



**Morrow County  
Multi-Jurisdictional  
Natural Hazard Mitigation Plan  
2023 Update Meeting  
AGENDA**



**Tuesday April 18, 2023**

**2:00 PM– 4:00 PM**

**HYBRID – North Morrow Annex (215 NE Main Ave., Irrigon) & Online**

Join Zoom Meeting

<https://us02web.zoom.us/j/89601631440?pwd=NGhLeFVWMktDMmUyejRoYkJOa3R3UT09>

Meeting ID: 896 0163 1440, Passcode: 708358

One tap mobile: +12532050468,,89601631440#,,,,\*708358# US

<b>Welcome/Introductions</b>	<b>2:00 pm</b>
<ul style="list-style-type: none"><li>• Please share your name, title, and jurisdiction</li><li>• Review and approve notes from meeting #5</li></ul>	Stephen Wrecsics, Morrow County Tamra Mabbott, Morrow County Susan Millhauser, DLCD
<b>DOGAMI Draft Risk Assessment</b>	<b>2:05 pm</b>
<ul style="list-style-type: none"><li>• Presentation and Q&amp;A</li></ul>	Matt Williams, Oregon Department of Geology and Mineral Industries, Geohazards Analyst
<b>NHMP Draft Risk Assessment</b>	<b>3:05 pm</b>
<ul style="list-style-type: none"><li>• Discuss overall priorities and hazard risk rankings</li></ul>	All
<b>Mitigation Strategy: Review Plan Goals</b>	<b>3:15 pm</b>
<ul style="list-style-type: none"><li>• Discuss / finalize draft updated goals<ul style="list-style-type: none"><li>○ New FEMA requirements</li></ul></li></ul>	All
<b>Project Map Development</b>	<b>3:30 pm</b>
<ul style="list-style-type: none"><li>• Review updated NHMP maps</li></ul>	All
<b>Progress Report: Mitigation Actions &amp; Annexes</b>	<b>3:45 pm</b>
<ul style="list-style-type: none"><li>• Share action items that might be relevant for others to collaborate on or add to their mitigation action list.</li></ul>	All
<b>Next Steps</b>	<b>3:55 pm</b>

- OCCRI Future Projects Report presentation
- Draft risk assessment review and feedback
- Continue to refine annexes and action items, including mitigation action description forms.
- Discuss mitigation strategy & plan maintenance process.

Next meeting: 5/16/23 in Irrigon,  
North Morrow Government Center  
& Online

**Morrow County MJ NHMP Website:** <https://www.co.morrow.or.us/emergency/page/natural-hazard-mitigation-plan>



**Morrow County  
Multi-Jurisdictional  
Natural Hazard Mitigation Plan  
2023 Update Meeting  
NOTES**



**Tuesday March 21, 2023**

**2:00 PM– 4:00 PM**

**HYBRID – North Morrow Annex (215 NE Main Ave., Irrigon) & Online**

Meeting recording: <https://dlcd.box.com/s/lf93qrvv6ki5zqvz4me9ey03293pslpd>

Meeting presentation: <https://dlcd.box.com/s/0q7pwlfybt5x3ev28tl8p57ge9xc33j8>

**Attendees:**

Ten people representing five jurisdictions, one special district, one utility, and one state agency attended the fifth meeting of the 2023 Morrow County Multi-Jurisdictional Natural Hazard Mitigation Plan.

**In-person**

Aaron Palmquist, City of Irrigon, City Manager  
Carla McLane, Irrigon Contract Planner/ Boardman Planning Official  
Tamra Mabbott, Morrow County Planning Director  
Stephen Wrecsics, Morrow County GIS Technician  
Susan Millhauser, DLCD Natural Hazard Planner, Project Manager

**Online**

Elizabeth Peterson, City of Lone, City Manager  
Veronica Hess, Lexington Town Recorder (partial)  
Brian Kollman, Operations Manager, Columbia Basin Electric Cooperative for Andy Fletcher  
Jared Huddleston, Morrow Soil and Water for Kevin Payne, District Manager Morrow SWCD  
Dawn Hert, DLCD Eastern Oregon Regional Representative

**Welcome/Introductions:**

- Attendees introduced themselves.
- The meeting notes from February 21, 2023 were briefly discussed and accepted.
- The Steering Committee reviewed the updated project timeline to better reflect the outreach strategy:
  - The risk assessment will be available for public review in April/May, hosted on the County website with feedback via email to the County, with cities helping to get out the word.
    - The County will advertise in local papers and post on the website and cities can share and get the word out.
    - We need to be very clear what is meant by natural hazards, e.g., does not include nitrate contamination of drinking water.
    - Make sure that the public is aware of the timeline for adoption, e.g., here's where we're at in the process and the projected timeline for adoption.

- Public review/input of the mitigation strategies will happen in the summer, with two meetings or open houses, one held in north county and the other in south county.
  - County/cities are responsible for doing the outreach, DLCDC can help with the content and putting together materials.
  - Discussed having a simple flyer that's double-sided, including translation to Spanish – the County may have some budget for translation. County-wide close to minority-majority Spanish-speaking population
  - Originally planned for outreach via a booth at the County Fair via Emergency Manager. For the last NHMP Planning had a booth at the Watermelon Festival.
  - Also, should reach out to the Chambers of Commerce.
- For adoption, planned for October-December 2023, each city and the county will have to hold a public hearing.
  - Is there support available for the cities? Paul initially indicated he would be available to attend council hearings to provide support. Need to confirm with Paul. As we get closer to adoption, we should revisit the strategy.
  - Cities must adopt their annexes, which are included in the full county plan to be adopted by the BCC. It's the jurisdictions' responsibility to keep their decision-makers in the loop so feedback can be incorporated prior to presenting the annexes and plan for adoption. The draft risk assessment might be a good step to share with city councils/BCC.
  - Boardman and Irrigon plan to adopt the NHMP as a standalone document. Afterwards, there may be adoption by reference to the Comp Plan as part of Goal 7 work. Can adopt by reference to allow for future plan updates without having to do a comp plan amendment.

## Draft Risk Assessment

- Discussed the preliminary ranking of the proposed hazards via the Hazard Vulnerability Assessment (HVA) for south Morrow County.
  - At the February meeting, which was focused on south county, the group confirmed the list of hazards and completed most of the HVA but ran out of time to wrap it up. The north county HVA was completed in January.
  - Susan will follow up with Lone, Lexington, and Heppner staff to adjust ratings to reflect south county hazard priorities.
  - Overall priorities and hazard risk rankings still need to be reviewed and affirmed by the steering committee. Can revisit after the draft DOGAMI risk assessment is presented and discussed.
- Discussed High Hazard Potential Dams (HHPD). FEMA's National Dam Safety Program now requires local NHMPs to address dam safety for HHPD grant eligibility.
  - There are seven dams in Morrow County, per the [National Inventory of Dams \(army.mil\)](https://www.army.mil), which the committee discussed in terms of risk.
    - The Willow Creek Dam outside of Heppner, owned by the USACE, is the only one identified in the inventory as a High Hazard Potential Dam and it has an Emergency Action Plan, which is the required plan.
    - Why don't we also talk about dams outside the county that could impact Morrow county, such as a potential impact from McNary Dam? There's no limit as to what the NHMP can discuss in terms of risk, but it won't include mitigation actions for a dam in Washington or another county.

- The other six dams are small reservoirs or wastewater treatment lagoons, so not a major concern in terms of natural hazard risk such as flooding. See notes in the HVA.
- Discussed the DOGAMI risk assessment, will it provide geological information related to dam safety? And other critical infrastructure such as rail and bridges? We want everything in the plan that could be impacted by a natural hazard.
  - Susan will check with DOGAMI regarding dams and transportation infrastructure.
- Clarify what makes a dam a HHPD so we can explain to the public what that means. (Per FEMA, **High Hazard Potential** is a classification standard for any dam whose failure or mis-operation will cause loss of human life and significant property destruction.)
- Need to formally assess and rank HHPDs dam as part of risk assessment.

### **Mitigation Strategy: Review New FEMA Requirements and Plan Goals**

- New FEMA requirements to address planning for climate change and equitable outcomes, community lifelines, and HHPD were reviewed.
- Climate change - Oregon Climate Change Research Institute (OCCRI) report for Morrow County will address how climate change is expected to influence climate-related natural hazards, helps to satisfy the climate change requirements. This will be additional information to consider related to risk assessment and potential mitigation projects. More information at [Future Climate Projections for Oregon Counties – Oregon Climate Change Research Institute \(oregonstate.edu\)](https://oregonstate.edu/future-climate-projections-oregon-counties).
- Equitable outcomes - FEMA defines underserved communities and social vulnerability, which are important to keep in mind, or use as a lens to view plan goals and mitigation strategies. Can think of underserved communities and social vulnerability as a lens Are the goals expansive enough or perhaps, they may need to be more specific to ensure that disparate impacts to underserved communities are being considered?
  - Vulnerabilities can overlap, i.e., elderly people who don't drive or have access to a private vehicle, like an assisted living facility, which may call for a specific mitigation strategy. Another example: people who lived in mobile home parks during the 2020 wildfires in Southern Oregon with only one road in and out of the development had a harder time evacuating. A mitigation project could be for evacuation signage in certain locations with higher concentration of vulnerable community members.
  - Are there areas in the county where emergency access hasn't been planned for or certain neighborhoods with lower car ownership? In south county there is aged populations, assisted living facilities, etc. - maybe emergency responders might need more information. Or people without smart phones. Language access, Spanish for emergency alerts, does this already happen, if not would be a project to identify.
- Critical community lifelines – some overlap between mitigation and recovery functions that are critical for community recovery after a natural disaster.
  - Food distribution centers have come up recently. Are there any in the County that could become inaccessible? Would food access to grocery stores be impacted?
  - Paul has mentioned emergency supplies out at the Depot, water, MREs, perhaps managed by Red Cross.
  - Let's make sure transportation networks, energy grid, fuel delivery, etc. are identified through this process to understand their vulnerabilities.

- Communication facilities, broadband, etc. Owners may not want them mapped but we can inquire about what owners are doing to ensure these are resilient to natural hazards. Are there projects the county can support to help better protect these facilities?
- Steering committee to refine priority community lifelines.
  - Susan can reach out to communications, energy, other companies as a neutral third party.
- The committee discussed the plan goals generally considering the new FEMA requirements.
  - Committee] put a lot of time into the goals last time, they are high enough level – unless there's a red flag for FEMA for what is or isn't in there, would rather not make any changes.
  - Goal 1 – should it also include people? Goal 1 is focused on protecting property to make sure the people that live/work there are safe. Goal 3 is preventative and focused on reducing the threat of loss of life and property.
    - FEMA's focus is on investing to project community investments. Look at other plans, Umatilla?
    - Focus is on mitigation to protect property that can affect lives. Don't want it to be too broad to go past natural hazards.
  - Goal 7 – second bullet might actually be more easily achieved due to restructuring Emergency Management into a standalone function.
  - Susan to review then share back by email with the group.

## Project Map Development

- Reviewed the 2016 NHMP maps and 2018-2019 CWPP maps and discussed potential updates and data needs related to critical facilities and infrastructure, community lifelines, and socially and economically vulnerable communities.
  - Boardman and Heppner have new fire stations.
- What about bridges? Have the shape files from the CWPP, would be smart to identify for evacuation routes planning, identify as critical pinch point. Could include a project to identify which bridges or routes are substandard from an emergency response perspective.
- CWPP communities at risk – [ODF Communities at Risk Report](#), came out in 2020. Stephen recalls they identified during the update.
- Confirm any updated fire protection districts near Irrigon, Boardman is serving an area but there hasn't been a vote yet to change the boundary.
- Any historic fires > 50 acres in size since the update?
- Discussed how WUI was determined in the CWPP. Identified areas of impact with concentrations of buildings, then did a buffer around them.
  - The WUI map may look different now, the bombing range now has fire protection but they're no longer dropping live munitions. Higher risk around the bombing range, but there is a 50–60-foot fire break. Confirm Cecille is on the WUI map, on Hwy 74 northwest of Lone.
- Are there geographic areas, types of communities such as manufactured home parks in the county that are more at risk?
- Area of landslide alluvial fan showing a historic/ prehistoric landslide was mapped. Don't use red!

- Stephen suggested for lifelines having a set of separate maps. Come up with a list and share with the cities to put on the map for their city, for example, food distribution center, fuel storage, etc. Having critical facilities elevated will help to prioritize. He will send maps to the cities for mark up and review.

## **Progress Report: Mitigation Actions & Annexes 3:40 pm**

### Mitigation actions discussion:

- Boardman and Irrigon action items from Carla were sent to Pam. Didn't yet identify any new action items, will need the form.
- Need an estimated cost for each mitigation project and timeline, which department is leading if more than, and priority for that organization. An action item form template is on Box, can customize for each jurisdiction. Susan will share links again in the follow up email.
- County – Stephen got updates from the roads department. Reviewed county actions, most are road improvements. Reach out to Sandy to see if there should be a flood mitigation project for the fairgrounds in Lone.
- Lone – Willow Creek 1979 flood took out the bridge, which has since been raised and hasn't backed up and flooded since. Rhea Creek dumps into Willow Creek. Is there an upstream opportunity for mitigation? Or a project to remap the floodplain? Lone met with FEMA representative, and it will cost \$\$ to do the work and a study. Important to include on the project list to help identify funding for a study if it hasn't been done yet, to lead to floodplain remapping (LOMAR) as many properties are still paying for flood insurance when that may not have to.
  - Liz will send Susan the City Council report from a couple of years ago.
- Lexington – A similar project could be beneficial, an assessment of flood mitigation that is appropriate to reduce the overall floodplain area if possible. Regarding Lexington water feasibility project, should call out looking for additional sources of water for the city, only have a single system and no back up (study next steps).
- Heppner – has a similar need for a backup water supply system. Hospital doesn't have enough water pressure to do appropriate fire suppression. Susan noted her conversation with Kraig, reflected on another spreadsheet, about the engineering studies being done.
- Are there language updates that should be tweaked? Example from Heppner (H06-03), is there newer updated language or references?
- Need to provide out more detail on the worksheets, can note if there's a change in need or technology. How do you reflect an old project that needs to be tweaked? Can it be renumbered, so the original intent isn't lost? Don't want to delete old projects but can add with a new number. Can cross-reference the old numbers.
  - Susan will look at how other plans have done that, don't want to lose the intent.
- Possible generators from Amazon for well backup electricity? Could lead to a project update, for example, to address a specific issue a different way.
- Susan to combine and send out to everyone with links and next steps. Need additional information about which hazards are being addressed with which projects, such as enlarging culverts, cost estimates, etc.
- Reviewed the mitigation action table template that will include all of the actions by hazard, with cross-references to joint projects.

### Annexes:

- Liz and Chad talked with Pam about the Lone annex.

- Irrigon and Boardman have started, and Carla will continue to work on those.
- Susan will check in with other jurisdictions.

**Next Steps:**

- Continue to refine annexes and action items, including mitigation action description forms. Updated mitigation actions due 4/17/23. Annexes can continue to be refined over the next two months.
- Continue to track time and engagement activities. Cost share forms are due April 15, 2023 for January through March 2023. Susan will send out at the first week of April to everyone as reminder with steering committee meetings filled in, please add additional meetings or time spent otherwise.
  - [Link to updated cost share form](#)
  - [Link to updated instructions](#)
- Outreach To Do
  - Link to project website! Morrow County MJ NHMP Website: <https://www.co.morrow.or.us/emergency/page/natural-hazard-mitigation-plan>
  - Suggest interested parties, engage community representatives in action item development.
- Review/refine project maps – Stephen with feedback from the jurisdictions.
- Presentation from OCCRI and review of DOGAMI report still to be scheduled.
- Carla will email Susan for Box access.
- Next Committee Meeting: Tuesday, April 18, 2 PM – 4 PM in Irrigon, North Morrow Government Center & Online via Zoom.



Hazard Vulnerability Analysis Score Sheet: South County															
Hazard	History			Vulnerability			Maximum Threat			Probability			Total	H-M-L	Rank
	Severity	Weight	Subtotal	Severity	Weight	Subtotal	Severity	Weight	Subtotal	Severity	Weight	Subtotal			
Air Quality (incl. inversion and wildfire smoke)	10	2	20	10	5	50	10	10	100	10	7	70	240	H	
Wildfire	10	2	20	10	5	50	10	10	100	10	7	70	240	H	
Severe Weather: Thunderstorms (incl. lightning & tornado)	10	2	20	10	5	50	5	10	50	10	7	70	190	H	
Drought	10	2	20	5	5	25	5	10	50	10	7	70	165	M	
Severe Weather: Windstorm (incl. dust storms)	10	2	20	5	5	25	5	10	50	10	7	70	165	M	
Severe Weather: Winter Storm (incl. freezing fog)	10	2	20	5	5	25	5	10	50	10	7	70	165	M	
Flood	10	2	20	5	5	25	1	10	10	10	7	70	125	M	
Landslide	10	2	20	5	5	25	1	10	10	10	7	70	125	M	
Severe Weather: Extreme Temperature	10	2	20	5	5	25	1	10	10	10	7	70	125	M	
Earthquake: Crustal	1	2	2	1	5	5	1	10	10	5	7	35	52	L	
Volcanic Event	1	2	2	1	5	5	1	10	10	5	7	35	52	L	
Earthquake: Cascadia Subduction Zone Event	1	2	2	1	5	5	1	10	10	1	7	7	24	L	
Dam Safety		2	0		5	0		10	0		7	0	0		

SEVERITY RATINGS (to be applied to the four categories) WE = weight factor  
 LOW = 1 - 3 points SEV = severity rating  
 MEDIUM = 4 - 7 points  
 HIGH = 8 - 10 points

The following categories are used in developing the scores for this analysis:

HISTORY (record of previous occurrences)  
 LOW 0 - 1 event per 100 years  
 MEDIUM 2 - 3 events per 100 years  
 HIGH 4 + events per 100 years

VULNERABILITY (percentage of population and property likely to be affected)  
 LOW < 1% affected  
 MEDIUM 1 - 10% affected  
 HIGH > 10% affected

MAX. THREAT (percentage of population and property that could be impacted under a worst-case scenario)  
 LOW < 5% affected  
 MEDIUM 5 - 20% affected  
 HIGH > 25% affected

PROBABILITY (the likelihood of occurrence within a specified period of time)  
 LOW one incident likely within a 75 to 100 year period  
 MEDIUM one incident likely within a 35 to 75 year period  
 HIGH one incident likely within a 10 to 35 year period

Risk Assessment Process:	
	<b>EXAMPLE:</b> The 2023 Morrow County NHMP Steering Committee reviewed and ranked the plan hazards (for south county-- Heppner, lone, Lexington, and surrounding unincorporated county areas) in a meeting February 21, 2023 and March 21, 2023 for HHPD.
<b>Notes by Hazard: Specific hazard impacts and/or logic used for ranking each hazard.</b>	
Air Quality	2022 wildfires and smoke inversion from fires in the valley. Fires in Gilliam or Sherman Co. also impact Willow Creek Valley.
Dam Safety	Need to revisit/check in with the USCOE. Dam is important to keep flooding from happening, they can turn off the flow.  3/21/23 SC mtg.: One lagoon has breached in the past 30 years in this region in Umatilla County on Hwy 207 due to a badger digging into it. Simplot was the owner. Not overly concerned at this point. If there are geologic hazards that maybe a concern but otherwise not concerned. Heppner Dam is for flood control. Talk to Kim at Heppner. The other dams are small sewage lagoons, regulated by DEQ, and don't hold a lot of water. Willow Creek has a low safety risk and has an Emergency Action Plan. Need to explain what makes a HHPD.
Drought	Every year letter of support to declare drought in the county, higher probability of above normal and 50-60% of lower precipitation. predicted. Usually into D2 severe into D3 extreme. Water supply for H, L, I are via deep wells so not threatened. Recreational impacts from algae blooms - public health affect. Dam in Heppner is emptied for irrigation. Drinking water can be shifted for irrigation. Potential water quality impacts. Impacts to livestock.
Earthquake: Cascadia Subduction Zone Event	
Earthquake: Crustal	4 historic EQ in E OR, see last plan. 1976 last one Deschutes Co
Flood	Kim Cutsforth, Willow Creek Valley and NFIP claims - Heppner has one NFIP claim, after the dam was built not a lot in the way of floods. 1971 last flood in Lexington, '96 an '97 emergency declarations on private property. Every year flooding to some degree requires fire dept response. Had to evacuate the grade school and needed clearing to protect the bridges. Flood monitoring on most of the streams, Mitten (?) Creek. Black Horse Creek - 2006 estimated. 2011 (had to evacuate elem. school) and 2014 March 29-30. County fairgrounds and baseball field/odoo grounds flooded. Hay fields impacted with rocks. A few bridges were lost, no loss of life. Mostly in floodways. Heppner had a monitor show 100 year flood in 2019 but the banks weren't breached. Shot LIDAR that shows that the flood was below the mapped floodplain. Opportunity to identify a project to request remap/LOMAR?
Landslide	Heppner sits on a pile of rock, pretty hard to slide. Upper Willow and Ray Creek 2019 slides in the forested areas, Willow Creek Rd. the road wasn't damaged but became impassable due to rock and debris. Potential mitigation project? Slides occur in areas / places that are away from population bases.
Severe Weather: Extreme Temperature	There has been discussion of setting up warming/cooling shelters in south County but not sure if that happened. Extreme temps are never long lived. Livestock considered as property: 50% of the county ranches so there are significant economic impacts.
Severe Weather: Thunderstorms (incl. lightning & tornado)	1995 tornado 6 mile swath, cyclonic winds that picked up feed trucks, uprooted trees. Hail damage. Power Co. has seen microburst that took out 48 transmission poles in one swath, eight years ago winter storm took out 21 transmission double circuit poles. Jan 2022 - high winds are number one issue multi-seasonal. Have a high rate of incidents happening. There are a lot more transmission lines with renewable energy projects, will see more exposure / hazard risk from lightning and possible wildfires. If power is shut off, there is impact to the hospitals and the people being served, some tests won't be available. Impacts to people with medical equipment in their homes.
Severe Weather: Wind Storm (incl. dust storms)	See above, not always thunderstorm related. Combination of both. See above about power outages and impacts to the grid. Windstorms affect people on the roads, dust storms that have caused multiple accidents on the roadway.
Severe Weather: Winter Storm (incl. freezing fog)	Winter storm not as vulnerable as the north end, don't have a major roadway like I-84, people are aware of freezing fog and know how to slow down. Power lines can be impacted but not as much as Gilliam County. Combined EMS for the whole county so may have to send responders to the north county in a severe event.
Wildfire	Labor Day 2020 fires didn't come into Morrow County from Umatilla County. Fire can be catastrophic. Still in WF season in February with it being dry and windy.
Volcanic Event	Mt St Helens, look at DOGAMI report
<b>EXAMPLE Notes by Hazard: Specific hazard impacts and/or logic used for ranking each hazard.</b>	
Drought	Example: Water source is not managed by the jurisdiction (no need to rank hazard unless a concern).
Earthquake	Example: CSZ risk is driving seismic upgrades for x, y, z buildings or infrastructure.
Flood	Example: Road and stormwater flooding is a concern.
Landslide	Example: Landslides are a major problem during winter storms due to large volumes of precipitation.
Wildfire	Example: Mitigation ongoing with gorse infestations due to historic fire experience.
Wind Storm	Example: Annual wind storms are a concern for lifelines... for our road department...
Winter Storm	Example: Ice affecting powerlines can result in X impacts such as... a need for backup power, etc.

Range	#s
Low	24-95
Medium	96-167
High	168-240

Hazard Vulnerability Analysis Score Sheet: North County															
Hazard	History			Vulnerability			Maximum Threat			Probability			Total	H-M-L	Rank
	Severity	Weight	Subtotal	Severity	Weight	Subtotal	Severity	Weight	Subtotal	Severity	Weight	Subtotal			
Severe Weather: Winter Storm (incl. freezing fog)	10	2	20	9	5	45	9	10	90	10	7	70	225	H	1
Severe Weather: Thunderstorms (incl. lightning & tornadoes)	10	2	20	8	5	40	8	10	80	10	7	70	210	H	2
Air Quality (incl. inversion & wildfire smoke)	10	2	20	7	5	35	7	10	70	10	7	70	195	H	3
Severe Weather: Extreme Temperature	10	2	20	7	5	35	7	10	70	10	7	70	195	H	3
Severe Weather: Windstorm (incl. dust storms )	10	2	20	6	5	30	6	10	60	10	7	70	180	H	4
Drought	10	2	20	5	5	25	5	10	50	10	7	70	165	M	5
Earthquake: Cascadia Subduction Zone Event	1	2	2	10	5	50	10	10	100	1	7	7	159	M	6
Wildfire	10	2	20	1	5	5	1	10	10	10	7	70	105	M	7
Volcanic Event	1	2	2	8	5	40	8	10	80	1	7	7	129	M	8
Earthquake: Crustal	10	2	20	1	5	5	1	10	10	1	7	7	42	L	9
Flood	1	2	2	1	5	5	1	10	10	1	7	7	24	L	10
Landslide	1	2	2	1	5	5	1	10	10	1	7	7	24	L	10
Dam Safety		2	0		5	0		10	0		7	0	0		

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 LOW = 1 - 3 points : SR = severity rating  
 MEDIUM = 4 - 7 points  
 HIGH = 8 - 10 points

The following categories are used in developing the scores for this analysis:

**HISTORY** (record of previous occurrences)  
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 MEDIUM : 2 - 3 events per 100 years  
 HIGH : 4 + events per 100 years

**VULNERABILITY** (percentage of population and property likely to be affected)  
 LOW : < 1% affected  
 MEDIUM : 1 - 10% affected  
 HIGH : > 10% affected

**MAX. THREAT** (percentage of population and property that could be impacted under a worst-case scenario)  
 LOW : < 5% affected  
 MEDIUM : 5 - 25% affected  
 HIGH : > 25% affected

**PROBABILITY** (the likelihood of occurrence within a specified period of time)  
 LOW : one incident likely within a 75 to 100 year period  
 MEDIUM : one incident likely within a 35 to 75 year period  
 HIGH : one incident likely within a 10 to 35 year period

<b>Risk Assessment Process:</b>	<i>EXAMPLE: The 2023 Morrow County NHMP Steering Committee reviewed and ranked the plan hazards (for north county-Boardman, Irrigon, and surrounding unincorporated county areas) in a meeting January 17, 2023, and March 21, 2023 (HHPD).</i>
<b>Notes by Hazard: Specific hazard impacts and/or logic used for ranking each hazard.</b>	
Air Quality	Significantly more in recent years, smoke from wildfire is more frequent. Two weeks for the last two septembers. Winter inversion is more pronounced in the north end, but inversions only last a day or just a morning.
Dam Safety	3/21/23 SC mtg.: One lagoon has breached in the past 30 years in this region in Umatilla County on Hwy 207 due to a badger digging into it. Simplot was the owner. Not overly concerned at this point. If there are geologic hazards that maybe a concern but otherwise not concerned. Heppner Dam is for flood control. Talk to Kim at Heppner. The other dams are small sewage lagoons, regulated by DEQ, and don't hold a lot of water. Willow Creek has a low safety risk and has an Emergency Action Plan. Need to explain what makes a HHPD.
Drought	Drought affects farms and entities that pump out of rivers; irrigated agriculture is vulnerable under projections.
Earthquake: Cascadia Subduction Zone Event	Certain areas in the county will feel CSZ effects. Heppner will have tremors and road impacts; Boardman could have major damage due to soil liquefaction, Irrigon .
Earthquake: Crustal	At least one fault in Morrow, have felt Eqs (less than a 6).
Flood	Flood controlled in Irrigon and Boardman, McNary dam is low risk.
Landslide	
Severe Weather: Extreme Temperature	Cooling centers have opened more than 4 times; extreme cold is more of a concern. Power outage is a concern.
Severe Weather: Thunderstorms (incl. Lightning & tornadoes)	combining tornado here - tornado impacts of \$1 million on ag pivot and south county airport
Severe Weather: Wind Storm (incl. dust storms)	Asthma and highway shut downs are included in risks of dust. These are the health impacts that drive the risk of this hazard. Dust storms are spring summer or fall. Really dry for multiple days before you get to an impact. If you go back to the 80s with development, many ppl think it is farm fields, but other development. Tornadoic event in 2006.
Severe Weather: Winter Storm (incl. freezing fog)	Power outage and highway closure. Taxing to local emergency services. Freezing fog is annual.
Wildfire	Quick containment, more agricultural risk (dryland wheat).
Volcanic Event	Eruption of one of the 'sisters', significant ash fall would occur of 2-4".
<b>EXAMPLE Notes by Hazard: Specific hazard impacts and/or logic used for ranking each hazard.</b>	
Drought	Example: Water source is not managed by the jurisdiction (no need to rank hazard unless a concern).
Earthquake	Example: CSZ risk is driving seismic upgrades for x, y, z buildings or infrastructure.
Flood	Example: Road and stormwater flooding is a concern.
Landslide	Example: Landslides are a major problem during winter storms due to large volumes of precipitation.
Wildfire	Example: Mitigation ongoing with gorse infestations due to historic fire experience.
Wind Storm	Example: Annual wind storms are a concern for lifelines... for our road department...
Winter Storm	Example: Ice affecting powerlines can result in X impacts such as... a need for backup power, etc.

Range	#s
Low	24-95
Medium	96-167
High	168-240

# Section 4

## Mission, Goals and Action Items

### Natural Hazard Mitigation Vision and Mission

The Steering Committee, with the support of the Planning Department and the guidance of Oregon ~~Partnership for Disaster Resilience~~ Department of Land Conservation and Development, along with examples of goals from other Oregon counties reviewed, considered and developed Morrow County's 2016 vision and mission statements as well as the and natural hazard mitigation plan goals to ensure alignment with new FEMA mitigation planning requirements, addressing planning for climate change and equitable outcomes, community lifelines, and High Hazard Potential Dams.

**Commented [MS\*D1]:** Add reference footnote:  
**FEMA Local Mitigation Planning Policy Guide**  
FP 206-21-0002  
Released April 19, 2022, Effective April 19, 2023  
OMB Collection #1660-0062

### Vision

To maximize Morrow County's resistance and resilience to natural hazards in both government and private sectors through preparedness and mitigation.

### Mission

To identify and reduce risk, work to prevent loss, and protect life, property, and the environment from natural hazard events through coordination and cooperation among public and private partners.

### Mitigation Plan Goals

The basis for Morrow County's goals concerning mitigation of natural hazard risks lies in the Comprehensive Plan, which directs the County to protect life and property from natural disasters and hazards. This goal exists in harmony with many other County planning programs from the Transportation System Plan to the ordinances, plans and policies of the Health Department, Planning Department, Public Works Department, and other entities such as Morrow County Emergency Management.

~~The following natural hazard mitigation plan goals - in no particular priority order - were developed in 2016 by The the Steering Committee based on consideration, with the support of the Planning Department and guidance of the Oregon State's Hazard Mitigation Plan Goals along with examples of goals from other Oregon counties, with updates made in 2023 by the Steering Committee to reflect alignment with new FEMA mitigation planning requirements; considered and developed in no particular priority order - the following natural hazard mitigation plan goals:~~

**Goal 1: Protection of Property:**

**Commented [MS\*D2]:** could delete the specifics...

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- Lessen impact from natural disaster on individual properties, businesses, and public facilities by increasing awareness at the individual level and encouraging activities that can prevent damage and loss of life from natural hazards;
- Improve hazard assessment information to make recommendations for discouraging new development and encouraging preventative measures for existing development in areas vulnerable to natural hazards.

**Goal 2: Education and Outreach:**

- Further the public's awareness and understanding of natural hazards and potential risk, including social and economic vulnerability and mitigation efforts;
- Provide information on tools, partnership opportunities and funding resources to assist in implementing mitigation activities, using best practices to engage underserved communities and individuals.

**Goal 3: Preventative:**

- Reduce the threat of loss of life and property from natural hazards by incorporating information on known hazards and providing incentives to make hazard mitigation planning a priority in land use policies and decisions, including plan implementation, with attention to barriers or opportunities in areas with underserved communities or for individuals or groups with heightened social vulnerability.

**Goal 4: Partnership and Coordination:**

- Identify mitigation or risk reduction measures that address multiple areas (i.e., environment, transportation, telecommunications);
- Coordinate public/private sector participation in planning and implementing mitigation projects throughout the County;
- Seek funding and resource partnerships for future mitigation efforts; and
- Strengthen communication and coordinate participation among and within public agencies, citizens/residents, non-profit organizations, business, and industry.

**Goal 5: Structural Projects:**

- When applicable, utilize structural mitigation activities to minimize risks associated with natural hazards.

**Goal 6: Natural Resources:**

- Preserve and rehabilitate and enhance natural systems to serve natural hazard mitigation functions (i.e., floodplains, wetlands, watersheds, and urban interface areas); and
- Balance watershed planning, natural resource management, and land use

**Commented [MS\*D3]:** Definitions from FEMA:

**Underserved Communities** refers to populations sharing a particular characteristic, as well as geographic communities that have been systematically denied a full opportunity to participate in aspects of economic, social and civic life. The barriers to opportunity and participation these communities face have been occurring throughout history and continue today.

**Social vulnerability** is understood as the potential for loss within an individual or social group, recognizing that some characteristics influence an individual's or group's ability to prepare, respond, cope or recover from an event. These characteristics can overlap within populations to create heightened vulnerability, which may be compounded by infrastructure deficiencies within communities and historic or existing discriminatory government policies.

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planning with natural hazard mitigation to protect life, property, and the environment.

**Goal 7: Emergency Services:**

- Minimize life safety issues by promoting, strengthening, and coordinating emergency response plans; and
- Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.