EXECUTIVE SUMMARY

Linn County Multi-Jurisdictional Natural Hazard Mitigation Plan (NHMP)

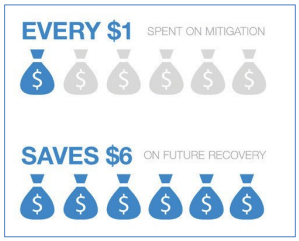
2023-25 Update

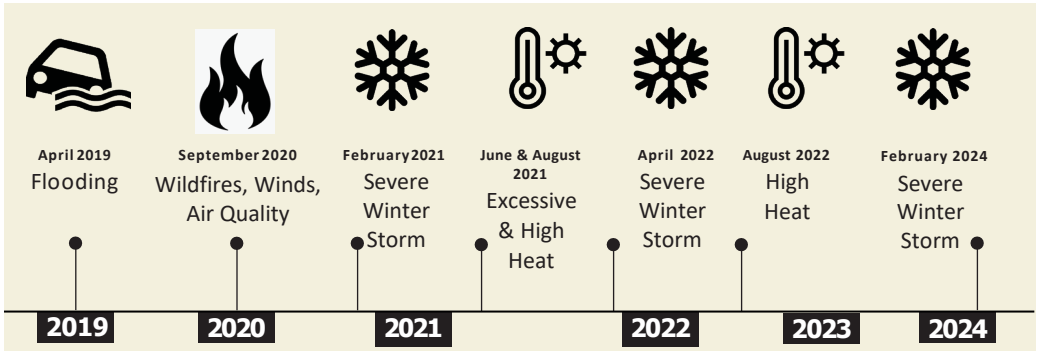
The Linn County NHMP focuses on natural hazards that historically impacted Linn County and the cities within and that could affect communities in the future. It is intended to assist jurisdictions reduce the risk from natural hazards by identifying resources, information, and strategies. It is also intended to guide and coordinate mitigation activities throughout the county.

What natural hazards affect Linn County?

Natural hazards pose a threat to the county's economy, people's health and property, infrastructure, and natural resources and ecosystems. Planning for natural hazards is vital due to potentially devastating effects.

Excessive heat, flooding, wildfires, windstorms, and winter storms have posed threats the last several years. These and other natural hazards could greatly affect the county in the future. Flooding is a primary concern in western parts of the county. Wildfires and landslide are concerns in steep and forested eastern areas of the county. Extreme heat and winter storms impact the entire county. The Cascadia Subduction Zone off the coast of Oregon and crustal faults within the county place it in danger of significant earthquake damage.





Recent Natural Hazard Events

Earthquake: Minor earthquakes historically occurred in the Cascade foothills. Since 2019, a cluster of small earthquakes have happened near Lacomb, with the largest on October 7, 2022, with a 4.4 magnitude on the Richter scale. The 1993 Scotts Mills earthquake in Marion County was magnitude 5.7.

Excessive Heat: A high-pressure dome over the Pacific Northwest led to a stretch of extreme heat, shattering records from June 26-29, 2021. All time maximum temperatures were broken by 8 to 10 degrees. There were 123 fatalities across Oregon as well as widespread business closures and postponements of events.

Flood: During April 6-21, 2019, a strong atmospheric river produced up to 5 inches of rain in a 48-hour period. This heavy rain combined with snow melt caused flooding along many rivers in Western Oregon. The Willamette River near Harrisburg crested at 15.3 feet on April 9, 1.3 feet above flood stage, and on April 11 crested near Albany at 27.3 feet, 2.3 feet above flood stage. The county received assistance as a part of a Presidential Declaration (DR-4452).

Tornado: A tornado touched down near Harrisburg on June 18, 2023. Six other funnel cloud sitings occurred in the county since 2019.

Wildfire: The 2020 Labor Day wildfires grew explosively due to strong winds combined with extremely low relative humidity and exceptionally dry fuel conditions. Loss of life, homes, and businesses occurred in the Santiam Canyon and smoke and extremely poor air quality impacted the entire county. The wildfires and straight-line winds event was a Presidentially Declared Disaster (DR-4562).

Windstorm: Ten episodes with winds of magnitude 35-62 miles per hour occurred in Linn County between 2019 and 2023, including the 2020 straight-line winds event (DR-4562).

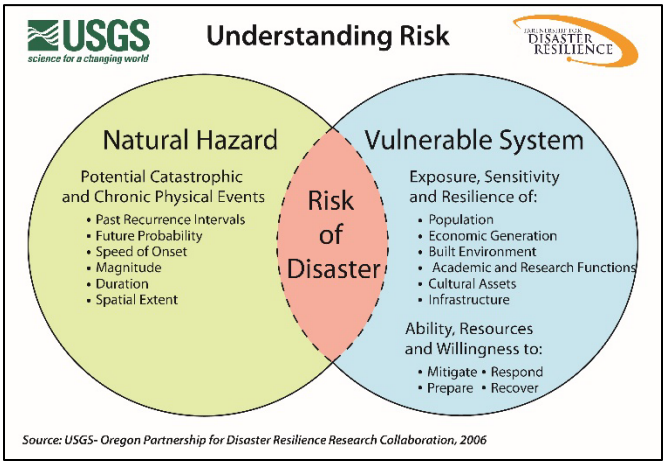
Winter Storm: Winter storm events included an ice storm in February 2021 and a late spring winter storm in April 2022. February 2024 brought an ice storm that impacted many residents. The 2021 and 2024 events were Presidentially Declared Disasters, DR-4599 and DR-4768, respectively.

Which hazards are of most concern in Linn County?

Risk assessment is a process of collecting information and assigning values to risks for the purpose of informing priorities, developing or comparing courses of action, and informing decision making. In other words, which natural hazards should be focused on when developing a course of action?

Conducting a risk assessment can provide information on the location of hazards, the value of land and property in hazard locations, and an analysis of risk to life, property, and the environment that may result from natural hazard events.

A risk assessment consists of three phases: hazard identification, vulnerability assessment, and risk analysis, as illustrated in the graphic to the right.



To inform the risk assessment, the Department of Geology and Mineral Industries analyzed the exposure and potential losses from two earthquake scenarios, a 100-year flood scenario, and exposure to landslide, channel migration, wildfire, and volcanic lahar.

Steering Committee Vulnerability Assessment

One element of assessing risk included the NHMP Steering Committee's vulnerability assessment. The assessment is based on the Oregon Department of Emergency Management (ODEM) Hazard Analysis Methodology which combines factors of History, Probability, Vulnerability, and Maximum Threat to assess risk. The total score provides a sense of hazard priorities, or relative risk. It does not predict the occurrence of a particular hazard, but it does "quantify" the risk of one hazard compared with another. By doing this analysis, planning can first be focused where the risk is greatest.

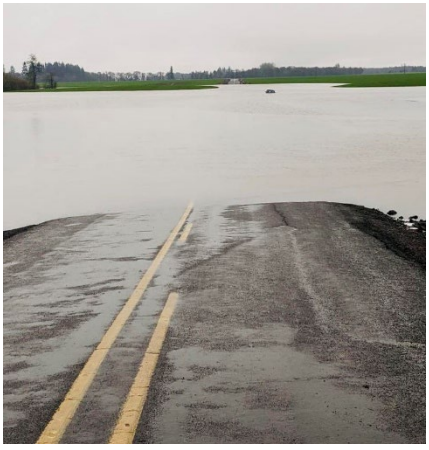
Summary of OEM Hazard Analysis Methodology County Level Risk Scores

HAZARD	Total Score
Winter Storm/Ice Storm	201.2
Extreme Heat	187.3
Smoke/Poor Air Quality	183.5
Flood	171.3
Drought	169.0
Earthquake (Cascadia)	160.7
Wildfire	158.9
Earthquake (Crustal)	155.7
Dam Failure	133.8
Windstorm/Tornado	116.5
Volcano	109.0
Landslide and Avalanche	106.4

The table to the left shows each hazard's potential impact on the county. City and district representatives then worked with the Department of Land Conservation and Development to refine the ranking of each hazard to focus on the probability and vulnerability for their jurisdiction.

During the NHMP update process, the Steering Committee identified two additional natural hazards, Extreme Heat and Dam Failure, to be addressed, with Smoke/Poor Air Quality identified as a hazard to be addressed separately from Wildfire.

Based on research by the Oregon Climate Change Research Institute, the Steering Committee considered how climate change impacts natural hazards affecting Linn County. These impacts are addressed throughout the NHMP and integrated into the consideration of probability.

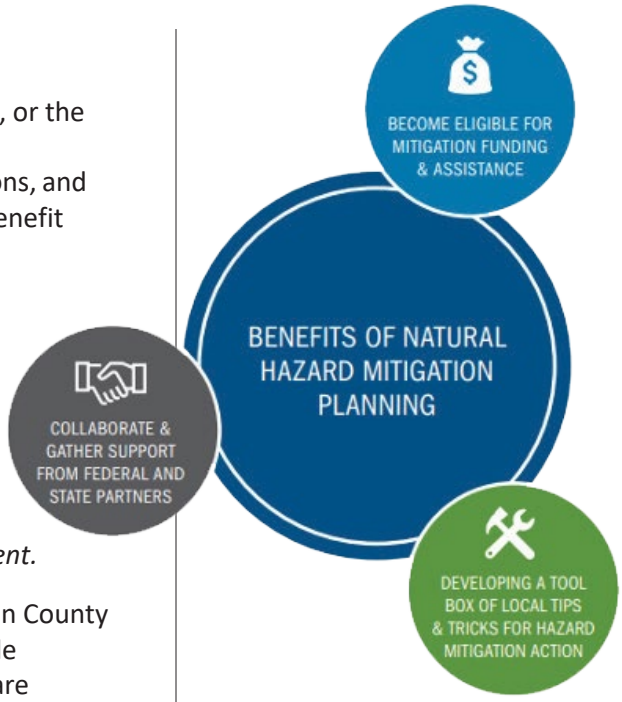


Understanding the risk of and vulnerabilities to natural hazards helped to inform the development of the NHMP's mitigation strategy.

How does this NHMP help reduce risk?

While it is impossible to predict exactly when natural hazards will occur, or the extent to which they will affect communities, with careful planning and collaboration among public agencies, private and non-profit organizations, and residents, it is possible to create a more resilient community that will benefit from long-term mitigation planning efforts.

The NHMP outlines Linn County's strategy to reduce or avoid long-term vulnerabilities to identified natural hazards. This **mitigation strategy** includes a mission, goals, and actions which the NHMP Steering Committee reviewed and updated during the Plan update process.



The **mission** of the Linn County NHMP is:

> *To reduce the impact of natural hazards on the community through planning, communication, coordination, and partnership development.*

Mitigation plan goals are more specific statements of direction that Linn County residents, businesses, and public and private partners can consider while working to reduce the county's risk from natural hazards. All the goals are important and are listed below in no particular order of priority:

> ***Goal 1:*** *Enhance coordination and communication among Linn County stakeholders to implement the Plan.*
>
> ***Goal 2:*** *Protect life, the built environment, and natural systems through County policies, procedures, and services.*
>
> ***Goal 3:*** *Protect life, the built environment, the economy, and natural resources through community-wide partnerships.*

Mitigation action items identified through the planning process are an important part of the mitigation strategy. Action items describe activities or projects that local jurisdictions can implement to reduce risk. Developing these actions was a multi-step, iterative process that involved brainstorming, discussion, review, and revisions by the NHMP Steering Committee.

Some of the actions are ongoing and conducted as a part of existing staff duties typically funded through existing budgets. Other actions are initiated and completed as discrete projects or activities that require grant or loan funding. The NHMP includes tables that organize the action items by completed, removed, and ongoing. Action items include information from each jurisdiction about the status, priority level, coordinating organization or department, an estimated timeline, potential funding sources, and other details.

Plan approval and implementation

In early 2025, the draft NHMP will be reviewed by ODEM and then reviewed and pre-approved by the Federal Emergency Management Agency (FEMA) pending adoption by each local jurisdiction included in the Plan. Once adopted locally, FEMA will issue a final approval. The final FEMA-approved NHMP will re-establish eligibility for FEMA Hazard Mitigation Assistance funding, which includes three main programs: the Building Resilient Infrastructure and Communities Program, the Hazard Mitigation Grant Program, and the Flood Mitigation Assistance.

Accomplishing NHMP mitigation goals and actions depends upon regular Steering Committee participation and support from county, city, and district leadership. Thorough familiarity with the Linn County NHMP will result in the efficient and effective implementation of appropriate mitigation activities and a reduction in the risk and the potential for loss from future natural hazard events.

Who was involved in developing this NHMP?

The Linn County NHMP is the result of a collaborative effort between the county, cities, special districts, residents, public agencies, non-profit organizations, the private sector, and regional organizations. County, city, and district advisory groups guided the development process.

To get community input during the Plan update process, the NHMP Steering Committee conducted outreach, including a survey to collect feedback and risk assessment information.

Public review of the mitigation strategy is now being conducted and feedback received will be considered by the Steering Committee to inform the Plan update.