

# Appendix E

## Plan Process Documentation

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**NATURAL HAZARDS MITIGATION PLAN UPDATE (4<sup>th</sup> EDITION, 2022)**  
**STATEMENT OF INTENT TO PARTICIPATE**  
**FOR THE**  
**THURSTON COUNTY, WASHINGTON REGION**

**PURPOSE:** The purpose of this Statement of Intent (SOI) is to provide a mutual understanding in support of the signatory local governments, school districts, special purpose districts, colleges and universities, and other organizations that will be working in cooperation to complete an update to the multi-jurisdictional “Natural Hazards Mitigation Plan for the Thurston Region.” This SOI serves as the “partners’ agreement.”

**BACKGROUND AND FEDERAL POLICY:** The Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant Program (HMGP) are federally funded programs managed by the Washington Military Department’s Emergency Management Division (State EMD). It provides grant funds for hazard mitigation plans and projects that reduce casualties and damage to structures in future disasters. The PDM program is authorized by Section 203 Robert T. Stafford Disaster Relief and Emergency Assistance Act. The HMGP grant program, made available following Presidential Disaster Declarations, is funded by the Federal Emergency Management Agency (FEMA), and authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

Cities, towns, counties, tribes, ports, school districts, and other special purpose local governments are required to adopt a FEMA- approved mitigation plan developed under 44 CFR Part 201 as a condition of receiving federal grant funds for mitigation plans or projects. Plans must be updated every five years in order to remain eligible for federal mitigation assistance. The current “Natural Hazards Mitigation Plan for the Thurston Region” (3<sup>rd</sup> edition) expires on August 2, 2022.

**ROLES AND EXPECTATIONS:** Consistent with the region’s previous planning framework, the Thurston County Emergency Management Council will serve as the Steering Committee to direct the development of the plan. A multi-jurisdictional Hazard Mitigation Planning Workgroup composed of designees from each of the participating partners, will build the plan.

For the Hazard Mitigation Plan update process, signatory participation is defined as:

1. Designating a lead point of contact to represent the partner agency’s interests on the regional Hazard Mitigation Plan Workgroup
2. Participating in the planning process including the Hazard Mitigation Plan Workgroup meetings, public meetings or open houses, workshops, planning partner specific training sessions, or public review and comment periods.
3. Providing reasonable support in the form of data, mailing lists, meeting space, and public information materials to solicit public participation in the planning process.
4. Conducting relevant jurisdiction specific meetings to review and refine its hazard mitigation capabilities, local risk assessment, and prioritizing a mitigation strategy.
5. Creating and prioritizing a mitigation strategy that will identify each project, the responsible entity for overseeing the project, how it will be financed, and an estimated implementation timeline.
6. Formally adopting the regional plan and a jurisdiction-specific mitigation strategy.

**JOINABILITY:** It is expected that there will be interested parties not currently included in this SOI that will request inclusion later. Other jurisdictions may be included in the regional plan update considering that they actively participate in all of the roles and expectations as outlined above.

**AGREEMENT:**

*Whereas*, the Federal Disaster Mitigation Act of 2000 requires that for all disasters declared on or after November 1, 2004, local and tribal government applicants must have an approved local mitigation plan in accordance with 44 CFR 201.6 prior to receipt of Hazard Mitigation Grant Program project funding; and

*Whereas*, Thurston County residents, businesses, and local governments are subject to frequent impacts from the destructive effects of flooding, winter storms, landslides, earthquakes, wildland fires, and other natural hazards that has resulted in 22 Presidential Disaster Declarations since 1965; and

*Whereas*, a multi-jurisdictional mitigation plan represents the commitment of jurisdictions to reduce risks from multiple hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards, and is in the public interest to proceed with the multi-jurisdictional grant application and planning process in a timely manner; and

*Whereas*, an open public involvement process is essential to the development of an effective plan, and the process will be coordinated with affected jurisdictions, agencies, businesses, academia and other private and non-profit interests in the county to ensure a comprehensive approach to mitigating the effects of natural disasters; and

*Whereas*, the plan shall include documentation of the planning process, and a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses, sufficient to enable each jurisdiction to identify and prioritize appropriate mitigation actions, a detailed mitigation strategy that provides the blueprint for reducing the potential losses identified in the risk assessment, a five year cycle for plan maintenance, and documentation of formal adoption by each participating jurisdiction; and

*Whereas*, the signatories agree to the best of their abilities and within the limits of their resources to work cooperatively on the project; and

*Now, Therefore*, this SOI is established to create a framework for coordinating efforts related to successfully completing the work funded under a Pre-Disaster Mitigation or Hazard Mitigation Grant Program grant or other relevant source of funding.

**SIGNATORIES:**

The undersigned individuals hereby commit to this SOI on behalf of their respective agencies. This SOI may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Each Party has signed this two-page SOI. The original signature pages are on file at the Thurston Regional Planning Council: 2424 Heritage Ct. SW, Suite A, Olympia, WA 98502-6031, Phone: (360) 956-7575.

John Hutchings, County Commissioner  
Thurston County, Washington

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Signature

Alan Carr, Mayor  
Town of Bucoda

11/26/19  
Date

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\_\_\_\_\_  
Signature  
Scott Spence, City Manager  
City of Lacey

  
Date

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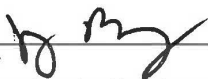
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\_\_\_\_\_  
Signature   
Jay Burney, Interim City Manager  
City of Olympia

\_\_\_\_\_  
Date 11/18/17

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 12-3-19  
Charmayne S. Garrison Date  
City Administrator  
City of Rainier

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11-26-19

Signature

Date

Robert Swain, Chief of Police  
Tenino Police Department

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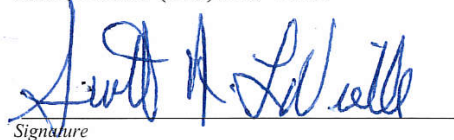
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 11/25/19  
Signature Date

Scott A. LaVielle, Fire Chief/Emergency Services Director  
City of Tumwater Fire Department

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\_\_\_\_\_  
Signature

11.25.19  
\_\_\_\_\_  
Date

Mayor  
\_\_\_\_\_  
Title

City of Yelm  
\_\_\_\_\_  
Organization

**From:** [Todd Stancil](#)  
**To:** [Purcell, Steve](#); [Ryder, Andy](#); [Selby, Cheryl](#); [Shaw, Robert](#); [Fournier, Wayne](#); [Kmet, Pete](#); [Foster, JW](#); [Menser, Tye](#); [Cox, Carolyn](#); [Downing, Joe](#); [Olsen, Russell](#); [mkarras@griffinschool.us](#); [sclifthorne@osd.wednet.edu](#); [Gretchen Maliska](#); [Sprouffs, Jerry](#); [grodeheaver@rochester.wednet.edu](#); [schiewek@tenino.k12.wa.us](#); [melisaa.beard@tumwater.k12.wa.us](#); [Edwards, Donna](#); [Pickernell, Harry](#); [Frank III, William](#); [calvin.dahl@westhurstonfire.org](#); [jsprouffs@setfa.org](#); [O'Callahan, John](#); [Kelling, Rick](#); [putnadm@comcast.net](#); [mhutchins@griffinfd.org](#); [thefaihwk@aol.com](#); [gzvirzdys@southbayfire.com](#); [bhall@tr1.org](#); [president@evergreen.edu](#); [tstokes@spscc.edu](#); [olyurbanagrarian@gmail.com](#)  
**Cc:** [Town of Bucoda](#); [Spence, Scott](#); [Burney, Jay](#); [Justice, Tami](#); [kcanup@cityoftenino.org](#); [Doan, John](#); [Michael Grayum](#); [Chavez, Ramiro](#); [Freeman-Manzanares, Ann](#); [Strub, Mike](#); [Gibbonev, Sam](#); [Weidenfeller, John](#); [Woods, Greg](#); [Patrick Murphy](#); [Clemens, Deb](#); [Bahr, Byron](#); [Fry, Kim](#); [endicott@tenino.k12.wa.us](#); [sean.dotson@tumwater.k12.wa.us](#); [Wharton, Brian](#); [Gleason, Jesse](#); [Hutcheson, Rita](#); [andrewschaffran@tcfcd12.org](#); [Brooks, Steve](#); [ljohnson@mclanefire.org](#); [coreyrux@griffinfd.org](#); [Gregory, Mark](#); [VanCamp, Brian](#); [Heywood, Cheryl](#); [Ward, William](#); [mmattes@spscc.edu](#); [Sarah Moorehead](#); [Marc Daily](#); [mhardie@ci.lacey.wa](#); [Knouff, Patrick](#); [jhutchings@cityoftenino.org](#); [bhurley@ci.tumwate.wa.us](#); [Todd Stancil](#); [kurt.hardin@co.thurston.wa.us](#); [Berkamp, Emily](#); [steven.besaw@lottwater.org](#); [Jennief@portolympia.com](#); [Oosterman, Linda](#); [mdahl@nthurston.k12.wa.us](#); [glasig@rainier.wednet.edu](#); [edowell@rochester.wednet.edu](#); [williamsb@tenino.k12.wa.us](#); [Murray, Mel](#); [Paul Brewster](#); [mike.presswood@co.thurston.wa.us](#); [etalylor@ci.lacey.wa.us](#); [Knouff, Patrick](#); [mike.presswood@co.thurston.wa.us](#); [Matlock, Mike](#); [Colt, Cody](#); [sandy.eccker@co.thurston.wa.us](#); [Burnham, Mike](#); [Kim Gubbe](#); [erin.m.brewster@evergreen.edu](#); [Schelling, Sarah](#); [Medrud, Brad](#); [Landon Hawes](#); [Nevin, Cherie](#); [bwilson@thurstonpud.org](#); [Ginther, David](#); [Casey Mauck](#)  
**Subject:** Hazard Mitigation Plan for the Thurston Region  
**Date:** Monday, October 18, 2021 2:27:38 PM

\*\*\*External Email\*\*\* Use caution before clicking links, opening attachments, or replying.

Dear Community Leader,

On behalf of the Thurston County Emergency Management Council, I invite your community to participate in the update to the Fourth Edition [Hazards Mitigation Plan for the Thurston Region](#). Storms, flooding, fires, earthquakes, landslides, volcanic activity, and the effects of climate change will impact our communities. Thurston County has received 24 Presidential Disaster Declarations since 1965, with the latest declaration issued for the 2020 Nisqually River flood event. In 2021, we witnessed international headline events for severe rainstorms and wildfires that were more severe and destructive than any in recent recorded history.

Our region's hazard mitigation plan is a multi-jurisdictional risk assessment and strategy that identifies and prioritizes sustained measures, that if enacted, will help our communities reduce losses. States, local governments, and tribes must also perform hazard mitigation planning, adopt federally approved plans, and update them every five-years as a precondition for receiving funding from multiple [federal mitigation assistance grant programs](#). These programs can help our communities implement projects that make us safer and more disaster resilient. A 2017 Report from the National Institute of Building Sciences estimates that for every federal mitigation grant dollar invested, four dollars will be saved in loss prevention.

The current plan is due for an update by August 2022. Thurston County Emergency Management and Thurston Regional Planning Council (TRPC) secured a FEMA Pre-Disaster Mitigation grant to update our region's plan. The plan update process is expected to launch in November 2021 and take approximately 12 to 15 months to complete.

Organizations that elect to participate in the process should appoint a lead and alternate staff representative to participate in a multi-agency planning workgroup. Now is also a good time to consider key staff and stakeholders who can provide multidisciplinary subject matter expertise and important voices to identify hazard reduction strategies within your community.

To confirm your organization's commitment to the plan update process or to learn more, please contact **Paul Brewster**, Senior Planner at TRPC, and share who will represent your organization in the plan update process: [brewstp@trpc.org](mailto:brewstp@trpc.org) or 360-741-2526.

Sincerely,

Todd Stancil, Police Chief  
Chair, Thurston County Emergency Management Council  
360.458.5701  
[www.yelmwa.gov](http://www.yelmwa.gov)



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Sincerely,



Todd Stencil  
City of Yelm Police Chief  
Chair, Thurston County Emergency Management Council

Hazards Home

Fourth Edition Update

Plan Documents

Home > Plans & Projects > Environment > Hazards Mitigation Plan > Fourth Edition Update



## COMING SOON: 4th Edition of the Hazards Mitigation Plan for the Thurston Region

### Hazard Mitigation Workgroup

The Hazard Mitigation workgroup will be meeting regularly throughout 2022-2023 to help identify potential mitigation stakeholders, share ideas and resources, and review the draft plan. Meetings will be held over Zoom and are open to the public.

### Get Involved

- Watch or attend a Workgroup meeting
- Send in Public Comment
- [Read the results of the Communitywide Survey](#)

### Hazard Mitigation Planning Participants



### Meeting Materials

- [June 26, 2023](#)
- [May 22, 2023](#)
- [April 24, 2023](#)
- [March 27, 2023](#)
- [February 27, 2023](#)
- [January 23, 2023](#)
- [November 28, 2022](#)
- [October 24, 2022](#)
- [September 26, 2022](#)
- [July 25, 2022](#)
- [May 23, 2022](#)
- [April 25, 2022](#)
- [March 28, 2022](#)
- [February 28, 2022](#)

### Partner Resources

- [Local Mitigation Planning Policy Guide \(FEMA\)](#)
- [The Role of Local Leadership \(FEMA\)](#)
- [Integrating Hazard Mitigation Tools Into Local Planning \(FEMA\)](#)
- [Building Community Resilience with Nature-Based Solutions \(FEMA\)](#)
- [Local Mitigation Planning Handbook \(FEMA\)](#)
- [Local Mitigation Plan Review Tool \(FEMA\)](#)
- [National Risk Index Map \(FEMA\)](#)

<p>¿Cómo podemos hacer que las comunidades del condado de Thurston sean más resistentes a las catástrofes?</p>	<p>Chúng ta có thể làm gì để các cộng đồng Quận Thurston trở nên kiên cường hơn trước thảm họa?</p>	<p>어떻게 하면 Thurston 카운티 지역 사회의 재해 복구 능력을 높일 수 있습니까?</p>	
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[www.trpc.org/HAZARDS](http://www.trpc.org/HAZARDS)



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HOME PAGE

## Thurston County wants to be prepared for natural disasters. Here's how to help

BY TY VINSON

JULY 11, 2022 5:00 AM



Sea level rise is expected to cause more frequent and widespread flooding in Olympia's downtown. BY AMELIA DICKSON



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<https://www.theolympian.com/article263300793.html>

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Thurston County asks for public input on hazards mitigation | The Olympian

If you live in the South Sound, you probably already know of the likelihood for natural disasters to strike. Thurston County is at risk of earthquakes, floods, tsunamis, wildfires and volcanic hazards.

The Thurston Regional Planning Council is starting to draft the county's fourth edition of its Hazards Mitigation Plan, so when disaster strikes, residents across the region will be prepared.

Tumwater City Planner Brad Medrud gave a presentation to Tumwater City Council on June 28 to lay out the city's role in the county planning process.

"We have a lot of opportunities for natural disasters in our community," Medrud said. "The purpose of mitigation is to identify and implement actions that eliminate long-term risks to life and property before they occur."

## TOP VIDEOS



Port commission votes to increase interim director's pay

He said some of the planning simply includes determining where buildings can and can't be built in the future in regards to floodplains. Building codes have to be up to date to ensure buildings can withstand earthquakes or other natural disasters. Tumwater, as well as other cities in the county, have specific sections in the plan that lay out mitigation.

For example, if data were to show a vital area or building would suffer from major flooding in a disaster event, mitigation could include elevating or removing those structures so they take on less. And this type of planning can regulate future development in those areas.

More than 20 local jurisdictions, including cities, school districts, LOTT and other special districts are involved in updating the mitigation plan. They're required by law to update their plan every five years to maintain eligibility for federal grant programs to fund mitigation, Medrud said.

The previous plan, published in 2017, included a community profile of Thurston County, different hazards risk assessments, strategies on how to implement mitigation efforts and more. Medrud said the county doesn't expect much to change in regards to strategies and implementation.

<https://www.theolympian.com/article263300793.html>

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9/30/23, 12:59 PM

Thurston County asks for public input on hazards mitigation | The Olympian



City spokesperson Ann Cook said if anything, they may find that will be additional hazards or the risk level of others may change.

The [2017 plan](#) says the region’s planning partners have made steady progress toward fulfilling mitigation goals so far. But the original plan had a goal fulfillment date of 2025, which is now right around the corner.

“Although the original plan sets a goal fulfillment date of 2025, most of the plan objectives will require continuous efforts throughout the region,” it reads.

A community survey is available for residents of Thurston County and any jurisdictions within it. It asks people what hazards they’re concerned about and how they want their city and county to take action to reduce losses. It can be found on [the TRPC’s website](#) until July 31.



TY VINSON

360-357-0201

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# HAZARDS MITIGATION PLAN FOR THE THURSTON REGION

## Thurston County Communities Natural Hazards and Resiliency Survey

### Results



Prepared by Thurston Regional Planning Council

Natural Hazard Mitigation Plan for the Thurston Region, 4<sup>th</sup> Edition Update

September 2022

### Acknowledgements

*Thurston County would like to thank and acknowledge the Washington Military Department's Emergency Management Division and the Federal Emergency Management Agency (FEMA) for its financial support of CFDA No. 97.047 for this project. This publication does not constitute an endorsement by FEMA or reflect FEMA's views or policies.*

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## Thurston County Communities Natural Hazards and Resiliency Survey – Results

### Project Overview

Over 20 local governments in Thurston County including municipalities, special purpose districts, and colleges are partnering with Thurston Regional Planning Council (TRPC) to update the [Hazards Mitigation Plan for the Thurston Region](#). The planning process identifies and assesses communities’ risks and vulnerabilities to natural hazards and prioritizes mitigation strategies to reduce these risks. It is critical to engage the public throughout the planning process to understand what risks community members are most concerned about, and the types of actions they want to be implemented to improve public safety.

### Survey Purpose

Plan partners selected an online survey format to conduct the first round of public input to inform the multi-jurisdictional plan update. The survey included 12 questions about perceived risk and preferred mitigation activities. Eight additional questions sought demographic information from participants. The survey was available to the public from June 6 – July 31, 2022. The survey was available in English, Korean, Spanish, and Vietnamese. The full survey can be found in **Appendix C: Community Survey**.

### Survey Promotion and Outreach Activities

The survey was hosted on TRPC’s website and promoted with a variety of outreach methods shown Table 1. All the plan partners were encouraged to notify their constituents about the survey through their agency social media accounts, electronic newsletters, utility bills, email messages, and during in-person community events. Additional outreach activities performed by project partners may not be shown in Table 1.

*Table 1. Summary of outreach methods used to promote the survey*

Method	Description	Timing
<b>TRPC Webpage</b>	A graphic on the website homepage directed to the survey link.	June 6 – July 31
<b>Facebook</b>	An advertisement for the survey was boosted throughout the region.	June 6 – July 31
<b>Timberland Regional Library newsletter</b>	A note about the community survey was included in TRL’s June digital newsletter.	June
<b>South Thurston Economic Development Institute</b>	Staff gave an announcement at the meeting.	June 18
<b>Swede Day</b>	Staff handed out bookmarks with a QR code to the survey at the event and posted a large QR code on a fire engine in the parade.	June 18
<b>Yelm Prairie Days</b>	Staff handed out bookmarks with a QR code to the survey at the event.	June 25
<b>Lacey PolyFest</b>	Staff handed out bookmarks with a QR code to the survey and provided iPads for guests to complete the survey onsite.	June 25
<b>Scott Lake Community Annual Celebration</b>	Staff handed out bookmarks with a QR code to the survey at the event.	June 25

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Method	Description	Timing
<b>Intercity Transit July Rider News</b>	A note about the community survey was included in IT's July digital newsletter.	July
<b>Timberland Regional Library Sandwich Boards</b>	Sandwich boards were put in the entries of all Timberland Regional Library locations in Thurston County. The board included a QR code to the survey and staff contact information.	July 8 – July 31
<b>South Sound BBQ</b>	Staff handed out bookmarks with a QR code to the survey and provided iPads for guests to complete the survey onsite.	July 9

This table does not include all activities conducted by plan partners.

Total Responses

668 people participated in the survey. There was one response to the Korean language version. There were no requests for paper versions of the survey.

Who took the survey?

- The highest response rates came from the communities of Olympia, Unincorporated Thurston County, and Lacey respectively (see Table 2).
- Homeowners are over-represented in the survey compared to the respondents who rent.
- 89% of survey respondents are white, and with every other race under-represented compared to the proportion of the county population they make up.
- One out of ten respondents indicated they have a disability.
- 61% of respondents have a household income of \$75,000 or more.

Table 2. Total Responses by Area of Residence\*

Community	Responses
Bucoda	9
Lacey	96
Olympia	187
Rainier	7
Tenino	7
Tumwater	55
Yelm	16
Unincorporated Thurston County	188
Outside Thurston County	9
No Response	100
<b>Total Responses</b>	<b>668</b>

\*As indicated by respondents

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Results - Hazard Awareness

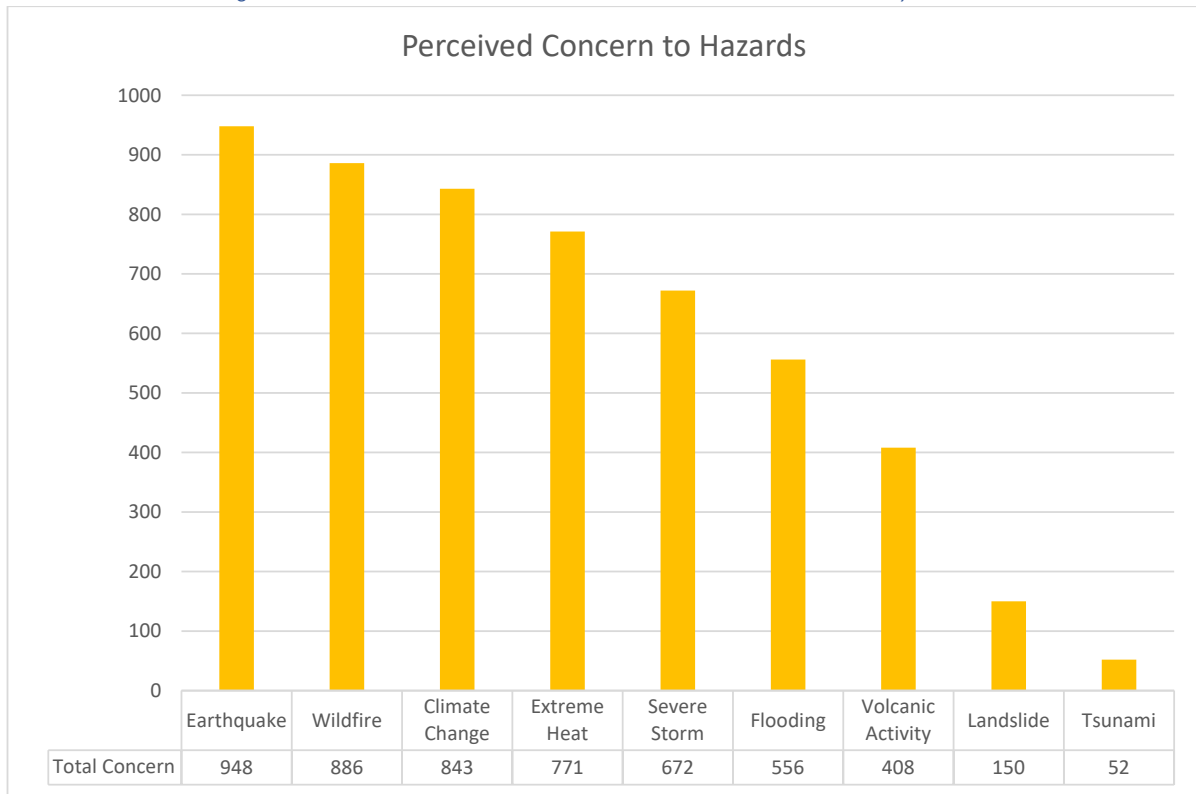
*Question 1. How concerned are you about the effects of the following natural hazards impacting your community?*

Respondents' level of concern for natural hazards varies based on the community they live in. The following figures rank the level of concern for each Thurston County municipality. All responses are weighted as follows: +2 for "Very Concerned", +1 for "Somewhat Concerned", and -1 for "Not Concerned". Responses of "No Opinion" are neutral and don't add or subtract from the total.

Countywide

Collectively, respondents throughout Thurston County are most concerned about earthquake with wildfire and climate change following closely. Extreme heat, severe storm, and flooding were of moderate concern while volcanic activity, landslide, and tsunami were ranked the lowest. It is important to note, during the survey period an extended heat wave occurred, which may have influenced the high rating for the extreme heat hazard.

Figure 1. Perceived concern to natural hazards in Thurston County.



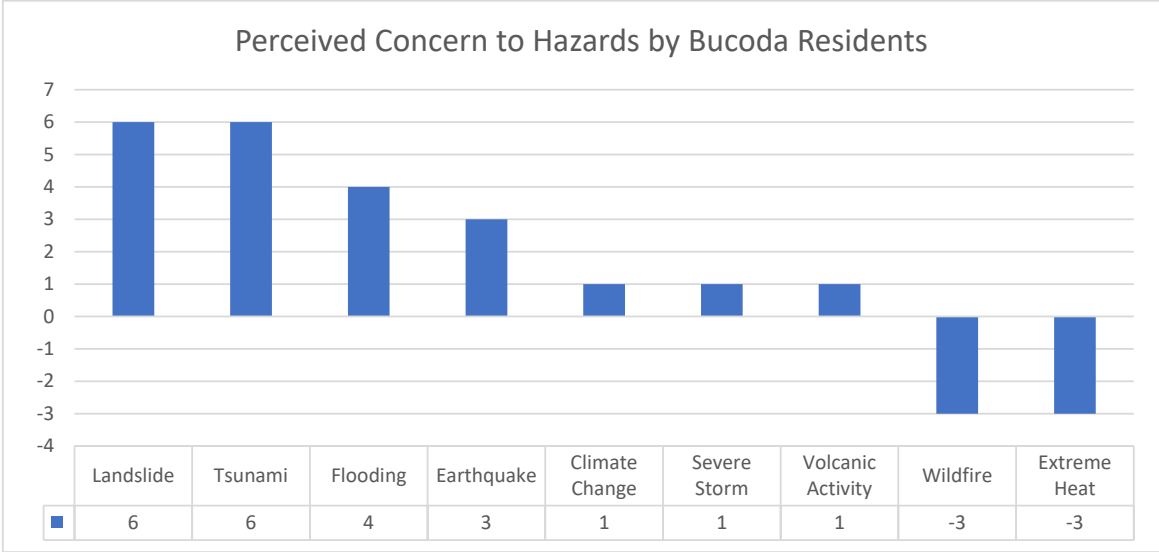
Responses are weighted +2 for "Very Concerned", +1 for "Somewhat Concerned", and -1 for "Not Concerned". Responses of "No Opinion" did not add or subtract from the total.

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Bucoda

Respondents in Bucoda are most concerned about landslides and tsunamis, with flooding and earthquakes following close behind. Wildfire and extreme heat are the only hazards where respondents “not concerned” responses outweighed respondents who do exhibit concern. With only three respondents from Bucoda, the sample size is too low for the results to represent the whole community.

Figure 2. Perceived concern to natural hazards in Thurston County by residents of Bucoda.



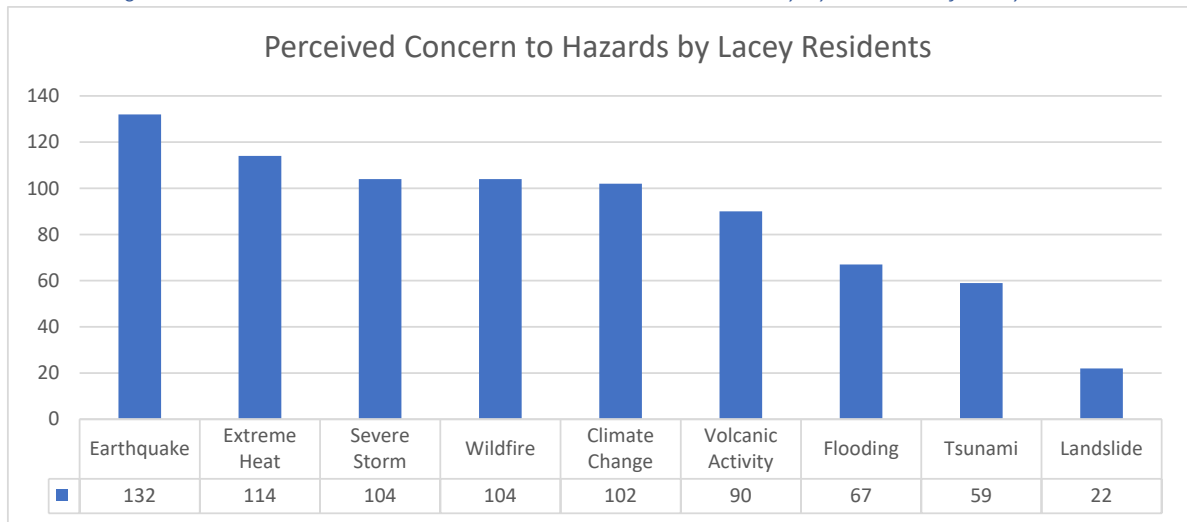
Responses are weighted +2 for "Very Concerned", +1 for "Somewhat Concerned", and -1 for "Not Concerned". Responses of "No Opinion" did not add or subtract from the total

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Lacey

Respondents in Lacey rank earthquake as the highest hazard of concern, similar to the countywide response, but rank extreme heat and severe storm higher than climate change and wildfire. Tsunamis and landslides were the hazards of lowest concern.

Figure 3. Perceived concern to natural hazards in Thurston County by residents of Lacey.



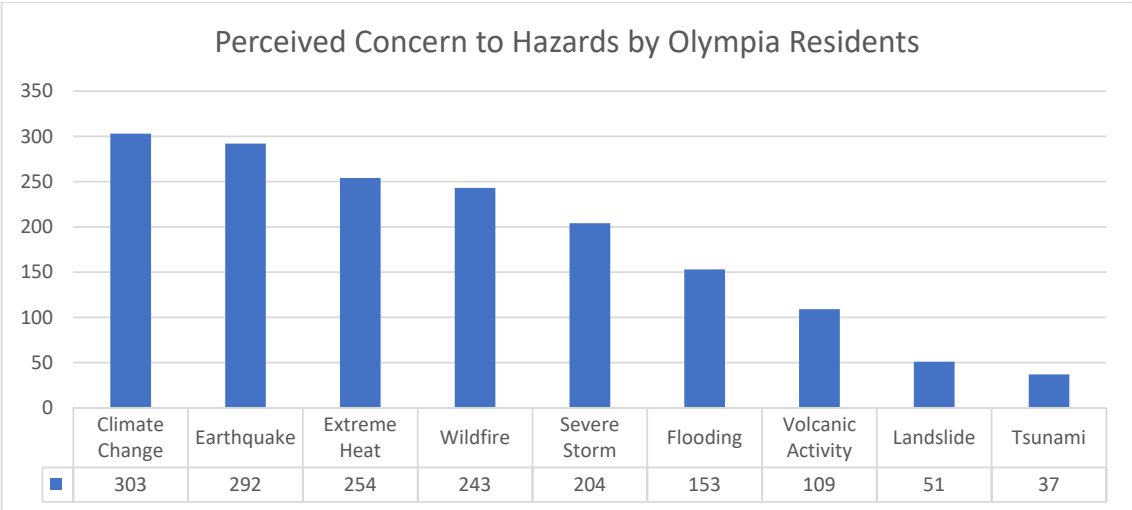
Responses are weighted +2 for "Very Concerned", +1 for "Somewhat Concerned", and -1 for "Not Concerned". Responses of "No Opinion" did not add or subtract from the total.

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Olympia

Residents of Olympia are most concerned about climate change, with earthquake and extreme heat following close behind. Like other communities, landslides and tsunamis ranked lowest.

Figure 4. Perceived concern to natural hazards in Thurston County by residents of Olympia.



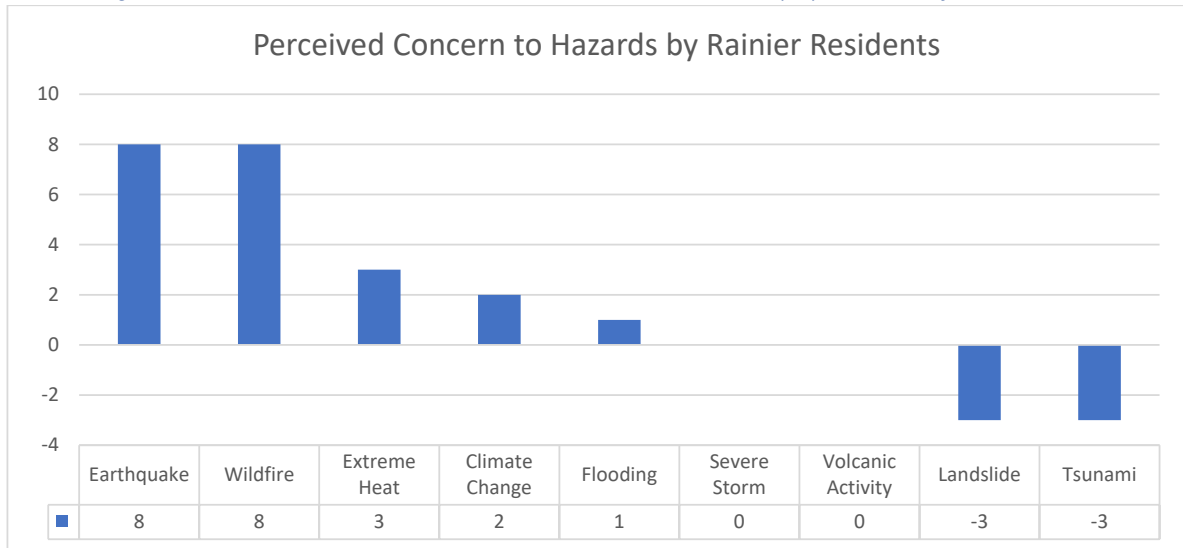
Responses are weighted +2 for "Very Concerned", +1 for "Somewhat Concerned", and -1 for "Not Concerned". Responses of "No Opinion" did not add or subtract from the total.

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Rainier

Respondents in Rainier are most concerned about earthquake and wildfire. Landslides and tsunamis are the only hazards where respondents indicated “not concerned” outweighed respondents who exhibited concern. Portions of Rainier are affected by high groundwater flooding but is not included in the 100-year and 500-year Flood Insurance Rate Map. As such, respondents did not rate flooding as a high concern. With only 7 respondents from Rainier, the sample size is too low for the results to represent the whole community.

Figure 5. Perceived concern to natural hazards in Thurston County by residents of Rainier.



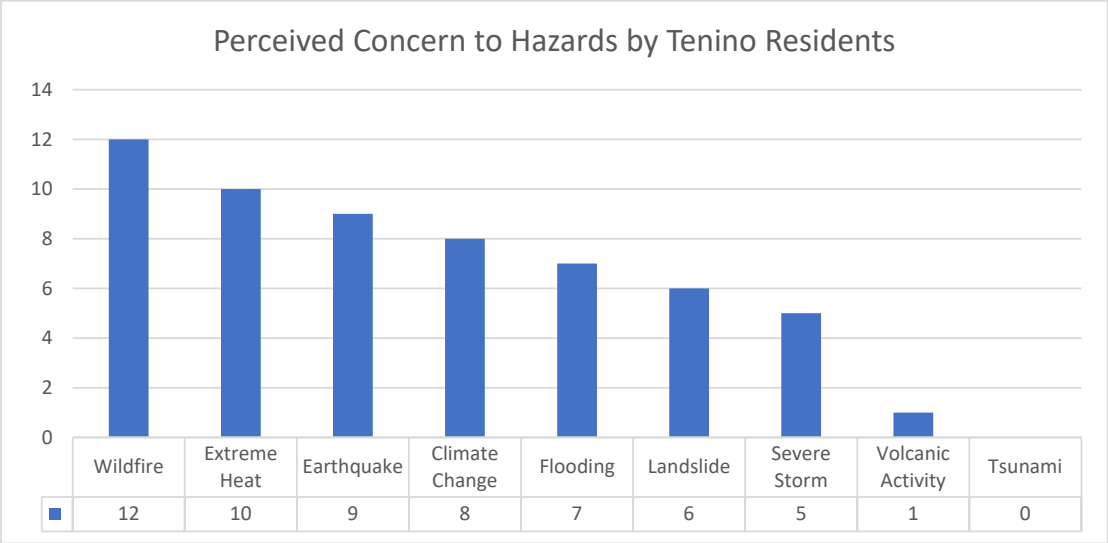
Responses are weighted +2 for "Very Concerned", +1 for "Somewhat Concerned", and -1 for "Not Concerned". Responses of "No Opinion" did not add or subtract from the total.

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Tenino

Respondents in Tenino are most concerned about wildfire and extreme heat, with volcanic activity and tsunami rating low. Tenino’s rural location and forested areas may contribute to the high rating of wildfire as a hazard of concern. With only seven respondents from Tenino, the sample size is too low for the results to represent the community.

Figure 6. Perceived concern to natural hazards in Thurston County by residents of Tenino.



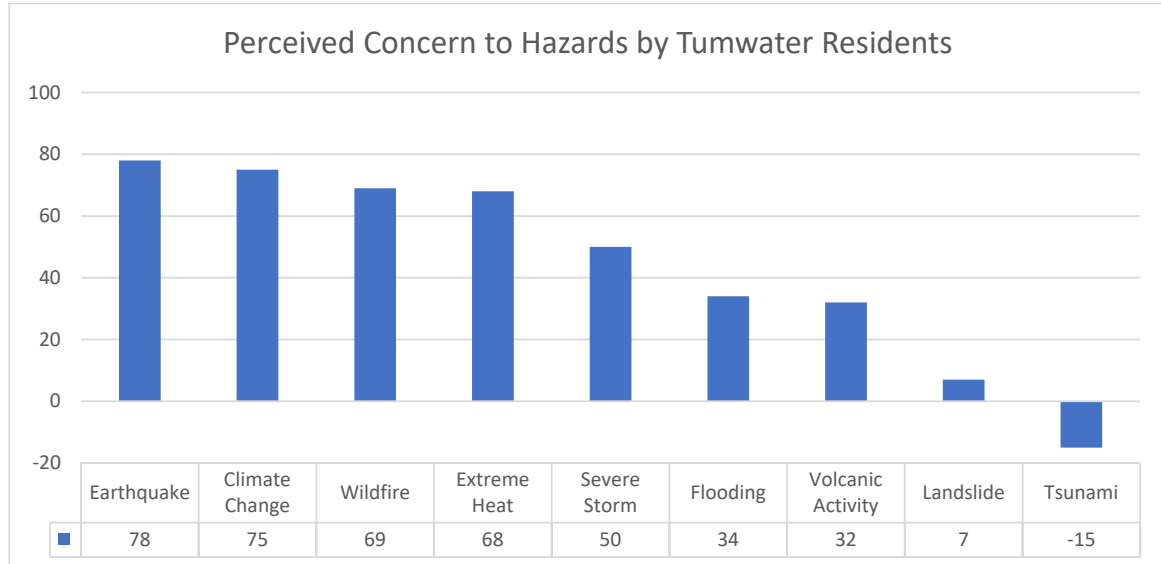
Responses are weighted +2 for "Very Concerned", +1 for "Somewhat Concerned", and -1 for "Not Concerned". Responses of "No Opinion" did not add or subtract from the total.

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Tumwater

Respondents in Tumwater are most concerned about earthquakes and climate change, with wildfire and extreme heat closely behind. Landslide and tsunami garnered the lowest concern.

Figure 7. Perceived concern to natural hazards in Thurston County by residents of Tumwater.



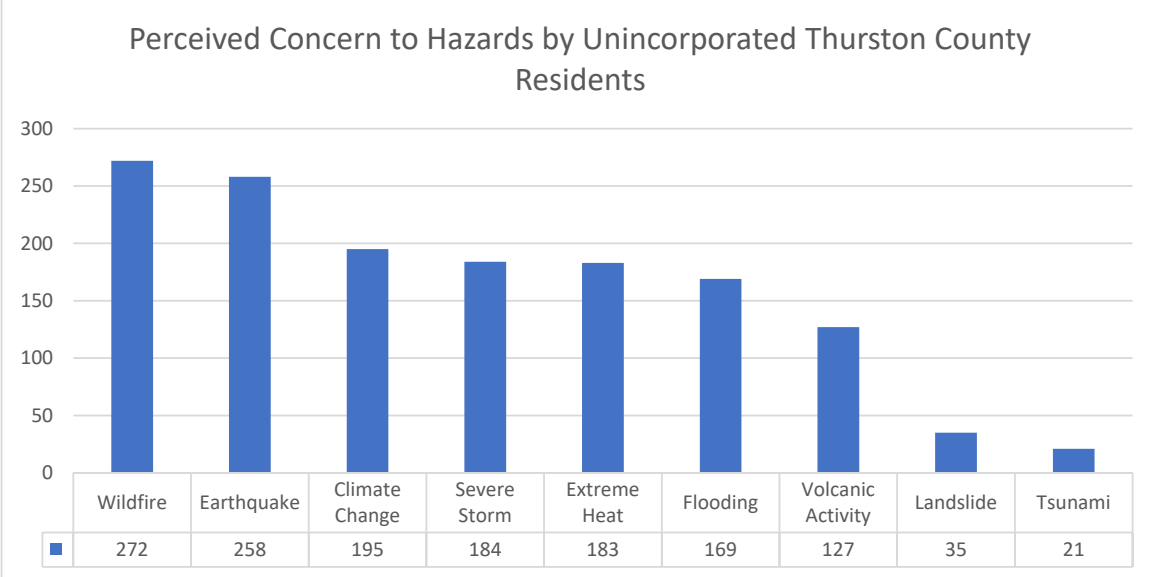
Responses are weighted +2 for "Very Concerned", +1 for "Somewhat Concerned", and -1 for "Not Concerned". Responses of "No Opinion" did not add or subtract from the total.

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Unincorporated Thurston County

Unincorporated Thurston County respondents’ hazards of concerns almost exactly match the collective countywide ranking, with wildfire and earthquake topping the list while landslide and tsunami fell to the bottom. Notably, flooding is the most prevalent hazard in Thurston County, but it ranked 6<sup>th</sup> by respondents.

Figure 8. Perceived concern to natural hazards in Thurston County by residents of Unincorporated Thurston County.



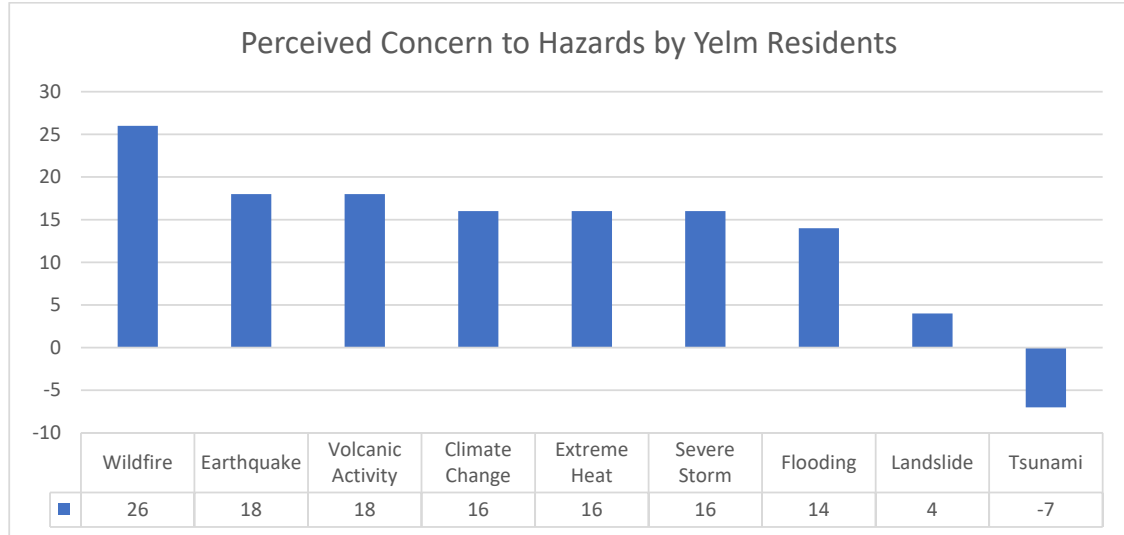
Responses are weighted +2 for “Very Concerned”, +1 for “Somewhat Concerned”, and -1 for “Not Concerned”. Responses of “No Opinion” did not add or subtract from the total.

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Yelm

Respondents in Yelm are most concerned about wildfire. Earthquake, volcanic activity, climate change, extreme heat, and severe storm follow closely behind. Yelm’s proximity to Mount Rainier may contribute to the higher rating of volcanic activity. However, with only 16 respondents from Yelm, the sample size is insufficient to represent the whole community.

Figure 9. Perceived concern to natural hazards in Thurston County by residents of Yelm.



Responses are weighted +2 for “Very Concerned”, +1 for “Somewhat Concerned”, and -1 for “Not Concerned”. Responses of “No Opinion” did not add or subtract from the total.

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### Results – Community Vulnerability

The survey included six open-ended questions about vulnerabilities and solicited possible solutions to reduce problems within the planning area.

*Question 2. Are there any other hazards not listed above that you are concerned about?*

142 respondents elected to respond to this question. The most common hazards of concern included:

- Disease or Epidemic (17 responses)
- Infrastructure Failure (14 responses)
- Drought (13 responses)

Several responses were focused around social or political issues that are unrelated to natural hazards including:

- Criminal Activity or Civil Unrest (18 responses)
- Political Ideologies (14 responses)
- Development (7 responses)
- Homelessness (4 responses)

Questions 3 through 7 sought additional details about areas of vulnerability in the region:

- *Question 3. Are you aware of any areas within the greater Thurston County region that are vulnerable to natural hazards?*
- *Question 4. Where in the region is this vulnerability located? Please describe with landmarks, cross-streets, or any other identifier?*
- *Question 5. What is the vulnerability?*
- *Question 6. Who does this vulnerability affect?*
- *Question 7. What possible solutions do you see to the problem you described above?*

260 respondents answered questions 3 through 7 and offered feedback about specific vulnerabilities in the region. Most responses reiterated general concerns about flooding, earthquake, and wildfire risks throughout the region, with special mention given to rural or forested areas and areas bordering waterbodies. Many respondents called attention to the section of I-5 that crosses the Nisqually Delta, and the risk that sea level rise poses to all areas bordering the South Puget Sound.

Full responses are sorted by jurisdiction, and a list of regional responses, can be found in **Appendix A: Specific Vulnerabilities by Geographic Area**. Some responses for Unincorporated Thurston County are relevant to portions of Bucoda, Rainier, Tenino, and Yelm .

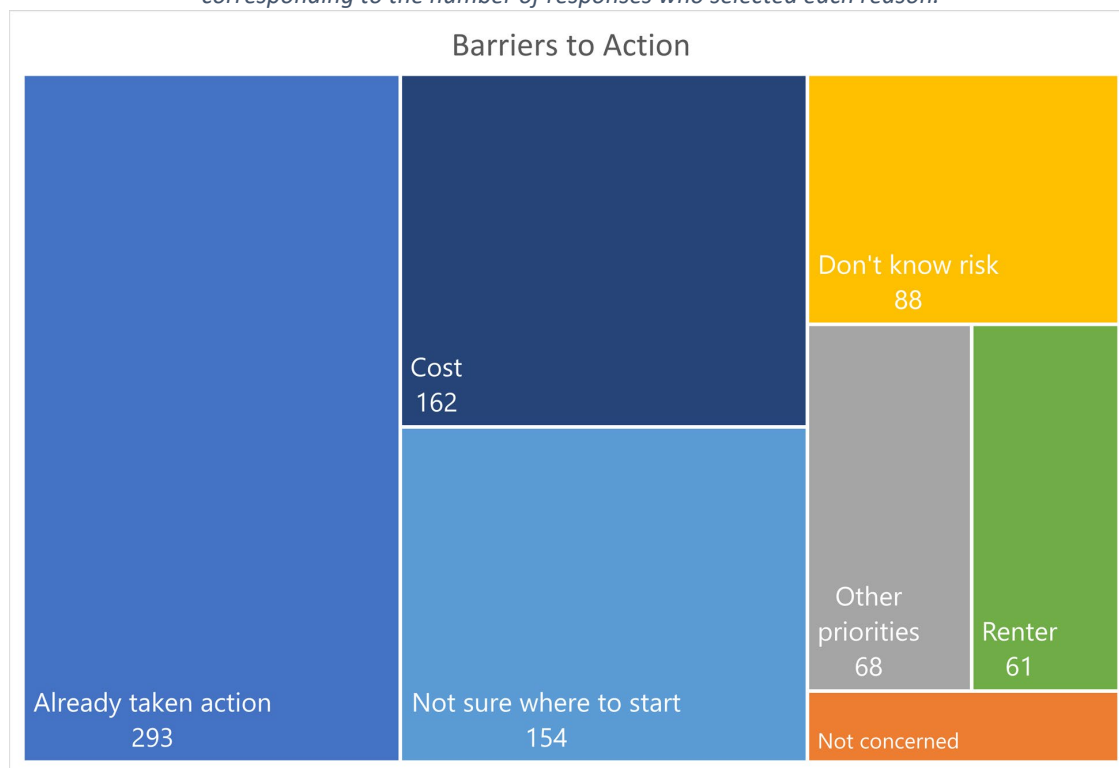
### Results – Barriers to Hazard Preparedness

*Q8. What barriers prevent you from taking steps to achieve greater personal preparedness for natural disasters, or to reduce your household's risks from the impacts of hazards? Please select all that apply.*

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Over 290 respondents indicated they have already taken action to reduce their personal risks to hazard impacts. Cost and not knowing where to start were nearly evenly divided as factors preventing people from taking action to reduce their risks. A lack of concern, and renter status, were the least commonly indicated barriers. Figure 10 shows the breakdown of barriers to action.

Figure 10. Barriers to taking actions to reduce personal risks to hazards, with the shape size corresponding to the number of responses who selected each reason.



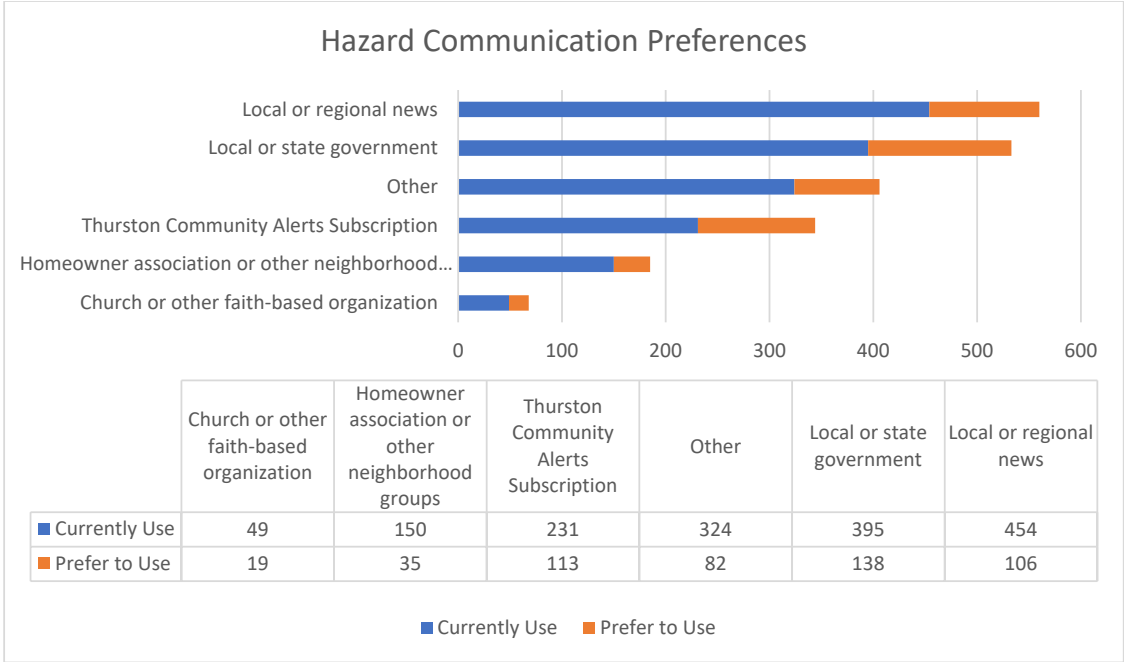
*Q9. How do you currently receive information about hazards in your community? How would you prefer to receive information? Choose all that apply.*

Respondents rank local or regional news as the method they most commonly already use to receive information about hazards, and the method they most commonly prefer to use. This is closely followed by local or state government, and other methods. Thurston County Community Alerts was a method that roughly one-third of respondents already use, and 113 respondents indicated that they prefer it. Neighborhood groups and church or faith-based organizations rated lowest of methods that people both currently and prefer to use to receive hazard information.

When respondents completed the survey, they were automatically redirected to the Thurston County Community Alerts registration page. Figure 11 shows respondents' preferences for methods of receiving hazard information.

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Figure 11. Communication methods that respondents currently use and prefer to use to receive information about hazards.



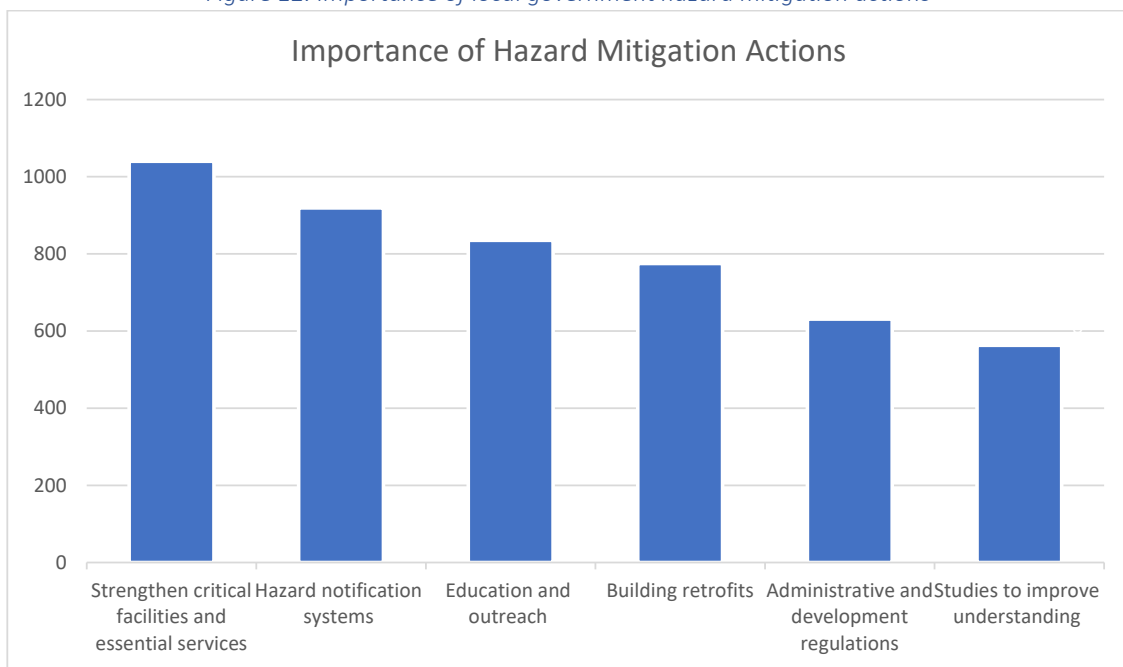
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Results – Hazard Reduction Activities

*Q11. How important is it to you for local governments to focus on the following hazard reduction activities?*

Community members were asked to rank, by level of importance, various categories of hazard mitigation actions that local agencies could focus on. Strengthening critical facilities and essential services topped the list, with hazard notification systems and education and outreach activities following. Administrative and development regulations, and studies to improve understanding, rated lowest. Figure 12 shows the ranking of mitigation actions by type.

Figure 12. Importance of local government hazard mitigation actions

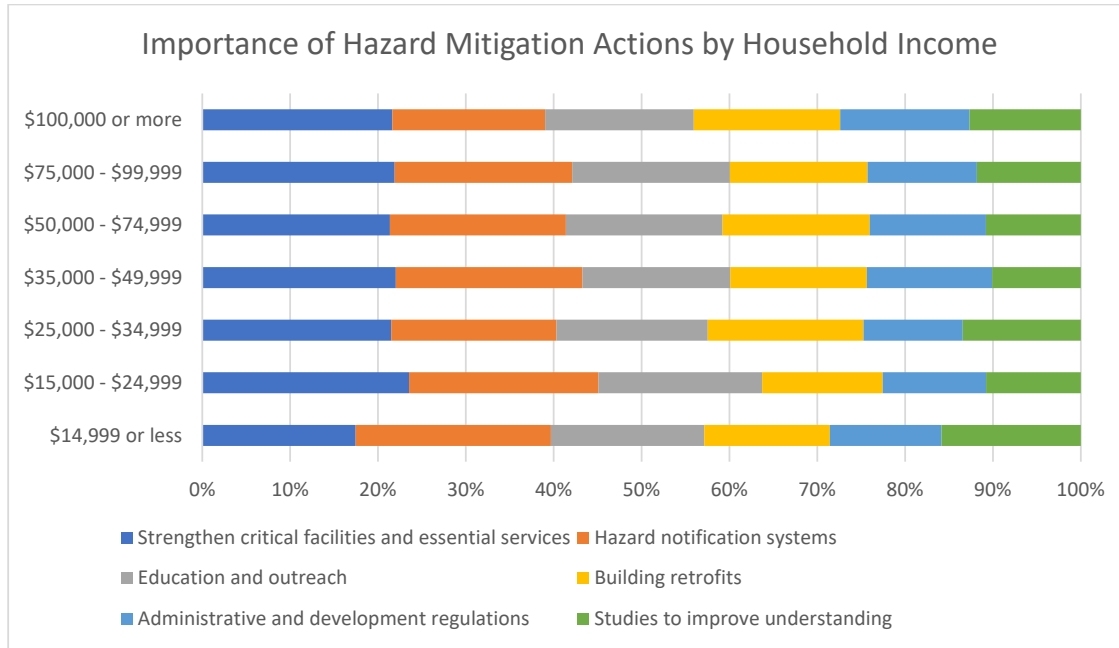


Responses are weighted +2 for "Very Important", +1 for "Somewhat Important", and -1 for "Not Important". Responses of "No Opinion" did not add or subtract from the total.

There are no significant differences in responses regarding hazard mitigation activities by income level. Respondents of every income category except \$14,999 or lower rated strengthening critical facilities and essential services highest, and most income categories rated studies to improve understanding as the action of lowest importance. Respondents earning less than \$14,999 in household income rated hazard notification systems as the action of highest importance. Respondents with household incomes of \$34,999 or lower rated administrative and development regulations slightly lower than studies to improve understanding. Figure 13 shows the importance of mitigation actions based on respondents' annual household income.

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Figure 13. Importance of hazard mitigation actions by household income



Responses are weighted +2 for "Very Important", +1 for "Somewhat Important", and -1 for "Not Important". Responses of "No Opinion" did not add or subtract from the total.

Q11. Is there anything else you would like to share about improving disaster resiliency in your community?

169 respondents chose to provide additional feedback. Full responses can be seen in **Appendix B: Additional Notes**. Common themes include additional opportunities for education, training, or other means to understand and prepare for household risks. Many responses focused on preparedness, rather than hazard mitigation, and a need for better evacuation planning, notification systems, and communication in general between governments and residents.

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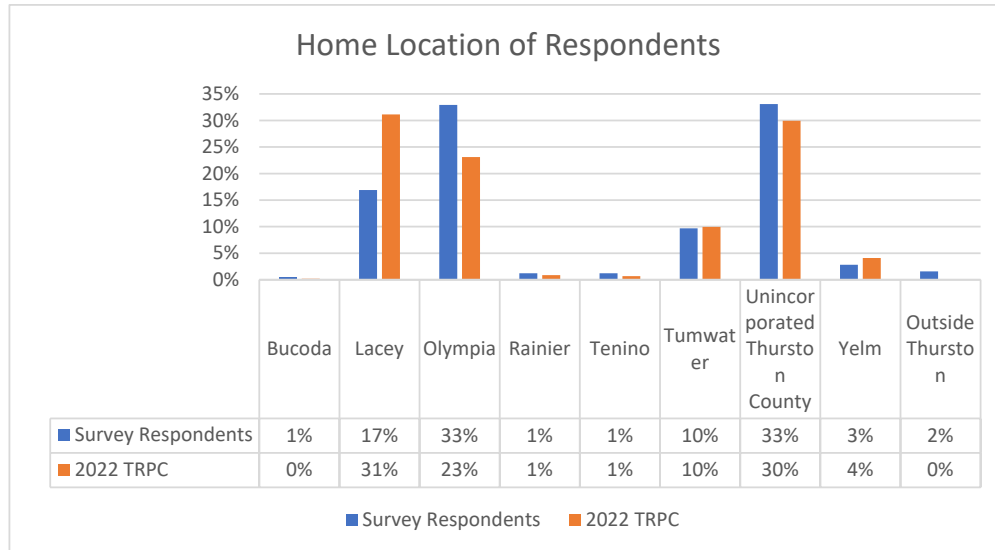
Results – Demographics

Respondents were asked to voluntarily share information about themselves. The section summarizes the respondents’ demographic information.

Q13. Where do you live?

Most survey respondents reside in Olympia or Unincorporated Thurston County, which includes the communities of Rochester and Grand Mound. The communities of Bucoda, Rainier, Tenino, Tumwater, Unincorporated Thurston County, and Yelm had proportions of survey respondents that closely matched the percentage of residents from each community in the county total. Olympia’s survey respondents significantly outweighed the percentage of county residents, while Lacey had a significantly lower percentage of respondents than their proportion of county residents.

Figure 14. Home location of respondents compared to the percentage of Thurston County population.



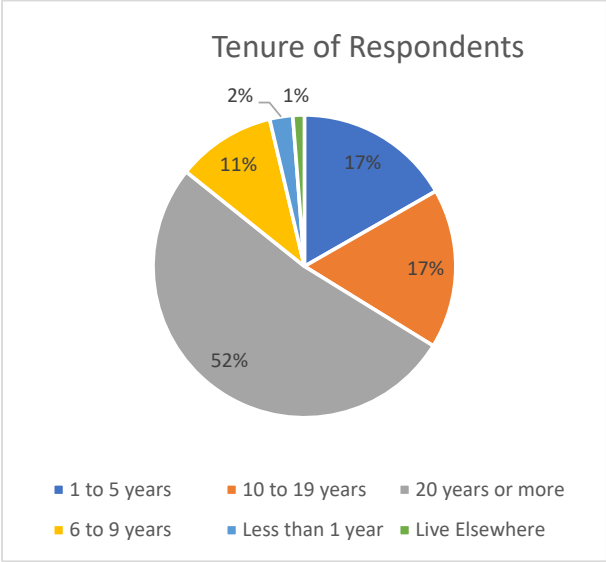
Source: TRPC 2022 Population Estimates.

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Q14. How long have you lived in the Thurston County area?

Most survey respondents have resided in Thurston County for at least 20 years, while only small percentages of respondents have resided in the county for less than one year.

Figure 15. Length of time respondents have resided in Thurston County.

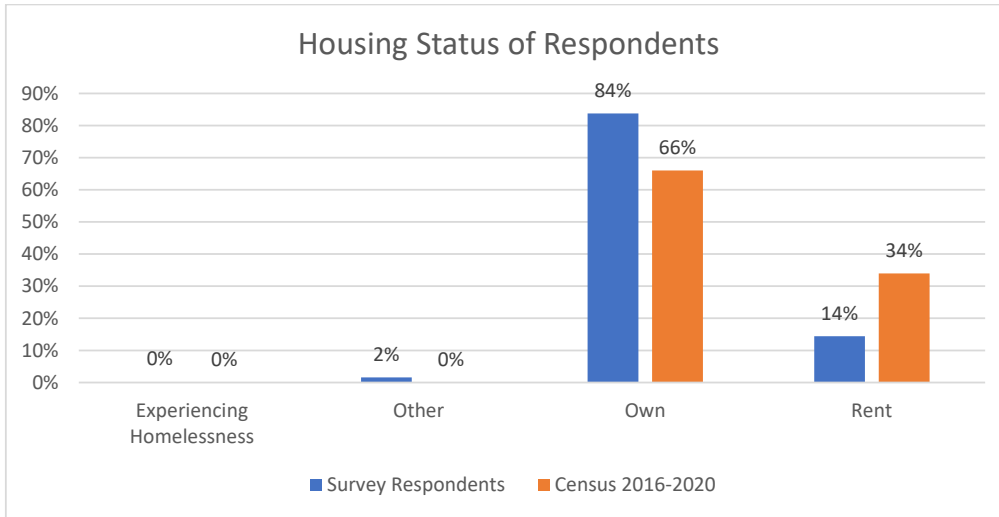


Q15. What is your current housing situation?

The majority of respondents own homes, rather than renting or other arrangements. Renters are underrepresented in the survey. Hazard mitigation priorities may be greatly affected by housing status, as renters may have less ability to retrofit their homes or conduct other personal preparedness activities. Figure 16 shows respondents stated housing status compared to actual population estimates.

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Figure 16. Respondents’ housing status compared to Thurston County’s population.

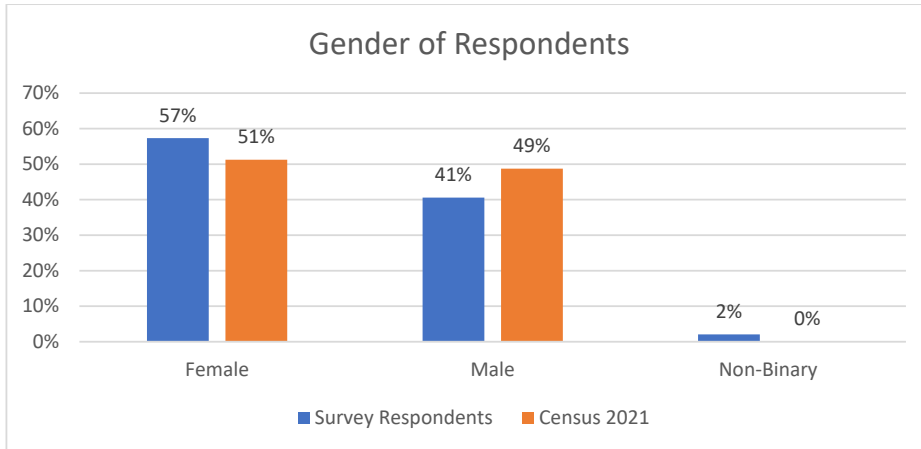


Source: US Census Bureau ACS 5-year Estimates, 2016-2020.

Q16. What is your gender?

Women are slightly overrepresented in survey results, while men are slightly underrepresented. Two percent of survey respondents indicated their gender as non-binary. There are no reliable estimates of the population that self-reports as non-binary residents, as the U.S. Census does not collect this data.

Figure 17. Gender of respondents compared to the percentage of Thurston County population



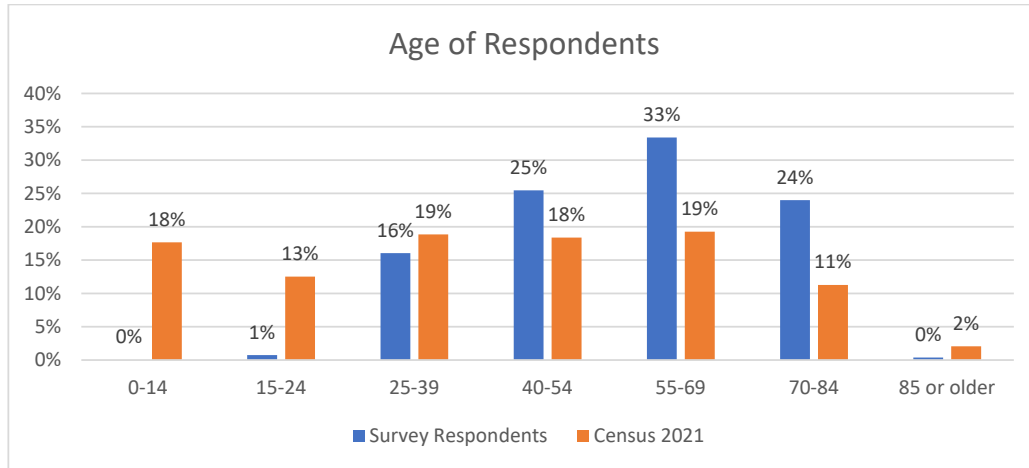
Source: Washington State Office of Financial Management, Postcensal Estimates 2021.

Q 17. What is your age range?

Adults ranging from 40-84 years are overrepresented in the survey results, while youth and adults over 85 are underrepresented. Respondents of ages 25-39 were slightly underrepresented, though the proportion of survey respondents is close to the percentage of the populations’ age ranges overall.

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Figure 18. Age of respondents compared to the percentage of Thurston County population.

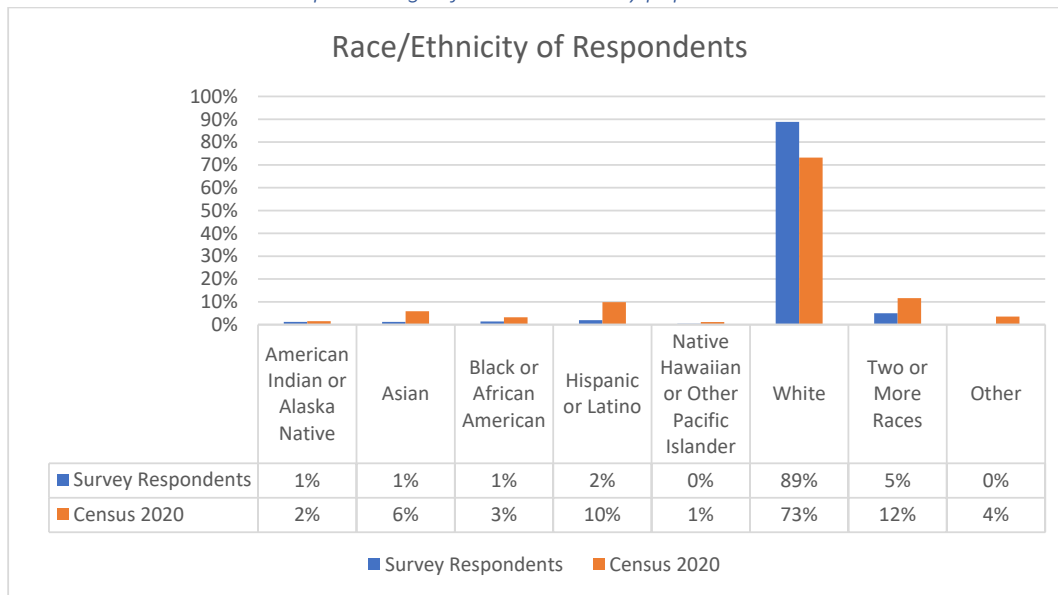


Source: Washington State Office of Financial Management, Postcensal Estimates 2021.

Q18. What is your race/ethnicity? Please select all that apply.

The majority of survey respondents are white, over representing the portion of actual white residents who live in Thurston County. All other races are underrepresented, with the greatest disparities in Asian, Hispanic, or Latino, and multiracial respondents.

Figure 19. Racial and ethnic composition of respondents compared to the percentage of Thurston County population.



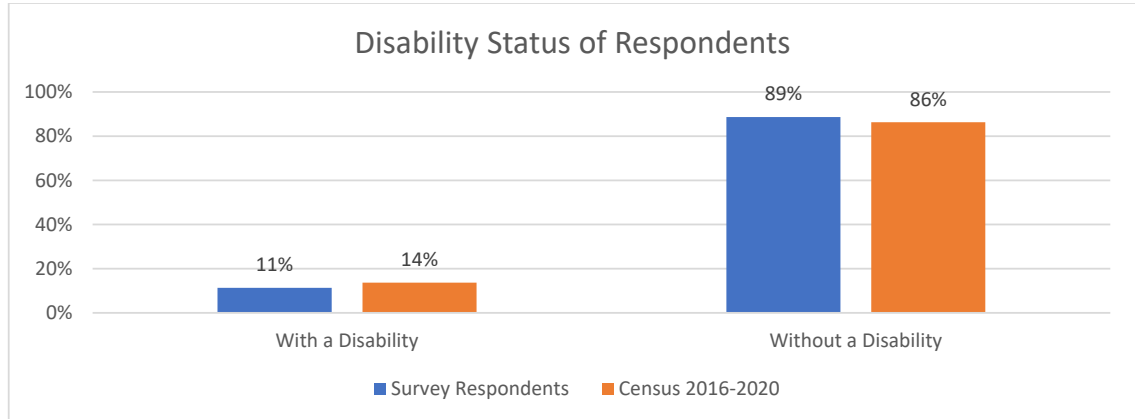
Source: US 2020 Census.

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*Q19. What disabilities do you experience? Please select all that apply.*

The proportion of survey respondents who indicated that they have a disability stayed very close to the percentage of community members in the county that have a disability.

Figure 20. Disability status of respondents compared to the percentage of Thurston County population.

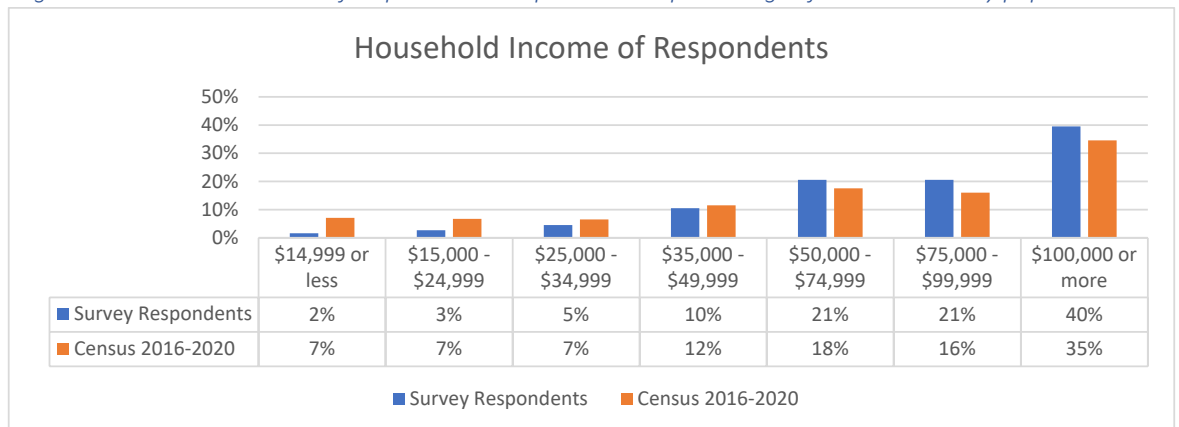


There may be differences in how the census defines disability and the wording of the survey question. Source: US Census Bureau ACS 5-year Estimates, 2016-2020.

*Q20. What is your annual household income?*

Overall, the amount of survey respondents grew as household income grew. This matches the overall trend of higher income households making up a larger portion of county residents than lower incomes, though when comparing the census estimates to the entire pool of survey respondents, higher income groups of \$50,000 and up were overrepresented while income groups below \$50,000 were all underrepresented. Household income can play a large role in how individuals experience and respond to hazards and disasters, and it will be important to remember that the survey results are primarily coming from folks in higher income groups.

Figure 21. Household income of respondents compared to the percentage of Thurston County population.



US Census Bureau ACS 5-year Estimates, 2016-2020.

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Appendix A: Specific Vulnerabilities by Geographic Area

Countywide

Location	Description	Affected People	Solutions
landslides - Steep slopes. Soil Liquefaction - loose granular soils below the groundwater table (generally near water bodies. Earthquake - Buildings and structures not up to current codes.	Landslides - loss of roadways utilities and structures, Soil liquefaction loss of roadways utilities and structures. Earthquake - loss of roadways, utilities, and structures.	The economic and mobility impacts affect everyone.	Landslides - Enforce landslide zoning. Liquefaction - require seismic design of all structures and utilities. Earthquake - require all new and retrofit construction to meet current standards,. This should include tiedown requirements for any new or retrofit residential construction.
Forested areas around Thurston County in general. We certainly have beautiful forests surrounding us. Wildfire is by far my biggest and most immediate concern. As well, soil erosion and rising waters along our Puget Sound coastline.	In the summers when it gets too dry and hot, we are sitting tinderbox. Rising waters in general will be affecting our downtown and coastal areas.	Wildfire really will affect everyone who is near its path.	Both concerns are hard to address. Controlling our rising waters is something we can address by slowing the warming of our environment and planet, which means less carbon footprints in general, across the world. Diminishing wildfire concerns is something I am curious to learn more about. I try to clear brush around areas I know of and can gain access to. But is there more we can do?
Things like fire and earthquake happen area wide, no specific location.	general		
Low lying			
Landslides along old hwy 99 between Oly and Tenino. Landslides along capitol lake. Tsunami and landslide hazards along the puget sound Shoreline. Earthquake	Roads, power, water, communications.	Earthquakes - everyone. Heat waves and storms - affects those with less access to air conditioning, shelter, back-up power and supplies. Volcanic ash:	The county should protect itself from lawsuits through notifying the ppl most at risk.

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Location	Description	Affected People	Solutions
vulnerability throughout the county with less hazard on basalt bedrock on Tumwater Hill. Heat wave and storm hazard throughout county, seasonally. Volcanic hazard from ashfall throughout county. Volcanic lahar hazard along edge of Thurston county in Nisqually valley.		everyone (if the wind blows thus way during an eruption). Lahar: affectd Nisqually valley communities. Tsunami: affects Shoreline communities and down town.	
Transportation corridors to major commerce/employment centers like downtown and West Olympia - such as I-5, Hwy 101, Cooper Point Rd & Black Lake Blvd, Harrison, Martin Way	Flooding, Earthquake, Volcanic activity. Impacts on I-5 anywhere in the region could have significant impacts (ie. Dupont train derailment back-up as example)	Anyone utilizing goods, products, and freight that is transported on I-5	Ability to rapidly adapt and deploy the marine terminal and Olympia Regional Airport as alternative methods of moving people and critical cargo in times of disaster response/recovery.
Rivers; Rock Candy Mountain (Hwy 8)	Flooding each year; clear cut trees create flooding zone(s)	Roads & bridges; homes & people who now have their wells messed up	Stop the clearcutting of trees anywhere.
homes and business throughout thurston county	power restoration	everyone cannot get gas, water or food or information.	partner with select community businesses to retrofit their business with back up generators etc so they can provide goods and services to the public during crisis. organize more communities to prepare so they can look after themselves and each other. offer low cost emergency preparedness items. Classes via zoom for prepardness.
Homes and businesses without air conditioning are all vulnerable to extreme heat, especially	Without shade and/or air conditioning people could overheat in their homes: heat stroke.	The elderly and People who are less likely or able to leave their homes to seek coolness	Trying to establish more shade trees in neighborhoods to create cooler microclimates.

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Location	Description	Affected People	Solutions
in neighborhoods without large trees to provide more effective shade.		elsewhere. Those without cars and living several blocks from a bus stop.	Neighborhood block watch type work to know those in your neighborhood and be able to check up on those who may be more vulnerable.
Everywhere	Earthquakes	Everyone	Develop a system to warn of earthquakes in advance. Myshake is a good start, but even more advanced warning. Also, encourage preparation (first aid, food, water, etc.) to survive if the bridges fall.
Anywhere near a river			
Landslides in the hilly region near SR 12. Floods in Nisqually River		Not allowing people to build in flood planes and at the base of steep slopes. Paying people to build back in the same spot instead of paying them to move elsewhere.	
The entire county is vulnerable to some of the natural hazards listed above, including climate change, extreme heat, earthquakes, wildfire smoke, etc. And areas near the coast (such as downtown Olympia) are vulnerable to flooding.	See above	Everybody in Thurston County in one way or another.	Planning and education
Anywhere where there is a lack of tree canopy, i.e. city business streets (heat islands), which includes all our major cities, regions around Deschutes, Woodland and Woodard Creeks for flooding, heavy treed areas (i.e. Lacey residential, or nearby forests) for severe storms.	Heat stroke (human and pet safety), flooding into residential or businesses (economic), downed trees in storms causing building damage or personal safety.	Obviously people and animals, but certainly the most vulnerable populations: older residents, poorer populations, houseless populations, wildlife.	A more robust tree canopy, while making sure dangerous/unstable trees are removed and replaced with better species; encouragement for residential and business property owners to move farther away from riverbanks; local government insisting on shade trees

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Location	Description	Affected People	Solutions
			(or other canopy) in business areas.
Low-lying areas (flooding), wildland-urban interface communities (wildfire), everywhere (earthquakes, climate change, extreme weather/heat waves)	Individual physical health, damaged infrastructure (roads, housing, water supplies, etc.)	Everyone, but especially poor and unhoused people	Improving the resilience of our infrastructure, outreach to the community about preparation (e.g. earthquake preparedness planning), building more affordable housing, reducing carbon emissions
Everywhere, crime is all around us, from car prowlers to mail thieves to car thieves. Wild fires are a big threat in the dry summers anywhere we have trees and/or dry grass.	People trying to defend their property.	Home owners and renters.	More law enforcement and prosecution of the offenders.
Deschutes river	Flooding along river, roads, and properties	Public and private property owners	Floodplain restoration and flooding mitigation
All areas near Puget Sound, properties near rivers and streams, all Thurston County	Tsunami, flooding, earthquakes, storms	Everyone, especially the poor	Have dollar reserves to help those affected, especially poor, and ability to repair damage
Earthquakes everywhere	earthquakes	everyone	strengthening foundations, early warning
All of the county is vulnerable to climate change, extreme heat and severe storms.	Death by overheating. Flooding in areas close to sea level.	All but the elderly are probably most vulnerable.	Dramatic reductions in green house gas generation.
All shorelines Urban areas	Flooding Heat and earthquake	Persons living and working near shorelines Persons in urban core	Building restrictions near shorelines Review of building code re earthquakes. Cooling centers
Earthquake could be any bridge. Think about how many bridges or underpass you use.	Possible collapse.	Everybody	Make sure bridges are up to what standard is deemed acceptable.
Ocean Shores	Tsunami	Residents and visitors	Towers?
landslides-steep slopes; flooding-river valleys; earthquakes-	landslides, flooding-limited areas; earthquakes-especially		localized planning and permitting; climate change-many things

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Location	Description	Affected People	Solutions
unconsolidated sediments; climate change-everywhere	downtown Olympia; climate change-everyone		
Budd Bay, Capitol Lake, Mt. Rainier, earthquake, forests, I5	Tsunami, earthquake, toxic water, wildfires	Everyone	Disaster Preparedness, carbon footprint reduction, traffic reduction (increased public transit), solid planning
All the areas adjacent to Capitol forest, any areas near water bodies	Flooding due to clearcuts, flooding due to heavy rainstorms combined with ocean rise, landslides due to both the above, extreme heat exacerbated by loss if tree cover and climate change	Everyone, but especially people living rurally or in forested areas	Stop logging immediately, take serious action to address climate change
County wide: shoreline (flooding), forests (wildfire), severe storms.			
Any where people go for supplies.	Injury and death	Anyone needing essential supplies	Focusing on sustainable economy training. Self defence training including gun safety. Basic first aid training for school age children.
Downtown Olympia- Sea level rise, earthquake liquifaction Landslides on unstable slopes- throughout County area Flooding- downtown Olympia	see above	Almost everyone because it also affects major transportation routes (4th Ave and 5th Ave)	infrastructure redesign for sea level rise resiliency
Sky	Global warming	Everyone	Stop the poisoning!
Any greenbelt areas where homeless tend to migrate are prone to fire danger	fire danger		Residential areas with greenbelts along public roads
The entire region is vulnerable to earthquakes and volcanic activity, forest fires are becoming an increasing concern throughout the county as the region becomes drier in the summers and hotter, flooding is a	See #4	Everyone but primarily those with few resources to relocate when faced with hazards (marginalized communities, people of color, the poor and elderly)	We need to start taking climate change and hazards seriously and incorporate them into planning. We cannot continue to operate as in the past. Cutting down swaths of trees and putting up row upon row of buildings and mile upon mile of streets

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Location	Description	Affected People	Solutions
concern along rivers and coastlines			harms the environment and makes us all more vulnerable to all hazards facing the region.
The whole county is very vulnerable to climate change impacts in the coming years	The whole county is very vulnerable to climate change impacts in the coming years	It impacts everyone but has greatest impact on low income communities and those struggling with housing insecurity. We've seen how the heat has killed members of our community who are in houses.	More housing built with climate change in mind. More climate change solutions
The vulnerability to climate change exists everywhere.	all of us.		
forests	fire and climate change	many people	address climate change post haste
Anywhere near the water inlets, some river areas ie the Deschutes where homes are close by, much of the area near Stewart's meats in case of volcano eruption. Big box stores with tall storage shelves above the aisles, in case of an earthquake, downtown Olympia, people living in the county, school children being stranded at schools if parents are unable to pick them up after an emergency.	Flooding from a tsunami near the water, flooding from rivers breaching their banks, injury from falling heavy boxes in stores, people/cars being crushed from old building collapsing if they have not been retrofitted, people being stranded from getting home if they have to cross bridges to get there. Lack of cell phone communication during disasters.	Anyone could be affected depending on the circumstance, especially elderly, poor, homeless people and those who need medical care.	Require retrofitting downtown buildings, offer no or low-cost loans to do this, prioritize bridge inspections and repair, remind people to prepare their homes for emergencies ( keeping a 6 week supply of food, water, and medications) offer no or low cost loans if needed to improve safety ie dangerous tree removal, retrofitting or stabilizing houses. Don't allow building in areas likely to flood or are particularly vulnerable to fires. Improve forest management to reduce the risk of fires. Help the schools to provide for an overnight stay and meals at their schools.

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Location	Description	Affected People	Solutions
The entire County given all the potential hazards	Climate change makes everywhere 100% vulnerable	Everyone	Immediate implementation of environmentally sustainable legislation and behavior
1. Rochester/Grand Mound and surrounding area; 2.Olympia/ Lacey/ Tumwater; and 3. Olympia/ Lacey/ Tumwater	1. Community wide wildfire/conflagration; 2. Disruption of the water supply due to earthquake; and 3. Unrecoverable damage to economy and community due to criminal activity (drug use, theft, violence, pollution).	Current and future citizens of Thurston and neighboring counties, as well as businesses, and government agencies.	1. Increased wildfire prevention/mitigation resources and education; 2. Beyond my scope to identify additional mitigation strategies; and 3. Increased law and code enforcement in those areas/issues.
Forested areas	Fire	People, animals, wildlife	Education, road maintenance for firefighting equipment and prevention
rivers	flooding & changes in course	people near rivers and people who cross rivers	clear log jams
River Street at 127 Ave SW in Littlerock. Your planning has the creek near LaFrance now flooding the area and my pumphouse flooded for the first time in 60 years. You need to help me fix what you folks have allowed. That water should go to Black River.I need your help and so do my neighbors.	The creek never used to flood into this area. I have lived her for over 50 years. You have allowed folks to fill in wetlands and now it floods. I can show you where this has happened. Please reach out and ask me.	It floods homes and roads.	Restore what used to be wetlands and change a couple of your regulations.
All of Thurston County	Seismic, flooding, extreme heat	Everyone - infrastructure including roads and communications	Educating the community on disaster preparedness and having a plan for these events.
The entire community is vulnerable to damage by an earthquake or severe storms.	Damage to buildings, roads, water, electrical, sewe.	Everyone	

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Location	Description	Affected People	Solutions
I-5	flooding hazard along highway, overtopping hazard. For rivers in general flooding and overtopping. For areas along the coast, sloughing due to earthquakes.	Individual homeowners and entire public	improve infrastructure. Better development guidelines
Mostly looking at sea rise in coastal areas including Puget Sound and increase in forest and/or woodland fires due to warming climate.	Flooding in high population areas and fires in more wooded areas.	Anyone who lives in these vulnerable areas.	Decreasing the use of fossil fuels to slow global warming. Be more aware of the climate implications of new construction.
For wildfires, any neighborhood with lots of trees, such as Ken Lake.	Fire danger	Homes in the neighborhood	I don't know, because I don't want the trees cut down. Perhaps people just need to be prepared to evacuate in the case of fire.
Anywhere there are forests concern me regarding wildfires	Wildfires	Everyone	Keep brush cleared and forest undergrowth cleared.
Flooding along all rivers and close to saltwater, landslides where there are clay bluffs. Fires - all forested and grassy areas.	Flooding due to excessive rain, rising sea levels. Landslides due to excessive rain, and underwashing by rivers. Wildfire as a result of human action or lightning.	Humans and all other animals living in these areas.	Climate action - which is more than local action.
Anywhere west of I-5	Earthquake damage	Residents	Reinforcing buildings, tsunami towers...
Shorelines- especially marine. SMP is not being proactive enough to require adequate setbacks and vegetation preservation in high risk landslide zones. Especially allowing variances is absolutely unethical at this point in time, knowing what we do about erosion and how many places have	Landslides, slope instability that puts infrastructure like septic systems and residences at risk.	community members are put at risk - it's a health/safety issue. Our environment is put at risk when we have to engineer stopgap solutions to address poor development practices.	Require much larger setback for new development, period. Don't allow variances without denying those applicants the right to any future bulkhead/engineered solution to their stupid decision- make relocation the only option. Enforce riparian vegetation protection

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Location	Description	Affected People	Solutions
	<p>been built too close to the water and are now facing risks or installing armor to try to protect themselves. Relocation should be required before installation of engineering slope stabilization or bulkheads. That only staves off issues. And it is difficult for these people to get insurance at sites like this, where increasing SLR, storm severity etc will only make steep slopes more unstable. The same applies for freshwater shorelines with steep slopes. We have to remember Oso and be more protective. If people insist on building in these areas, we have to develop mechanisms that deny them the option to install bulkheads or engineered walls in the future, so they take the risk seriously. We need to have better geotech review from third parties. New people are moving to the area rapidly and they are buying waterfront/streamside property .They don't understand coastal processes and they trust that the disclosure process will protect them. Almost never have I seen appropriate</p>		<p>because those zones actually protect people (whether they are willing to accept this or not). Use penalties and incentives to enforce protection. Figure out ways to help people better manage shoreline stormwater - not with infiltration facilities. Develop retroactive stormwater plans for communities so they manage water safely and avoid causing pollution issues. Regulate forest clearing upland of shorelines because all that water managed by large trees will now be draining to the waterfront.</p>

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Location	Description	Affected People	Solutions
	disclosure for waterfront sales and people are often shocked to realize they bought their retirement home on an active landslide site. They trust that the County wouldn't let this happen.		
15	There are only three bridges that cross the Nisqually in Thurston county. If the bridge over 15 fails, this will push a massive amount of traffic across the remaining structures. Additionally, when the train derailed over i5 this put an immense amount of traffic through other routes causing significant backups.	Everyone across the region including logistic freighting.	Add another bridge across the Nisqually, connect WA-7 with Bald Hill road through Peisner to Seglins to a number of roads Seglins nearly makes contact with on the Pierce county side. This would help take pressure off the other three bridges. Additionally Weyerhauser occupies a large portion of land between the Lewis and Thurston County, blocking access to potential opportunities for hiking and other forestry tourism. Another route connecting Bald Hill Rd to the Weyerhauser truck rd, over to NF72 and down to Hwy 508 through Cinebar could help ease traffic regionally when there's a large accident on i5.
Anything less than 30 feet above sea level.	Not just flooding, but submersion.	Anyone that lives there, works there.	New Orleans comes to mind, but really, Downtown needs to move, either straight up Venice style, or up one of the three hills.

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Location	Description	Affected People	Solutions
Low lying areas along rivers and shores throughout the county	Floods - loss of homes, businesses and lives	Property owners	Restrict development in those areas
Any areas near creeks or rivers	Flooding	Travelers, nearby residents	Published maps showing areas of possible flooding. Signage warning of possible street flooding.
Coastal regions- tsunamis Everywhere- earthquake and volcano and wildfire and flooding and climate change	Location and climate change	Everybody	Stronger infrastructure, removal of 5th ave dam to restore the deschutes estuary
The inlets of Puget Sound Farms in the county	Flooding and sea level rise Fire, flooding, drought on farmland	Inlets: the port land downtown, downtown business and residents Farms: landowners, farm workers, eaters	Inlets: Unknown Farms: assure farms have access to water during droughts, pays farmers who manage land for production that accommodates flood for parts of the year
Near rivers in flood plains - nisqually and Deschutes, everywhere for Earth quakes, older mobile homes, apartments, and rentals for heat	Flooding, heat, earthquake	Low income, renters, elderly, young people, people with disabilities	Climate action plans implemented in our communities, preventing building in flood plains
Cascadia	Fault line	Everyone	Planning and preparedness
All areas	Earthquake	Potentially everyone	Be ready.
-Nisqually River -I5 -BNRR -High Pressure pipeline Routes	-Nisqually River: Flooding, Lahar Flow -I5: Earthquake Damage to Bridges and Roadway -BNRR: Derailment of trains carrying hazardous materials		Train Agencies and Community to respond to these events
Downtown Olympia, nisqually, and other regions at or below sea level	Flooding and resulting roadway instability	Everyone who relies on an open i5 corridor and people who live / work / shop in downtown	Reinforcing structure and flood control mechanisms
Nisqually River Valley, Chehalis River Valley, and Rural South Thurston County.	Flood, Earthquake, and Fire	Residents and Businesses of those areas.	education, communication, outreach, continue mitigation efforts.

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Location	Description	Affected People	Solutions
Flooding near rivers?	Flooding?	People who live near water?	Less people.
Anywhere on a steep hillside, houses close to the beach, anywhere when it comes to climate change/hear/earthquakes...		Building codes, zoning,	
Earth quake anywhere.	Utility services and impassable roads. Public panic .	everyone	emergency supplies of water at least stored in every neighborhood school, library or municipal building.
Downtown and throughout the community	People are already living hard lives. A disaster such as an earthquake would disrupt all the services that they already rely on leading to more crime as people try to survive	Everybody	Do we have plans to address places like the food bank when an earthquake (or other event) happens. People who are living day to day don't have the space or the resources to have a few weeks of extra food
Nisqually river Mt Rainier Fault lines	Being in proximity if these were to max out	Everyone in our area	Just updates and awareness. I usually don't worry too much until someone brings it up.
All of Thurston county	Earthquake, volcano, climate change, heat, wildfire	Everyone	All the proposed solutions to climate change, good building codes
Hire a geologist	Earth movement	People	Stop building stupid
All bridges and over passes.	Earthquakes	Everyone	More Inspectors, after earthquake
Wildfire in WADOT areas as little is done to prepare	Wildfires	Me	The Lacey fire department is not prepared on this issue
Prairies wind driven brush and grass fires	Houses	Home owners not aware	Public service handouts
Areas near rivers, bridges.	proximity	everyone	allocate dollars for fixing our bridges, mitigate potential flooding
Local jurisdictions have already mapped these as critical areas	Depends on the critical area category	Anyone living, working, or owning property in those areas	Tailor dev regs in those areas
Most of the roads	Trees too close to the roads	Everyone that needs to go anyplace	Require trees to be maintained away from roads

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Location	Description	Affected People	Solutions
Along the rivers	Flooding	People who live near the rivers	I don't know
Deschutes River and coast of Budd Inlet. Everywhere earthquake. Everywhere big storm. Fire anywhere.	Everywhere big storm or earthquake or fire.	homeless people. people living near coast and rivers. Homes with a lot of brush and/or trees fire!	Get good shelter for homeless. Be prepared for flooding. Clear up brush and trees near homes. Sick or old trees trimmed or taken down!
Most residential areas will probably become isolate with a significant earthquake.	Bridges and probably many roads.	Probably all neighborhoods that have limited access.	Educate communities that they are likely to be on their own for extended times. Harden infrastructure as budgets allow.
Many residential areas are likely to get cut off from services in a major disaster.	Few citizens have planned for lack of services for an extended period of time. Medical needs, food/water, sanitation, shelter etc.	Everyone but has a more profound effect on those with the least amount of resources.	Identify those who are most likely to be effected and plan accordingly. Develop community wide plan to educate the public on the need to be prepared for various events they may disrupt services.
Where ever power lines pass through forests or near tall trees susceptible to high winds or fires.	Wildfires and power outages.	All residents and businesses in affected areas.	Aggressively relocate vulnerable power lines to protected under ground trenches and vaults.
All structures that will be effected by earthquake, lahar & tsunami	Collapse from shaking or being impacted from objects being forced into them in mud flows or titlewave	Every living thing in its path! Infrastructure from traversing the landscape to clean sources of drinking water will be effected in these things with little hope to survive an occurrence rescue operations will have no exception to casualties & equipment failure & loss	Unless you can sprout wings and fly there is not much you can do to escape those things! Even if there is advanced warning getting to higher ground for most will be impossible in the panic that will follow such an event when there is only minutes before the dealer strikes and what you happen to be doing at that time! If it happens at night & you're quick to jump & run ya might have a chance but the majority

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Location	Description	Affected People	Solutions
			will parish in the devastation that will ensue!
I-5		ALL	PREPLANE
I-5 at Dupont/Nisqually Plus freeway system in general is very minimal - 512 and 167 are still only two lanes in most places(should be 3-4)	Block access to Seattle Tacoma - only route North/South with out adding 3-4 hours on two lane roads	everyone	widening freeways and highways - building more access around JBLM
South county - flooding	North county - flooding & volcano	All	earthquakes, landslides
Forested areas for fire. Downtown Oly for rising sea levels.	Loss of life/homes/ reconstruction/	All	Leave all trees in place. Require developers to pay for cut trees and preserve more land & trees for parks like Squaksin Park with trails
anywhere along the sound is vulnerable to sea level rise and landslides		stop sea level rise	
The vulnerability is countywide because people are not prepared for emergencies/disasters.	The cities place NO priority on emergency preparedness or disaster response. Neither does the Port, the PUD or the Thurston Conservation District. The County does some work in this area, but needs to step it up. Most people in our area have NO idea how to prepare for a major disaster or what will occur when we have one.	Everyone, but especially vulnerable are the unhoused, those in shelters, the elderly and others who depend on electricity to operate things they need for medical conditions.	Preparedness education needs to be a HIGH priority, not an afterthought when something happens.
Earthquakes impacting all of I-5 Throughout the state/nation/world, specifically coastal areas are at risk for flooding and landslides, extreme heat and wild fire in rural areas/highly vegetated	Earthquakes impacting all of I-5 Throughout the state/nation/world, specifically coastal areas are at risk for flooding and landslides, extreme heat and wild fire in rural areas/highly vegetated	Mostly metropolitan populations surrounding coast and I 5, people and wildlife everywhere, but also transportation of goods and services. Lower income populations will be least resilient against excessive heat, flooding, transportation delays-	Localize goods and services by investing in local and urban agriculture, invest in public transportation through mixed use infrastructure where population can work where they live, improve walkability, bicycle infrastructure, create more buffer zones

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Location	Description	Affected People	Solutions
		every hazard will impact them most	against natural hazards, improve native vegetation and invest in green infrastructure- green roofs, pervious pavement, etc.
Close to rivers.	Flood	People living in close proximity.	Not filling low lying areas to accommodate construction.
All shoreline on the sound, with old bulkheads	Debris in the sound that may have chemical and pesticides/ herbicide	Fish, aquatic plant life. Flooding. As humans will repair their bulk heads.	Stop purchasing land close to the water.
unspecific -- low-lying land, waterfront infrastructure, dwellings on steep slopes especially when the ground is saturated from precipitation, historic buildings without earthquake retrofitting	damage from sea level rise and tsunami, extreme losses from quake and/or volcano and/or slides	residents, businesses, and government entities, especially disadvantaged individuals who likely will not have the same flexibility and access to resources as those of us with privilege	long term planning, adaptation, mitigation, and accurate projections of resources that disadvantaged residents will require
Ditches need to be maintained	High water flow	Flooding streets & intersections	Keeping them mowed & adding small damns to reduce high water flow
Deschutes Valley Flooding, Nisqually reach flooding		Flooding, cutting off major arterials	
Any lowland river			
entire area vulnerable to earthquakes. could be quite devastating.	earthquakes could affect housing, transportation, utilities, food/water, medical services, jobs, schools...everything.	everyone	getting individuals prepared for what might be a reasonable timeframe before they can expect help, and information on how they can be prepared to go it alone.
All low lying areas are at risk of sea level rise. Volcanic impacts could occur throughout the area, although prevailing winds probably reduce risks. You know where these risks are. I don't have any new ones.			

Bucoda

Location	Description	Affected People	Possible Solutions
Town of bucoda	Flooding	Citizens of bucoda	
Along the Chehalis River	Flooding	Home in the area or people being trapped by the flood waters.	Raising the road where it floods.

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Chehalis River lowland areas	flooding	farming and residences	get the flood control works upstream built
East end Skookumchuck valley	Possible dam failure	Everyone down stream on Skookumchuck river and possible the Chehalis river down stream of Centralia	

Lacey

Location	Description	Affected People	Solutions
Area where I-5 crosses the Nisqually River	Flooding	Residents of that area; commuters	Raised bridge; flood mitigation
Nisqually River at Nisqually	Flooding	Residents near river, commuters passing through	?
Nisqually Delta	Flooding	Residents	Prayers
Campus highlands drive and 46th Avenue	Undersized storm water retention pond	Campus highlands residential areas	Collaboration with local private golf course manager to mitigate flood damage
Hicks Lake shoreline is in 100 year flood zone. Sandy soils with high groundwater could be subject to liquefaction during earthquake.	see above	structures abutting the lake.	Maintain channel between Hicks and Pattison Lakes so water doesn't back up.
NE Sleater Kinney between Sleater Kinney and Lilly Rd	Increased groundwater filling under homes	Long established neighborhoods	Recognizing increasing problem of groundwater flooding and finding a helpful solution
Ridgeview Estates , a residential development off Martin Way East & backside of Steilacoom Rd. SE before the crossroad of Duterrow Rd. SE / Meridian Rd. NE	Mostly wildfire potential than earthquake , severe storms	Most of the residents especially on the periphery of the development due to forested areas	Would be prudent to know what steps to take in fact a fire or earthquake occurs. What's the best way to help ourselves & our small community if fire & emergency rescue services are unable to reach or assist us . How would we evacuate, especially if there's structural damage on I-5 ?
Nisqually delta: Pacific & 6th.	Prone to flooding. An earthquake large enough to compromise the dam would be devastating to the	Residents	Enhanced early warning and better traffic control. Even on a good day, getting out of the neighborhood can be difficult. During frequent high traffic events, it's nearly impossible.

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	region. Evacuation is difficult because of increased traffic on Mounts Rd/Old Pacific.		
Nisqually area	flooding	puget sound area	
Nisqually valley crossing, I-5 and up river.	Coastal flooding, lahar, Tsunami, bridge integrity in quake.	All travelers going across the county line.	Rebuild roadways to a higher elevation, higher bridges over the river.
Nisqually Valley - Flooding, Volcanic, Storms, Earthquake	Destruction of bridge on I-5. It is highly vulnerable to all of above.	Anyone and anything that requires I-5 transportation. People, Food, all life necessities. Main transportation corridor.	Rework I-5 to elevation much higher with replacement of aging bridges across the Nisqually River.
Nisqually bridge.	Flood or earthquake damage to the Nisqually bridge.	Transportation north and south of Thurston County.	Building a new modern bridge and defining emergency alternate routes.
Nisqually basin	Floods. Fires. Earthquake.	All of us	Mitigation..awareness communication...disaster plan management. Action plan communication amd training
Nisqually valley in the event of Mt Rainier eruption	Mudslides, volcanic debris and possible tsunami.	Communities along the river, Nisqually reservation, shoreline land owners around southern Puget sound.	Early warning system.
Nisqually River Valley	Particularly vulnerable to recurrent flooding	Homes in the area	Better control to water released from the dams to prevent flooding.
Nisqually River	Flooding	Those nearby	
Nisqually river valley	Lahar from Mt Rainier eruption	Yelm and Nisqually reservation	Mitigation (e.g. moving people away from riverbank)
Nisqually Basin	Volcanic		
Nisqually valley	Flooding and possibly volcano lahar or other downstream effects	Folks who live there and anyone needing to travel across the valley if I-5 becomes blocked or otherwise unusable	?
Nisqually river, I-5	Flooding, lahar, potential destruction of bridges and highway link to north.	Could affect everyone living in Thurston county. Potential disruption to supply routes for all resources. Could prevent	Update I-5 and other bridge infrastructure with modern bridges well above potential flood levels. Also mitigates sea level rise hazards. May need to raise road bed for

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		commuters from reaching their jobs. Possibly limiting medical services if local hospitals become overwhelmed.	portions that are too close to water level.
Nisqually Valley and I5 corridor is restricted during an event and I5 both into and out of Thurston County leave very little ability to evacuate an area when it is not passable there are very limited alternate routes.	I5 both into and out of Thurston County leave very little ability to evacuate an area when it is not passable there are very limited alternate routes.	Communities in Thurston County relying on I5 for evacuation routes. Or in an event could severely limit the supply availability in and out of Thurston County	Ensure alternate travel routes to evacuate are sufficiently robust to accommodate and alleviate the potential restrictions the event could cause. Enlarge the routes that run through Roy/Tenino etc.
I-5 crossing of the Nisqually River	Flooding / liquification / erosion of the road pylons	any Commercial and personal traffic	
Mounts road Nisqually river basin area flooding zone	Flooding		

Olympia

Location	Description	Affected People	Solutions
Prairie Habitat nearshore saltwater habitat forested habitat	Wildfire, invasive species, development loss of functional habitat, invasive species wildfire, invasive species, drought	ESA listed species, other commercially important species and humans..	conservation, protection and proper ecosystem management for prairies, nearshore and forested habitats.
Downtown Olympia and the margins of Budd Inlet.	Increase in tidal incursion due to increase in sea level.	Everyone in the county who lives or does business in Olympia or other low lying areas.	Raise the elevations by armoring banks, etc. Relocate low lying infrastructure to higher ground.
Downtown Olympia is going to be increasingly impacted by tidal surges and potential flooding of streets and businesses as climate	In ability to use streets due to flooding, cutting off parts of the city i.e. the west side of Olympia from the downtown core.	Homes and businesses will have to deal with flooding limiting access for customers and tenants.	Elevating key streets to provide access across town. Elevating businesses and homes on stilts or flow through basements.

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change impacts increase in intensity.		Require new buildings to incorporate flooding into their design, i.e. flow through first floor with garage, living areas on 2nd floor.	
downtown olympia business district including the capitol	downtown olympia was built on fill over the natural water table, which could liquify during a severe earthquake, causing buildings and other structures to fracture and sink	state workers, downtown olympia residents, businesses and visitors	an engineering survey and report identifying ways to mitigate and then either community grants or fundraising to refit downtown
Downtown Olympia	Flooding	Buildings near the sound and Capitol Lake.	Do not build in that area or plan for flooding such as having lower levels built with flooding in mind.
Healthcare, PSPH, PSAP 911, Water treatment and distribution, Senior Services at the Olympia Center and in Lacey, TC Jail, OPD Jail, OFD Fire Stations, Olympia PW facilities, Port of Olympia marine and air, LOTT water treatment, I-5 transportation	These are critical infrastructures	general population, specifically in the urban core	Invest in and maintain infrastructure and public safety
Shoreline along Budd Inlet	Flooding	Downtown Olympia. Homes along the shoreline	Making the Port area a marsh like it was originally It could absorb absorb huge amounts of water. Definitely not build a barrier that might mitigate downtown, but be a disaster for the rest of South Sound.sound.
All of downtown Olympia	Flooding from sea level rise	Homes, businesses	No clue
1. There are a number of slopes both east and	1. Landslides and debris flows. 2.	1. Owners of property on and adjacent to the	1. Varies from location to location, based on

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west of Budd Inlet and along Capitol Lake. 2. Slopes described above, plus low-lying areas supported by fill.	Seismic shaking, triggering slope movement and, in the low-lying areas, liquefaction and tsunamis. Damage to critical infrastructure.	unstable slopes. 2. In addition to property owners, individuals working and shopping downtown and at the port, and traffic throughout the region.	site-specific conditions, from planting native, deep-rooted vegetation to slope retention, and precluding new development. 2. Seismic retrofitting of buildings and infrastructure, and for tsunamis, evacuation of the vulnerable areas.
Cooper Crest neighborhood; 20th and Cooper Rd. NW	Land slides; flooding	Homeowners; possibly schools	Monitoring, and if necessary, landscaping and retaining walls
1. Downtown Olympia & other shoreline areas. 2. Nisqually river valley. 3. Entire region.	1. Sea level rise; earthquake/tsunami/subsidence effects. 2. Floods; lahar effects from Mt. Rainier. 3. Climate change effects; intense heat episodes.	All of us.	Work to mitigate climate change. Improve disaster planning. Build public awareness.
Saltwater Shoreline	Olympia area	Coordinated Planning	
Flooding around Scott Lake. Landslide during heavy rain on the hillside just north of the governor's mansion.	see #4	The flooding affects a number of residents in the Scott Lake area, many of whom earn below the median income. The landslide affects the state government, the railroad, and potentially anyone walking along the nearby path.	Flooding--huge problem. Best solutions: relocate; raise the homes on pillars; leave more forest to absorb the water. Landslide. Shore up the hillside. Maybe remove trees from the top edge of the hill. Probably have to cut into the existing parking lot above the hill.
downtown Olympia	sea level rise due to climate change	nearly everyone	fewer residences and vital businesses at ground level
West Olympia, Cooper Point Rd, logging and excessive clearing to build residential/commercial units	Loss of trees	Flooding and climate change	Great control on builders

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Olympia downtown and surrounding dense neighborhoods	Extreme heat, sea level rise	Elderly, children, people experiencing homelessness	Green spaces, more trees, "shade oasis" structures to enable walking longer distances by providing a place to rest out of the sun
Olympia waterfront downtown Lott	Seismic sea waves Sea level rise	Lowlanders many businesses, our waste water treatment	Learn to swim... begin to require elevation of buildings, etc.
Between Olympia and Tumwater on (1) Interstate 5 and (2) on Capitol Way. In both cases, both northbound and southbound	During heavy rains, large pockets or stretches of standing water	Drivers and pedestrians	(1) Better paving to alleviate areas where water collects and (2) better stormwater drainage overall
Olympia and tidelands	Sea level rise.	Olympia port, downtown business and waterfront home owners.	Stop burning products to produce energy.
Downtown Olympia is built on fill. It will liquify during an earthquake	Downtown Olympia is built on fill. It will liquify during an earthquake	At least Thurston, but since many State workers and major businesses are located in the Olympia area the impact could be catastrophic	none
Nisqually Valley, Budd Inlet.	Water damage from floods and volcano eruptions.	All of us.	None.
Downtown isthmus	Flooding from storms, climate change	residents, businesses, tourism	
Near Mt. Rainier. Downtown Olympia.	Near Mt. Rainier: Volcanic and earthquake. Downtown Olympia: Flooding.	Near Mt. Rainier: People who live in towns or farms near Mt. Rainier. Downtown Olympia: Businesses, apartments, homeless people.	Near Mt. Rainier: Provide warning prior to earthquake and volcanic events. Downtown Olympia: Construct walls or higher soil next to low shores.
4th street bridge, downtown Olympia	flooding, tsunami, ocean rising	people in the downtown area and the west side	Quit building high rise building so close to the water
Downtown Olympia	Climate change, earthquake	Everyone that lives and works there	Reduce development in lowlying areas

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Downtown Olympia and the port area are subject to flooding. Every place with tall trees is subject to wind storm damage.	Water and wind damage.	Wind affects the entire region, as there are tall trees everywhere. Flooding in the port and downtown will affect access to businesses, local government offices and apartments.	For wind damage, encourage solar power, battery storage, and use of batteries in electric cars to meet residential power needs. To address flooding, there should be restrictions on new buildings in the flood area, plus dikes, pumps, etc for existing buildings and facilities.
downtown olympia and Budd inlet shoreline and bluffs	earthquake, and flooding	businesses and homes	no possible solutions
Portion of harbor area that is built on fill.	Earthquake liquifaction, flood damage	Residents and businesses in the area	More flood gates on storm drains connecting to the lake/bay
1. Downtown Olympia 2. I-5 Bridges	1. Sea Level Rise/Tsunami 2. Seismic Damage	1. Everyone locally, either directly or indirectly 2. Everyone due to cut off of supplies e.g. food and fuel.	1. Short term, continue antiflooding measures. Long term, plan to retreat up-gradient over time. Protect Capitol Campus. 2. ID and improve bypasses/detours; plan for air and sea emergency supply.
I bought my house (division st sw) on olympias westside looking for areas with out liquefaction potential. I understand other areas in ympia have higher susceptibility to liquifyung during an earthquake.	Primarily concerns about the impending cascadia quake (give or take whether it will be in my lifetime). Other concerns primarily include flooding and health hazards related to wild fire smoke.	Earthquakes - everyone. Risk depends on where you are, age and quality of structure you're in. Flooding - the county can better model who is at risk for this than I can assess Smoke mitigation - people whose livelihoods are outside, children, people with breathing medical concerns, pets, wildlife, people who can filter air, people without air-	Broader legislation regulating manufacturers contributing to climate change. Grants or free products or price reduction brainstorming so it's not so much more expensive to make climate friendly choices.

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		conditioned homes who rely on open windows for heat control.	
Downtown	Sea level rise	Everyone in Oly, either directly or indirectly	Appropriate zoning and building codes, building resiliency into infrastructure
Downtown Olympia Property next to forested areas	Earthquakes, Flooding, Tsunamis Wildfire	most everyone in some way	preparedness, training within neighborhoods/ apartment units
Rural areas and downtown Olympia	Rural areas fire. Downtown Olympia flooding due to rising water levels. Also unreinforced masonry buildings and brick chimneys in an earthquake. Chimneys above internal walls will come down straight through the roof and into a house. Brick chimneys on exterior walls will just pull away from the house a crumble.	Likely as eminent risk 1/4-1/2 the local population.	No new multi housing near the port or downtown that are less than 50-75 feet above sea lever. Grants or very low cost loans to reinforce masonry commercial buildings in the downtown core.
Capitol Way around the bridge over I5	Landslides	Homes and businesses	I don't have any
Soft soils by the water	Soils are prone to sinking and creating building instability	Economic vitality - downtown business owners, gov buildings, lower income apartment housing	Retrofitting buildings, preparedness kits for longer term, public community plans showing routes with potential impact to infrastructure
Downtown Olympia, Nisqually Valley, Thurston County	Sea level rise and flooding from the mountains, fires in all of Thurston County	Natural area, animals, sea life, humans. Livability	Less auto traffic and more mass transit. Stop urban sprawl. Move people away from the sound shores and river banks.
Liquefaction in dtwn Olympia	infrastructure loss	The entire region	More stringent assessment and mitigation

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Downtown Olympia near Childrens Museum	Flooding and erosion	The community, residents of downtown	Reinforcing the area, dredging out the mudflats
Marine shoreline within 2-5 feet elevation above HAT (highest astronomical tides). ie, nearest tidal station to Thurston County with HAT info to is Tacoma, where HAT is 1.87ft above MWWW. And highest observed tide is 3.09 ft above MWWH. <a href="https://tidesandcurrents.noaa.gov/datums.html?id=9446484">https://tidesandcurrents.noaa.gov/datums.html?id=9446484</a>	Since highest annual tides occur mid-winter, co-occurrence with extreme storms have potential to raise marine waters 2+ feet above HAT, imperiling residences and infrastructure.	Shallow gradient marine shorelines are most at risk, but all marine shorelines would be affected.	Establish at least one tidal station in southern Puget Sound, eg, Budd Inlet that will include all datums, ie, HAT. Use this info to survey elev of near shore infrastrucure and all new county permits. Inform shoreline residents of potential flooding during severe storms coincident with highest tides.
low-lying areas - such as downtown Olympia	Subject to impacts from sea elevation change.	all of us.	protection of downtown by making site more resilient and potentially constructing sea walls.
Downtown	Floods	Businesses and people who are near the coastline	Maybe the lake going back to saltwater. Probably making the beaches more natural with less concrete.
GreenCove Creek Basin and Downtown	For Green Cove Basin- Flooding, landslides , toxic contamination from MTCA site, loss of aquifer recharge areas leading to loss of habitat for salmon and continually lowering aquifer levels that threaten the drinking water supply for the City and Cooper Point Rd. And the strategic groundwater reservation Flooding, earthquakes, tsunamis for downtown	Our drinking water aquifers Wildlife habitat Infrastructure from landslides and flooding Public health	Do not allow any development in any critical areas County wide monitoring of aquifers for water quantity AND quality, including testing for chemicals

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Olympia Watershed Park, county prairie lands (wildfire) i.e., Rocky Prairie (Old Hwy. 99, Waldrick Rd.), Mima Mounds.	Wildfire encroaching on residential and out buildings.	Residents and property owners.	Safety assessments to show cause for fire safety barriers, access for fire suppression equipment.
Downtown Olympia	Flooding	Everyone in the region	Move key city and county operations to higher ground, like the Capital Mall area. Raise the level of 4th and 5th Ave. bridges and the roads leading on to them.
Flooding along shorelines from sea level rise and especially downtown Olympia	Very vulnerable.	It will impact the local residents and businesses but also all tax payers since we will likely pay for preparation and response.	Stop developing in a large portion of downtown Olympia. The 'walled' area should be enough to save the east-west street connections. Stop the port deep dredging and shipping to free up funds for other Port activities that are not water dependent.
Downtown Olympia as a whole.	Build on fill, near water	Business and community as a whole	
Sea level rise - downtown Olympia, I-5 at Nisqually	Flooding and transportation bottlenecks	Commuters, downtown businesses, unhoused people	Infrastructure improvements
Downtown flooding. Severe storms everywhere. I worry about Grass Lake greenbelt burning.	floods, storms and fire	Residents, businesses, wildlife, first responders etc	I have no solutions for natural disasters
I look at my road, 28th Ct SE, Olympia, WA, 98501. It has a downward grade from where it connects to Sherwood Dr SE and Raintree Ct SE.	During heavy rains, water flows down into the cul-de-sac at the end of 28th Ct SE. While there is draining on the south east end of the cul-de-sac, the grading on the road is insufficient for proper water flow. Water	I potentially effect the entire neighborhood and associated property values. Curbs in front of our property are heavily damaged, which will cause sidewalks to fail, and other property damage to our home.	Improve that streets drainage, which would require a new storm drain installed where the majority of the streets water now pools near.

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	<p>always pools up on the north side the the cul-de-sac where it eventually soaks under curbs, driveways, yards, and homes. This had contributed to driveway and foundation issues at our home, as well as high risk for flooding due to a saturated. One way to help MY property would be to pump excess water out into the street away from the home, but all the water from the streets already pool in front of our house due to lack of storm water drainage.</p>		
Olympia along the water	Flooding	People within that area	None, cost prohibited
Downtown area	sea level rise	businesses downtown, LOTT	I agree with the solutions discussed in Olympia's SLR response plan
Downtown Olympia	Earthquake & sealevel rise & landslides	Everyone	Stop building in areas of historic land fill
The houses above Capital Lake and the Deschutes River seem vulnerable to slides	Landslides	The people who own the property	Not sure
I-5 bridge over the Nisqually River, bridge over Deschutes River/ Capital Lake and near the brewery and Olympia waterfront with continued development	Nisqually River flooding, earthquake and flow from a Mount Rainier eruption could eliminate/damage the bridge. The bridge over the Deschutes River bridge could suffer the same fates (except Rainier eruption). Rising sea levels likely will cause waterfront/shoreline	Citizens, wildlife, commuters, public transportation, Westside Olympia residents, military personnel, first responders, fire fighters, police	Replace/improve/ raise the bridges, cease development of the waterfront and require developers to improve infrastructure in the areas affected by the development.

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	damage to structures and roads plus buildings on fill at the waterfront may be damaged by earthquakes.		
Hillsides along Percival Creek, especially from the bridge at Cooper Point Way and Evergreen Park DR SW.	Wildfires going up the hillsides from activities -- smoking, campfires, etc. -- of illegal "campers" along Percival Creek.	Businesses on the edge of hillside on one side, and multiple homes/condos on the hillside on the other side. Fires going up the hillsides would cause a substantial loss of both property and lives.	Removing, and continuing to monitor, the illegal "campers" before they cause loss of life. They are not only polluting the stream with their trash and human waste, but endangering the lives and property of all the people and businesses clustered along the ridges on both sides.
I5-US101 intersection and Nisqually area.	Flooding, landslides, earthquake, volcanic runoff	Everyone	South county bypass around other side of JBLM would avoid this area and Nisqually too
Olympia WA	Over regulation and taxation.	Middle class	Reduce government by 50 percent
downtown Oly	flooding		businesses and residents
Oly waterfronts and downtown.	Floods, tsunamis, lahars	Businesses and residences	Don't know
Downtown Olympia	Flooding from rising sea level	Businesses, residents, transportation	Stop building downtown.
Waterfront downtown Olympia	Flooding	Olympia	Warning
West Olympia above Deschutes Parkway and West Bay Dr	Landslide from an earthquake	Local residents	Awareness and individual resident action to keep the slope stable.
Along the sound in Olympia and Nesqually	Tsunami	Everyone in the immediate area	None
Downtown Olympia at isthmus and I-5/101 bridge/interchange	Earthquake. Deschutes and Capitol Lake will create a chasm if essential bridge infrastructure or arterials are blocked/destroyed or inundated with traffic.	Olympia/Tumwater/Lacey/Thurston County	Upgrade bridges and focus on expanding the grid network of streets to provide detours/alternative routes. Maintain and expand paved bike/ped trails/pathways as alternative routes.

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			<p>Trails could be used by cargo bikes to deliver aid. If wide enough - emergency vehicles could also use them. Use federal funding transp. package and WA Move Ahead funding to complete phase 3 and phase 4 of KF Woodland trail. When completed, the Woodland Trail could stretch from McAllister Springs to Capitol Lake and create a major east-west corridor that will tie some of the most populated areas of Lacey, Olympia, and Tumwater to the Chehalis Western Trail, Capitol Lake, and other destinations accessible from this corridor (see Thurston Regional Trails Plan, p. 3-20). The Capitol to Capitol Trail would create a major east/west connection through west Olympia. Extend the Deschutes Valley Trail from Tumwater Falls to Pioneer Park to expand the North/South route.</p>
downtown Olympia, Budd Bay, would be inundated with rising seas due to climate change			
Port of Olympia	Rising water levels	Business Residents	Enforcement of stricter EPA regulations & Building Codes
Downtown Olympia	flooding	public	relocation, portable barriers
Downtown...	Rising seas	Every one that uses downtown	Stop developing lower parts of town
Downtown Olympia	Flooding, sea level rise	Businesses, people, government continuity	Long term code change for raising buildings

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Sea level rise, in particular effects on downtown Oly and LOTT.	Flooding downtown core and ability of LOTT to process sewage	Local jurisdiction located on or near Puget Sound	I know City of Oly is looking at the impacts, but other local jurisdictions need to become more involved
Downtown Olympia is vulnerable to liquefaction since it's built on infill.	earthquakes	everyone	retrofit buildings, stop gentrifying downtown
Downtown Olympia, Nisqually bridge, Summit Lake	Flooding, or landslide or fires for Summit Lake.	Summit the residents there. Nisqually I5 travelers, Olympia, businesses and transportation from Eastside to west.	Conservation for Summit, online monitoring for others with contingency plans.
Downtown Olympia Tsunami South County - Forest Fire	Everyone		Mitigate with early warning/education Additional fire resources, both preventative and reactive
Rural areas that could be affected by fire. Downtown Olympia is particularly vulnerable to both earthquakes and flooding downtown	Fire in rural areas. Flooding and severe earthquake damage downtown.	Rural residents. Downtown businesses and workers at risk of injury.	Grants to reinforce downtown buildings, and requirements/law to reinforce vulnerable buildings within a specific period or be declared uninhabitable.

Tenino

Location	Description	Affected People	Solutions
In/around Tenino especially HWY 507 and into Churchill Rd	Flooding and dangerous ice on road during storms, roads sometimes impassible	Many families living in this area including ours	flood mitigation focusing on ecological restoration in Cozy Valley to store water by returning it to a wetland
Flooding in/around Tenino and Rochester. Churchill Road outside Tenino is hazardous to drive on when roads freeze due to incline of the hill, and becomes inaccessible when floods occur (highway 507 flooded last winter near the Churchill	See above	Rural families, farms	Neighborhood emergency team training similar to the NET program used in Portland, OR. Train residents how to be prepared and handle disaster scenarios because EMTs will not be able to help everyone during major

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<p>intersection) - when this happens, residents on this road are cut off (Churchill is only accessible from 507). Outside Tenino and throughout the county there is also potential for liquefaction and landslides due to earthquake.</p>		<p>emergency scenarios. Provide resources for neighborhoods, store emergency supplies at designated beacon locations that contain water, first aid supplies, etc. Flood mitigation in and around Tenino, specifically using ecological restoration to sequester water and restore salmon habitat, creeks and ponds.</p>
<p>Nisqually valley. Deschutes area...</p>	<p>Flooding. Landslides. People. Wildlife.</p>	<p>Barriers.</p>

Tumwater

Location	Description	Affected People	Solutions
<p>Between Olympia and Tumwater on (1) Interstate 5 and (2) on Capitol Way. In both cases, both northbound and southbound</p>	<p>During heavy rains, large pockets or stretches of standing water</p>	<p>Drivers and pedestrians</p>	<p>(1) Better paving to alleviate areas where water collects and (2) better stormwater drainage overall</p>
<p>The houses above Capital Lake and the Deschutes River seem vulnerable to slides</p>	<p>Landslides</p>	<p>The people who own the property</p>	<p>Not sure</p>
<p>I-5 bridge over the Nisqually River, bridge over Deschutes River/ Capital Lake and near the brewery and Olympia waterfront with continued development</p>	<p>Nisqually River flooding, earthquake and flow from a Mount Rainier eruption could eliminate/damage the bridge. The bridge over the Deschutes River bridge could suffer the same fates (except Rainier eruption). Rising sea levels likely will cause waterfront/shoreline damage to structures and roads plus</p>	<p>Citizens, wildlife, commuters, public transportation, Westside Olympia residents, military personnel, first responders, fire fighters, police</p>	<p>Replace/improve/ raise the bridges, cease development of the waterfront and require developers to improve infrastructure in the areas affected by the development.</p>

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	buildings on fill at the waterfront may be damaged by earthquakes.		
Hillsides along Percival Creek, especially from the bridge at Cooper Point Way and Evergreen Park DR SW.	Wildfires going up the hillsides from activities -- smoking, campfires, etc. -- of illegal "campers" along Percival Creek.	Businesses on the edge of hillside on one side, and multiple homes/condos on the hillside on the other side. Fires going up the hillsides would cause a substantial loss of both property and lives.	Removing, and continuing to monitor, the illegal "campers" before they cause loss of life. They are not only polluting the stream with their trash and human waste, but endangering the lives and property of all the people and businesses clustered along the ridges on both sides.
Port of Olympia	Rising water levels	Business Residents	Enforcement of stricter EPA regulations & Building Codes

Unincorporated Thurston County

Location	Description	Affected People	Solutions
Capitol Forest	Landslides	Residents	Reduced logging activity
Rochester	Wildfire	Land, structures, houses	Not sure
Along the Chehalis River	Flooding	Home in the area or people being trapped by the flood waters.	Raising the road where it floods.
Chehalis River lowland areas	flooding	farming and residences	get the flood control works upstream built
Rochester	Fire	Horses houses people	Climate mitigation and adaptation and jaArd training and assistance
Capitol Forest	Wildfire, landslides (most of this is due to excessive logging)	Natural land users	Stop logging.
All of Rochester/South county Particularly the triangle from Littlerock Rd s. to HW12 & Chehalis River and E to I-5, beyond to Tenino	Wildfire - heavy residential in the wildland-urban interface Pockets along Scatter Creek are vulnerable to flood All would be affected by	Farms, homes, businesses, schools, medical facilities, major and secondary roads	Fire prevention education and measures (e.g. fuels reduction) Evacuation and shelter in place education and preparedness Increased enforcement

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	ash/mudflow if Rainier blew to the west		of no trash burning/burn barrels, burn bans, and burn permit requirements. Ban fireworks and enforce ban!
Hopkins ditch	Flooding	Many people who are impacted by the lack of drainage and the increase in development	The county should give the hopkins drainage ditch commission storm water tax monies collected so that the ditch can be properly maintained. The county is refusing to contribute. Have The Preserve development pay into ditch management. It drains their area and they are refusing. Have the county acknowledge the errors in the drainage plans from that development and start finding solutions with the ditch commission.
Rural areas	Wildland Urban Interface	Homes and lives	Less red tape and more concern toward human life than ground moles
Mima Mounds and surrounding area	Tall dry grasslands provide fuel for potential wildfire	Homes nearby	Education and outreach for fire prevention. Fireworks and shooting during hot summer months and other activities could provide a spark to ignite these fuels and others.
Nisqually view loop 98516	Land slide erosion	Homes on the loop	Slope stabilization
Downtown Olympia, Nisqually bridge, Summit Lake	Flooding, or landslide or fires for Summit Lake.	Summit the residents there. Nisqually I5 travelers, Olympia, businesses and transportation from Eastside to west.	Conservation for Summit, online monitoring for others with contingency plans.

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Nisqually delta: Pacific & 6th.	Prone to flooding. An earthquake large enough to compromise the dam would be devastating to the region. Evacuation is difficult because of increased traffic on Mounts Rd/Old Pacific.	Residents	Enhanced early warning and better traffic control. Even on a good day, getting out of the neighborhood can be difficult. During frequent high traffic events, it's nearly impossible.
Summit Lake, Turkey Rd. very steep, many steep slope residential developments along shorelines, in general, in Thurston County.	Landslide hazard	residents and the whole community that would lose the quality of resources due to impacts from landslide hazards near other jurisdictional critical areas.	Limit development near steep slopes, larger buffers, geotechnical reports should not have more pages in the disclaimer section than in the body of the report.
Delphi Rd, Cedar Flats, Maple Valley Rds subject to all potential hazards with season climate and weather events singularly common	flooding, wildfire, snow, ice, wind storm. Infrastructure damage notably electric service and travel ability due to rural nature of the area	The entire population of the general region	Better water runoff management, citizen awareness of grassland control. Shifting from mostly above ground electric distribution to underground and focus on micro grid development, utilization of renewable energy and energy storage in micro grid
Nisqually area	flooding		puget sound area
Nisqually valley crossing, I-5 and up river.	Coastal flooding, lahah, Tsunami, bridge integrity in quake.	All travelers going across the county line.	Rebuild roadways to a higher elevation, higher bridges over the river.
Semi-rural or rural areas throughout Thurston County	Wherever grasses are tall, undergrowth is dead or dry, where summertime drought causes risk of fire that threatens both wild areas and homes.	Wildlife and plants, forests, people and their homes and pets.	Requiring a "buffer zone" of graded 12 foot areas around farmland, as they do in California OR keeping a "green zone" - a watered and lush area of the same dimensions around rural areas and homes.
The Scatter Creek Wildlife Preserve is very vulnerable to wildfire. We live across	Many acres of Scotch Broom, tall grasses that act as "grass-o-line", and a constant	The homeowners in the area, the wildlife (especially endangered ones) that live there,	Early, consistent management by mowing of the grass and removal of the

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from it at 6837 183rd Ave SW, Rochester.	prairie wind to fuel if further make it a severe wildfire hazard.	and the value of the land as a hunting area that creates revenue for the State program.	Scotch Broom. They say "we are going to burn it" but that never occurs because they need a window without wind and when the fire danger isn't high or they create a wildfire that they are trying to prevent.
Flooding in/around Tenino and Rochester. Churchill Road outside Tenino is hazardous to drive on when roads freeze due to incline of the hill, and becomes inaccessible when floods occur (highway 507 flooded last winter near the Churchill intersection) - when this happens, residents on this road are cut off (Churchill is only accessible from 507). Outside Tenino and throughout the county there is also potential for liquefaction and landslides due to earthquake.	See above	Rural families, farms	Neighborhood emergency team training similar to the NET program used in Portland, OR. Train residents how to be prepared and handle disaster scenarios because EMTs will not be able to help everyone during major emergency scenarios. Provide resources for neighborhoods, store emergency supplies at designated beacon locations that contain water, first aid supplies, etc. Flood mitigation in and around Tenino, specifically using ecological restoration to sequester water and restore salmon habitat, creeks and ponds.
Chehalis river area - flood Gopher Preserve areas between 183rd and Old Hwy 99 that are overgrown and are a severe fire hazard to the neighbors	Flood, fire	Nearby houses	Continuing flood mitigation Mandate that the conservation areas remove scotch broom and mow the land.
Nisqually Valley - Flooding, Volcanic, Storms, Earthquake	Destruction of bridge on I-5. It is highly vulnerable to all of above.	Anyone and anything that requires I-5 transportation. People, Food, all life	Rework I-5 to elevation much higher with replacement of aging

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		necessities. Main transportation corridor.	bridges across the Nisqually River.
Nisqually bridge.	Flood or earthquake damage to the Nisqually bridge.	Transportation north and south of Thurston County.	Building a new modern bridge and defining emergency alternate routes.
Nisqually valley. Deschutes area...	Flooding. Landslides.	People. Wildlife.	Barriers.
Above Rainier, Yelm, Buccoda, Tenino etc. is a lot of forest land. It is fantastic to have but when people go into those areas to camp it is very easy for a fire to development when ground is parched. I would suggest making fires illegal at the first sign of dryness that goes for home bonfires etc. Right now, it is set by date, but we should monitor the moisture and call it earlier if need be.	Foreign Pests coming into WA. Whether it is tree destroying beetles or killer hornets	Everyone	I hate to say this but more restrictions on imports especially live vegetation coming from areas known to have pest we do not have.
11846 Deer Trail Ln SW is adjacent to the Capitol Forest. Fire management on DNR land and our own parcel are inadequate.	Forest fire.	Many nearby properties.	Use the existing roads as fire breaks by clearing perhaps 15 or 20 feet on each side of forest roads. Make up for the extra harvest by expanding "Leave Tree" areas, which would reduce harvests to offset the extra harvest near the roads. This would also allow more robust survival of the "Leave Tree" areas. Also, thin third generation stands.
Rochester is full of dried fields and yards that are tall, dry, close to tree's. Drive down	These places are close to homes, schools and if they catch on fire as the fields did two years	Home owners, school districts	There needs to be a law enacted that allows the fire department to be able to have people

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<p>Pecan Street and see the fields of dry grasses, drive down Hwy 99 and see the tall fields of dry grass.</p>	<p>ago, it is going to devastate the area.</p>	<p>mow these fields early on prior to fire danger. If they are not taken care of, the home or property owner needs to receive a hefty fine and notice they can be sued if these fields catch on fire. I am NOT talking of hay fields that get mowed each season. I am talking about fields near Pecan Street where the apartment renter burns his trash next to these fields and tall trees during the middle of the night thinking no one smells or sees this. I come from an area where the fire department could mandate yards and fields be mowed and if not and the city had to mow it the homeowner got a fine and a bill. Washington talks a big talk about fires but the reality is nothing is done preventatively.</p>	
<p>Woodland Creek Estates Neighborhood</p>	<p>Wildfire. There are many homes that back up to the forest, and there are many trees in the neighborhood. There's charred trees and evidence of wildfire in the Palm Creek Headwaters park from decades ago, so there's no reason it can't happen again.</p>	<p>Residents in the neighborhood</p>	<p>Natural debris cleanup. Property assessments, community wildfire prevention education, Lacey City involvement.</p>
<p>Scatter creek, vulnerable to flooding, southern Thurston</p>	<p>See above</p>	<p>Rural Thurston county residents</p>	<p>Act on climate change!</p>

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county is rural and vulnerable to activities causing power outages			
93rd Avenue / SR 121 between I-5 and Tilley Rd SW seems susceptible to flooding. Every winter water comes very near to being over the roadway. The parking lot at Johnson's Machine shop floods. Hopefully the construction/development along this stretch doesn't make this worse.	Flooding. I suppose there is a risk of groundwater contamination depending on development or leaking tanks (Pilot/Flying J).	People traveling on 93rd Avenue. Potentially emergency services.	Improve drainage or elevate the roadway. Require mitigation from developers.
Scatter creek area	Flooding seasonally	Those living in the flood plain	Don't build in the flood plain...
old 99 going up chain hill	land slide	all road user	move the road a bit
Nisqually basin	Floods. Fires. Earthquake.	All of us	Mitigation..awareness communication...disaster plan management. Action plan communication and training
Nisqually valley in the event of Mt Rainier eruption	Mudslides, volcanic debris and possible tsunami.	Communities along the river, Nisqually reservation, shoreline land owners around southern Puget sound.	Early warning system.
Nisqually River Valley	Particularly vulnerable to recurrent flooding	Homes in the area	Better control to water released from the dams to prevent flooding.
Steamboat Island Peninsula	there is a fault line that runs horizontally across the road - which literally cuts the peninsula in half.	everybody from the fault line up to Carolyn Beach area - nobody above the line would be able to get out if the road collapsed	reinforcement of road. Strategic placement of emergency supplies. Develop plan for evacuation by air or water if necessary. Develop plan for neighborhoods to know more. Have

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			people sign up with SMART911.
North of big tykle cove the land is falling into the sound	Landslide	The houses below and above	Plant more trees
Delphi, Madrona Beach, downtown Olympia	Flooding	Everyone	
Scatter Creek Area on 183rd Ave.	Large are of grass land with wildfire risk	All housing communities around the area and the firefighters responsible for fighting the fires	Working with WDFW on control burning and help home owners creat defensible space.
Nisqually River	Flooding	Those nearby	
Nisqually river valley	Lahar from Mt Rainier eruption	Yelm and Nisqually reservation	Mitigation (e.g. moving people away from riverbank)
Carlyon Beach and other piglet sound bluffs	Landslides	People who own homes or are thinking of buying homes in the area	Have the Washington Geological Survey map landslide hazards using lidar data so that the city, county and general public can know areas that are at risk
East end Skookumchuck valley	Possible dam failure		Everyone down stream on Skookumchuck river and possible the Chehalis river down stream of Centralia
Mile marker 95 of I-5	Flooding	Potentially all traffic between Seattle and Portland and residents in the area	Purchase of 2-3 acres to be used as drai ace.
Multiple locations in less developed parts of Thurston County with only 1 access road.	Road at locations with only 1 acces road can be blocked by fallen trees or fire, isolating people, wild and domestic animals and preventing them from leaving or preventing assistance from reaching their property.	People, animals, homes, businesses and the natural environment that have only 1 access road.	1) more rigorous maintenance (removal) of vegetation in ROW along county roads by county and property owners. 2) Neighborhood meeting periodically to develop communication and teamwork, identify and work on hazards. 3) Government and agencies with jurisdiction meeting

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			occasionally with neighborhood for oversight and counsel.
Rural areas such as south Thurston County and Yelm area are susceptible to wildfires.	Wildfires, floods.	Rural property owners.	Encourage property owners with livestock to develop evacuation and emergency response plans as designed by Thurston County Emergency Management Equine Outreach volunteer group. This protocol encourages livestock owners to identify emergency transportation resources, temporary sheltering, phone call trees, information collars for evacuation purposes, property grids informing fire and medical response where electrical boxes, propane, wells, water hydrants/faucets etc are located similar to Alberta, Canada’s emergency response system.
Rochester	Flooding	Housing and farmland	Keeping culverts and waterways clear and free of debris
Downtown Olympia Tsunami South County - Forest Fire	Everyone		Mitigate with early warning/education Additional fire resources, both preventative and reactive
North of Lacey there are homes overlooking Hogum Bay and DeWolf Bight	Landslide due to shore loss/bluff retreat as sea level rises	Homeowners	Buyouts, maybe slope stabilization
Nisqually Basin	Volcanic		
Rural, agro land	Tree falls on structures, vehicles, roads and power line.	Long power outages, loss of home and lives.	Trim back foliage/trees from power poles and lines. Develop info bulletins for home and

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			property owners and how to limit and prevent damage.
Carlyon Beach bluffs	Landslides	Homeowners	Better setback laws for new construction as well as thorough investigation of stormwater runoff/retention ponds' impacts to bluff stability. Possible buy-out program for severe at-risk homes?
7528 Cooper Point Road NW	earthquakes and wildfires	all residents	none
Johnson Point	Wild fire	Everyone, people, animals, wildlife	Land preparation and homeowner education. House hardening (roofs and eaves).
The Nisqually River is constantly in danger of flooding because of Tacoma Power's preference for power regeneration over public safety.	Those of us who live along the river have to constantly be on guard from November until March because we can't easily get to work or escape when the river floods. I've had to get FEMA assistance twice to repair our road and its bridges.	Those living on the flats along Old Pacific Hwy near Reservation Road are affected most but upstream we are affected too. JBLM employees will be affected most if another flood destroys the bridge over I-5. It's a National Security issue.	TPU MUST keep the Alder Reservoir much lower in the winter so there is more room to absorb high eaters coming from Mt Rainier during three day rainstorms or winter temperatures high enough to melt the snowpack.
Nisqually valley	Flooding and possibly volcano lahar or other downstream effects	Folks who live there and anyone needing to travel across the valley if I-5 becomes blocked or otherwise unusable	?
Rail lines along Case Road & Hwy.12	Hazardous and oil fuels	Scatter Creek, housing, soil and water contamination	An alert system-cellphone notification. Rail trains slow down thru environmentally sensitive areas
Nisqually river, I-5	Flooding, lahar, potential destruction of bridges and highway link to north.	Could affect everyone living in Thurston county. Potential disruption to supply routes for all resources. Could prevent	Update I-5 and other bridge infrastructure with modern bridges well above potential flood levels. Also mitigates sea level rise

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		commuters from reaching their jobs. Possibly limiting medical services if local hospitals become overwhelmed.	hazards. May need to raise road bed for portions that are too close to water level.
Mullen rd. RRXing/downtown back fill land/old growth trees by major thoroughfares	Excessive water ,mud slides, poor drainage ,liquefaction , hillside without proper stabilization	Traffic, homes, road closures, pot holes , power outage, tree damage,	Preventative work -tree trimming or removal, road improvement, retroactive shoring of properties -earthquake ,floods, improve drainage,improve road side areas (landscape,curbs,backfill,)
Flooding on the black river	We had almost no way out when the river flooded	Many people in the homes near Mimi mounds	Raise the road and bridge at at least one crossing. All three crossings of the black river were closed. And Delphi was closed in a couple spots. You could get around on waddle creek to black lake and get to Tumwater but even those roads had water over them
Nisqually Valley and I5 corridor is restricted during an event and I5 both into and out of Thurston County leave very little ability to evacuate an area when it is not passable there are very limited alternate routes.	I5 both into and out of Thurston County leave very little ability to evacuate an area when it is not passable there are very limited alternate routes.	Communities in Thurston County relying on I5 for evacuation routes. Or in an event could severely limit the supply availability in and out of Thurston County	Ensure alternate travel routes to evacuate are sufficiently robust to accommodate and alleviate the potential restrictions the event could cause. Enlarge the routes that run through Roy/Tenino etc.
Steamboat Peninsula, north of US-101 at Steamboat Island Rd NW.	Earthquake. As I recall there was a USGS study that identified small fault lines running across the Peninsula at roughly 71st St. NW. Also, there is a history of infrequent landslides across US101,	Landslide along US-101, especially if it includes Madrona Beach Rd., would make travel between Olympia and the Steamboat Peninsula area much more difficult. An earthquake	Area residents need to prepare for the possibility travel by road will be interrupted for a significant period of time after a disaster such as landslide or earthquake. In case of

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	northwest of the WA-8 interchange. Also, wildfire on the Peninsula could present a problem as there are only a limited number of roads (evacuation routes) providing access off the Peninsula.	could make transportation along Steamboat Island Rd NW much more difficult, potentially cutting residents on the north half of the Peninsula off from the south end and US-101.	wildfire, additional time will be needed to evacuate the peninsula before access routes are at risk of being cut off by fire.
I-5 crossing of the Nisqually River	Flooding / liquification / erosion of the road pylons	any Commercial and personal traffic	
Gadwell Court SE	Large forest area between the houses - love the view but vulnerable to wildfires and intense winds	residential area	need thinning and pruning of dead trees and ground brush
Hwy 12 through Rochester and Reservation	Flooding	Homes and access	not sure
Rochester. Close to Lewis Co.	Flooding	Close to Lewis Co. and typically is a flood zone	Nothing has changed and repeats frequently annually
Rochester	Flooding		A family member
Island View Ct NE, Olympia	Depletion of ground water supply, earthquake, fire, smoke, climate change.		Everyone, including our property.
Mounts road Nisqually river basin area flooding zone	Flooding		
End of bald hill rd South East part of county	Wildfires	everyone living beyond bad hill road and longtime road	Reopen the road between the back gate of clearwood And highway 7 in Pierce County. We need another way out in case a wildfire blocks Bald Hill road
Rural areas that could be affected by fire. Downtown Olympia is particularly vulnerable to both earthquakes and flooding downtown	Fire in rural areas. Flooding and severe earthquake damage downtown.	Rural residents. Downtown businesses and workers at risk of injury.	Grants to reinforce downtown buildings, and requirements/law to reinforce vulnerable buildings within a specific period or be declared uninhabitable.

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Alder dam	close to a mountain that could produce large earthquake	everything below it	remove the dam.....
Area where I-5 crosses the Nisqually River	Flooding	Residents of that area; commuters	Raised bridge; flood mitigation
Nisqually River at Nisqually	Flooding	Residents near river, commuters passing through	?
Nisqually Delta	Flooding	Residents	Prayers
1. Downtown Olympia & other shoreline areas. 2. Nisqually river valley. 3. Entire region.	1. Sea level rise; earthquake/tsunami/subsidence effects. 2. Floods; lahar effects from Mt. Rainier. 3. Climate change effects; intense heat episodes.	All of us.	Work to mitigate climate change. Improve disaster planning. Build public awareness.
Flooding around Scott Lake. Landslide during heavy rain on the hillside just north of the governor's mansion.	see #4	The flooding affects a number of residents in the Scott Lake area, many of whom earn below the median income. The landslide affects the state government, the railroad, and potentially anyone walking along the nearby path.	Flooding--huge problem. Best solutions: relocate; raise the homes on pillars; leave more forest to absorb the water. Landslide. Shore up the hillside. Maybe remove trees from the top edge of the hill. Probably have to cut into the existing parking lot above the hill.
West Olympia, Cooper Point Rd, logging and excessive clearing to build residential/commercial units	Loss of trees	Flooding and climate change	Great control on builders
Nisqually Valley, Budd Inlet.	Water damage from floods and volcano eruptions.	All of us.	None.
Near Mt. Rainier. Downtown Olympia.	Near Mt. Rainier: Volcanic and earthquake. Downtown Olympia: Flooding.	Near Mt. Rainier: People who live in towns or farms near Mt. Rainier. Downtown Olympia: Businesses, apartments, homeless people.	Near Mt. Rainier: Provide warning prior to earthquake and volcanic events. Downtown Olympia: Construct walls or higher soil next to low shores.

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downtown olympia and Budd inlet shoreline and bluffs	earthquake, and flooding	businesses and homes	no possible solutions
Portion of harbor area that is built on fill.	Earthquake liquifaction, flood damage	Residents and businesses in the area	More flood gates on storm drains connecting to the lake/bay
Rural areas and downtown Olympia	Rural areas fire. Downtown Olympia flooding due to rising water levels. Also unreinforced masonry buildings and brick chimneys in an earthquake. Chimneys above internal walls will come down straight through the roof and into a house. Brick chimneys on exterior walls will just pull away from the house a crumble.	Likely as eminent risk 1/4-1/2 the local population.	No new multi housing near the port or downtown that are less than 50-75 feet above sea lever. Grants or very low cost loans to reinforce masonry commercial buildings in the downtown core.
Soft soils by the water	Soils are prone to sinking and creating building instability	Economic vitality - downtown business owners, gov buildings, lower income apartment housing	Retrofitting buildings, preparedness kits for longer term, public community plans showing routes with potential impact to infrastructure
Downtown Olympia, Nisqually Valley, Thurston County	Sea level rise and flooding from the mountains, fires in all of Thurston County	Natural area, animals, sea life, humans. Livability	Less auto traffic and more mass transit. Stop urban sprawl. Move people away from the sound shores and river banks.
Marine shoreline within 2-5 feet elevation above HAT (highest astronomical tides). Ie, nearest tidal station to Thurston County with HAT info to is Tacoma, where HAT is 1.87ft above MWWW. And highest observed tide is 3.09 ft	Since highest annual tides occur mid-winter, co-occurrence with extreme storms have potential to raise marine waters 2+ feet above HAT, imperiling residences and infrastructure.	Shallow gradient marine shorelines are most at risk, but all marine shorelines would be affected.	Establish at least one tidal station in southern Puget Sound, eg, Budd Inlet that will include all datums, ie, HAT. Use this info to survey elev of near shore infrastrucure and all new county permits. Inform shoreline residents of potential

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above MWWH. <a href="https://tidesandcurrents.noaa.gov/datums.html?id=9446484">https://tidesandcurrents.noaa.gov/datums.html?id=9446484</a>			flooding during severe storms coincident with highest tides.
low-lying areas - such as downtown Olympia	Subject to impacts from sea elevation change.	all of us.	protection of downtown by making site more resilient and potentially constructing sea walls.
GreenCove Creek Basin and Downtown	For Green Cove Basin- Flooding, landslides , toxic contamination from MTCA site, loss of aquifer recharge areas leading to loss of habitat for salmon and continually lowering aquifer levels that threaten the drinking water supply for the City and Cooper Point Rd. And the strategic groundwater reservation Flooding, earthquakes, tsunamis for downtown	Our drinking water aquifers Wildlife habitat Infrastructure from landslides and flooding Public health	Do not allow any development in any critical areas County wide monitoring of aquifers for water quantity AND quality, including testing for chemicals
Olympia Watershed Park, county prairie lands (wildfire) i.e., Rocky Prairie (Old Hwy. 99, Waldrick Rd,). Mima Mounds.	Wildfire encroaching on residential and out buildings.	Residents and property owners.	Safety assessments to show cause for fire safety barriers, access for fire suppression equipment.
Flooding along shorelines from sea level rise and especially downtown Olympia	Very vulnerable.	It will impact the local residents and businesses but also all tax payers since we will likely pay for preparation and response.	Stop developing in a large portion of downtown Olympia. The 'walled' area should be enough to save the east-west street connections. Stop the port deep dredging and shipping to free up funds for other Port activities that are not water dependent.

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Sea level rise - downtown Olympia, I-5 at Nisqually	Flooding and transportation bottlenecks	Commuters, downtown businesses, unhoused people	Infrastructure improvements
I5-US101 intersection and Nisqually area.	Flooding, landslides, earthquake, volcanic runoff	Everyone	South county bypass around other side of JBLM would avoid this area and Nisqually too
West Olympia above Deschutes Parkway and West Bay Dr	Landslide from an earthquake	Local residents	Awareness and individual resident action to keep the slope stable.
Along the sound in Olympia and Nesqually	Tsunami	Everyone in the immediate area	None
Ridgeview Estates , a residential development off Martin Way East & backside of Steilacoom Rd. SE before the crossroad of Duterrow Rd. SE / Meridian Rd. NE	Mostly wildfire potential than earthquake , severe storms	Most of the residents especially on the periphery of the development due to forested areas	Would be prudent to know what steps to take if in fact a fire or earthquake occurs. What’s the best way to help ourselves & our small community if fire & emergency rescue services are unable to reach or assist us . How would we evacuate, especially if there’s structural damage on I-5 ?

Yelm

Location	Description	Affected People	Solutions
McKenzie Ave SW in Yelm and 170th St SE between Walmart and 103rd Ave SE in Yelm	Both roads frequently flood	There are houses and apts near McKenzie (I believe potentially low-income apts) that have the road connected to the driveways frequently flooding. Also impacts residents trying to go to Walmart via 103rd Ave	Retrofitting the road to be more flood resistant and improving stormwater facilities
Rural areas such as south Thurston County and Yelm area are susceptible to wildfires.	Wildfires, floods.	Rural property owners.	Encourage property owners with livestock to develop evacuation and emergency response plans as designed by Thurston

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			<p>County Emergency Management Equine Outreach volunteer group. This protocol encourages livestock owners to identify emergency transportation resources, temporary sheltering, phone call trees, information collars for evacuation purposes, property grids informing fire and medical response where electrical boxes, propane, wells, water hydrants/faucets etc are located similar to Alberta, Canada’s emergency response system.</p>
<p>The Nisqually River is constantly in danger of flooding because of Tacoma Power’s preference for power regeneration over public safety.</p>	<p>Those of us who live along the river have to constantly be on guard from November until March because we can’t easily get to work or escape when the river floods. I’ve had to get FEMA assistance twice to repair our road and its bridges.</p>	<p>Those living on the flats along Old Pacific Hwy near Reservation Road are affected most but upstream we are affected too. JBLM employees will be affected most if another flood destroys the bridge over I-5. It’s a National Security issue.</p>	<p>TPU MUST keep the Alder Reservoir much lower in the winter so there is more room to absorb high eaters coming from Mt Rainier during three day rainstorms or winter temperstures high enough to melt the snowpack.</p>

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Appendix B: Additional Notes

Notes
county and city governments need to work much more closely together to address these issues. Both need to get past their viewpoint of project by project approval, and look at the entire system, and what it needs to function properly to withstand disasters.
Public funds to those who can't afford to have basic preparations
I see the government's primary roles as setting and enforcing standards, developing and transmitting procedures to follow, and developing reciprocal agreements with other communities.
I think utilizing natural environment prevention measures is important. For example not building in areas with natural cyclical flooding and estuaries. We need to utilize the natural environment to accommodate water intrusion and other natural events rather than a "hardening strategy".
Folks need to learn more about what they can do, personally. They also need to be aware of disinformation & misinformation. Government, non-profit orgs, private orgs who care, etc. can't do this alone. The public needs to get behind this more so that each of us starts to decrease our carbon footprint on basic personal level. And this may start with having to combat the amount of nonsense and ignorance that some information sources are choosing to spew out to the public.
Ensure all levels of government and responders have plans and regularly exercise those plans.
Trainings and community networks
I think most of us understand that the problems we face are not going to go away on their own. We have to think about what we are going to do when the worst case scenario occurs and have prepared as much as we can to be ready for that.
Include economic development practitioners in planning
I think that the Port of Olympia is negligent in communicating it's role in disaster response/recovery which concerns me that I'm not sure that they even know it's their role. ThurstonStrong was the model for economic disaster associated with pandemic response.
allowing for grants to help home owners looking for vulnerabilities in their homes
a wind storm can take power out for weeks. improve power restoration.
I recall in the past that our neighborhood associations had a plan for what our responsibilities would be in case of a disaster.
i like receiving alerts, it's helpful
I think a map describing which bridges are the safest to travel after an earthquake would be useful for planning purposes. People will need to travel to get kids and go home. The usual route home may not be the safest.
I didn't mention our highway system to and from Thurston County but we definitely need to replace the I-5 bridge over the Nisqually. If that goes, it will be a nightmare and really costly compared to even the cost to fix now.
Setup clear communication for disasters (like a simple website with who to call for what issue - this info gets lost on government sites and people are stressed out when they need the info)
My neighborhood is situated on very dense, coarse gravel, sand, and boulders, and slopes are very gentle, so we are not as at risk as other locations in Olympia.
More action and less meetings. Use taxpayers money to actually make a difference and not for a bunch of talking heads and numerous impact statements etc
Educate not regulate.
Not sure if a lot of the current summer road construction projects can also include road improvements to prevent flood impacts.

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Olympia seems to be at cross-purposes by encouraging increased downtown residential areas while talking about preparing for sea-level rise.
Clarify how many days of potable water supplies should be on hand at every residence until emergency services become available.
Subscribers to existing emergency alerts should stay subscribed until the opt out. I've had to resubscribe several times. Often do not receive alerts even while subscribed (find out from neighbors).
There should be a funded effort for swift water rescue incident response teams, and multiple units should be designated to serve the Chehalis and Nisqually rivers, during flood events. Not just for people but for livestock and animal rescue, additional facilities for holding these animals should be identified, like fairgrounds.
stop thinking URBAN and recognize the impact on rural is often substantially more intense due to existing limitations on vital infrastructure and access to essential services during disaster events.
I hope we have some opportunities to use federal infrastructure funds to prepare our communities.
Reduce the carbon footprint of the county
Keep pushing toward net zero carbon to do our part to lessen climate change impacts.
Would love to see an ongoing series of education for preparedness. Maybe focus on giving discounts for rain barrels or other emergency supplies
Warning systems to give more time for self-protection in case of earthquake and tsunami would help
A different way to look at fires is equating it to population and not climate change, unless the population increase is a type of "climate". You have 5 people at your house and nothing gets broken. You have 100 and things get broken. Population increase negatively increases fire danger.
I would like to see public subsidies available for lower-income households to build and maintain their own emergency-preparedness kits. Or, provide pre-made kits at low or no cost to as many people in need as possible. Thank you!
I would like a government - sponsored program to bring groups/neighborhoods together for the purpose of identifying and mitigating hazards pertinent to their immediate area. Then, train and inform them as to how to address hazard issues. Rather than an overarching approach, involve people on a micro-local level. A bit the way that Next Door operates, but from a hazard mitigation standpoint. I have a lot of ideas regarding this and how it could be implemented at low cost to the state.
Education and planning/permitting seem like the most important activities
Thank you for engaging the community!
Instead of talking need to start doing. Hazards have been the same for ever. Do something and do not put the burden on the tax payer. Quit throwing money into other useless projects.
There needs to be better transfer of information to new property owners of previous hazards that have affected the said property. The lot in front of us was under water for 10 days with over a foot of water, yet when the property was sold, the new owner was only told that there was "some water" on the property. She was led to believe that it was just a little standing water. If Scatter Creek floods our area again, their well will be under water.
Please don't forget about those of us who live in unincorporated Thurston county :)
We need more alerts and notifications.
This should be high priority. Time is ticking. Not if but when. When could be next week.
People need to be made aware that in the event of a disaster, they are on their own. They cannot rely on someone else to save them, come for them, provide for them. I have seen time and time

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again that people fail to prepare, expecting to be "rescued". Then they get upset when that rescue does not come. Wake up people!!!!
Drinking water availability and emergency medical services after a major earthquake.
Taking care of the homeless issue. There's no excuses for them taking over private or public property. It's an outsider way of life. It detracts from bigger issues. I shouldn't see scorched trees while walking around town. Or "home made" dwellings near sidewalks and trails. I've crossed paths with more needles than I should. Treat services are out there!!! If I can gain employment... so can the next guy/girl.
I have a lot of large trees and I love them, I would never cut them, but I am losing some to root rot. I think for residential properties that that have a lot of tree growth and the people are worried about fires I would not require a permit that cost money. The owner only need proof that it is not timber land and that it is a danger.
Public service announcements and announcements on local newscasts.
Every property owner should evaluate properties' situation, structure, etc. Stock emergency supplies starting with "blue tarps" for damaged roofs, clear plastic sheeting to cover broken windows and any other nonperishables to sustain life in (relative) safety and comfort.
The most vulnerable groups are the least likely to have resources. Enable those who can to protect themselves and make it clear they'll be on their own for a while. Plan to fully support people on the edge of society.
Our family had an emergency late in December of last year requiring trips to the hospital. We live in a rural area in the SE county. There was snow, then rain. There are two areas that had flooded badly. I had no choice but to drive through since there was no way to turn around, but the water was deeper than one should attempt in a sedan. Both of these areas have flooded before, but never this much, in my experience. It felt very dangerous. One of them happened because a homeowner recently clear cut a hill behind their house, the other is at the end of Rainer Road, where it meets college. I hope that these can be corrected before the next flood happens.
Local governments need to put welfare of people above their own political, developer and corporate interests...really.
A few years ago I was on my way home from shopping,when I got to Hwy 12/Pecan Street where a tree and the surrounding grass had caught fire. I ran home and packed our to go bag, our dogs to go bag, grabbed our important papers and began getting both our vehicles out of the area. My husband notified neighbors and set up sprinklers. There was no notification, no warning that this was going on and had I not passed in enroute to home, I would have never known. The trains that year were also setting the fields on fire. DO SOMETHING about the tall grasses and that goes for property owned by the cities, counties, state and railroad as well.
I would like to see more emphasis on personal accountability and resiliency versus the (what I believe to be widespread) impression that Federal, State, or County resources will rescue everyone.
Yes, I am available via email to do a meeting with you folks. Thank you.
Set up information booths at public events and the farmer's market.
Bring resources to the community, especially to rural residents
Build mass transit. No charge to ride.
If the American Red Cross is not already involved in this planning, please invite them in. Local expertise may be limited, but nationally the Red Cross is knowledgeable in disaster mitigation, both before and after. They should be part of the county emergency management as well as emergency preparation. Thanks. <a href="https://www.redcross.org/about-us/our-work/disaster-relief.html">https://www.redcross.org/about-us/our-work/disaster-relief.html</a> <a href="https://www.redcross.org/local/washington/about-us/locations.html">https://www.redcross.org/local/washington/about-us/locations.html</a>

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I think the single greatest thing we can do as a society is encourage individuals/families to be prepared. Education is the key to this. What disasters are we likely to face and what can we do to prepare? Education about what to have in an emergency kit is helpful, but sometimes guidance is kind of limited. For example, "first aid kit" is not clear enough. If I buy a first aid kit it really only comes with band aids and ibuprofen. But then I feel prepared because I bought the thing the guidance told me to.
I5 corridor is only major thoroughfare going North and South... when it is out due to flooding, water levels things stop! We need a diversion route that can be used.... way past time and it needs to be this side of the mountains.
Regional coordination efforts are commendable. They need to be continued and expanded.
Maintain up-to-date information for the communities at risk.
Continue to support and require developers to include greenbelts in developments. It helps lessen the impact of flooding, reduces the overall local surface area of impervious surface areas that leads to greater erosion and local heating, and helps keep local temperatures lower which helps reduce fire risk as well as cooling household needs.
Ideally, public transport would be a priority for investing in resilience, since post-disaster use of highways by all vehicles may be very limited. Also, residents need to know options for getting impt info if cell-phone and internet hardware are not functional.
Alternative to I-5 in Thurston county is urgently needed.
power grid is very fragile
Underground electrical lines would prevent downed power lines that could cause shock or fires.
There is no end of money to accomplish all the above, but that doesn't mean we do nothing. It's important to build capacity in all the above areas... just keep at it.
amber alert type system
The more we can do to reduce the worst heat island areas now (giving shade trees a chance to grow, for instance), the better. We also need to build under the assumption that flooding will be more extreme, and with floodplain management in mind.
You're doing great.
There is not enough attention paid to our dwindling water resources, tree canopy and loss of biodiversity because of the overriding interests of development. If you don't resist this unyielding pressure to build more, there's no way to stop these disasters. Without recognition that all of our well-being is completely dependent on the water, policies will continue to allow overuse and degradation. I hope our local government has the strength and resolve to say No to unwise development that further threatens our precious and irreplaceable resources.
It would help if local governments (Olympia) would assess and act on fire hazards from City property as they impact residential properties.
Reduce CO2 emissions
Make the electrical grid more resilient! Our power goes out far too frequently. As rising temperatures place more pressure on the power supply, this will be an even bigger problem. Microgrids may be one solution, or the ability to use solar panels in the event of a power outage.
I'd like to see more local government led coordination of neighborhood-level preparation for disasters. And my true answer to #8 would be 'procrastination' -- probably the biggest barrier to personal prep is 'I'll do it tomorrow.'
The local governments should focus on what they can do to reduce climate emissions. These actions will have other benefits. Don't encourage or support sprawl and development in flood prone areas.
We need to do more to deal with climate change in our community.

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Planning for harm reduction and trauma informed care for people impacted in disasters
Are economic development directors at the table?
Don't waste our money! Use it wisely. We work hard for it; you hardly work for it!
Some kind of neighborhood inventory of residences - who has disabilities, how many have serious health issues ,how many live alone, who has no outside transportation, who has pets, how many and type, etc.....
If you look at Japan who is normally way more prepared than the United states you will see that even with all the preparation they had, they really couldn't do much against mother nature
House the homeless
Homeless camps have started many fires. I hope the local gov realizes how big of a risk this is to surrounding homes and infrastructure.
Worried about well mitigation
Are you planning for just one earthquake scenario? For example, the Full Rip versus the Seattle fault?
Fire evacuation
It is very important and education/outreach is vital to understanding local issues and opportunities for improvement/awareness.
don't raise any taxes to do these things
Make evacuation routes visible and up to date.
Removal of the 5th ave dam will improve floodplain and reduce climate change in the area
Removing the 5th ave dam in downtown Olympia would mitigate effects of climate change and flooding
Seminars, classes for the public for educating about disaster preparedness given by police, firefighters and first responders.
Make this initiative a priority with Thurston County.
I feel like the community does well. I just wish clear steps to take.
One thing I suggest we need to look at is food supplies. The amount of produce, green house tomatoes, bell peppers, mushrooms, etc. that we import from Canada and from south of us up I-5 leaves us vulnerable to problems. In both cases I-5 is an important tool that brings in a lot and if it is damaged in an earthquake or cut by flooding or some other problem occurs with the supply chain the area will have a problem. Why hasn't the greenhouse business developed in this area? If it did that might reduce the potential problem that would occur in a disaster and it probably would have a number of other benefits as well that are not the interest of this discussion at the moment. Are the land use regulations standing in the way? If so they need to be repealed. Lots of places have well developed greenhouse business why can't we do the same? Sincerely, Michael H. Wilson
Efforts to connect neighbors and neighborhoods.
Better-consolidated information on the supplies to keep on hand. Each source seems to provide different information so it's difficult to know what is really necessary. Also, when and how to rotate items - water in plastic jugs expire (the plastic degrades), and it seems like many of the food stuffs are not meals I would normally eat, so they expire and get tossed. Also, the number of items I've seen on various lists are appropriate only for sheltering in place, not for being mobile.
Promote increased communication among residents to help our neighbors (GMRS/FRS radios, presentations to HOA's etc). We seem to all hibernate and not talk to all of our neighbors.
A "disaster bank": like a food bank provides food to the community from donations, there should be a way to donate preparedness items in our community.

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The survey above should include questions related to cost/benefit. most citizens don't recognize that changing building codes to make structures "more" resilient will increase the cost to housing and businesses. At a time when the nation is trying to find ways to create "affordable housing" the increased cost of changing building codes to make structures "more" resilient needs to be considered. So the real question is... are current building codes sufficient? The seismic requirements in Building codes have been changed significantly over the years so at what point are they "good enough"
Education, Preparation
Community fair or neighborhood meetings
It's hard to maintain urgency with something that *might* happen. I appreciate your efforts.
Regulate climate change
Incorporate businesses and VOADs with the plan.
How to Prepare for Climate Change Book by David Pogue - great resources for general disaster preparedness. Very useful regardless of what you think about climate change.
Provide organization and training for community action response teams.
Wild fire evacuation plans. Paradise, Ca. and Redwood Valley were last minute. I think we need sirens placed ?
Lack of community education and disinterest by the public. Start with the kids in school and hope to reach families.
I live here because there is almost zero danger of natural disaster.
Our hospitals can not handle a large scale emergency
Certain medications are only available through a prescription. One disaster advice is to "stock up" on medications. How do I stock up on insulin when the amount I am allowed is limited by prescription and my insurance? I am insulin dependent. Disaster advice says not to rely on normal infrastructure and services in the weeks and months post disaster, so I assume I won't have access to insulin then. How are you pre-emptively helping people dependant on prescription medications to live?
I think my community does fairly well. Just some people don't know what they don't know. Thank you.
Consider equity. Who are the least able to recover from disaster? Pay special attention and provide resources to assist them.
Less reliance on communications infrastructure working in a crisis.
Fox the roads
Engage HOAs and provide grant funding.
Evacuation routes for people at sea level.
It might be a good idea for the South Bay Fire Department to hold a fire information event on how land owners can lower their property's fire risk.
Direct growth away from downtown bridges.
Yall want to burn down downtown and start over anyway.
Thurston County, the Nisqually River Council, the Nisqually Indian tribe, private citizens who live along the river, TPU and Centralia Dam representatives should form a committee that meets regularly to improve our protection from flooding.
During heavy snow. Start plowing main entrance/exits in subdivisions.
Governments also need to focus on at risk groups such as the elderly, handicapped and homeless as well.
1) Better information about flood and earthquake insurance for home owners and regulations to ensure this type of insurance is offered, funded and reliably will offer coverage in our region. 2)

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Funding to reduce cost of new and replacement energy star rated heat pumps that can provide residential cooling during extreme heat. Local companies are charging astronomical prices due to recent heat waves and pent up demand. Installation prices quoted regionally are thousands of dollars (sometimes double the cost) above what a similar units cost to install on the east coast. Companies appear to be price gouging following last summer’s extreme heat and this could cost lives.
People don't care until something happens. Then, they blame gvmt. (Ref. Oso landslide)
Stricter rules on yard waste burns especially large properties
Get a better governor
Cellphone notices
Join the amateur radio network for communications when all else fails.
At some point, residents have to become aware of and take responsibility for their own safety in the event of a significant hazardous occurrence. We should not be their babysitters.
We store drinking and other water. Canned and dry food in case power is out a long time. Extra soap, paper products and dry power to make drinks. Charcoal for grill to cook.
Provide more support for TC Emergency Mgt to provide education on preparedness and support it’s volunteers! Sponsor more CERT classes.
Mitigation is key! Programs need to be tailored to reach their intended audience. Volunteers groups, neighborhoods, communiites, who are already engaged in preparedness activities should be engage in this process to better understand what works and what doesn't.
I think people generally don’t think about this nor really want to discuss the reality. That’s been our experience in this neighborhood but we think about it. We’ve cleared a lot of trees around us & have placed a sprinkler system on our roof which we use in the evening as preventive measure during high heat weather with accompanying dryness.
Extreme winds and wildfires will come to western Washington with increasing frequency, due to global warming. Extreme rain, ice and snow events will also increase. We are not prepared!
Beware of any federally funded money that by accepting it the public is made aware of their rules & regulations that come with their funding once used on these projects that there is no reversal of them when put into effect once the money is exchanged ! Look long & hard at the terms they aren't advertising to the public prior to making the deal you must be aware of to make an informed decision on how to proceed or it will be for our ruin to give government total control over us!!!!
Encourage CERT and Red Cross training opportunities.
Interested in neighborhood activities to better plan collaboration if the earthquake cuts off services
we need aa better state highway system. Right now there are major choke points in the several areas in case of evacuation or getting aid to communities.
We have a MAJOR GAP in how people receive information in our community. The paywall on the local newspaper is obscene and the 'volunteer-led' facebook group called 'Thurston Co. Scanner, News, & Weather Blog' is a toxic social media environment full of speculation and bigoted/disgusting commentary. Trusted journalism is important. Do better.
We need a NET program similar to the model that Portland has, which I was a part of. We don't have enough emergency workers to handle the fallout of a major earthquake.
I think it is important to think of global warming and what that is going to do to the lower city of Olympia near the port and how the area would be protected. Like Florida has Cities that are lower than sea level. I would think there would be need to start implementing those protections now to protect if parts of the City of Olympia end up below sea level.
Everything is expensive to do... I would prepare if I could afford too

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In our current state, if we have a disaster, we will be in a total mess. We barely got through the first year of the pandemic because we had done NO planning for such an event. Especially hard hit were unhoused individuals, but many others were affected as well: small businesses, hospitals, local governments, etc., who had not clue how to respond and little help from any source.
It's directly related to climate change and the general public is very unprepared for it.
Funding available for folks in poverty to be protected too
Need community involvement.
More neighborhoods have the resources to inform and assist neighbors to have at least a base of preparation
Local residents should continue to be encouraged to participate in Map Your Neighborhood, to plan to meet a disaster, with neighbors in a smaller area. In my area, the Griffin Neighborhood Association (SteamboatIsland.org) has done a little work on this, but more could be done.
It can be confusing and overwhelming to have many emergency alerts from many sources (county, TESC, FEMA, etc) for many areas in the county. I know they update sometimes more than once a day with changing conditions. I know they are for greater areas like the whole county and for more specific areas like a subsection of a town. But it gets overwhelming to get so many messages and makes me not understand what is going on where I am. Cause I get confused about the update for a nearby area. It would be nice to have a harmonized text alert that addresses the phone's location and the greater county all at once (since you might be moving around) and with less frequent updates after the first update (only with moderate chances announced). Less overwhelming and confusing please. And consolidate the source!
I'd like to see more opportunities for training for community responders
View Jason Bierman's video "When We're on an Island..." <a href="https://www.youtube.com/watch?v=5bFUcmBAfUc&amp;list=PLD9Z0YRY2Cqwglu6oyVBWXpSfpQy9KgfG&amp;index=2&amp;t=13s">https://www.youtube.com/watch?v=5bFUcmBAfUc&amp;list=PLD9Z0YRY2Cqwglu6oyVBWXpSfpQy9KgfG&amp;index=2&amp;t=13s</a>
HOA work within their communities
Figure out how Thurston County could function if our freeway access were cut off.
Community engagement. Setting up neighborhood networks to support each other.
Developing community response versus reliance on government aid
Feel fairly hopeless about changing attitudes of all the yogis that deny there's a problem. By not sure it's a good use for money
Check and correct evacuation chokepoints. Areas such as the bridge in McKenna, that is a chokepoint. There are others.
stop spending more on useless waste.
I think some of the infrastructure such as bridges/ roads in area concern with earthquake
Hearing community often recieve FIRSTHAND previligies, treatments whenever it comes down to alert, spreading news, etc NOW WHAT about deaf, hard of hearing communities. We are taxpayers but are LEFT IN THE DARK
Allow people to cut down trees on and off their property that will fall on their house during a large windstorm. The current tree management policies and regulations can cause direct harm to humans when those trees fall on property. People can be hurt or killed, resources have been destroyed, new resources must be extracted to create a new living space for the displaced humans.
You can have the best, most expensive, proactive program about preparedness, hazard awareness and most will not observe or prepare because most have been conditioned that the govt will take care of me...

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Not sure we know how much to reinforce structures to survive "the big one". Its sort of an unknown so what is the balance between dollars and enhanced reinforcements. Don't want building to be prohibitively expensive. Already feel we are safe. More so than many other places who dont enforce building standards. Really appreciate reminders and zoom sessions on disaster preparations. The community zoom meeting with Japan was really enlightening. Like zoom because so easy to join in an learn.

I work in local gov and consider myself to be pretty informed about what's going on, and I even don't know where to start! It would be good to have a local expert or contact to start with for residents who want to improve personal preparedness or long-term resiliency

Getting people to be prepared for 2 weeks....or 2 months is incredibly important. A massive event will leave people on their own for a significant period of time. The hurricane in New Orleans took years to recover.

Please provide all information in Korean

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## Appendix C: Community Survey



# HAZARDS MITIGATION PLAN FOR THE THURSTON REGION



Thurston County Communities Natural Hazards and Resiliency Survey

**How can we make Thurston County communities more disaster resilient? Over 20 local government agencies including the county, cities, schools, emergency services, transit, and other special purpose districts will evaluate strategies to reduce community risks from natural hazards such as earthquakes, floods, severe storms, and wildfires.**

**Your feedback on this survey will inform actions to be adopted by local governments to reduce losses. All responses will remain confidential.**

***This survey can be provided in alternate formats by contacting the Thurston Regional Planning Council at 360.956.7575 or email [info@trpc.org](mailto:info@trpc.org).***

**Hazard Awareness**

1. How concerned are you about the effects of the following natural hazards impacting your community?

	Not Concerned	Somewhat Concerned	Very Concerned	No Opinion
Earthquake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extreme heat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flooding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landslide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tsunami	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Severe storms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Volcanic Activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildfire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Are there any other hazards not listed above that you are concerned about?

3. Are you aware of any areas within the greater Thurston County region that are vulnerable to natural hazards?

- Yes
- No
- I'm not sure



# HAZARDS MITIGATION PLAN FOR THE THURSTON REGION



## Thurston County Communities Natural Hazards and Resiliency Survey

### Community Vulnerability

4. Where in the region is this vulnerability located? Please describe with landmarks, cross-streets, or any other identifier.

5. What is the vulnerability?

6. Who does this vulnerability affect?

7. What possible solutions do you see to the problem you described above?



# HAZARDS MITIGATION PLAN FOR THE THURSTON REGION



## Thurston County Communities Natural Hazards and Resiliency Survey

### Preparedness

8. What barriers prevent you from taking steps to achieve greater personal preparedness for natural disasters, or to reduce your household’s risks from the impacts of hazards? Please select all that apply.

- I’m not concerned
- I have other priorities
- I don’t know if my household is at risk
- I’m not sure where to start
- I’m a renter
- I don’t have extra money to spend on hazard resilience/preparedness
- I have already taken action to prepare for natural disasters and hazards.

9. How do you currently receive information about hazards in your community? How would you prefer to receive information? (Choose all that apply)

	Currently Use	Prefer to use
Local or regional news (newspaper, TV, radio, websites, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
Local or state government (websites, email, social media, newsletter, public meetings, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
Other websites, email, social media, newsletters, meetings	<input type="checkbox"/>	<input type="checkbox"/>
Thurston Community Alerts Subscription	<input type="checkbox"/>	<input type="checkbox"/>
Church or other faith-based organization	<input type="checkbox"/>	<input type="checkbox"/>
Homeowner association or other neighborhood groups	<input type="checkbox"/>	<input type="checkbox"/>



# HAZARDS MITIGATION PLAN FOR THE THURSTON REGION



## Thurston County Communities Natural Hazards and Resiliency Survey

### Actions to Reduce Losses

10. How important is it to you for local governments to focus on the following hazard reduction activities?

	Not sure	Not important	Somewhat Important	Very Important
Education and outreach activities to improve the publics' hazard awareness and preparedness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Studies to improve communities' understanding of hazards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administrative and development regulations to strengthen resiliency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hazard notification systems to improve public warnings and evacuations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building retrofits to reduce their vulnerability to hazards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strengthen critical facilities, roads and bridges, vital infrastructure and utilities, and essential services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Is there anything else you would like to share about improving disaster resiliency in your community?

12. If you would like to receive notifications about upcoming hazard awareness events, mitigation planning updates, and opportunities for public participation, please provide your email address.



# HAZARDS MITIGATION PLAN FOR THE THURSTON REGION



## Thurston County Communities Natural Hazards and Resiliency Survey

### Demographics

Information about your race, ethnicity, age, income, and/or gender that is provided voluntarily through this survey may be used to monitor Thurston Regional Planning Council's Title VI program.

#### 13. Where do you live?

- Bucoda
- Chehalis Reservation
- Lacey
- Nisqually Reservation
- Olympia
- Rainier
- Tenino
- Tumwater
- Yelm
- Unincorporated Thurston County
- I don't live in Thurston County
- Prefer not to answer

#### 14. How long have you lived in the Thurston County area?

- Less than 1 year
- 1 to 5 years
- 6 to 9 years
- 10 to 19 years
- 20 years or more
- I don't live in Thurston County
- Prefer not to answer

15. What is your current housing situation?

- Rent
- Own
- Experiencing Homelessness
- Other
- Prefer not to answer

16. What is your gender?

- Female
- Male
- Non-Binary
- Other
- Prefer not to answer

17. What is your age range?

- 0-14
- 15-24
- 25-39
- 40-54
- 55-69
- 70-84
- 85 or older
- Prefer not to answer

18. What is your race/ethnicity? Please select all that apply.

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White
- Prefer not to answer

Other (please specify)

19. What disabilities do you experience? Please select all that apply.

- Deafness or serious difficulty hearing
- Blindness or serious difficulty seeing, even with glasses
- Serious difficulty concentrating, remembering, or making decisions because of a physical, mental, or emotional condition
- Serious difficulty walking or climbing stairs
- Difficulty doing errands alone such as visiting a doctor's office or shopping because of a physical, mental, or emotional condition
- None of these apply
- Prefer not to answer

20. What is your annual household income?

- \$14,999 or less
- \$15,000 - \$24,999
- \$25,000 - \$34,999
- \$35,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- \$100,000 or more

Visit [www.trpc.org/hazards](http://www.trpc.org/hazards) to learn more.

Staff contact: Paul Brewster, Senior Planner at Thurston Regional Planning Council, at [brewstp@trpc.org](mailto:brewstp@trpc.org) or (360) 741-2526.

#### **Acknowledgments**

*Thurston County would like to thank and acknowledge the Washington Military Department's Emergency Management Division and the Federal Emergency Management Agency (FEMA) for its financial support of CFDA No. 97.047 for this project. This publication does not constitute an endorsement by FEMA or reflect FEMA's views or policies.*

## Thurston County Summer Weather Hazards Seminar

**May 31, 2023**

**11:00 a.m. – 1:00 p.m.**

**Emergency Coordination Center Training Room or Zoom**

11:00 a.m.	<b>Welcome and Introductions</b>	<p>Ben Miller-Todd Thurston County Emergency Services</p> <p>Leonard Johnson Thurston County Fire Chief's Association</p>
11:05 a.m.	<b>National Weather Service Outlook</b>	<p>Reid Wolcott National Weather Service</p>
11:20 a.m.	<b>Puget Sound Energy Wildfire Preparedness</b>	<p>Michelle Boll Puget Sound Energy</p>
11:35 a.m.	<b>Wildfire Ready Neighbors</b>	<p>Jennifer Coe Washington Department of Natural Resources</p>
11:50 a.m.	<b>Wildfire Smoke Preparedness</b>  <b>Hazardous Weather Extreme Heat Response Plan</b>  <b>Cooling Shelters</b>	<p>Dan Nelson Olympic Region Clean Air Agency</p> <p>Kaitlyn Kelly Washington State Department of Health</p> <p>Keylee Marineau Thurston County Public Health &amp; Social Services</p>
12:10 p.m.	<b>Thurston County Risk Reduction Strategies for Wildfires</b>  Topics discussed include: <ul style="list-style-type: none"> <li>• Wildfire Mitigation Activities</li> <li>• Prescribed Burns</li> <li>• Burn Bans/Fireworks</li> <li>• Evacuation Planning</li> </ul>	<p>Paul Brewster Thurston Regional Planning Council</p> <p>Josh Cummings &amp; Staff Community Planning &amp; Economic Development</p> <p>Thurston County Sheriff's Office Evacuation Planning</p>
12:55 p.m.	<b>Questions</b>	



## Thurston Region Hazard Mitigation Draft Actions Survey - Regional

Help Shape how Thurston County Communities Reduce their Risks from Hazards

**Over the past year, local governments in Thurston County have been updating the Hazards Mitigation Plan for the Thurston Region. Local governments identified the main hazards that pose risks to our communities, and looked at how these hazards may impact people, homes, infrastructure, and other community assets. To learn more about natural hazards in Thurston County, and this plan, visit our [online Open House](#) before taking this survey.**

The planning partners would like your feedback on 12 countywide regional actions. After you complete the survey, you will be redirected to the open house. You are encouraged to provide feedback on other communities' mitigation action surveys.

*This survey may be provided in alternate formats by contacting the Thurston Regional Planning Council at 360.956.7575 or email [info@trpc.org](mailto:info@trpc.org).*

### Regional Actions

Review this list before responding to the next two survey questions.

#### Actions that Address Multiple Hazards

##### **Countywide Emergency Shelter Capacity and Operational Assessment (A)**

Conduct a pre-disaster emergency shelter facilities assessment to look at staffing, support services, materials, funding, and agreements to support shelter operations for a range of durations and needs.

##### **Critical Asset Management System (B)**

Critical assets include subject matter experts, specialized teams, and specialized equipment that supports emergency response and recovery needs. Developing and maintaining an inventory of these resources and a system for tracking requests can help reduce losses and speed recovery activities for both pre- and post-disaster emergency situations.

##### **Critical Infrastructure Inventory (C)**

Maintain an accurate and complete database of critical infrastructure such as bridges, water systems, medical facilities, and energy utilities to improve communities' ability to look at risks, identify vulnerabilities, and prioritize the restoration of essential lifeline services during post-disaster recovery.

##### **Evacuation Route Planning for Catastrophic Dam Failure and Volcanic Lahar (D)**

Develop an evacuation plan for potential dam failure and lahar hazards. The plan will include routes, alert notification protocols, signs, staging areas, public education, emergency sheltering needs, operational plans, and training for organizations and personnel who would be involved in evacuation operations.

##### **Hazard Modeling and Loss Estimation Capacity Building (E)**

Build local knowledge and technical skills to develop, operate, and maintain community-specific hazard modeling tools that include local data. Local modeling tools can inform planning and decision making for hazard mitigation, emergency management, disaster recovery, and training.

##### **Lifeline Transportation Resiliency Route Planning (F)**

Identify and map "lifeline" transportation routes that are critical to keep functioning or restore during and after a disaster. Identifying routes will also help the region prioritize long-term infrastructure strengthening projects.

##### **Ongoing Hazard Mitigation Planning Workgroup Coordination (G)**

Establish regular meetings among local governments to implement, evaluate and maintain the Hazard Mitigation Plan's actions and risk assessment.

##### **Regional Hazard Mitigation Public Outreach Strategy (H)**

Continue outreach and education activities to inform the community about natural hazards and steps people and organizations can take to reduce risks. Attention will focus on socially vulnerable populations at higher risk.

### Actions that Address Landslide Hazards

#### Countywide Landslide Hazards Mapping (I)

Enroll in the Washington Geological Survey Landslide Hazards Program to inventory and map the county and cities' landslide hazards. The data will assist communities identify landslide hazard areas, reduce potential future losses, and update comprehensive plans, zoning codes, development regulations, and policies.

### Actions that Address Sea Level Rise Hazards

#### Olympia Sea Level Rise (SLR) Response Plan Implementation (J)

Implement the strategies in the Olympia SLR Response Plan, which aims to reduce risks from emerging SLR hazards.

### Actions that Address Severe Weather Hazards

#### Extreme Heat Incident Response and Illness Prevention Plan (K)

Develop a countywide plan to improve the region's response during extreme heat incidents. The plan will identify capabilities and strategies to reduce heat-related injuries and deaths.

### Actions that Address Wildfire Hazards

#### Community Wildfire Protection Plan (L)

Develop a countywide plan that identifies areas that are at risk for wildfire losses and prioritize strategies for reducing and controlling vegetative fuels, wildfire response, and community education and preparedness. This plan is required to access federal wildfire grants.

1. Based on your understanding of hazards and how they might impact you or your community, select the three actions that you would like to see prioritized highest.

- (A) Countywide Emergency Shelter Capacity and Operational Assessment
- (B) Critical Asset Management System
- (C) Critical Infrastructure Inventory
- (D) Evacuation Route Planning for Catastrophic Dam Failure and Volcanic Lahar
- (E) Hazard Modeling and Loss Estimation Capacity Building
- (F) Lifeline Transportation Resiliency Route Planning
- (G) Ongoing Hazard Mitigation Planning Workgroup Coordination
- (H) Regional Hazard Mitigation Public Outreach Strategy
- (I) Countywide Landslide Hazards
- (J) Olympia Sea Level Rise (SLR) Response Plan Implementation
- (K) Extreme Heat Incident Response and Illness Prevention Plan
- (L) Community Wildfire Protection Plan

2. Based on your understanding of hazards and how they might impact you or your community, what other actions do you suggest should be taken to minimize hazard impacts? Share as much detail as you can.

3. Please share your email address (optional) if you would like to receive future updates about projects or plans to make Thurston County communities safer from natural hazards.

**Email Address**

Thurston Region Hazard Mitigation Draft Actions Survey - Regional

Demographics

**Information about your race, ethnicity, age, income and/or gender that is provided voluntarily through this survey may be used to monitor Thurston Regional Planning Council's Title VI program and helps us understand who is represented by the survey results.**

4. What is your gender?

- Female
- Male
- Non-Binary
- Prefer not to answer

5. What is your age range?

- 0-14
- 15-24
- 25-39
- 40-54
- 55-69
- 70-84
- 85 or older
- Prefer not to answer

6. What is your race/ethnicity? (check as many as apply)

- American Indian & Alaska Native
- Asian
- Black / African American
- Hispanic or Latino
- Native Hawaiian & Pacific Islander
- White
- Other Race
- Prefer not to answer

7. What is your household's annual income (before taxes)?

- Less than \$14,999
- \$15,000 - \$24,999
- \$25,000 - \$34,999
- \$35,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- \$100,000 or more
- I don't know
- Prefer not to answer

Visit [www.trpc.org/hazards](http://www.trpc.org/hazards) to learn more.

Staff contact: Paul Brewster, Senior Planner at Thurston Regional Planning Council, at [brewstp@trpc.org](mailto:brewstp@trpc.org) or (360) 741-2526.

### **Acknowledgments**

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# News Release

**FOR IMMEDIATE RELEASE:** August 8, 2023

**SUBJECT: Local Governments in Thurston County Invite Public to Online Open House and Survey for Proposed Actions to Make Communities Safer from Natural Disasters**

**CONTACT:** Paul Brewster  
Senior Planner  
brewstp@trpc.org  
(360) 741-2526

Extreme summer temperatures and wildfires are dominating news headlines in cities across North America. An estimated three million American adults were displaced from their homes by weather-related disasters in 2022. Thurston County communities are not immune to nature's calamity. In fact, there have been 24 federal disaster declarations for Thurston County since 1965. To counter future disasters, the county, cities, and several special purpose local governments have identified over 100 actions to help reduce impacts from natural hazards such as earthquakes, floods, severe weather, and wildfires. Actions include developing an Extreme Heat Incident Response and Illness Prevention Plan, developing a Community Wildfire Protection Plan, identifying evacuation routes for potential catastrophic dam failure and volcanic lahar, relocating and elevating structures in flood hazard areas, performing seismic upgrades to water storage reservoirs, adding backup power systems to critical facilities, and performing more public education about the effects of hazards and steps that people could take to protect their loved ones and property. The actions are proposed as part of the update to the [Hazards Mitigation Plan for the Thurston Region](#).

Thurston Regional Planning Council (TRPC) is leading the planning process and is seeking public feedback on the proposed actions. Paul Brewster, Senior Planner, is managing the project, "The plan is a long-term multi-

jurisdictional investment strategy. It will guide decisions about projects that can protect lives, improve public safety, and strengthen important infrastructure like bridges, water systems, and communications. Prioritizing our ability to withstand natural hazards and adapt to climate change is foundational to making our communities safe, healthy, and affordable places to live, work, and thrive in.”

Ed Taylor who is the City of Lacey Emergency Manager and Chair of the Thurston County Emergency Management Council is leading the city’s update to the plan “We want to increase peoples’ awareness about emergency preparedness, inform them about hazards that threaten our communities, and ask for their feedback to help shape projects, programs, and services that can protect our communities’ assets.”

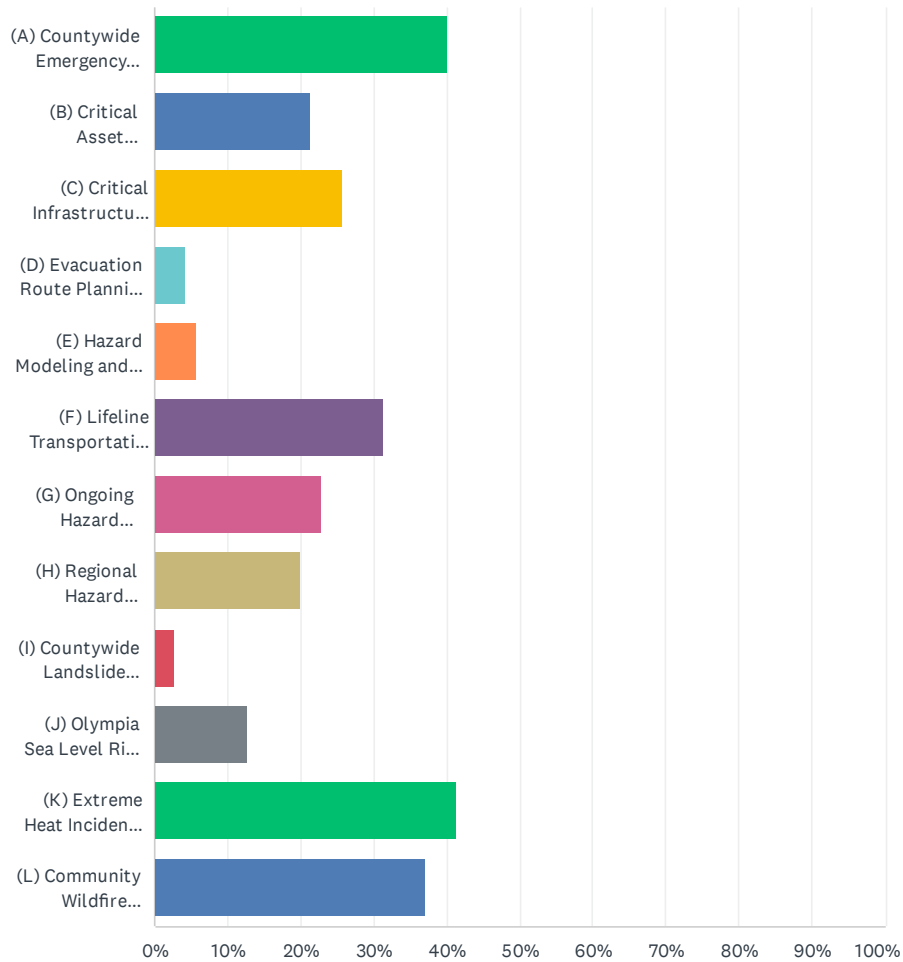
Community members and interested parties are invited to visit an online open house to learn about natural hazards, the plans’ actions, and take surveys. TRPC is hosting the self-paced open house and surveys through August 25 at [www.trpc.org/hazards](http://www.trpc.org/hazards).

The plan is being updated through a grant from the Federal Emergency Management Agency (FEMA). Local governments are required to update their hazard mitigation plans every five years to remain current and maintain eligibility for grants to fund important projects. For further information, contact Paul Brewster, Senior Planner, Thurston Regional Planning Council, (360) 741-2526.

Thurston Region Hazard Mitigation Draft Actions Survey - Regional

**Q1 Based on your understanding of hazards and how they might impact you or your community, select the three actions that you would like to see prioritized highest.**

Answered: 70 Skipped: 0



Thurston Region Hazard Mitigation Draft Actions Survey - Regional

ANSWER CHOICES	RESPONSES	
(A) Countywide Emergency Shelter Capacity and Operational Assessment	40.00%	28
(B) Critical Asset Management System	21.43%	15
(C) Critical Infrastructure Inventory	25.71%	18
(D) Evacuation Route Planning for Catastrophic Dam Failure and Volcanic Lahar	4.29%	3
(E) Hazard Modeling and Loss Estimation Capacity Building	5.71%	4
(F) Lifeline Transportation Resiliency Route Planning	31.43%	22
(G) Ongoing Hazard Mitigation Planning Workgroup Coordination	22.86%	16
(H) Regional Hazard Mitigation Public Outreach Strategy	20.00%	14
(I) Countywide Landslide Hazards	2.86%	2
(J) Olympia Sea Level Rise (SLR) Response Plan Implementation	12.86%	9
(K) Extreme Heat Incident Response and Illness Prevention Plan	41.43%	29
(L) Community Wildfire Protection Plan	37.14%	26
Total Respondents: 70		

Thurston Region Hazard Mitigation Draft Actions Survey - Regional

**Q2 Based on your understanding of hazards and how they might impact you or your community, what other actions do you suggest should be taken to minimize hazard impacts? Share as much detail as you can.  
(See Public Comments section appended to this document)**

Answered: 43 Skipped: 27

Thurston Region Hazard Mitigation Draft Actions Survey - Regional

**Q3 Please share your email address (optional) if you would like to receive future updates about projects or plans to make Thurston County communities safer from natural hazards.**

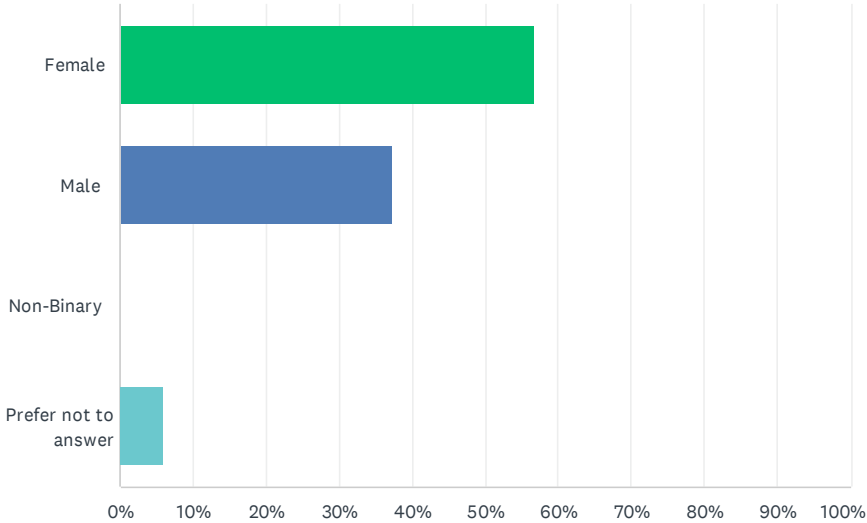
Answered: 35 Skipped: 35

ANSWER CHOICES	RESPONSES	
Name	0.00%	0
Company	0.00%	0
Address	0.00%	0
Address 2	0.00%	0
City/Town	0.00%	0
State/Province	0.00%	0
ZIP/Postal Code	0.00%	0
Country	0.00%	0
Email Address	100.00%	35
Phone Number	0.00%	0

Thurston Region Hazard Mitigation Draft Actions Survey - Regional

### Q4 What is your gender?

Answered: 67 Skipped: 3

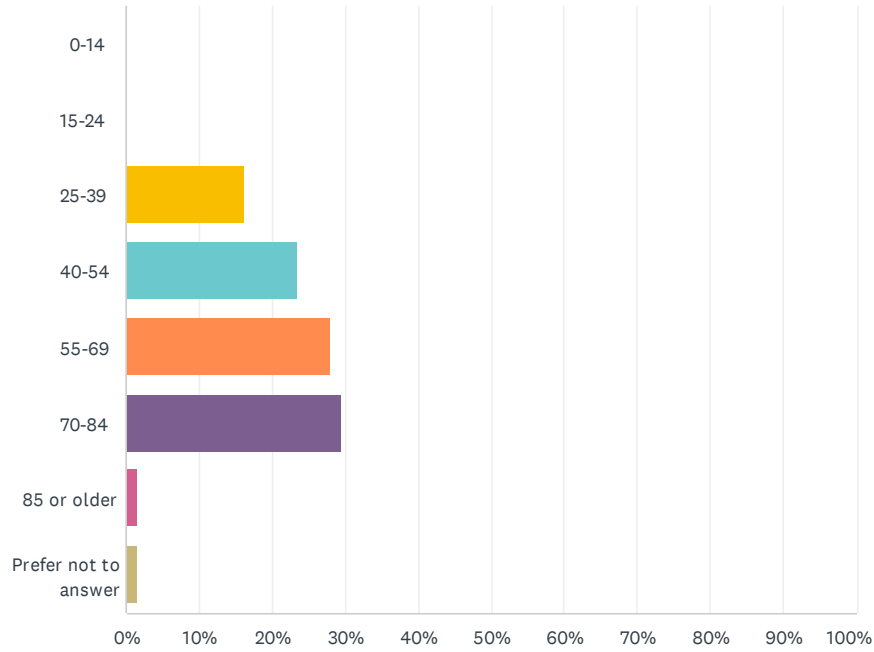


ANSWER CHOICES	RESPONSES	
Female	56.72%	38
Male	37.31%	25
Non-Binary	0.00%	0
Prefer not to answer	5.97%	4
TOTAL		67

Thurston Region Hazard Mitigation Draft Actions Survey - Regional

### Q5 What is your age range?

Answered: 68 Skipped: 2

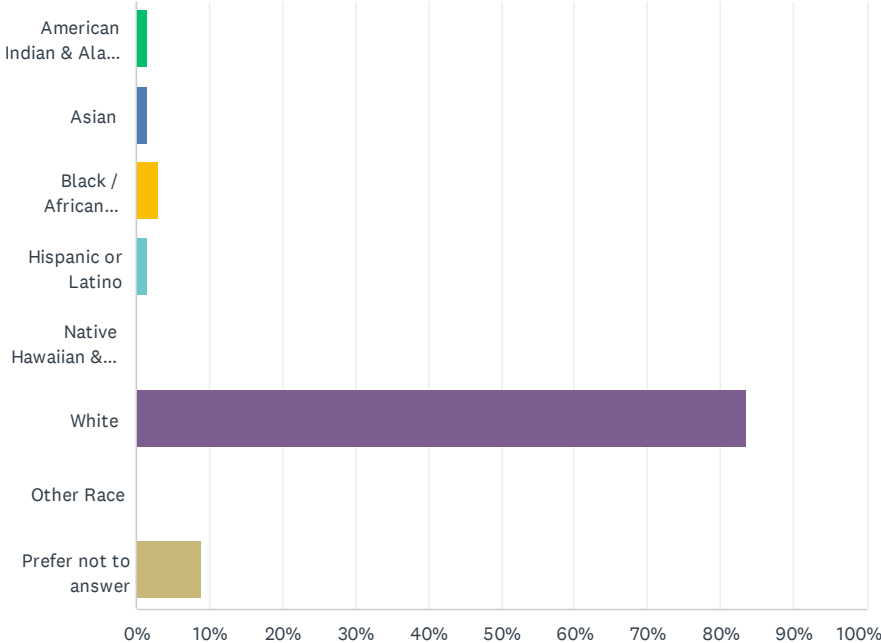


ANSWER CHOICES	RESPONSES	
0-14	0.00%	0
15-24	0.00%	0
25-39	16.18%	11
40-54	23.53%	16
55-69	27.94%	19
70-84	29.41%	20
85 or older	1.47%	1
Prefer not to answer	1.47%	1
<b>TOTAL</b>		<b>68</b>

Thurston Region Hazard Mitigation Draft Actions Survey - Regional

Q6 What is your race/ethnicity? (check as many as apply)

Answered: 67 Skipped: 3

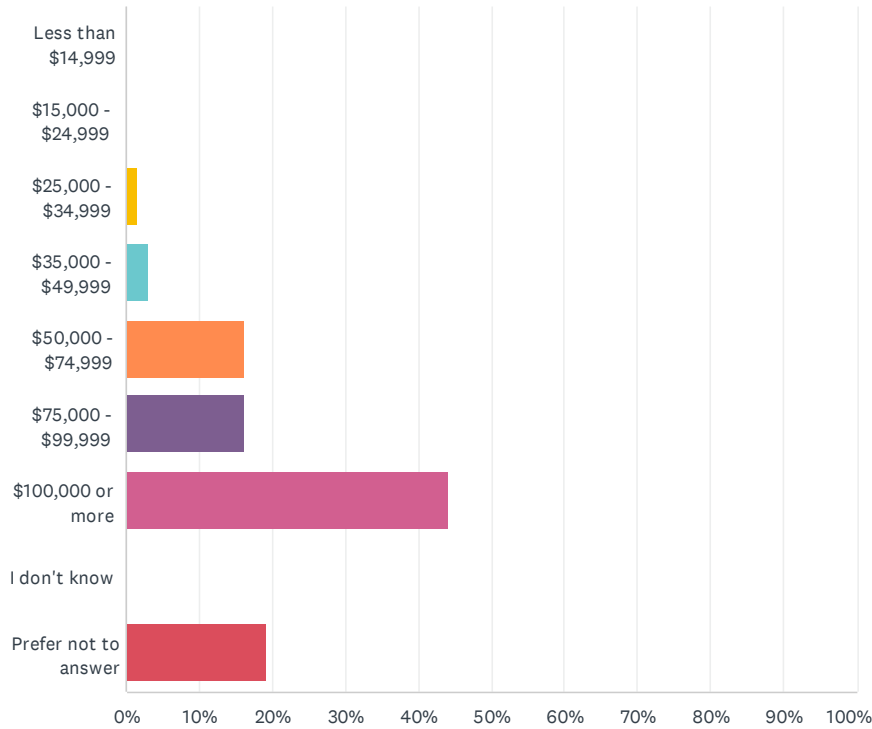


ANSWER CHOICES	RESPONSES	
American Indian & Alaska Native	1.49%	1
Asian	1.49%	1
Black / African American	2.99%	2
Hispanic or Latino	1.49%	1
Native Hawaiian & Pacific Islander	0.00%	0
White	83.58%	56
Other Race	0.00%	0
Prefer not to answer	8.96%	6
Total Respondents: 67		

Thurston Region Hazard Mitigation Draft Actions Survey - Regional

Q7 What is your household's annual income (before taxes)?

Answered: 68 Skipped: 2



ANSWER CHOICES	RESPONSES
Less than \$14,999	0.00% 0
\$15,000 - \$24,999	0.00% 0
\$25,000 - \$34,999	1.47% 1
\$35,000 - \$49,999	2.94% 2
\$50,000 - \$74,999	16.18% 11
\$75,000 - \$99,999	16.18% 11
\$100,000 or more	44.12% 30
I don't know	0.00% 0
Prefer not to answer	19.12% 13
<b>TOTAL</b>	<b>68</b>

## Thurston Region Hazard Mitigation Draft Actions Survey – Regional

### Public Comments to Question 2.

Q2 Based on your understanding of hazards and how they might impact you or your community, what other actions do you suggest should be taken to minimize hazard impacts? Share as much detail as you can.

1. The issues not addressed that could be the result of several of the identified hazards include prolonged power outages and access to potable water. Hopefully working with PSE and Thurston PUD, there are coordination plans in place. As a retired health care administrator, coordinating risk mitigation and management plans with the Providence Health and Multicare Capital Medical Center are part of many/most of this important work
2. Our population needs to be educated about the danger of heat events here, and how to save themselves and their neighbors. They need to know to get help before the delirium sets in! 56 patients with heat stroke delivered to Valley Medical Center during 8 hours on the worst day of the heat event in June 2021 would be a disaster here in Olympia. The Harborview command center shuttled patients to seven other major hospitals within 20 minutes of Valley; we have no such possibility to unload our ERs and ICUs in Thurston County. We will only be able to surge our capacity to a limited degree, and with episodic heat waves, all of the victims tend to arrive at once. Thurston County lacks air conditioning, which is uncommon in our county. In Vancouver, BC, 98% of heat stroke victims died in their overheated homes, often in material and social deprivation areas. Vancouver, BC, all groups over 50 years had a doubling of mortality rates, not just the very old and sick. Outside workers and athletes, the unhoused, young children, and pregnant women are also at the highest risk. Evidence shows that the health impacts of climate change mobilize many people not previously focused on the climate crisis to decide to take action to save our planet, and by far, the most significant health risk is extreme heat.
3. Of course, all of the above are interrelated and we need every action on the list to be taken. Marking a house with information could help in rescue attempts (e.g., disabled person lives here, number of people living in home). Public education workshops are so necessary--I just learned from a PSE tech about the earthquake valve on my meter and how it works. We all need to know this.
4. Emergency Management, Law Enforcement and Planners need help to do their jobs. Public Education about the most likely hazards our populations are likely to encounter is important to have people learn how to help themselves and not need to surge into the limited hospital capacity or even outpatient clinic/EMS capacity we have in this county. People need to be educated about the danger of extreme heat events and how to save themselves and their neighbors. I don't think many folks know that their ability to think clearly may be one of the first capacities to go, thus delirious patients aren't able to save themselves. In Vancouver BC in 2021 98% of heat stroke victims died in their overheated homes, some who did call 911 were too far gone to be resuscitated. Also, we do not have hospital capacity to "surge" large numbers of heat exhaustion/stroke patients, even if EMS has the capacity to transport them. In Vancouver

BC in 2021, all age groups over 50 years had a doubling of mortality rates, not just the very old and sick. Thus, the population at risk for needing medical help is extremely large and would overwhelm our medical healthcare system. Please use the very helpful information in this open house to focus public education efforts on the three most likely hazards and prepare citizens to care for themselves and each other. Thank you for the strong work. I am impressed with the content of the Open House.

5. Conduct outreach to existing neighborhood groups to strengthen awareness and participation in hyper-local disaster planning, including "Map Your Neighborhood" kinds of approaches. I live in semi-rural, unincorporated Thurston County and although we're mostly prepared for short-term emergencies (power outages, weather-related issues, etc.), we'd be in a real fix if we were isolated for more than a week or two before fuel, food, and medical assistance could reach us. We need to plan together, with neighbors, to meet the challenges of a real disaster.
6. Our population needs to be educated about the danger of heat events here, and how to save themselves and their neighbors. Air conditioning is uncommon in our county, and that in Vancouver BC 98% of heat stroke victims died in their overheated homes, often in areas of material and social deprivation.
7. For me as a layperson, the risk of a catastrophic earthquake appears like the scenario with the highest overall risk, not only due to immediate damage to people, structures, and infrastructure throughout Thurston County, but also on a regional level. An event that also affects King and Pierce Counties would drastically reduce available resources for response and recovery to our community. There is an immense need to educate community members on how to be as individually prepared and self-sufficient as they could be in that scenario. Realistically, though, the vast majority will never be prepared, so practical, tangible resources like mass shelter/food/water/medical supplies will need to be brought online as quickly as possible.
8. Extreme heat is deadly, impacts all sectors of our population, especially those without adequate shelter or cooling facilities and needs our immediate attention.
9. Extreme heat education and system response! I grew up in the Midwest; in my community, knowing and responding to the signs of heat stroke was common knowledge because it was life-saving. That is becoming the case here. Our community needs to be educated about the danger of heat events here, and how to save themselves and their neighbors. With heat stroke, there's no time to look up the facts and get help before the delirium sets in. You have to know what to do. As a county, we are not prepared on a systems level: 56 patients with heat stroke delivered to Valley Medical Center during 8 hours on the worst day of the heat event in June 2021 would be a disaster here. The Harborview command center shuttled patients to the 7 other major hospitals within 20 minutes of Valley, and we have no such possibility to unload our ERs and ICUs in Thurston County. We will only be able to surge our capacity to a limited degree, and with episodic heat waves, all of the victims tend to arrive at once. People will die. Air conditioning is uncommon in our county; Vancouver BC 98% of heat stroke victims died in their overheated homes, often in areas of material and social deprivation. In Vancouver BC all age groups over 50 years had a doubling of mortality rates, not just the very old and sick. Outside workers and athletes, the unhoused, young children and pregnant women are also at highest risk. We need to care for our communities.

10. Air conditioning is uncommon for most residents of Thurston County. We are just one heat wave away from a mass casualty incident. Our hospital systems are not well equipped for this stress on the system.
11. our population needs to be educated about the danger of heat events here, and how to save themselves and their neighbors
12. County-provided or subsidized 2 week emergency kits available for every household.
13. We need to educate our population to the risks of heat exposure, how to recognize danger signs, how to avoid heat stroke and what to do. We need to have neighbor hood checks of neighbors and high risk person. We need to have cooling centers easily accessible to our homeless and others. We need to avoid overhweming our ERs with patients with cases that could have been avoided.
14. The heat wave in 2021 was a warning to us all that Extreme Heat, is an issue we take seriously. Many people do not have air conditioned homes. As well, most people do not recognize the risks associated with body heat, and the symptoms which lead to a heat stroke. We need to plan now
15. Residents needs to be educated about the danger of heat events here, and how to save themselves and their neighbors. They need to know to get help before the delirium sets in. There were 56 patients with heat stroke delivered to Valley Medical Center during 8 hours on the worst day of the heat event in June 2021. The Harborview command center shuttled patients to the 7 other major hospitals within 20 minutes of Valley, and we have no such possibility to unload our ERs and ICUs in Thurston County. We will only be able to surge our capacity to a limited degree, and with episodic heat waves all of the victims tend to arrive at once. Air conditioning is uncommon here. In Vancouver BC 98% of heat stroke victims died in their overheated homes, often in areas of material and social deprivation. In Vancouver BC all age groups over 50 years had a doubling of mortality rates, not just the very old and sick. Outside workers and athletes, young children and pregnant women are also at highest risk.
16. We need to educate citizens about heat stroke.
17. Communication is critical in these situations: agencies & responders must be able to talk to each other, and to get reliable information to the affected populations (especially advance warnings).
18. I am increasingly aware of the issues facing the elderly - frail or otherwise - and encourage a focus on outreach and education for this group, working through and with churches, senior services organizations and grocery stores, like Safeway as well as public agencies (e.g., transit).
19. Develop access to air conditioning for low income seniors. I have a friend in The Shag housing unit downtown without air conditioning and she is at risk of dying during extreme heat. This is an immediate problem. Develop better education around heat exhaustion and recognizing symptoms and need to hydrate.
20. Actually most all the above ought be accomplished and the county should not choose to avoid any of these tasks
21. Education about the dangers of heat exposure and a plan for the next serious heat event.
22. It seems inevitable that the next 10 years will see a worsening of extreme weather; right now there is no plan to deal with mutiple widespread extreme heat events. Even a small, traveling education (schools? fairs?) exhibit might save some lives.
23. Our county is at high risk for remarkable levels of mortality from extreme heat events, but we can greatly reduce mortality with an effective heat plan. Our heat events are episodic and have been rare until recently, but will get much worse in the near future, and we are unprepared for

this deadly climate health risk. The main reason is that our population does not understand the risk of heat and how to stay safe. The June 2021 heat wave was the deadliest weather related event in Washington history, but the deaths were higher in Vancouver BC where the heat dome was centered. The BC Coroner's report of the 619 deaths confirmed during the 6 days of the event reveals the problem: 28% of heat stroke victims never called 911, and 83% of those who did call 911 were too far gone when the paramedics arrived to be resuscitated! The simple explanation for these amazing findings is that delirium is one of the earliest symptoms of heat stroke. The brain is the most susceptible organ! We will need emergency services surge capacity, but more importantly we need an educational campaign regarding heat risk, directed by our health department with the help of community nonprofits.

24. Make sure emergency communications work well. The Maui wildfires pointed out that most people don't get notified. So make sure those notifications are well functioning.
25. Due to the high risk of wildfires prevention is the best defense. County can keep the grass on side of the roads cut short. Vegetation along the walking trails should be maintained either by county or volunteers. Education to land owners on best methods of making fire breaks on their property.
26. Develop financial incentive program(s) for homeowners to invest in home retrofits for seismic, flood and/or wildfire resiliency. Many homeowners likely want to make upgrades / modifications to disaster-proof their home, but do not have the financial means to do so. Financial incentives could possibly include some form of cost-share program, tax breaks, or discounts on insurance premiums.
27. Identify natural fresh water sources for water filtration. Invest in vehicles that can more easily access areas after disaster (ATVs, e-cargo bikes, dirt bikes). We have become wifi/cell/power dependent - focus outreach on how we share information when these amenities are gone. Consider community classes that teach basic first aid, basic survival skills, and how to prioritize tasks during an emergency.
28. My prioritization reasons: A: I'm part of SEOC ESF 6 so this is a personal interest. C: Surprised we don't have this already? Or is this an update/confirmation of what the SEOC has? L: Wildfires are going to become more present and prominent on the west side and few folks around here have defensible terrain around their homes and businesses.
29. Jurisdictions should follow through with their plans and seek funding sources to implement their actions.
30. Communications between cities and jurisdictions. Police, fire, etc...can they all easily communicate without red tape?
31. Within the transportation area, assess the ability of people to move around by foot and cycling in the event of transportation fuel disruption. This includes both gas availability as well as electricity disruption.
32. Many parts of our community are prone to power outages during extreme cold weather events. Severe winter storms that limit transportation and disrupt power supplies put many of our elderly homeowners at risk each year. The risk from overhead powerlines in areas with heavy tree cover could be mitigated in neighborhoods at highest risk during winter storms. Mitigation of the power line failures from tree damage during storms by cutting, trimming, and established setbacks would also likely reduce fire risk during extreme hot and dry weather.
33. Use amateur radio operators as a data gathering tool and as a communications backup.

34. Ban the use of fireworks other than professionally supervised events.
35. Consider first "overburdened communities" - looks like Bucoda might be such a community with multiple hazards
36. Better coordination with community partners that support natural disaster preparedness programs, like Thurston Conservation District. Support for natural disaster management practices in local ordinances, such as fuel load reduction. Low impact development, such as natural shorelines or soft shore armoring and urban storm water retrofits to defend against sea level rise. Evacuation planning and housing for livestock. Support for compatible flood plane uses, like agriculture and habitat conservation. Deschutes Estuary restoration. Satellite emergency support services at volunteer fire departments for far removed communities (Bald Hills, Skookumchuck, Steamboat, Boston Harbor, Independence Valley, etc.)
37. More funding for fire departments and DNR. Controlled burns, education.
38. Improve communications infrastructure with the use of FRS and amateur radio networks that are linked to or monitored by TCDEM
39. Residents need to be better informed. I recognize this is an impossible task but but people need to know.
40. Convene "civilians" in resilience planning similar to what is suggested by the National Disaster Preparation Training Center. They are doing amazing work on preparing communities for volcanic chaos.
41. Better education on swales and how they are critical for asset and infrastructure protection.
42. I need you to remember that transportation is not just automobiles. You need to immediately start considering how we will use more optimal forms of transportation in our response to crisis, and also, boring daily life. Building infrastructure that can move people and goods on foot, cart, electric micro mobility, bike, scooter, light rail, cable, lighter than aircraft, etc. will build a better, more resilient future. But you have to start doing it now.

## Thurston Regional Hazards Mitigation Plan Public Engagement Strategy

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## Introduction

Disasters can cause loss of life, damage buildings and infrastructure, and have devastating consequences for a community's economic, social, and environmental well-being. Hazard mitigation reduces disaster damage and is defined as sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards. Outreach programs that increase risk awareness, projects to protect critical facilities, and the removal of structures from flood hazard areas are all examples of mitigation actions. Local mitigation actions and concepts can also be incorporated into land use plans and building codes.

Local governments have the responsibility to protect the health, safety, and welfare of their citizens. Proactive mitigation policies and actions help reduce risk and create safer, more disaster resilient communities. Developing a Hazard Mitigation Plan (HMP) creates a community blueprint for reducing the negative impacts known hazards.

## Hazard Mitigation Benefits

Mitigation is an investment in the region's future safety and sustainability. Hazard Mitigation activities provide a range of protective benefits to people and communities:

- Protects public safety and prevents loss of life and injury.
- Reduces harm to existing and future development.
- Prevents damage to a community's unique economic, cultural, and environmental assets.
- Minimizes operational downtime and accelerates recovery of government and business after disasters.
- Reduces the costs of disaster response and recovery and the exposure to risk for first responders.
- Helps accomplish other community objectives, such as leveraging capital improvements, infrastructure protection, open space preservation, and economic resiliency.

## Framework

The Public Engagement Strategy provides a framework for engaging individuals and stakeholders across Thurston County in support of the HMP's development. At a minimum, the public outreach process must satisfy the Federal Emergency Management Agency's (FEMA) local HMP requirements specified in 44 CFR §201.6. This consists of providing an opportunity for the public to comment on the plan during the drafting stage and prior to plan approval. TRPC and the project partners will strive for a thorough and equitable approach while implementing the framework to learn community values and collect input on recommendations and strategies. The framework consists of six components.

1. Planning Area
2. Community Engagement Goals and Objectives
3. Audiences
4. Planning Entities and Responsibilities
5. Methods of Engagement
6. Potential Challenges
7. Schedule

### 1. Planning Area

The planning process will focus on communities fully and partially within the municipal boundary of Thurston County, Washington. The process will cover both incorporated and unincorporated areas of the county to include Thurston County, cities, tribes, and special purpose districts. Some special purpose districts are headquartered in Thurston County and operate facilities or perform public services in a multi-county region. These organizations may opt to extend their planning areas beyond Thurston County's border.

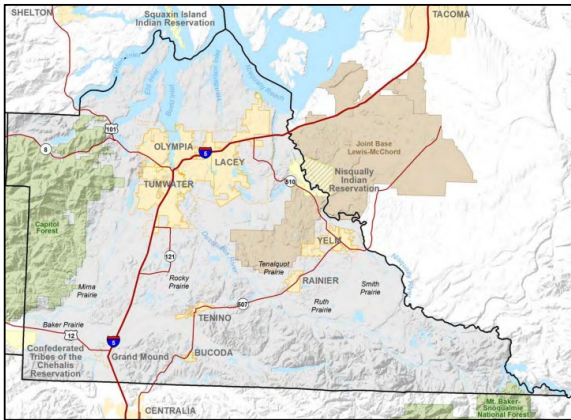


Figure 1. Map of Thurston County, Washington.

### 2. Community Engagement Goals and Objectives

The HMP process is an opportunity to: 1) Build community support for mitigation strategies to help the region become more disaster resilient; 2) Increase public awareness about the adverse impacts and consequences of natural hazard events; and 3) Solicit community feedback on mitigation ideas and priorities.

Achieving these community engagement goals and objectives ensures the HMP process will exceed the minimum local mitigation planning outreach requirements and strengthen planning outcomes.

Goal 1: Build community support for hazard mitigation planning.

#### Goal 1 Objectives

- 1.1. The Thurston County Emergency Management Council prioritizes hazard mitigation and promotes the implementation of mitigation initiatives across the region.
- 1.2. Local elected officials promote hazard mitigation planning within their respective community and provide support and resources to their staff to satisfy FEMA local mitigation planning requirements.
- 1.3. Jurisdiction plan partners provide meaningful opportunities for residents and stakeholders to participate in the planning process.

Goal 2: Increase public awareness about the region's known hazards and their impacts.

#### Goal 2 Objectives

- 2.1. Community members, businesses, and other stakeholders receive timely information about the planning process.
- 2.2. Information is readily available to help people understand how hazards could affect them.

- 2.3. Community members have access to accurate information to know what actions they can take to reduce their risks.
- 2.4. Local media organizations report or share information about natural hazards and their economic, social, and environmental impacts.

Goal 3: Create opportunities for people to share ideas to make Thurston County communities more disaster resilient.

#### *Goal 3 Objectives*

- 3.1. Meaningful opportunities are available for people to comment and share ideas on the development of the mitigation plan prior to FEMA’s plan review and approval process.
- 3.2. The plan partners will consider and incorporate public feedback into their action plans.
- 3.3. The approved plan will include a process for ongoing public participation in hazard mitigation planning.

### 3. Audiences

To capture the ideas and concerns of those most likely to be affected by the implementation of the HMP, the process will engage a variety of individuals and organizations from across the planning area. Multiple audiences will be engaged to shape the plan.

#### A. Tribes Local Governments, and Special Purpose Districts

The planning process will develop a multi-jurisdictional HMP. An approved and adopted HMP is a prerequisite for tribes, local governments, and special purpose governments (school districts, transit agencies, water utilities, fire districts, etc.) to apply or receive FEMA Hazard Mitigation Assistance grant program funds. While private companies and non-profit organizations can develop HMPs, they are ineligible to obtain FEMA mitigation grant funds without an eligible local government applicant to serve as the project sponsor. As such, the planning process will exclusively invite tribes and local governments to partner to develop a multi-agency plan for the Thurston Region. Each participating jurisdiction will produce an independent HMP through the regional planning process. Each jurisdiction will be responsible for the development, public review/comments, and adoption process of its plan in conformance with their practices and procedures.

#### B. Residents

Homeowners, property owners, and neighborhoods experience losses from floods, wildfires, and other hazard events. Residents in hazard prone areas can identify problem areas and can help shape mitigation actions that could help protect their homes and investments.

#### C. Businesses and Employees

Major disasters can severely impact the region’s major employers and local businesses. The risk assessment should account for the region’s economic sectors to recover from disasters, and their ability to become more resilient to future disasters. The planning process will engage the Thurston Economic Development Council, chambers of commerce, major employers, businesses, and non-profits to solicit feedback on the plan’s mitigation strategies and their relationships and impacts to the region’s economy.

### D. Hard to Reach Populations

People of color, people experiencing homelessness, people with disabilities, people living at or below the poverty level, the elderly, and people with limited English proficiency are often the most vulnerable to hazard impacts because they often lack the resources and means to mitigate, prepare, or recover from them. The process will engage shelter operators, faith-based organizations, advocacy organizations, non-profits, and others that provide a range of social support services to these populations to solicit feedback on mitigation actions that likely affect those who may be hardest hit by hazard events.

### E. Academia and State and Federal Agencies

Academic and government agencies involved in researching geological, hydrological, and meteorological hazards or regulate environmental and natural resource protections can provide technical assistance to communities to advise on best practices in hazard mitigation.

### F. Emergency Services Providers

Law enforcement and fire service agencies are familiar with hazard prone areas and the types of impacts that occur in our region's communities. Mitigation strategies should include actions that minimize risks to first responders and protect continuity of operations for emergency services.

### G. Critical Facilities, Infrastructure, and Utilities Providers

Both public and private organizations that manage critical facilities and services such as medical care, energy distribution, ports, transportation, communications, water and wastewater, and other utilities provide critical services and/or infrastructure necessary to sustain communities and are critical to recover from disasters. Mitigation strategies should engage critical facility operators and service providers to consider mitigation actions that protect these assets.

## 4. Planning Entities and Responsibilities

Several entities will perform key roles in leading, informing, and producing the HMP. Each entity has specific functions that complement the others. The coordination of their efforts, taken as a whole, strives to achieve a thorough and equitable public engagement process.

### Thurston Regional Planning Council (TRPC) – Staff

Thurston Regional Planning Council or TRPC is a public council of governments and is the Metropolitan Planning Organization for the Thurston County Region. The management and production of the HMP will be performed by TRPC staff under a contract with Thurston County Emergency Management and under the general direction of the Emergency Management Council. Staff are responsible for coordinating the planning activities among the planning entities and stakeholders. Staff will ensure all planning partners understand their roles and responsibilities in the process. TRPC is also responsible for creating access to meaningful public participation. Staff is responsible for the research, meeting materials and agendas, scheduling community events, performing community outreach, and assembling planning documents and reports.

### The Emergency Management Council of Thurston County (EMC)

The EMC is comprised of emergency managers of local governments and tribes in Thurston County. It meets monthly to coordinate local emergency management activities of the county, cities, and tribes. The EMC will serve as the Steering Committee and will provide general direction on the plan update

process. The EMC will invite tribes, local governments, and special purpose districts to participate in the HMP update.

#### Thurston County Emergency Management (TCEM)

The plan update process is funded through a FEMA Pre-Disaster Mitigation Grant. A local match is funded by Thurston County. TCEM is the sub-applicant for the grant and is responsible for managing the federal grant on behalf of the jurisdictions participating in the plan update. TCEM staff will also perform a lead role in partnership with TRPC to assist with meeting facilitation, coordination, and plan development throughout all stages of the planning process.

#### Hazard Mitigation Planning Workgroup (HMPW)

Each jurisdiction intending to develop a mitigation plan through the regional process will appoint a representative who will participate in a partnership Hazard Mitigation Planning Workgroup or HMPW. The HMPW will deliberate on all stages of the plan development and will serve both as a working body and in an advisory capacity to inform the planning process and the plan's contents, policies, and recommendations. The workgroup will be augmented with members of the Thurston County Local Emergency Planning Committee (LEPC) and other community stakeholders to provide additional community representation.

#### Consultant Team

A subconsultant team will develop both an earthquake hazard model (Cascadia Subduction Zone, 100-year probabilistic, and Olympia Structure) and a flood hazard model (100-year, 500-year, and historic) using local data to perform advance loss estimation and scenario analysis. Other loss estimation tools may be developed for high hazard dam inundation and direct highspeed wind impacts. Model scenario analysis will consider opportunities to evaluate the performance of sector specific regional mitigation strategies such as water system infrastructure seismic retrofits. Modeling results will inform both countywide and jurisdiction-specific mitigation strategies. The consultant team will also provide materials and training to help guide plan partners to identify and rank mitigation activities.

## 5. Methods of Engagement

A variety activities may be used at various stages of the planning process to provide project updates, broadcast messages, and solicit feedback from the general public and the plan's audiences.

- **Community events** – Permitting safe conditions, TRPC staff and project partners may set up a booth/table at 1-2 fairs/festival and other community events to engage attendees.
- **Email communication** – Managed by TRPC staff and partner jurisdictions. Email can be used to manage and coordinate responses to project inquiries, to invite recipients to events, and to notify project subscribers of project milestones.
- **Online surveys** - Managed by TRPC staff, two short community surveys, one at the beginning of the process and one after the plan is drafted can help inform the plan's development. The surveys can include questions that cover the public's concern about hazards, how they are impacted by them, and learn what they think local governments can do to reduce risks. Online surveys will include demographic questions to understand who is participating/responding.
- **Project webpage** – Managed by TRPC staff. The website will provide timely information on the HMP development status, upcoming planning meetings, and upcoming community engagement

opportunities. Also provides links to all workgroup meetings held via Zoom which are open to the public.

- **Public meetings** – Convened and staff by TRPC and project partners, online meetings can coincide with the timing of online surveys to inform the community about the hazard mitigation planning process. In-person meetings may also be considered to have more interactive discussions between community members and the project partners to solicit information about problem areas in the community and potential solutions for reducing hazard risks. Meeting evaluation forms can include demographic questions to record who is participating.
- **Social media** – Managed by TRPC staff and partner jurisdictions. Social media can notify followers and non-followers about upcoming events and to increase awareness about the benefits of hazard mitigation.
- **Traditional media** – Newspapers, community tv, and radio may be used to target public engagement and update communities on upcoming events and project milestones.
- **Video interviews/story telling**– Produced by TRPC staff and project partners, highlight the stories of fire chiefs, emergency managers, and others who have experienced natural disasters and hazards firsthand. Short one to two-minute videos about hazard experiences such as a wildland fire incident or a flood and why hazard mitigation is important to reduce losses. The video can be linked to the project webpage and shared through social media.

### 6. Potential Challenges

There are several challenges the project team could face in carrying out the public engagement process.

- **Lack of interest** – While disasters are becoming more prevalent in Thurston County and beyond, many residents do not participate in mitigation activities and may not know the benefits of doing so. Strategies to address this challenge include keeping messaging in plain language and highlighting the benefits of mitigation planning.
- **The message doesn't reach the public** – Despite the best efforts of staff, sometimes even the best public engagement campaigns do not solicit a significant amount of public feedback. Many residents may not follow the social media accounts of their local governments or read local newspapers. To overcome this challenge, the project team will use a variety of methods of public engagement and leverage existing communications networks and nonprofit organizations that have a stronger foothold in the community.
- **The communities most plagued by disasters do not engage in the process** – There are several historical factors that have contributed to environmental justice issues related to natural hazards. Communities of color, non-native English speakers, people with disabilities, and people of low incomes may be more likely to experience negative effects of hazards. These communities are also often underrepresented in surveys and other public engagement processes. Strategies to address this challenge include reaching out directly to community organizations and leaders, and continually examining feedback received to ensure communities are not left out.

### 7. Schedule

The table below provides an estimated timeline of the public outreach process for the hazard mitigation plan update. The project has an anticipated end date of August 2023, at which time local jurisdictions

and other plan partners will adopt the plans. This timeline includes regional actions only and does not include the public engagement activities of plan partners.

<b>Estimated Timing</b>	<b>Topic</b>	<b>Potential Method(s)</b>
Ongoing (already live)	Planning process updates and contact information	TRPC website
Spring 2022	Capability Self-Assessment: Plan partners will identify their own planning & mitigation capabilities	Online survey, email, workgroup meetings
Spring 2022	Community survey identifying hazards and personal mitigation priorities	Online survey, virtual and in-person public meetings, social media, traditional media, TRPC website
Winter 2022-2023	Mitigation action plan and strategy prioritization	Online survey, virtual and in-person public meetings, social media, traditional media, TRPC website, video interview/story telling
Spring 2023	Public comment period on draft plan	TRPC website, traditional media, social media, virtual or in-person open house



# News Release

**FOR IMMEDIATE RELEASE:** November 3, 2023

**SUBJECT: Local Governments in Thurston County Invite the Public to Comment on the Hazards Mitigation Plan for the Thurston Region**

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It's not a matter of if, but when that an earthquake, tsunami, landslide, or a volcanic eruption will impact Thurston County. Climate science forecasts that winters in the Puget Sound Region will become warmer and wetter, altering the hydrologic cycle. Changes in the timing, type, and quantity of precipitation will create adverse conditions for coastal and riverine flooding. Rising sea level will threaten Thurston County's shoreline and impact residents, businesses, and infrastructure. Summers will become longer, warmer, drier, and exacerbate conditions for wildfire hazards and poor air quality. Extreme heat events will become more frequent resulting in more people becoming victims of heat-related injuries.

Over the last 21 months, local governments have been working together to update the [Hazards Mitigation Plan for the Thurston Region](#) to make our communities more disaster resilient. Thurston Regional Planning Council is currently seeking public comment on the final draft plan. "The plan is a long-term strategy for communities to identify vulnerabilities and reduce risks from natural hazards," according to Paul Brewster who is coordinating the multijurisdictional plan update on behalf of Thurston County communities and special purpose governments. "The Federal Emergency Management Agency requires states, tribes, and local government adopt plans to be eligible to obtain hazard mitigation grants that can fund projects like seismic retrofits to water systems." The plan's actions

include developing an Extreme Heat Incident Response and Illness Prevention Plan, developing a Community Wildfire Protection Plan, identifying evacuation routes for potential catastrophic dam failure and volcanic lahar, relocating and elevating structures in flood hazard areas, performing seismic upgrades to water storage reservoirs, adding backup power systems to critical facilities, and performing more public education about the effects of hazards to help people identify steps they can take to protect their property.

Ed Taylor, the City of Lacey Emergency Manager and Chair of the Emergency Management Council of Thurston County is leading the city's update to the plan "The vision for the plan is that all sectors of the community work together to create a disaster resilient region – so it is important that community members lend their voices to our region's mitigation strategy." Community members and interested parties are invited to provide public comment on the draft plan through November 17, 2023, at [www.trpc.org/hazards](http://www.trpc.org/hazards). For more information, contact Paul Brewster, Senior Planner, Thurston Regional Planning Council, [brewstp@trpc.org](mailto:brewstp@trpc.org) or (360) 741-2526.

