be one thing, that it's not cost prohibitive to have those kinds of supplies.” - CBO Interviewee

CBO interviewees, local leader interviewees, and community survey respondents expressed high likelihood that many individuals in Tillamook County may not be able to get to a shelter (or would only use one if it was close by) because evacuation roads are limited and roads that exist may likely be inaccessible, including primary evacuation routes. Participants also stated that there are large sections of the county that lack internet and/or cell service and rural homes that could be difficult for responders to reach.

“So where I live in... there used to be a road there...it's closed down now and it has been for the last probably five or six years...if a disaster happened where I live, there's one way in, one way out. And it's been that way for probably the last six or seven years.” - CBO Interviewee

“The problem with Tillamook County is that we are 74 miles long on the coast. So it's a strip and also goes east. So it's really hard to come together as a county. That is our goal. That is our whole goal is that we are united, that we have the same processes, that whatever we're doing, that we do it together.” - Local Leader Interviewee

“Landslides are a concern, because if they come down and close Highway 101, some of the areas, that's their only way out. And it also creates some mega detours. When they had one slide last year on 101, the detour was like an hour and a half to get around. There's a way to get around it, but it was quite a long ways. I think that's another one that we probably need to talk about is the landslides.” - Local Leader Interviewee

“Cell service is terribly lacking in so many parts of the county. Not only do I not have reliable cell service at home but there is no landline service here either. That is a tragedy waiting to happen for many of us older folks (70 and disabled here)” - Community Survey Respondent

Despite different degrees of preparedness reported between the different regions of the county, local leader interviews and responses to the Tillamook County HHS readiness assessment survey both indicated very strong overall support from leadership (commissioners, agency directors, etc.) and a desire to engage in coordinated planning and preparedness efforts.

Equity considerations in preparedness + response

Burden of preparedness

Many of the populations most at risk for negative health outcomes due to a natural disaster or other emergency (e.g. unhoused populations, people with disabilities) are also the least likely to have the resources they need to prepare. A few CBO interviewees mentioned that some of these communities are living in a state of crisis at all times, and thinking ahead to prepare for the future is a “luxury” that they don’t have. Some community members, such as people who are unhoused or living in small/shared homes, do not have space to store additional supplies. Some interviewees said that the burden of preparedness should weigh heavier on the local government and other organizations serving these populations.

“I feel like the population that I serve, they just have what they need to live every day. They don't necessarily plan ahead of time. And most of the time it is because of the money. If they don't have plenty of money, how are they going to go and buy extra stuff” - CBO Interviewee

“There's no additional funds. There's no housing stability. Costs have gone up so much that I'm afraid that many of the families that we are serving are experiencing, like I said, a daily emergency and do not have enough food to get them through each day, let alone preparing for the future.” - CBO Interviewee

“It has been brought up in conversation that it should be the work of those folks to be preparing for those who live daily emergencies rather than putting the burden on folks who don't have the means, and most likely the time or access.” - CBO Interviewee

“I think...preparedness is something that really, at the moment, feels exclusively for people who have the money to be prepared.” - CBO Interviewee

Accessing + utilizing resources

We heard from a few community survey respondents and CBO interviewees that some people living in Tillamook County would not feel safe accessing emergency services in a disaster, such as a temporary shelter, because they are afraid of being turned away or otherwise discriminated against.

“I think that probably people who come to our office who receive our services feel safe there. But I know that from conversations that I've had specifically with some of the LGBTQ population is that

our county is not a safe place. And when I think about trying to access services, I think [that's] one of the barriers.” - CBO Interviewee

“There aren't enough people engaged in this work who speak the language, who look like them [Latino/a/x community members], and so I think that makes it tough, too. I do think that there are fears of discrimination and just being turned away or maybe not treated the same as everybody else. I think for the most part, it's not that people with the power to help them, I don't think it's their intent to push them away. I think a lot of times it's just that language barrier and maybe not having experience working with this population that makes it, I think, uncomfortable for both people, but it's harmful for the Latino population.” - CBO Interviewee

“I would want to use shelters provided by the county because of the convenient location but I would avoid it because I would not feel like I ‘fit in’ because of my ethnicity.” - Community Survey Respondent

“Will they be wheelchair accessible? Do they offer family bathrooms?” - Community Survey Respondent

“Lack of information and I would be embarrassed to go because I don't speak English.” - Community Survey Respondent

“I would use it for my children so that they would be safe, and I would not use it for not being near Americans who resent your race.” - Community Survey Respondent

Roles + Responsibilities in emergency response

Defining roles for Tillamook HHS

Interviews with local leaders and responses on the readiness assessment survey indicated that there may be some room to improve coordination in disaster preparedness and response in order to increase equity and effectiveness. One local leader interviewee described a desire for more unity in disaster preparedness and response in Tillamook County overall. Another interviewee detailed that Tillamook County's incident command structure needs some polishing, reporting that currently, roles are dependent upon which department shows up on the scene first.

"The problem with Tillamook County is that we are 74 miles long on the coast. So it's a strip and also goes east. So it's really hard to come together as a county. That is our goal. That is our whole goal is that we are united, that we have the same processes, that whatever we're doing, that we do it together." - Local Leader Interviewee

"Really just knowing what agencies and who to involve when something happens. I think the ICS system, who's in charge of what, still needs to be dialed down a bit, it just kind of happens of who shows up first, whether it's the police department, the sheriff's department, the fire department or who it is, ends up doing part of that. But I think there needs to be a bigger agency-wide or department-wide type thing." - Local Leader Interviewee

Like many other local health departments in Oregon, the COVID-19 pandemic highlighted the necessity of strong coordination and partnerships when responding to urgent public health challenges. In the

readiness assessment, Tillamook HHS reflected on their partnerships that were strengthened during the pandemic response and rated their community connections highly. Tillamook HHS reported strong coordination especially at the leadership level, stating that they participate in a number of emergency preparedness committees and have regular communication with elected officials and the county emergency manager. At the staff level, knowledge and expertise of disaster preparedness and response is mixed, and efforts are underway to increase knowledge and capacity broadly in the department.

The Tillamook Emergency Operations Plan was last updated in 2017 and, according to Tillamook HHS, includes tasks that HHS is not prepared to take on.

“Within the [emergency operations] plan, it has duties listed in it that Tillamook HHS is not prepared to do nor capable of doing. While we are familiar with the EOP, there does need to be a modern revision that clearly outlines the capabilities and responsibilities of Tillamook HHS and how we can effectively respond.” - Tillamook HHS Readiness Survey Respondent

A review and update to the emergency preparedness operations plan that considers Tillamook HHS’s capacity more intentionally and clarifies their specific role in various emergency situations would likely increase readiness for disaster preparedness and response. Additionally, community survey responses may be able to provide some insight into specific supports that Tillamook HHS can provide their community members in the event of a natural disaster. We asked respondents, “What additional support would you want and/or need to manage your health (mental and physical) during a natural disaster or other emergency?” and the most common requests were related to clear and timely information and access to supplies.

“Communication and presence from local and state officials. A clear plan for a road forward and what is expected from the community members.” - Community Survey Respondent

“Neighborhood connection and resource support.” - Community Survey Respondent

“The local radio station reaching out to the community with updated information.” - Community Survey Respondent

“I believe [my city] now has a trailer with emergency supplies. I would hope to have access to those resources as needed.” - Community Survey Respondent

“Fresh water. Opportunities to gather with others at predictable times and places so we can exchange things we might need, see each other, etc.” - Community Survey Respondent

CBO role in disaster preparedness and response

CBO interviewees echoed much of what was shared by local leader interviewees, community survey respondents, and responses on the readiness assessment survey related to a need for increased coordination and collaboration in disaster preparedness and response efforts. Many CBO interviewees reported that information during emergency events is sometimes unclear, or nonexistent. These interviewees said that they believe the people they serve would not know where to go and that they themselves have been confused about what to do in emergency situations.

“I’m just thinking about a situation that happened a long time ago...here in Tillamook it got flooded, and then someone said something about a tsunami alert...And it was, I don’t know, 3:00

AM and everybody was communicating by phone, calling each other, saying that something's going to happen in the morning so everybody has to go out of here. So people just started driving to Hillsboro, because they were afraid that Tillamook is going to get flooded or the tsunami's going to come and it's going to destroy everything. And so, people were calling each other, but there was not a plan.” - CBO Interviewee

“I'll tell you that with the tsunami warning, the emergency preparedness office or the emergency management office and the school districts were not in lockstep.” - CBO Interviewee

Overall, CBO interviewees expressed interest in building their capacity to support the people they serve in disaster preparedness and response, but were unsure about how to begin this effort with Tillamook HHS. The CBOs interviewed for this assessment seemed to be especially interested and well-positioned to disseminate information (both about preparedness, and emergency communications), and provide wraparound supports like wellness checks, food boxes, and general social connection. They also noted that in an emergency the population they serve becomes “everyone,” and they desired support from Tillamook HHS to be ready to scale up their services in times of need. CBO interviewees also highlighted their trusted relationships with people they serve, most of whom are also particularly vulnerable to natural disaster-related health challenges, as a strength to be leveraged in an equitable disaster response.

“I don't think it's in place for anyone already. I think that organizations have...had fits and starts around emergency preparedness. Because we've had a lot of practice in Tillamook County with flooding, and storms, and things like that, there is... I have heard in the community a sense of ‘we

take care of each other and we don't need to plan because we'll just be there for each other.' But, that's when it's a known emergency, something we've already experienced, and there are many that we haven't yet...On a scale of one to 10, how prepared are the organizations to support folks that we serve, we're probably at maybe a three or a four.” - CBO Interviewee

“And I know that one of the things I'm going to do personally that I've kind of committed to in the last few months is really expanding our outreach as an organization and my connection as a person with the LGBT community and the folks in our community... I just want to be a point of welcome personally as well as for the organization that I work for.” - CBO Interviewee

“And we definitely need to revisit that, especially to make sure that we have a plan and the people [we serve] know what those plans are. And I just know that we've developed a new or improved partnership with our communication district and dispatch. They actually had a group that came to one of our trainings recently, which is great...I just want to make sure we're doing what we can to help people have more information about that. Because just the simple things like having access to NIXLE or something like that so that people know that if there's an emergency, there is a place where they can get information.” - CBO Interviewee

“The problem is that when there is an emergency, everyone in the community becomes eligible for assistance at that point. So now we've gone from serving around 3,000 folks to serving 25,000, plus all of the tourists in the area. That's not going to be what we need.” - CBO Interviewee

Resilience

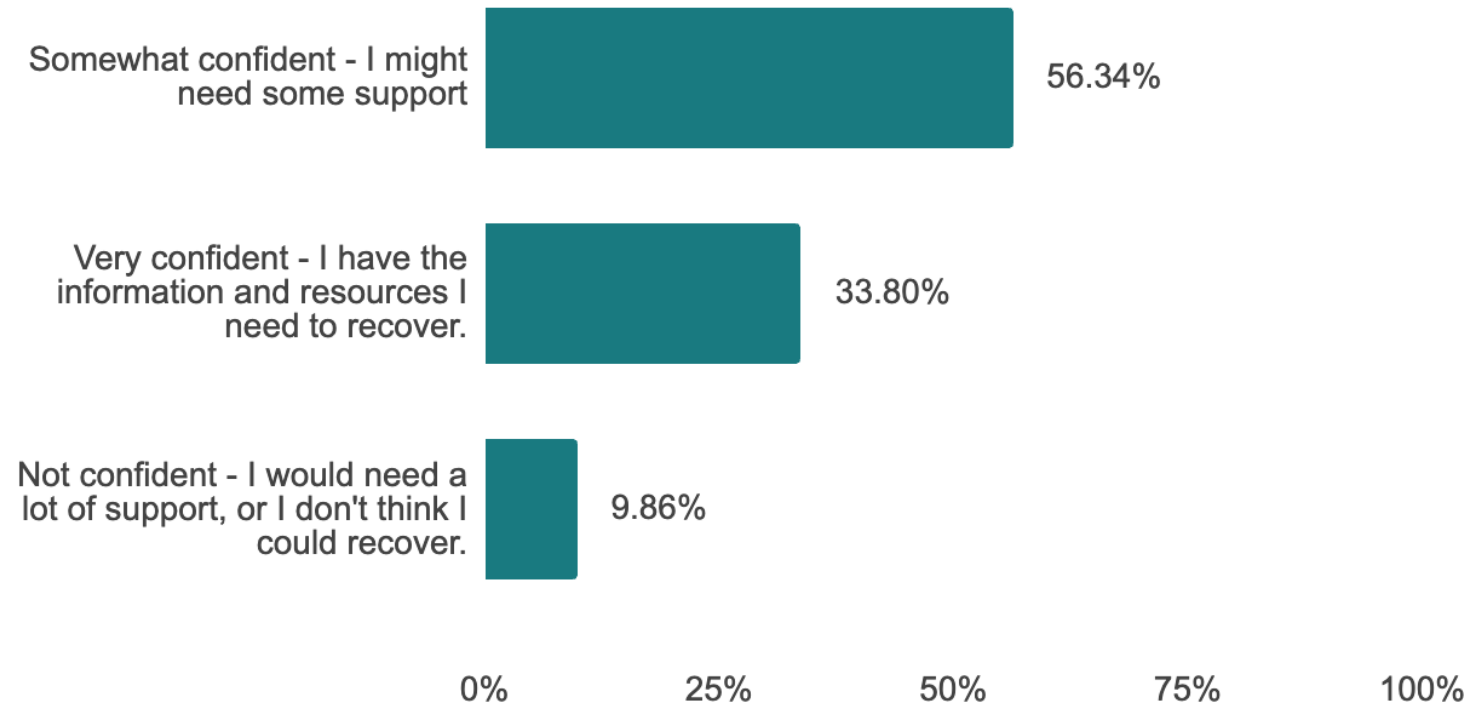
Leadership support

Although CBO interviewees and community respondents were mostly unaware of coordinated planning at the leadership level, overall, interviews with local leaders and responses to the Tillamook HHS readiness assessment survey reported that leadership throughout the county, such as elected officials and heads of governmental agencies were all supportive of coordination and efforts to improve county preparedness, and that those entities had done some planning.

Community strengths

It was evident in the community surveys that people not only felt prepared for an emergency, but also saw themselves as self-reliant and having a strong support network in case something happens. CBO interviewees made similar statements, highlighting that sub-populations and communities trust and are able to depend on each other. When asked how confident they were in their ability to recover from an emergency or natural disaster, roughly half of community survey respondents said they were “somewhat confident” and about a third of respondents said they were “very confident” (see Figure 11).

Figure 11. Most respondents were somewhat or very confident in their ability to recover from a disaster, although many respondents reported that they would need some or a lot of support in recovery (N=71)



Recommendations

1. Residents of Tillamook County rely on social media (primarily Facebook), radio, CBOs, and word-of-mouth to get information about preparing for and responding to natural disasters. For future communications, ensure that easily understood information in multiple languages in addition to English is distributed to CBOs serving vulnerable populations and accessible on social media and over the radio.
2. CBOs who participated in this assessment demonstrated a desire to partner with Tillamook HHS to increase preparedness among the communities they serve, and they are especially interested in being involved in disseminating information and providing wraparound supports. CBOs also have trusted relationships with many vulnerable populations in Tillamook County, and could support the utilization of emergency resources among these populations. Tillamook HHS should explore ways to engage CBOs in future disaster planning and response efforts.
3. Like many coastal communities in Oregon, Tillamook County has limited access to evacuation routes, and respondents to our community survey indicated that most individuals expect to have to shelter in place in the event of a natural disaster. Investment in supplies to shelter in place and plans for distribution to the communities with the highest need should be prioritized.
4. Community members are interested and eager to know what disaster planning has been or is happening. Tillamook HHS should explore ways to expand the reach of their disaster preparedness and response planning communications. This could include sharing the results of

this assessment and next steps to improve disaster preparedness and response in the county through the communication methods identified in recommendation 1 above.

Appendix

Appendix A: CBO Interview Guide

Appendix B: Local Leader Interview Guide

Appendix C: Community Survey Questions

Appendix D: Readiness Assessment Survey Questions

Appendix A: CBO Interview Guide

This guide was used in individual and group interviews with CBOs. Some of the questions in this guide are marked as applicable only to CBOs serving specific populations.

Introduction:

Thank you for taking the time to speak with me today. My name is XXX, and I work for the Rede Group, a company that does strategic planning, research, and evaluation for nonprofit and public-sector organizations. This interview is part of an emergency and natural disaster preparedness community assessment and plan that Tillamook County Health and Human Services is undertaking to assess its capacity to address emergency and natural disaster preparedness and gaps in Tillamook County. The Rede Group is conducting this interview on behalf of Tillamook County Health and Human Services.

We will be recording this interview and taking notes in order to accurately capture all of your comments. What you say here today is confidential. There will be no names attached to any comments in the report. Moreover, the Rede Group will not use this recording for any other purpose other than developing the report. The recording will not be made available to anyone outside of the Rede Group and that includes Tillamook County Health and Human Services. [applicable to group interviews only] I want to remind each of you to respect the privacy of others in this group. It is important that you commit to not sharing anything you hear from others today.

The purpose of the assessment is to help Tillamook County Health and Human Services identify emergency and natural disaster preparedness priorities and develop recommendations for closing gaps in emergency and disaster preparedness in Tillamook County. We are interested in hearing your experiences and opinions about emergency and natural disaster preparations in regards to being informed of an emergency or natural disaster, preparations you have in place in case of an event, and knowledge of resources in the community. Results from this interview and additional data collection will be available in the Fall of this year.

This interview is scheduled to take [75-120 minutes] and will conclude at [time of conclusion]. During our conversation, I may interject or redirect. This is not to be rude, I just want to be respectful of your time and do my best to ask all of the questions in the time we have. If you have questions after the interview is complete, you can contact us at XXX.

Do you have any questions for me before we begin?

The questions I'm going to be asking you today are focused on the people that you serve. We're going to start by talking about emergency preparedness, then we will talk about what it's been like for you and your community when a natural disaster has taken place.

Questions (for all CBOs):

1. Where does your target/served population go to find emergency preparedness information?
 - a. When they see emergency preparedness information, do they understand it?
 - i. Is it in a language that they understand?

- ii. If they use images, do these images make sense?
- 2. Does your target/served population have emergency plans in place when they travel or in all the places that they live/work?
- 3. Does your target/served population have the recommended supplies in case of an emergency (adequate food, water, communication devices, etc.)?
 - a. What is preventing them from gathering these resources?
 - b. Do they know what to supply?
 - c. Do they have the ability to store the supplies?
- 4. With extreme weather (heat waves, snow), and or with natural disasters, would your target/served population use organized shelters?
 - a. Do they feel safe in them?
 - b. Do they know of shelters available to them?
 - c. Can they get to them?
- 5. How does your target/served population learn about emergency events? (do they seek out the information or do they get informed about the event)
 - a. Where do they get emergency information/up to date alerts? (for example, are you signed up for Nixle alerts, radio, text message)
 - b. Is the information in an accessible language for them?
 - c. Is it posted/communicated in various languages?
 - d. Do they have access to a cell phone?
 - e. Do they have access to the internet?

- f. Prompt for details - what radio station? What text messaging app? What TV news station, etc.
- 6. What if there was no power or cell phone service, does your target/served population know how to access information and resources?
- 7. What is the main form of transportation for your target/served population?
- 8. Does your target/served population know how to access the necessary resources after a disaster? (for example, funding, food, medication, supplies, housing)

Questions for CBOs Serving Individuals/Families Experiencing Economic Instability:

- 9. Does your target/served population have a plan for if/when they cannot use digital money such as SNAP, EBT, supplemental benefits?

Questions for CBOs Serving Individuals with Chronic Conditions and/or Disability:

10. Does your target/served population have a plan in place to manage their condition during an emergency (e.g. extended power outage, evacuation, etc.)?
11. Does your target/served population have a plan for if/when they cannot use digital money such as SNAP, EBT, supplemental benefits?
12. Have they talked to their medical providers about what they are going to do in a disaster?
13. Does your target/served population have an evacuation plan?
 - a. Have they talked with others about their evacuation plan?
14. Does your target/served population have an extra supply of medications (for how long or 3 days to 2 weeks)?
 - a. Are their medications mail-ordered or do they need to pick them up?
 - b. Are they reliant on home-oxygen?
15. Does your target/served population have a plan to access dialysis in a disaster?
 - a. Has their dialysis provider given them any emergency preparedness information?

Questions for CBOs Serving Veterans:

16. What resources or strategies would your target/served population have access to in order to manage their mental health during a disaster?
 - a. What additional support would they (want or need)?

17. Would your target/served population have the medications/supplies they need for medical conditions if Veteran Affairs services were suspended for 2 weeks or more as a result of a disaster?

Questions for CBOs Serving LGBTQIA+ Individuals:

18. What concerns does your target/served population have regarding discrimination in benefits or resources in case of a disaster? OR What difficulties does your target/served population face receiving benefits/shelter/etc?

Closing Questions (for all CBOs):

19. Is there anything else you would like to share with us about emergency preparedness or response for the population you serve?
20. Is there anyone else we should reach out to?

That is all the prepared questions we have for you today. Thank you for participating in this interview!
[Stipend information].

Appendix B: Local Leader Interview Guide

Introduction:

Thank you for taking the time to speak with me today. My name is XXX, and I work for the Rede Group, a company that does strategic planning, research, and evaluation for nonprofit and public-sector organizations. This interview is part of an emergency and natural disaster preparedness community assessment and plan that Tillamook County Health and Human Services is undertaking to assess its capacity to address emergency and natural disaster preparedness and gaps in Tillamook County. Rede Group is conducting this interview on behalf of Tillamook County Health and Human Services.

We will be recording our discussion today and taking notes. There will be no names attached to any comments in the report. The Rede Group will not use this recording for any other purpose other than developing a report. The recording will not be made available to anyone outside of the Rede Group, and that includes our client, Tillamook County Health and Human Services. What you say here today is confidential. We will be reporting feedback only as overall themes and insights that emerged from all our interviews. We may use quotes anonymously in reports to highlight themes, but they will be stripped of any identifiable information. Nothing you say in this interview will be attributed to you personally, and nothing you tell us will be used against any person or program.

The purpose of the assessment is to help Tillamook County identify emergency and natural disaster preparedness priorities and develop recommendations for closing gaps in emergency and disaster preparedness in Tillamook County. We are interested in hearing your experiences and opinions about what emergency and natural disaster preparations you or your organization provides, as well as resources in the community. Results from this interview and additional data collection will be available later this Fall.

The interview should take 60 minutes. During our conversation, I may interject to keep the discussion on topic. This is not to be rude, I just want to be respectful of your time so we can get through all of the questions in 60 minutes. If you have questions after the interview is complete, you can contact us at XXX. Do you have any questions for me before we begin?

With that, let's get started.

1. First, can you please share your name, position, and [city/area]?

Now we're going to talk about Environmental Health

2. What comes to mind when you think about environmental health?
3. How concerned are you about the following occurring in Tillamook County? (On a scale of 1 to 5 where 1 represents not concerned at all and 5 represents very concerned)
 - a. Contaminated drinking water - either municipal or well provided
 - b. Limited supply of drinking water

- c. Disease from ticks or mosquitos (ex. Lyme disease)
 - d. Pesticide exposure from agriculture/forestry
 - e. Unsafe housing conditions (ex. Mold)
 - f. Poor air quality
4. What other environmental health issues are relevant to Tillamook County that are not listed above?
5. What environmental health issues are most significant to the community members that you work with or serve through your organization?

Thank you, now I want to shift to thinking about emergency preparedness issues.

6. What comes to mind when you think about emergency preparedness?
7. How concerned are you about the following events occurring in Tillamook County? (On a scale of 1 to 5 where 1 represents not concerned at all and 5 represents very concerned)
- a. Wildfire
 - b. Wildfire smoke
 - c. Flooding
 - d. Earthquake

- e. Tsunami
 - f. Drought
 - g. Extreme weather – heat waves
 - h. Extreme weather – cold/winter storms
8. What other emergency preparedness issues are concerning you in Tillamook County?
9. What emergency preparedness issues are most significant to the community members that you work with or serve through your organization?
10. In Tillamook county, who do you think is the most vulnerable to the health impacts of (natural disasters/emergency events/environmental health issues)? Why are they most vulnerable?
11. Have you noticed or heard of impacts to food production, overall population health, and general lifestyle related to large scale environmental changes or issues connected to the frequency of natural disasters? [Probe: for example, here in the Pacific Northwest ocean acidification and warming temperatures have affected salmon numbers and forest health?]
- a. Thinking of the residents of __[city/area]__, are you concerned about these types of changes?
 - b. What kind of health impacts are you most concerned about?

- c. Are you concerned about the mental health impacts on residents due to these types of changes?
- 12. Do you think that Tillamook County is prepared for the public health challenges related to natural disasters and emergency events ahead?
 - a. Why or why not?
- 13. A key component of emergency preparedness is recognizing and bolstering community resources. Can you share about community strengths and resources that could support emergency preparedness?
 - a. What role, if any, do you think the health department could play in supporting community resilience?

Before we wrap up, I have a couple of questions for you specific to well-water quality and testing.

- 14. As we see an increase in climate pattern shifts (increased drought, risk of saltwater intrusion, etc.), what are the foreseeable dangers of elevated contaminants in the drinking water supply?
- 15. What should Tillamook County be testing for in the well water?
- 16. On a scale of 1 to 5, where 1 represents not important at all and 5 represents very important, how important do you find well water testing to be?

17. What do you think the level of interest of Tillamook County community members is on Well Water Testing? (On a scale of 1 to 5 where 1 represents not interested at all and 5 represents very interested)
18. What areas of the county do you see the biggest need for well water testing?
19. What resources are available for people if contamination is found in their drinking water supply?

That is all the prepared questions we have for you today, thank you again for participating in this interview.

Appendix C: Community Survey Questions

Introduction:

How Prepared Are You For An Emergency Event Or Natural Disaster?

Natural disasters and emergency events can occur without warning. Rede Group, in partnership with Tillamook County Health and Human Services, would like to know how you prepare for possible emergencies and what you do during emergencies.

Participation in this survey is totally voluntary. Your individual answers to this survey will not be shared with anyone outside of Rede Group, including Tillamook County HHS. Rede Group will only share anonymous, aggregate (combined) findings with Tillamook County HHS to help them create better resources and support you and your community when responding to natural disasters.

The survey will take about 15 minutes to complete, and will be open until August 4th, 2023. If you have questions about this survey or this project, please contact Audra Baca at audra.baca@redegroup.co.

Thank you for your time!

Questions:

1. This question will help us sort out bots in our survey responses. Please solve the equation below

$$5 + 1 + 5 = ?$$

Being Prepared

2. Do you use any of these resources to find information about preparing for an emergency? (ex. What supplies to have ready, a plan for what to do if something happens) Check all that apply.

- ☐ Tillamook County website
- ☐ Social Media
- ☐ Community events
- ☐ Places I go to regularly (doctor's offices, social security office, church, children's school, work, etc.)
- ☐ None - I do not receive or look for information about preparing for natural disasters or other emergencies
- ☐ Other:

3. Do you receive or look for information about natural disasters or other emergencies (ex. Wildfires, floods) from any of these sources? Check all that apply.

- ☐ Tillamook County website

☐ NIXLE

☐ Radio

☐ Social Media

☐ Other sources:

☐ I do not receive or look for information about natural disasters or other emergencies – [Skip logic, skip next few questions (go to 6) about emergency preparedness information]

4. When you see emergency preparedness information, is it understandable?

☐ Yes

☐ No

[if yes, skip to question 6]

5. If the emergency preparedness information you have seen is not easy to understand, please tell us why:

☐ It is not in a language that I can speak or read

☐ The words are too technical (hard to understand)

☐ The images are confusing

☐ Other reasons:

6. Do you have an emergency response or evacuation plan for your home?

☐ Yes

☐ No

☐ I'm not sure

7. Do you know the emergency response or evacuation plan at your place of work?

☐ Yes

☐ No

☐ My place of work does not have an emergency response or evacuation plan

☐ I either work from home or am not currently employed

8. Do you keep emergency cash anywhere in case of a power outage that would make it impossible to use digital money, including SNAP and EBT?

a. Yes

b. No

c. I'm not sure

9. Do you identify as someone who lives with a chronic illness or disability?

☐ Yes

☐ No

☐ Other comments:

10. [If yes] – If you identify as someone who lives with a chronic illness or disability, do you have a plan in place to manage your condition and/or disability during an emergency (e.g. extended power outage, evacuation, etc.)?

☐ Yes

☐ No

☐ Other comments:

11. Have you had any conversations with your medical providers (including primary care physicians, therapists, and others) about what you are going to do in the event of a natural disaster?

☐ Yes

☐ No

☐ Other comments:

12. Do you have an extra supply of medications for up to 2 weeks?

☐ Yes

☐ No

13. Do you receive medications or services through Veteran Affairs?

a. Yes

b. No

[If no, skip to question 15]

14. Would you have the medications/supplies you need for medical conditions if Veteran Affairs services were suspended for 2 weeks or more as a result of a disaster?

☐ Yes

☐ No

15. In your opinion, how prepared are you and others in your household (if anyone) to respond to an emergency or natural disaster, such as a flood?

☐ Fully prepared - I have supplies ready to go and a plan for evacuation [skip to 17]

☐ Somewhat prepared - I know what I would need to pack but haven't packed it and/or I'm not sure where I would go.

☐ Not prepared - I don't know what to pack or where to go. I need more information.

16. If you are only somewhat or not at all prepared to respond to a natural disaster, what do you think has prevented you from becoming more prepared?

Note: There are many reasons that people feel unprepared, including a lack of money for supplies, a lack of information about what to pack and where to go, and general discomfort thinking about emergencies. Are any of these true for you? What else do you think is challenging about preparing for a natural disaster or other emergency?

[Comment box]

When/If an emergency happens

17. Are you aware of shelter spaces currently available in Tillamook County?

☐ Yes

☐ No

☐ Other comments:

18. If your county was affected by extreme weather such as heat waves or heavy snow and the county set up a shelter, would you use it?

☐ Yes

☐ No

☐ I don't know/would need more information

19. Please tell us more about whether you would use a shelter provided by the county during an extreme weather event or other emergency.

What would make you want to use them?

And, what might make you avoid using them? (discrimination, belief that access is limited to certain people, etc.)

Explain:

[Comment box]

20. Do you have reliable transportation to get to a shelter or evacuation point in an emergency?

☐ Yes

☐ No

☐ I don't know

☐ Other comments:

21. What is the main form of transportation for you?

☐ Personal car

☐ Driven by friends/family

☐ Public Transportation

☐ Taxi/Lyft/Uber/Ride Share

☐ Walk

☐ Bike

☐ Other

22. Do you have access to a cell phone that you could use in an emergency?

☐ Yes

☐ No

☐ I'm not sure

23. Do you have access to the internet at home and/or on a portable laptop or cell phone?

☐ Yes

☐ No

☐ I'm not sure

24. If there was no power or cell phone service due to a natural disaster, how would you figure out where to go or what to do? (For example, do you have a radio? Could you reach out to a neighbor?) Check all that apply.

☐ I would go to a neighbor

☐ I would listen to the radio

☐ I would go to a shelter

☐ I would look for officials, such as police or firefighters

☐ Other:

25. What resources or strategies, if any, would you be able to use to manage your mental health during a disaster?

[Comment box]

26. What resources or strategies, if any, would you be able to use to manage your physical health during a disaster?

[Comment box]

27. What additional support would you want and/or need to manage your health (mental and/or physical) during a natural disaster or other emergency?

[Comment box]

28. Are there children in your household (under 18 years old) that you would be responsible for in an emergency?

☐ Yes

☐ No

☐ Other comments:

29. Would you like to share any concerns or needs for support related to caring for children in an emergency?

[Comment box]

After an emergency event

30. In your opinion, how confident are you in your ability (and others in your household, if any) to recover from an emergency or natural disaster?

- ☐ Very confident - Whatever happens, we have the information and resources we need to recover from a disaster. For example, I'm confident that I can find alternate housing and food after a natural disaster.
- ☐ Somewhat confident - I think I could recover from a natural disaster but some things might be difficult, or I might need some support finding things like alternative housing and food.
- ☐ Not confident - I don't think I would be able to recover from a natural disaster, or it would be extremely difficult and I would need a lot of support.

31. Is there anything else you would like to share about your ability to recover from an emergency or natural disaster and what support you might need?

[Comment box]

Closing

32. Is there anything else you would like to share with us and Tillamook County about emergency preparedness?

[Comment box]

33. This question will help us sort out bots in our survey responses. **Please write “ladybug” in the comment box below.** The rest of this paragraph does not matter. The itsy bitsy spider went up

the water spout. Down came the rain and washed the spider out. Out came the sun and dried up all the rain. And the itsy bitsy spider went up the spout again.

[Comment box]

Thank you for taking this survey!

If you have a few extra moments, we would also appreciate you answering two questions related to well water in Tillamook County.

34. Does your household use well water?

- a. Yes, we get water from a public well
- b. Yes, we get water from a private well
- c. No, our water does not come from a well
- d. I'm not sure

[If no or not sure, skip question 35 and end survey]

35. How interested would you be in having your well water tested?

- a. Very interested
- b. Somewhat interested, but I would like more information.

c. Not interested

d. I'm not sure

You've reached the end of the survey. Thank you!

Appendix D: Readiness Assessment Survey Questions

Introduction:

As a team, please indicate the level of capacity by ranking each situation listed according to the following capacity area ranking system. You will also have opportunities to make comments.

Early Capacity – Score of 1 or 2

This may look like (but not be limited to)...

- Not yet, or learning stage
- Very little to no interest, support, or resources
- Planned/intended but not started or in initial stages of implementation
- Most strategies should focus on training public health officials/internal organizational team members and building awareness among our stakeholders

Established Capacity – Score of 3 or 4

This may look like (but not be limited to)...

- There is some interest and support within our organization and the broader community

- Working toward this but not fully achieved
- There may not be funding, but there are other forms of capital that could be used (such as existing partnerships, initiatives, collaborations, etc.)
- Our strategies may include a mix of targeted educational outreach with one or two priority public health interventions

Strong Capacity – Score of 5 or 6

This may look like (but not be limited to)...

- There is strong support within our organization and broader community to work on natural disaster and emergency preparedness
 - We can devote staff time to this and partners are ready to collaborate with us on these efforts
 - We have the interest and sustainable capacity to work on strategies that involve changes in our planning, policies, and systems
 - We have put in place some or many changes and/or initiatives
-

1. Interest among Tillamook County HHS staff to learn about natural disaster and emergency preparedness:

1 - Early Capacity

2 - Early Capacity

3 - Established Capacity

4 - Established Capacity

5 - Strong Capacity

6 - Strong Capacity

Comment:

2. Knowledge among staff about natural disaster and emergency preparedness:

1 - Early Capacity

2 - Early Capacity

3 - Established Capacity

4 - Established Capacity

5 - Strong Capacity

6 - Strong Capacity

Comment:

3. Leadership Support for natural disaster and emergency preparedness:

1 - Early Capacity

2 - Early Capacity

3 - Established Capacity

4 - Established Capacity

5 - Strong Capacity

6 - Strong Capacity

Comment:

4. Organizational culture of collaboration and creative problem-solving in regard to natural disaster and emergency preparedness:

1 - Early Capacity

2 - Early Capacity

3 - Established Capacity

4 - Established Capacity

5 - Strong Capacity

6 - Strong Capacity

Comment:

5. Broader jurisdictional support for natural disaster and emergency preparedness (commissioners, other agency directors, etc.):

1 - Early Capacity

2 - Early Capacity

3 - Established Capacity

4 - Established Capacity

5 - Strong Capacity

6 - Strong Capacity

Comment:

6. Our department is familiar with the county's emergency operations/management plan and understands what other agencies have the authority to do with regard to natural disaster and emergency preparedness

- I don't know
- No, we do not understand
- Yes, we somewhat understand
- Yes, we clearly understand

Comment:

7. Tillamook County HHS can allot time to work on natural disaster and emergency preparedness:

- 1 - Early Capacity
- 2 - Early Capacity
- 3 - Established Capacity

4 - Established Capacity

5 - Strong Capacity

6 - Strong Capacity

Comment:

8. Tillamook County HHS has sufficient funding for natural disaster and emergency preparedness:

1 - Early Capacity

2 - Early Capacity

3 - Established Capacity

4 - Established Capacity

5 - Strong Capacity

6 - Strong Capacity

Comment:

9. Tillamook County HHS staff are ready to engage in natural disaster and emergency preparedness programming:

- 1 - Early Capacity
- 2 - Early Capacity
- 3 - Established Capacity
- 4 - Established Capacity
- 5 - Strong Capacity
- 6 - Strong Capacity

Comment:

10. Tillamook County HHS staff are connected and coordinating efforts internally and with community partners for natural disaster and emergency preparedness:

- 1 - Early Capacity
- 2 - Early Capacity
- 3 - Established Capacity
- 4 - Established Capacity

5 - Strong Capacity

6 - Strong Capacity

Comment:

11. General public readiness in natural disaster and emergency preparedness:

1 - Early Capacity

2 - Early Capacity

3 - Established Capacity

4 - Established Capacity

5 - Strong Capacity

6 - Strong Capacity

Comment:

12. (By position) Who participated in this survey? (administrator, all-staff, leadership team, etc.) Please list: