North Lincoln Fire & Rescue District Addendum

to the Lincoln County Multi-Jurisdictional NHMP

Photos courtesy of North Lincoln Fire & Rescue District

Effective: December 17, 2025 through December 16, 2030

Prepared for
North Lincoln Fire & Rescue District
2525 NW HWY 101, Lincoln City, OR 97367

Prepared by
The University of Oregon
Institute for Policy Research & Engagement
School of Planning, Public Policy, and Management

Prepared for
North Lincoln Fire & Rescue District
2525 NW HWY 101, Lincoln City, OR 97367

This Natural Hazard Mitigation Plan was prepared by:

UNIVERSITY OF OREGON | School of Planning, Public Policy and Management | Institute for Policy Research and Engagement

Planning grant funding provided by:

FEMA

Federal Emergency Management Agency (FEMA)
Hazard Mitigation Grant Program
Grant No: HMGP-PF-5446-01-P-OR

Additional Support Provided by:

OREGON DEPARTMENT OF EMERGENCY MANAGEMENT OEM

U.S. Department of Homeland Security
Federal Emergency Management Agency
Region 10

130 228th St SW
Bothell, WA 98021

December 17, 2025

Stephen Richardson
State Hazard Mitigation Officer
Oregon Department of Emergency Management
3930 Fairview Industrial Dr SE
Salem, OR 97302

Reference: Approval of the Lincoln County Multi-Jurisdictional Natural Hazard Mitigation Plan

Dear Officer Richardson:

In accordance with applicable[1] laws, regulations and policy, the Risk Analysis Branch of FEMA Region 10 Mitigation Division has approved the local mitigation plan for the following jurisdictions:

Lincoln County	City of Depoe Bay	City of Newport
City of Toledo	Beverly Beach Water District	Central Lincoln People's Utility District
Central Oregon Coast FRD	Depoe Bay Fire District	Gleneden Sanitary District
Kernville-Gleneden Beach-Lincoln Beach Water District	North Lincoln Fire and Rescue District	Otter Rock Water District
Panther Creek Water District	Salishan Sanitary District	Seal Rock Water District
Siletz Valley Fire District	SW Lincoln County Water People's Utility District	

Mitigation plans may include additional content to meet Element H: Additional State Requirements or content the local government included beyond applicable FEMA mitigation planning requirements. FEMA approval does not include the review or approval of content that exceeds these applicable FEMA mitigation planning requirements.

The approval period for this plan is from December 17, 2025 through December 16, 2030.

[1] Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and National Dam Safety Program Act, as amended; 44 CFR Part 201, Mitigation Planning; and Local Mitigation Planning Policy Guide (FP-206-21-0002).

The jurisdictions' plan approval ensures the eligibility for project grants under FEMA's Hazard Mitigation Assistance programs. All requests for funding are evaluated individually according to eligibility and other program requirements. Having an approved mitigation plan does not mean that mitigation grant funding will be awarded. Specific application and eligibility requirements can be found in each FEMA grant program's respective policies and annual Notice of Funding Opportunities, as applicable.

FEMA's approval is for a period of five years, effective the date FEMA received the adoption documentation. For this plan, documentation was received on December 17, 2025 and is considered approved as of then. Prior to December 16, 2030, each jurisdiction must review, revise, and submit their plan to FEMA for approval to maintain eligibility for grant funding. The enclosed plan review tool provides opportunities to incorporate into future updates.

Sincerely,

Wendy Shaw, P.E.
Risk Analysis Branch Chief
Mitigation Division

JG: MB

Attachment**:** Local Mitigation Plan Review Tool

North Lincoln Fire & Rescue District #1

RESOLUTION # 2025-09

Resolution Adopting Representation in the Updates to the Lincoln County Multi-Jurisdictional Natural Hazards Mitigation Plan

---

WHEREAS, North Lincoln Fire & Rescue District #1 recognizes the threat that natural hazards pose to people, property and infrastructure within our community; and

WHEREAS, undertaking hazard mitigation actions will reduce the potential for harm to people, property and infrastructure from future hazard occurrences; and

Whereas, an adopted Natural Hazards Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

WHEREAS, North Lincoln Fire & Rescue District #1 has fully participated in the FEMA prescribed mitigation planning process to prepare the Lincoln County, Multi-Jurisdictional Natural Hazards Mitigation Plan, which has established a comprehensive, coordinated planning process to eliminate or minimize these vulnerabilities; and

WHEREAS, North Lincoln Fire & Rescue District #1 has identified natural hazard risks and prioritized a number of proposed actions and programs needed to mitigate the vulnerabilities of the District to the impacts of future disasters within the Lincoln County, Multi-Jurisdictional Natural Hazards Mitigation Plan; and

WHEREAS, these proposed projects and programs have been incorporated into the Lincoln County, Multi-Jurisdictional Natural Hazards Mitigation Plan that has been prepared and promulgated for consideration and implementation by the participating cities and special districts of Lincoln County; and

WHEREAS, the Oregon Department of Emergency Management and Federal Emergency Management Agency, Region X officials have reviewed the Lincoln County, Multi-Jurisdictional Natural Hazards Mitigation Plan and pre-approved it contingent upon this official adoption of the participating governments and entities;

WHEREAS, the NHMP is in an on-going cycle of development and revision to improve its effectiveness; and

WHEREAS, North Lincoln Fire & Rescue District #1 adopts the NHMP and directs the Fire Chief or their designee to develop, approve, and implement the mitigation strategies and any administrative changes to the NHMP.

NOW, THEREFORE, BE IT RESOLVED that the North Lincoln Fire & Rescue District #1 adopts the Lincoln County Multi-Jurisdictional Natural Hazards Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED that the North Lincoln Fire & Rescue District #1 will submit this Adoption Resolution to the Oregon Department of Emergency Management and Federal Emergency Management Agency, Region X officials to enable final approval of the Lincoln County Multi-Jurisdictional Natural Hazards Mitigation Plan.

PASSED and ADOPTED by the Board of Directors of North Lincoln Fire & Rescue District #1 this 12 day of November, 2025.

Board President

Board Secretary

Table of Contents

Introduction 1
Purpose and Adoption *1*
Process, Participation, and Adoption *1*
Implementation and Maintenance 2
Implementation through Existing Programs *3*
Capability Assessment *3*
Policies and Programs 3
Personnel 3
Mitigation Successes 4
Mitigation Strategy 4
Risk Assessment 7
Hazard Analysis *7*
Community Characteristics and Assets *8*
Community Characteristics 8
Facilities and Property Assets Inventory 9
Hazard Identification *11*
Vulnerability Assessment *11*

ATTACHMENT A: PUBLIC INVOLVEMENT SUMMARY 16

Steering Committee 16

ATTACHMENT B: HAZARD MAPS 18

List of Tables

Table FD-1 Action Items 5
Table FD-2 Hazard Analysis Matrix 8
Table FD-3 Hazard Risk and Description of Impact 13
Table FD-5 Facilities Summary 15

List of Maps

Map FD-1 District Boundaries 10
Map FD-2 Earthquake Liquefaction (Soft Soil) Hazard and Active Faults 18
Map FD-3 Probability of Damaging Shaking 20
Map FD-4 Perceived Shaking and Damage Potential, Probabilistic Earthquake Model 21
Map FD-5 Perceived Shaking and Damage Potential, CSZ Earthquake Model 22
Map FD-6 Tsunami Inundation Scenarios 23
Map FD-7 Flood Hazard Zones (100- and 500-year floodplains) 24
Map FD-8 Landslide Susceptibility Exposure 25
Map FD-9 Burn Probability and Fire History (1992-2022) 26
Map FD-10 Potential Wildfire Impact (Overall) 27

Introduction

Purpose and Adoption

This is the North Lincoln Fire & Rescue District (North Lincoln FRD) addendum to the Lincoln County Multi-Jurisdiction Natural Hazards Mitigation Plan (NHMP). This addendum is not intended to be a standalone document, rather information contained herein supplements information contained in Volume I (Basic Plan) which serves as the NHMP foundation and Volume II (Appendices), which provides additional information. This addendum meets the following requirements:

- Multi-jurisdictional **Plan Requirements: Participation** §201.6(a)(4),
- Multi-Jurisdictional **Plan Content: Risk Assessment** §201.6(c)(2)(iii),
- Multi-jurisdictional **Plan Content: Mitigation Strategy** §201.6(c)(3)(iv), and
- Multi-jurisdictional **Plan Content: Documentation** §201.6(c)(5).

This is the first addendum to the Lincoln County NHMP for the North Lincoln FRD.

Process, Participation, and Adoption

This section of the NHMP addendum addresses 44 CFR 201.6(a)(3), *Participation and* 44 CFR 201.6(c)(5), *Plan Adoption.*

North Lincoln FRD adopted their addendum to the Lincoln County Multi-jurisdictional NHMP on November 12, 2025. FEMA Region X approved the Lincoln County NHMP and the district's addendum on December 17, 2025. With approval of this NHMP the district is now eligible to apply for the Robert T. Stafford Disaster Relief and Emergency Assistance Act's hazard mitigation project grants through December 16, 2030.

In addition to establishing a comprehensive community-level mitigation strategy, the Disaster Mitigation Act of 2000 (DMA2K), and the regulations contained in 44 CFR 201, require that jurisdictions maintain an approved NHMP to receive federal funds for mitigation projects. Local adoption, and federal approval of this NHMP ensures that the North Lincoln FRD will remain eligible for hazard mitigation assistance project grants.

The Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon's Institute for Policy Research and Engagement (IPRE) collaborated with the Oregon Department of Emergency Management (OEM), Lincoln County, and North Lincoln FRD to develop this addendum. Members of North Lincoln FRD participated in the County NHMP update process (Attachment A and Volume II, Appendix B).

Convener and Committee

The district's Fire Chief serves as the NHMP addendum convener. The convener of the NHMP addendum will take the lead in implementing, maintaining, and updating the addendum in collaboration with the designated convener of the Lincoln County NHMP (Lincoln County Emergency Manager).

Representatives from the District met formally, and informally, to discuss the development of their addendum (Attachment A). They reviewed and developed the district's addendum, with a focus on their risk assessment and mitigation strategy (action items).

This addendum reflects decisions made at the designated meetings, and during subsequent work, and communication with OPDR.

The North Lincoln FRD steering committee was comprised of the following representatives:

- Convener, Rob Dahlman, Fire Chief
- Cody Heidt, Deputy Chief of Operations

Implementation and Maintenance

The North Lincoln FRD Board of Directors will be responsible for adopting the addendum to the Lincoln County NHMP. This addendum designates the steering committee, and a convener to oversee the development, and implementation of action items. Because the District is part of the County's multi-jurisdictional NHMP, the District will look for opportunities to partner with the County. The district's steering committee will convene after adoption of the addendum on an annual schedule. The County is meeting on a quarterly basis and will provide opportunities for participating jurisdictions (cities and special districts) to report on NHMP implementation, and maintenance during their meetings. The steering committee, assembled by the convener, will be responsible for:

- Reviewing existing action items to determine suitability of funding;
- Reviewing existing, and new risk assessment data to identify issues that may not have been identified at NHMP creation;
- Educating, and training new steering committee members on the NHMP, and mitigation actions in general;
- Assisting in the development of funding proposals for priority action items;
- Discussing methods for continued public involvement;
- Evaluating effectiveness of the NHMP at achieving its purpose and goals (use Table 4-1, Volume I, Section 4, as one tool to help measure effectiveness); and
- Documenting successes, and lessons learned.

The convener will also remain active in the County's implementation and maintenance process (Volume I, Section 4).

The Steering Committee will be responsible for activities outlined in Volume I, Section 4.

The district will utilize the same action item prioritization process as the County (Volume I, Section 4 and Volume II, Appendix D).

Implementation through Existing Programs

Many of the NHMP's recommendations are consistent with the goals and objectives of the district's existing plans and policies. Where possible, the North Lincoln FRD will implement the NHMP's recommended actions through existing plans and policies. Plans and policies already in existence have support from residents, businesses, and policy makers. Many land-use, comprehensive, and strategic plans get updated regularly, allowing them to adapt to changing conditions and needs. Implementing the NHMP's action items through such plans and policies increases their likelihood of being supported and implemented.

This NHMP is strategic and non-regulatory in nature, meaning that it does not necessarily set forth any new policy. It does, however, provide: (1) a foundation for coordination and collaboration among agencies, residents, and the district; (2) identification and prioritization of future mitigation activities; and (3) aid in meeting federal planning requirements and qualifying for assistance programs. The North Lincoln FRD currently has the following plan that relates to natural hazard mitigation. For a complete list visit the district's website.

- Lincoln County Community Wildfire Protection Plan (2024)

Capability Assessment

The Capability Assessment identifies and describes the ability of the North Lincoln FRD to implement the mitigation strategy and associated action items. This is a key component of the 2024 Natural Hazard Mitigation Plan (NHMP) update. Capabilities can be evaluated through an examination of broad categories, including existing authorities, policies, programs, funding, and resources.

Policies and Programs

The NHMP provides direction for the North Lincoln FRD to explore integration into other planning documents and processes.

The district does not issue burn permits because burning anything within Lincoln City limits is prohibited. Burn permits are issued by the Oregon Department of Forestry for anything outside city limits.

The district holds two open house annually for community outreach, and the district participates in local Emergency Management preparedness fairs.

Personnel

The following North Lincoln FRD personnel have assignments that correspond to natural hazard mitigation.

- Fire Chief
- Operations and Training Chief
- Fire Marshal
- Captains

- Maintenance Technician

Mitigation Successes

This is a list of funding that North Lincoln FRD has sought out or received, as well as recently completed projects to improve mitigation.

- Seismic Rehabilitation Grant Program (SRGP) funds for stations 12 and 14.
- Seismic evaluation completed for station 16.

Mitigation Strategy

This section of the NHMP addendum addresses 44 CFR 201.6(c)(3)(iv), *Mitigation Strategy*.

The North Lincoln FRD adopts the mission and hazard mitigation goals described in Volume I.

To develop the district's mitigation strategy (action items), the Steering Committee assessed the district's risk and identified potential issues to be addressed. The Steering Committee also noted what mitigation accomplishments have been made in recent years.

Priority Action Items

Table FD-1 presents a list of mitigation actions. The highest priority actions are shown with orange highlight. The district will focus their attention, and resource availability, upon these achievable, high leverage, activities over the next five years. Although this methodology provides a guide for the steering committee in terms of implementation, the steering committee has the option to implement any of the action items at any time. This option to consider all action items for implementation allows the committee to consider mitigation strategies as new opportunities arise, such as capitalizing on funding sources that could pertain to an action item that is not currently listed as the highest priority.

Table FD-1 Action Items

Mitigation Strategies		Impacted Hazard												Implementation and Maintenance			
Action Item #	Statement	Air Quality	Coastal Erosion	Drought	Earthquake	Extreme Heat	Flood	Landslide	Tsunami	Volcanic Event	Wildfire	Windstorm	Winter Storm	Potential Funding Resources	Lead	Timeline	Cost
1	Support and coordinate at least two annual fuels reduction projects (such as prescribed burns or chipping) in high-risk wildland-urban interface (WUI) zones like Otis and Rose Lodge, in compliance with state and local regulations, to reduce wildfire risk and improve defensible space.			X							X			Local funding resources, FEMA-HMGP, ODF-CWPP, USFS SFA, CWDG	Fire Prevention Officer	S	M
2	Partner with OSU Extension to host quarterly Firewise landscaping clinics, targeting property owners in high-risk areas to promote defensible space and wildfire-resistant landscaping practices.			X							X			NFPA FP&S, ODF-CWPP, CWDG, OSU-Extension	Community Outreach Coordinator	S	L
3	Establish a formal volunteer recruitment and retention program, including incentives, training stipends, and community outreach, with a goal of increasing the active volunteer roster.				X		X	X	X		X	X	X	Local funding resources, SAFER, OVFF, FEMA-AFG	Training Officer	S	M
4	Secure funding and complete upgrades to the Otis Station's water supply infrastructure to ensure reliable fire suppression capacity during wildfire and drought conditions.			X	X		X	X			X	X	X	Local funding resources, FEMA-HMGP, USDA-RD, CDBG	Facilities Manager	S	M
5	Coordinate with landowners and state forestry partners to complete a targeted fuels reduction project in the Panther Creek area, reducing ladder fuels and improving access for fire response.			X							X			Local funding resources, ODF-CWPP, CWDG, FEMA-HMGP, USFS-SFA	Fire Prevention Officer	S	L
6	Improve emergency access and defensible space along Slick Rock Road through vegetation management, signage, and road grading, reducing response time and wildfire spread potential.				X		X	X			X	X	X	Local funding resources, FEMA-HMGP, FHWA-ER, CDBG	Operations Chief	M	M
7	Develop and distribute flood preparedness materials, including workshops and printed guides, to assist residents in flood-prone areas like Kernville and the Siletz River corridor with mitigation strategies such as sandbagging and elevation planning.						X							Local funding resources, FEMA-HMA, NOAA-WRN, OEM	Community Outreach Coordinator	S	L
8	Collaborate with local beach management agencies to implement a seasonal beach fuel reduction program, including public education and debris removal, to mitigate fire risk from recreational bonfires.			X					X		X			Local funding resources, ODF-CWPP, CWDG, NFPA-FP$S, local tourism	Fire Prevention Officer	S	L
9	Install seismic-rated water storage tanks at rural fire stations—specifically Stations 12 (Rose Lodge), 13 (Otis), and 17 (Kernville)—to ensure a minimum 72-hour water supply for fire suppression and emergency operations following a major disaster. These tanks will be designed to withstand Cascadia Subduction Zone (CSZ) earthquake			X	X						X			Local funding resources, FEMA-HMGP, USDA-RD, CDBG	Facilities Manager	M	M

Mitigation Strategies		Impacted Hazard												Implementation and Maintenance			
Action Item #	Statement	Air Quality	Coastal Erosion	Drought	Earthquake	Extreme Heat	Flood	Landslide	Tsunami	Volcanic Event	Wildfire	Windstorm	Winter Storm	Potential Funding Resources	Lead	Timeline	Cost
	impacts and will be integrated into each station's emergency water system.																

Source: North Lincoln FRD steering committee, 2025.
Cost: L (less than $50,000), M ($50,000-$499,999), H ($500,000-$5 million), VH (more than $5 million),
Potential Funding Sources: HMA=FEMA's Hazard Mitigation Assistance disaster and non-disaster grant programs
Timing: Short (1-4 years), Medium (4-10 years), Long (10 or more years)
Priority Actions: Identified with orange highlight
Dark Grey highlight indicates that the hazard does not impact the jurisdiction

Risk Assessment

This section of the NHMP addendum addresses 44 CFR 201.6(c)(2)(iii) - Risk Assessment.

Assessing natural hazard risk has three phases:

Phase 1: Identify hazards that can impact the jurisdiction. This includes an evaluation of potential hazard impacts – type, location, extent, etc.

Phase 2: Identify important community characteristics, assets, and system vulnerabilities. Example vulnerabilities include people, businesses, homes, roads, historic places, and drinking water sources.

Phase 3: Evaluate the extent to which the identified hazards overlap with or have an impact on, the important assets identified by the community.

The local level rationale for the identified mitigation strategies (action items) is presented herein, and within Volume I, Section 2, and Volume II, Appendix C.

Hazard Analysis

The district developed their hazard analysis, using the County's (Volume I, Section 2) as a reference. Changes from the County's analysis were made where appropriate to reflect distinctions in vulnerability and risk from natural hazards unique to the district, which are discussed throughout this addendum.

Table FD-2 shows the hazard analysis matrix listing each hazard in rank from high to low. For local governments, conducting hazard analysis is a useful step in planning for hazard mitigation, response, and recovery. The method provides the jurisdiction with a sense of hazard priorities but does not predict the occurrence of a particular hazard. See Volume I, Section 2 for methodology details.

Windstorm, winter storm, riverine flood, Cascadia Subduction Zone earthquake, local tsunami, wildfire, coastal flood, and landslide are the **high hazard threats** to the city. Distant tsunami and crustal earthquake are the **low hazard threats**.

The fire district's primary capabilities center on emergency response and public safety, with a focus on fire suppression, rescue operations, and hazard mitigation. While protecting people is central to its mission, the district operates in close coordination with county and city agencies that hold broader responsibilities for managing the overall impacts of hazard events on communities.

Through this collaborative approach, the fire district provides essential expertise, personnel, and resources during emergencies, supporting the efforts of other jurisdictions. The county and cities maintain primary responsibility for comprehensive disaster management and recovery, while the fire district leads in life safety and incident response.

Given this operational scope, the fire district is not directly affected by the following hazards and does not have infrastructure or responsibilities that warrant profiling them in its hazard analysis: air quality/smoke, coastal erosion, drought, extreme heat event, tornado, and volcanic event. These hazards fall outside the district's direct impact zone or operational purview and are more appropriately addressed by other agencies within the broader emergency management framework.

In addition, hazards identified within the "bottom tier" have low vulnerability and/or low probability to the district. As such the district has elected to not include mitigation strategies. Instead, the district will collaborate with the County and applicable cities to implement mitigation strategies related to these hazards.

Table FD-2 Hazard Analysis Matrix

Hazard	History	Vulnerability	Maximum Threat	Probability	Total Threat Score	Hazard Rank	Hazard Tiers
Windstorm	20	50	100	70	240	#1	
Winter Storm	18	35	90	70	213	#2	
Flood (Riverine)	20	35	90	63	208	#3	
Earthquake (Cascadia)	2	50	100	49	201	#4	*Top Tier*
Local Tsunami	2	50	100	49	201	#5	
Wildfire	12	35	90	63	200	#6	
Flood (Coastal)	20	25	80	63	188	#7	
Landslide	16	35	80	56	187	#8	
Distant Tsunami	10	15	60	35	120	#9	*Bottom Tier*
Earthquake (Crustal)	10	20	40	21	91	#10	

Source: North Lincoln FRD steering committee, 2025.

Community Characteristics and Assets

The following section provides information on North Lincoln FRD specific demographics and assets (see Table FD-4). Many of these community characteristics can affect how natural hazards impact communities, and how communities choose to plan for natural hazard mitigation. Considering the District specific assets during the planning process can assist in identifying appropriate measures for natural hazard mitigation.

Community Characteristics

The district serves a diverse and hazard-prone 80-square-mile area along Oregon's central coast. The district encompasses 7 miles of Pacific shoreline, the 680-acre Devils Lake, and the City of Lincoln City (population 10,134), along with the surrounding communities of Kernville, Neotsu, Otis, and Rose Lodge. The district also includes significant state and federal forestlands and tribal trust lands, including the Chinook Winds Casino Resort. The district's jurisdiction stretches from Cascade Head south to the Siletz River along Highway 101, east along Highway 18 to the Van Duzer Corridor, and along Siletz River Highway 229 to milepost 9.

The district operates six strategically located fire stations—Rose Lodge (Station 12), Otis (Station 13), Bob Everest (Station 14), DeLake (Station 15), St. Clair (Station 16), and Kernville (Station 17)—with two stations staffed 24/7 by at least one engine company. The district is composed of 28 career staff and 25 volunteers and provides a full range of emergency services including fire suppression, EMS, technical and water rescues, hazardous materials response, and participation in the Lincoln County Rope Rescue Team.

Lincoln City has a median age of 51.4, with nearly 30% of residents over 65, making older adults a key vulnerable population. The city also experiences a significant influx of tourists, with up to 60,000 overnight visitors during peak summer months. This transient population, along with a 14% poverty rate and a growing number of non-English speakers (primarily Spanish), presents unique challenges for evacuation, communication, and emergency response.

Facilities and Property Assets Inventory

This section provides information on district specific assets. Assets that may be affected by hazard events include residential and nonresidential buildings, critical facilities, and infrastructure. Considering the district specific assets during the planning process can assist in identifying appropriate measures for natural hazard mitigation.

The district maintains a robust network of infrastructure assets that support its mission to protect life, property, and the environment across an 80-square-mile area on Oregon's central coast. The district operates six fire stations strategically located to serve both urban and rural communities: Station 12 in Rose Lodge, Station 13 in Otis, Station 14 (Bob Everest) in Lincoln City, Station 15 in DeLake, Station 16 in St. Clair, and Station 17 in Kernville. Stations 14 and 16 are staffed 24/7, ensuring continuous emergency response coverage.

These stations are supported by critical infrastructure including a fueling station at Station 13, which is vital for maintaining operations during extended emergencies. All stations are equipped with backup generators. Emergency supply caches, known as EvacuHubs, are distributed throughout the district and stocked with food, water, and essential supplies to support up to 10,000 people for three days. These caches are located at or near fire stations and community centers, enhancing the district's capacity to support shelter-in-place and evacuation scenarios.

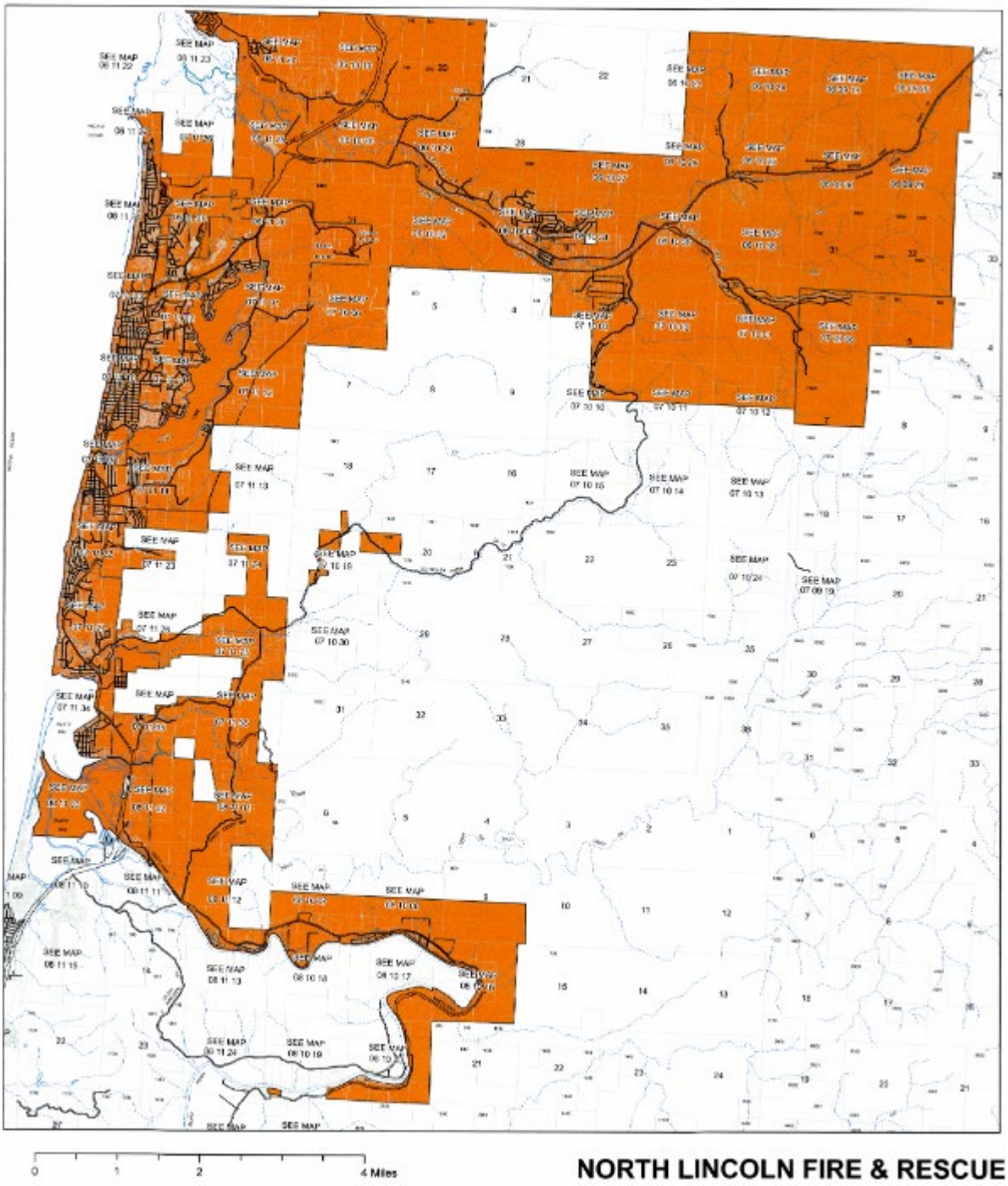
The district also relies on a network of communication assets, including radio towers and integration with the Lincoln Alerts (Everbridge) emergency notification system. Tsunami sirens, tested weekly, provide an additional layer of public alerting in coastal hazard zones. The district collaborates closely with key partners such as Samaritan North Lincoln Hospital (which has its own emergency operations plan and backup systems) and local schools, which serve as designated shelters and assembly areas. Other partners include the Community Emergency Response Team (CERT), Conexion Fenix for multilingual outreach, and the Chinook Winds Casino Resort, which represents a major population center during peak tourism seasons.

Table FD-5 lists the facilities that, if damaged, could significantly impact the public safety and economic conditions of the district.

The districts facilities are located within the service area (see figure FD-3) which includes the City of Lincoln City and census designated places Neotsu and Rose Lodge. The district spans areas

along the Siletz highway, north through Lincoln City, and approximately 10 miles east along Highway 18.

Map FD-1 District Boundaries



Source: Lincoln County GIS - Click link for more information

Hazard Identification

This section profiles the district's hazards and assesses their vulnerabilities, distinct from the countywide planning area. Detailed hazard profiles of the most significant countywide hazards are described in Volume I, Section 2. The detailed profiles include hazard characteristics, history, location, extent, previous occurrences, and probability of future occurrences. An event that affects the County, or applicable cities where district assets are located (Lincoln City area), is likely to affect the district as well. However, not all hazards impact the district assets. The district chose to profile the hazards shown in Table FD-2 due to the impact these hazards have upon their assets. Factors included during discussions by the district included the number of potential assets damaged, extent of damage, and length of time required for repairs (economic losses were also considered).

Additional information is found in the Risk Assessment for Region 1, Oregon Coast, Oregon SNHMP (2020).

National Flood Insurance Program (NFIP)
FEMA updated the Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) in 2019 (effective October 18, 2019). The district is not a community which has authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction.

There are no repetitive loss or severe repetitive loss properties owned or operated by the district. For specific information for communities within the district's service area see Volume I, Section 2 and the addenda for the city of Waldport (Volume II) for more information.

Vulnerability Assessment

Development and population forecasts are not expected to increase or decrease the impact of their profiled hazards.

The district operates six fire stations across Lincoln County, several of which are in areas highly susceptible to natural hazards. Stations 16 (St. Clair) and 17 (Kernville) are situated in low-lying coastal zones that are vulnerable to tsunami inundation, liquefaction, and flooding. Stations 12 (Rose Lodge) and 13 (Otis) are in forested inland areas with high wildfire risk and are prone to landslides and isolation during severe weather events.

Access to many of these stations depends on bridges and roads that are vulnerable to collapse or blockage during earthquakes, floods, or landslides. This could severely delay emergency response and isolate entire communities.

The district also maintains emergency supply caches, known as EvacuHubs, which are distributed across Lincoln City neighborhoods. While these caches are critical for post-disaster survival, some are in hazard-prone areas, and others may be inaccessible during emergencies due to road damage or flooding.

Communication infrastructure is another point of concern. The district relies on radio towers and cellular networks, both of which are susceptible to disruption during windstorms, ice events, or

earthquakes. While systems like Lincoln Alerts and tsunami sirens are in place, their effectiveness may be limited by power outages or gaps in public awareness.

The population served by The district includes a high proportion of older adults (nearly 30% of Lincoln City residents are over the age of 65). Many of these individuals may have mobility or medical needs that complicate evacuation or sheltering during emergencies. Additionally, about 14% of the population lives below the poverty line, which can limit access to preparedness resources and transportation.

Language barriers also present a challenge. Spanish is the second most common language spoken in the area, and non-English speakers may not fully understand emergency alerts or evacuation instructions.

Tourism adds another layer of complexity. During peak seasons, Lincoln City's population can swell to 40,000–60,000 people, many of whom are unfamiliar with local hazards or evacuation routes. This influx can strain emergency services and complicate evacuation logistics.

Geographic isolation is a major concern. Earthquakes, landslides, and flooding can create "islands" by cutting off neighborhoods from the rest of the district. Areas around Devils Lake, Cutler City, and the Siletz River corridor are particularly at risk. These communities may be without access to emergency services for extended periods.

2007 Rapid Visual Survey

Oregon began implementing seismic building codes in the 1970s, though more rigorous standards were not adopted until 1991 and further strengthened in the early 2000s. In 2007, the Oregon Department of Geology and Mineral Industries (DOGAMI) conducted a statewide seismic needs assessment, which included estimates of seismic vulnerability for public buildings in Lincoln County, such as schools and emergency services facilities. For more information click this link DOGAMI Report O-07-02, Statewide Seismic Needs Assessment.

A key mitigation priority for the district is to ensure that critical facilities are constructed or retrofitted to withstand future seismic events. The district has received multiple Seismic Rehabilitation Grant Program (SRGP) awards to support this goal. In 2017, Fire Station 12 (Rose Lodge) was awarded $808,022 and Fire Station 14 (Bob Everest) was awarded $1,048,039.

Table FD-3 provides the ranking of hazards of concern based on total threat score and Table FD-4 shows hazard impact to the district's assets.

Hazard area extent and location maps are included in Attachment B. Information shown on the maps is for planning purposes, represents the conditions that exist at the map date, and is subject to change. Refer to the original source documentation to better understand the data sources, results, methodologies and limitations of each dataset presented.

2007 Rapid Visual Survey

Oregon began implementing seismic building codes in the 1970s, though more rigorous standards were not adopted until 1991 and further strengthened in the early 2000s. In 2007, the Oregon Department of Geology and Mineral Industries (DOGAMI) conducted a statewide seismic needs assessment, which included estimates of seismic vulnerability for public buildings in

Lincoln County, such as schools and emergency services facilities. For more information click this link DOGAMI Report O-07-02, Statewide Seismic Needs Assessment.

A key mitigation priority for the district is to ensure that critical facilities are constructed or retrofitted to withstand future seismic events. The district has received multiple Seismic Rehabilitation Grant Program (SRGP) awards to support this goal. In 2017, Fire Station 12 (Rose Lodge) was awarded $808,022 and Fire Station 14 (Bob Everest) was awarded $1,048,039.

Table FD-3 Hazard Risk and Description of Impact

Hazard	Description of Impact	Total Threat Score
Windstorm	Severe coastal windstorms can down trees and power lines, particularly along Highway 101 and inland routes like Highway 18 and 229. These events have historically disrupted access to key areas such as Otis, Rose Lodge, and the Siletz River corridor, isolating fire stations and delaying emergency response. High winds also pose risks to communication towers and overhead utility infrastructure critical to operations.	240
Winter Storm	Ice and snow events, such as the 2024 storm, have caused widespread power outages and blocked roads throughout the district. Steep, forested terrain in areas like Rose Lodge and Otis is especially vulnerable. Fire stations may become inaccessible, and prolonged outages can disrupt radio communications, fuel delivery, and heating systems at critical facilities.	213
Flood (Riverine)	Riverine flooding along the Siletz River and its tributaries can isolate communities like Kernville and Rose Lodge. Station 17 and surrounding areas are particularly vulnerable during heavy rain events, which can coincide with landslides and road washouts, delaying emergency response and evacuation efforts.	208
Earthquake (CSZ Event)	A Cascadia Subduction Zone earthquake would cause widespread shaking, liquefaction, and landslides across the district. Stations near Devils Lake and the Siletz River, including Stations 14 and 17, are in moderate to high liquefaction zones. Bridge failures and slope instability could sever access routes, isolating fire stations and communities for days or weeks.	201
Local Tsunami	A locally generated tsunami following a CSZ earthquake could inundate low-lying areas of Lincoln City, including parts of the Taft and Cutler City neighborhoods. Station 16 (St. Clair) and nearby infrastructure may be at risk. Rapid evacuation would be essential, but landslides and bridge collapses could hinder movement to high ground.	201

Hazard	Description of Impact	Total Threat Score
Wildfire	The district includes significant wildland-urban interface (WUI) zones, particularly in Otis, Rose Lodge, and along the Siletz River. The 2020 Echo Mountain Fire demonstrated the district's vulnerability. Stations 12 and 13 are in high-risk areas and could be threatened by fast-moving fires, especially during dry east wind events.	200
Flood (Tidal)	Tidal flooding is a concern in coastal areas of Lincoln City, especially near the D River and Siletz Bay. While most fire stations are located outside the immediate tidal zone, access routes such as Highway 101 and Schooner Creek Bridge may be compromised during king tides or storm surge events.	188
Landslide	Landslides frequently occur along steep slopes in the district, particularly near Otis, Rose Lodge, and the Siletz River corridor. These events can block access to Stations 12, 13, and 17, isolate neighborhoods, and delay mutual aid. Landslides are often triggered by heavy rainfall or seismic activity.	187
Distant Tsunami	Though less severe than a local tsunami, a distant tsunami could still flood low-lying coastal areas, including parts of Lincoln City. Infrastructure such as Station 16 and nearby roads could be affected by wave action, debris, and saltwater intrusion.	120
Earthquake (Crustal)	Crustal earthquakes, while typically smaller than CSZ events, can still cause localized damage to older buildings and infrastructure. Fire stations built before modern seismic codes, particularly in Otis and Rose Lodge, may be at risk. Bridge damage and slope failures could impair response capabilities.	91

Source: North Lincoln FRD steering committee, 2025.

Table FD-4 Facilities Summary

Name/Number	Address	Identified Hazard Exposure											
		AQ	CE	DR	EQ	EH	FL	LS	TS	VE	WF	WS	WT
Stations													
Station 12 – Rose Lodge	5284 Salmon River Hwy, Otis, OR 97368				X							X	X
Station 13 – Otis	381 N Old Scenic Hwy 101, Otis, OR 97368				X		X		X			X	X
Station 14 – Bob Everest	2525 US 101, Lincoln City, OR 97367							X	X			X	X
Station 15 – DeLake	1500 SE 9th St, Lincoln City, OR 97367								X			X	X
Station 16 – St. Clair	4520 SE Hwy 101, Lincoln City, OR 97367								X			X	X
Station 17 - Kernville	3726 OR-229, Lincoln City, OR 97367				X		X				X	X	X

Source: Information provided by North Lincoln FRD
Dark Grey highlight indicates that the hazard does not impact the jurisdiction.

Table Key:
"X" – Facility may be exposed and may be impacted by the identified hazard per a visual inspection of the mapped hazard area
[blank] = facility exposure has not been assessed for this hazard

Hazard Descriptions:

AQ = Air Quality	EH = Extreme Heat	LS = Landslide	WF = Wildfire
CE = Coastal Erosion	EQ = Earthquake	TS = Tsunami	WS = Windstorm/Tornado
DR = Drought	FL = Flood	VE = Volcanic Event	WT = Winter Storm

Attachment A: Public Involvement Summary

Members of the Steering Committee provided edits and updates to the NHMP prior to the public review period as reflected in the final document. In addition, a survey was distributed that included responses from residents of the district (Volume II, Appendix F).

To provide the public information regarding the draft NHMP addendum, and provide an opportunity for comment, an announcement was provided from August 7 through 21, 2025 on the County's website and publicized by the district. Comments were reviewed and integrated into the NHMP as applicable. Additional opportunities for stakeholders and the public to be involved in the planning process are addressed in Volume II, Appendix B.

Various agencies and organizations contributed input through multiple channels, including comments on the draft. These groups include local and regional hazard mitigation agencies, development regulators, neighboring communities, businesses, academia, nonprofits, and community-based organizations serving underserved and socially vulnerable populations (see Volume II, Appendix B).

Steering Committee

Steering Committee members possessed familiarity with the district and how it is affected by natural hazard events. The Steering Committee guided the update process through several steps including goal confirmation and prioritization, action item review and development, and information sharing, to update the NHMP and to make the NHMP as comprehensive as possible. The Steering Committee met formally on the following dates:

Meeting #1: April 16, 2025 (virtually via Zoom)
During this meeting, the Steering Committee reviewed the previous NHMP, and were provided updates on hazard mitigation planning, the NHMP update process, and project timeline. The Steering Committee:

- Reviewed recent history of hazard events in the district.
- Reviewed and confirmed the County NHMP's mission and goals.
- Discussed the NHMP public outreach strategy.
- Reviewed and provided feedback on the draft risk assessment update including community vulnerabilities and hazard information.
- Reviewed and updated their existing mitigation strategy (actions).
- Reviewed and updated their implementation and maintenance program.

Meeting Attendees

- Rob Dahlman, Fire Chief
- Cody Heidt, Deputy Chief of Operations

Meeting Summary

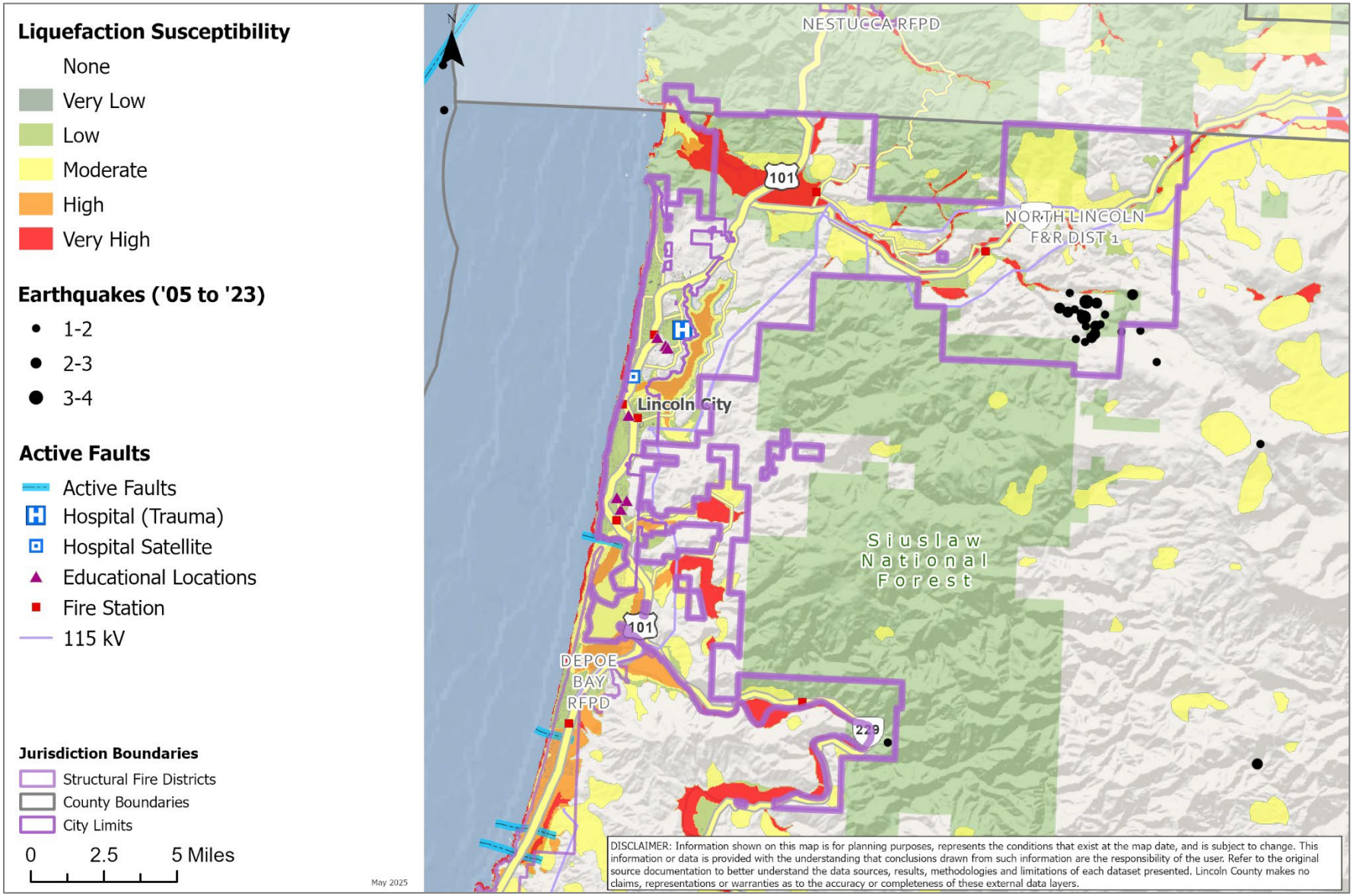
The meeting focused on developing the district's addendum to the Lincoln County Natural Hazard Mitigation Plan (NHMP). Key findings included an assessment of hazard vulnerabilities, with windstorms, winter storms, and flooding prioritized over landslides and wildfires. Specific vulnerabilities were highlighted, such as flood risks to Stations 13 and 17 and limited access during emergencies. The district also reviewed its capabilities, including physical assets like stations and radio towers, and identified gaps such as the need for backup power and improved water supply at Otis Station.

The meeting also addressed challenges related to funding and service demands, especially from increased development and tourism, and the lack of tax revenue from tribal and urban renewal properties. Several mitigation successes were noted, including seismic upgrades and emergency supply storage. New and ongoing action items were proposed, such as improving volunteer firefighter recruitment, enhancing defensible space, and advocating for fuel reduction on beaches.

Attachment B: Hazard Maps

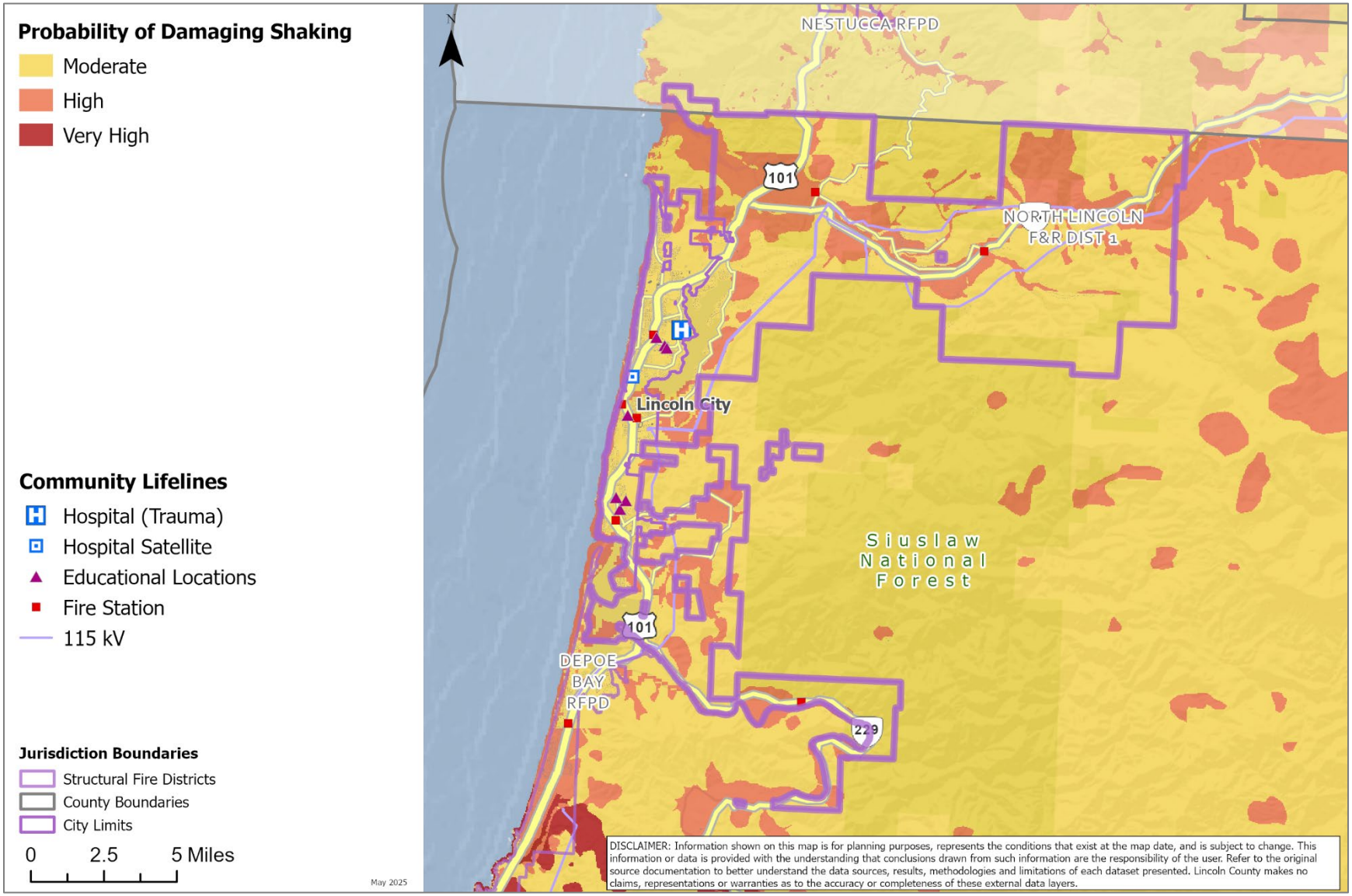
Map FD-2 Earthquake Liquefaction (Soft Soil) Hazard and Active Faults 18
Map FD-3 Probability of Damaging Shaking 20
Map FD-4 Perceived Shaking and Damage Potential, Probabilistic Earthquake Model 21
Map FD-5 Perceived Shaking and Damage Potential, CSZ Earthquake Model 22
Map FD-6 Tsunami Inundation Scenarios 23
Map FD-7 Flood Hazard Zones (100- and 500-year floodplains) 24
Map FD-8 Landslide Susceptibility Exposure 25
Map FD-9 Burn Probability and Fire History (1992-2022) 26
Map FD-10 Potential Wildfire Impact (Overall) 27

Map FD-2 Earthquake Liquefaction (Soft Soil) Hazard and Active Faults



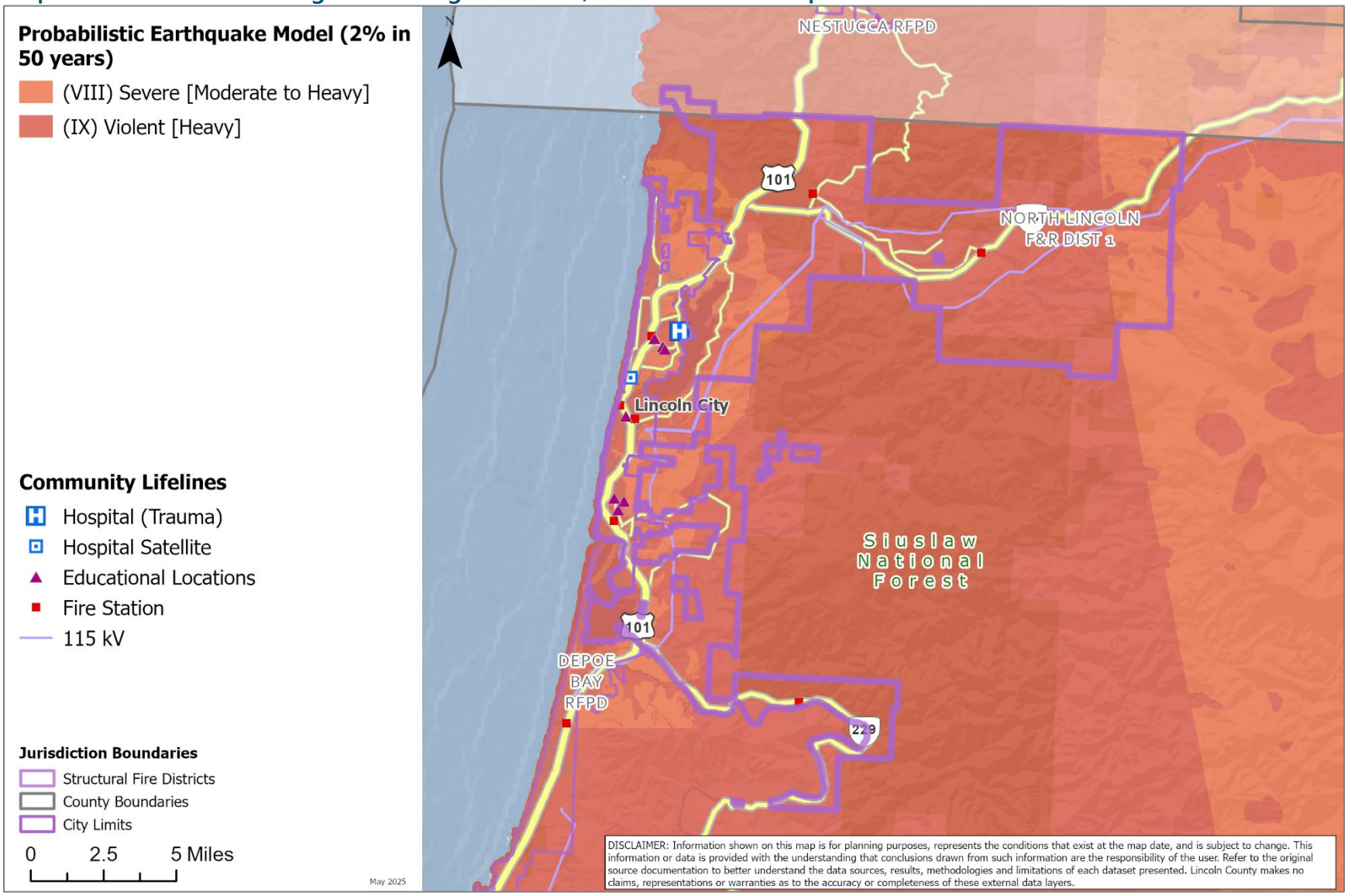
Source: Oregon Explorer: Map Viewer – To view map detail click hyperlink to left.

Map FD-3 Probability of Damaging Shaking



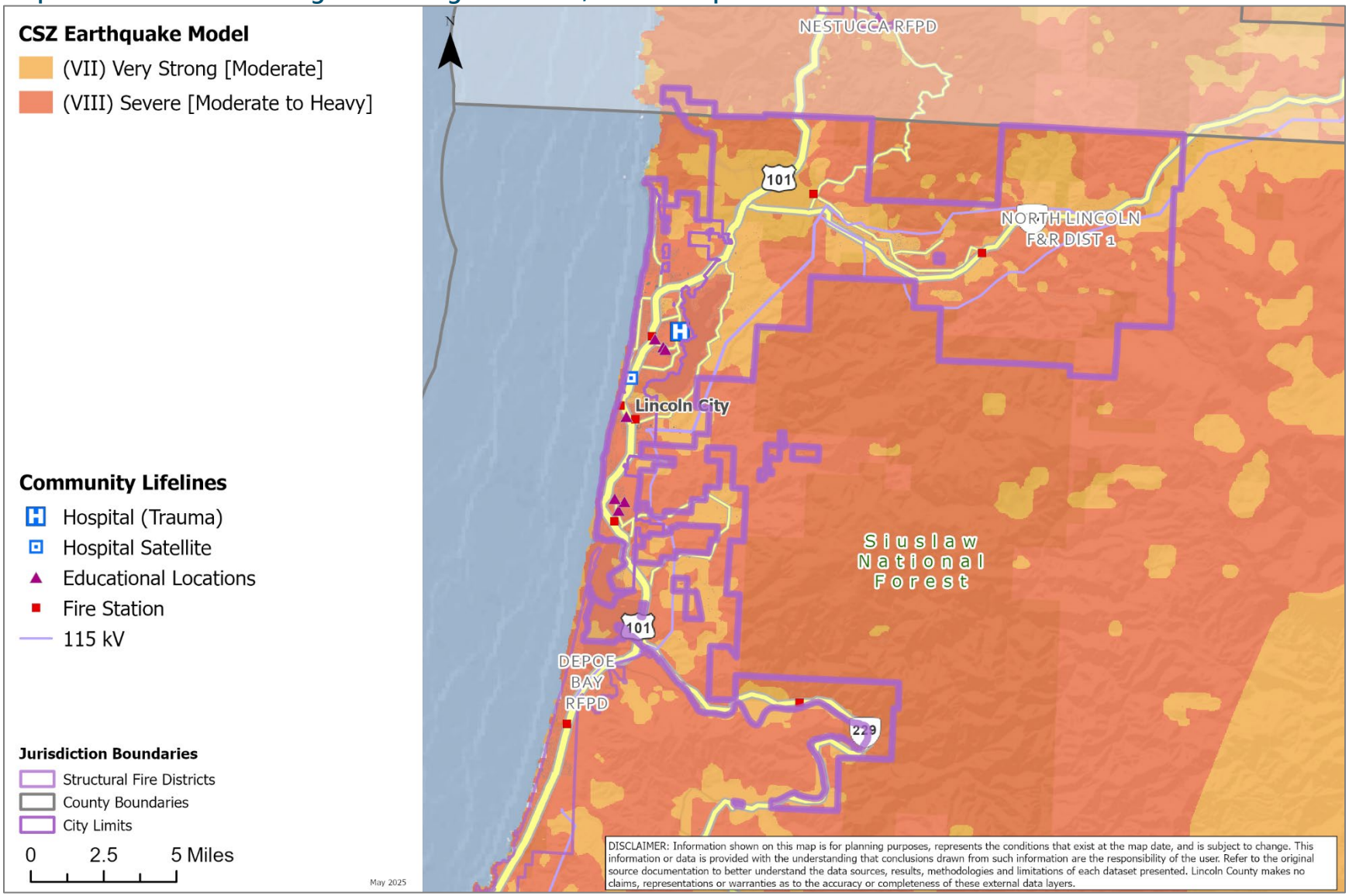
Source: Oregon Explorer: Map Viewer – To view map detail click hyperlink to left.

Map FD-4 Perceived Shaking and Damage Potential, Probabilistic Earthquake Model



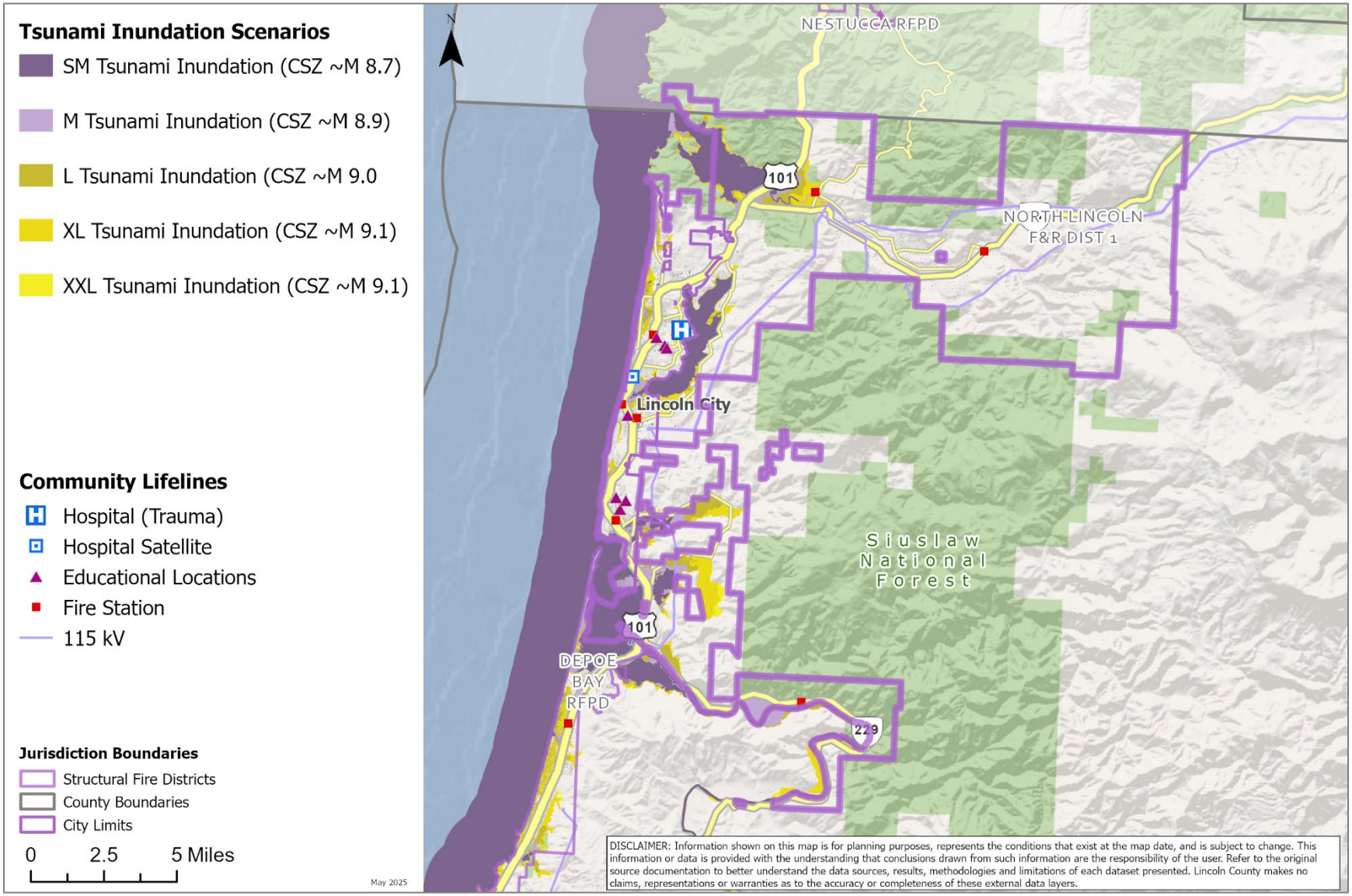
Source: Oregon Explorer: Map Viewer – To view map detail click hyperlink to left.

Map FD-5 Perceived Shaking and Damage Potential, CSZ Earthquake Model



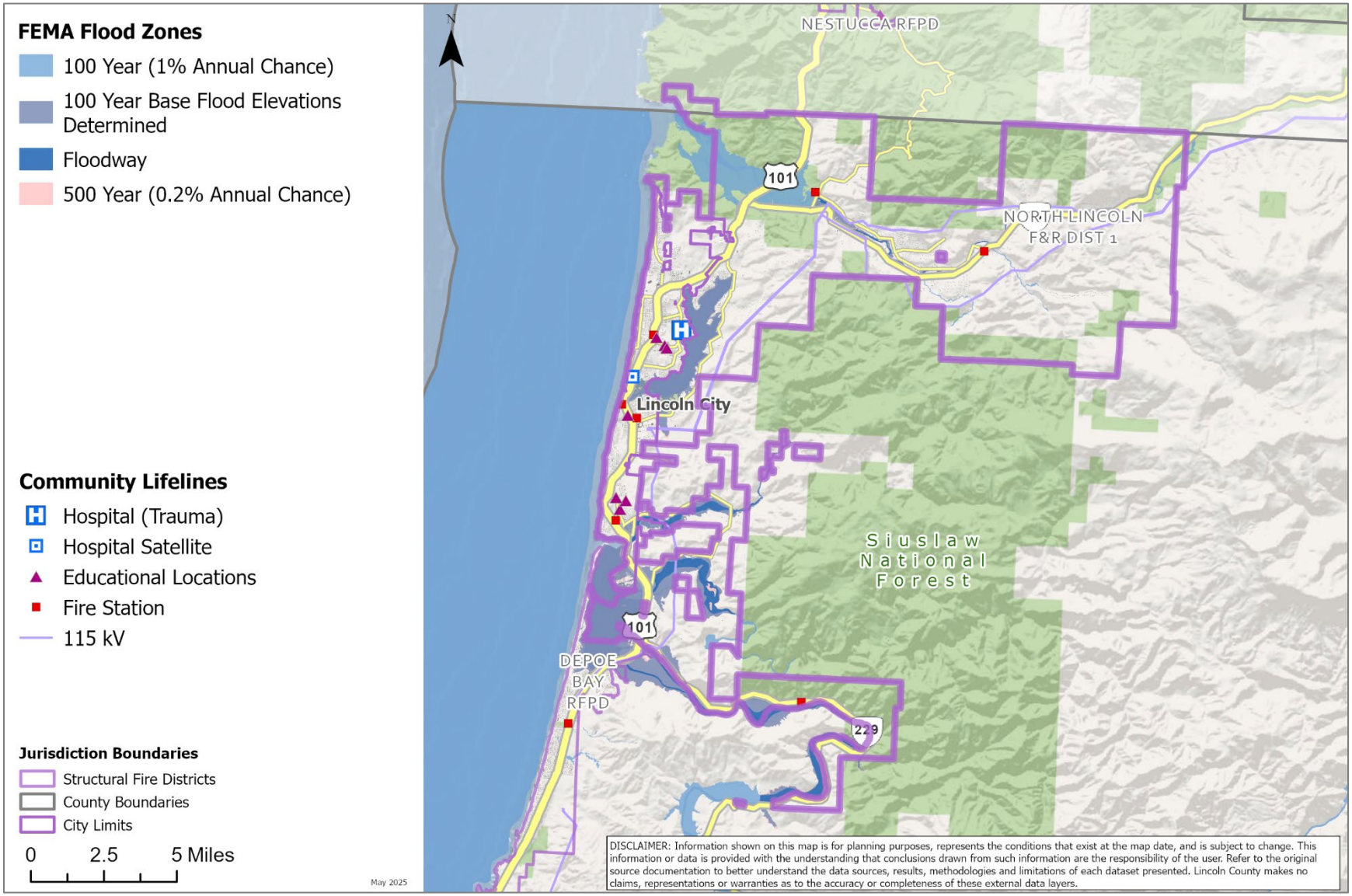
Source: Oregon Explorer: Map Viewer – To view map detail click hyperlink to left.

Map FD-6 Tsunami Inundation Scenarios



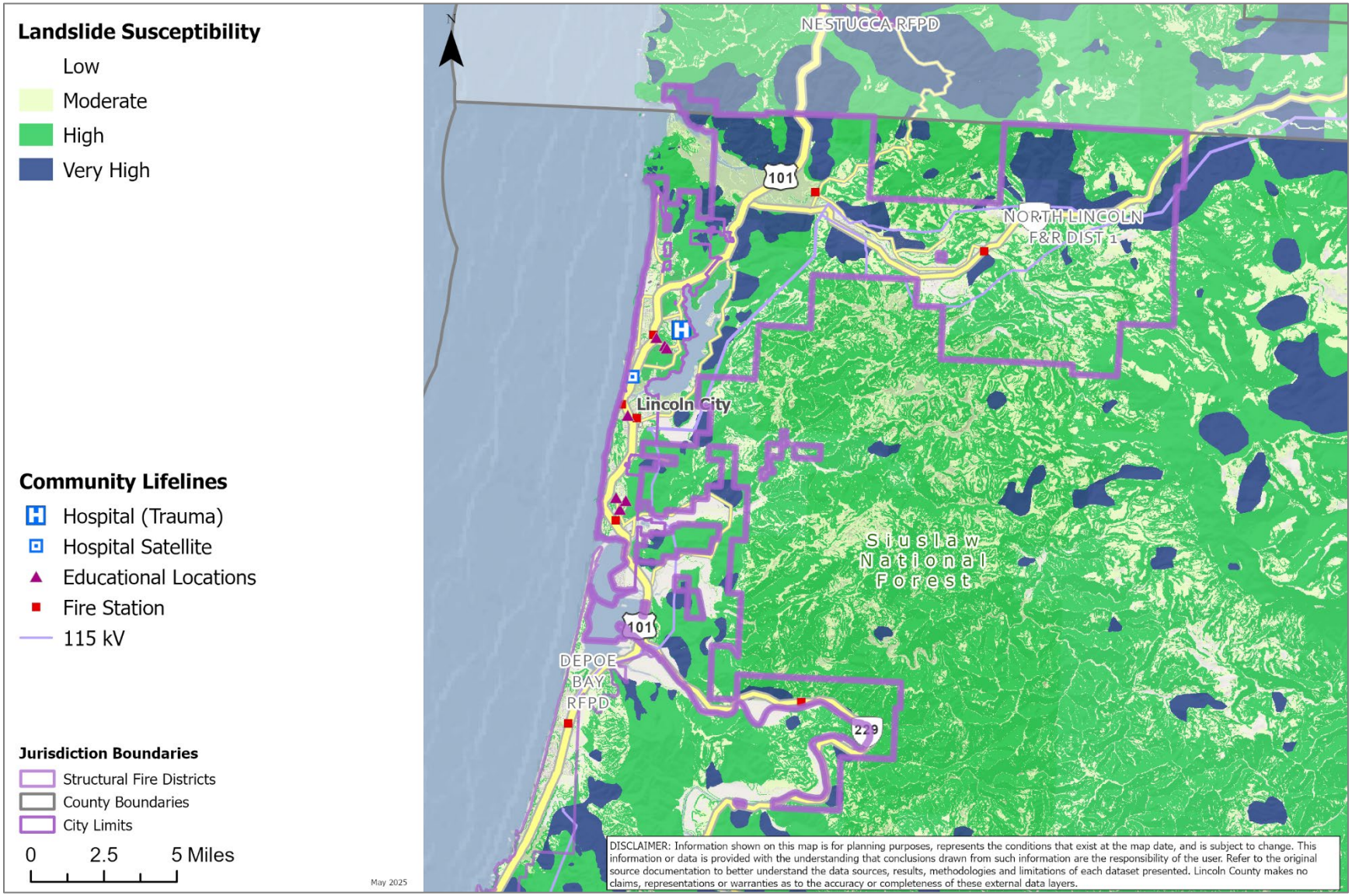
Source: Oregon Explorer: Map Viewer – To view map detail click hyperlink to left.

Map FD-7 Flood Hazard Zones (100- and 500-year floodplains)



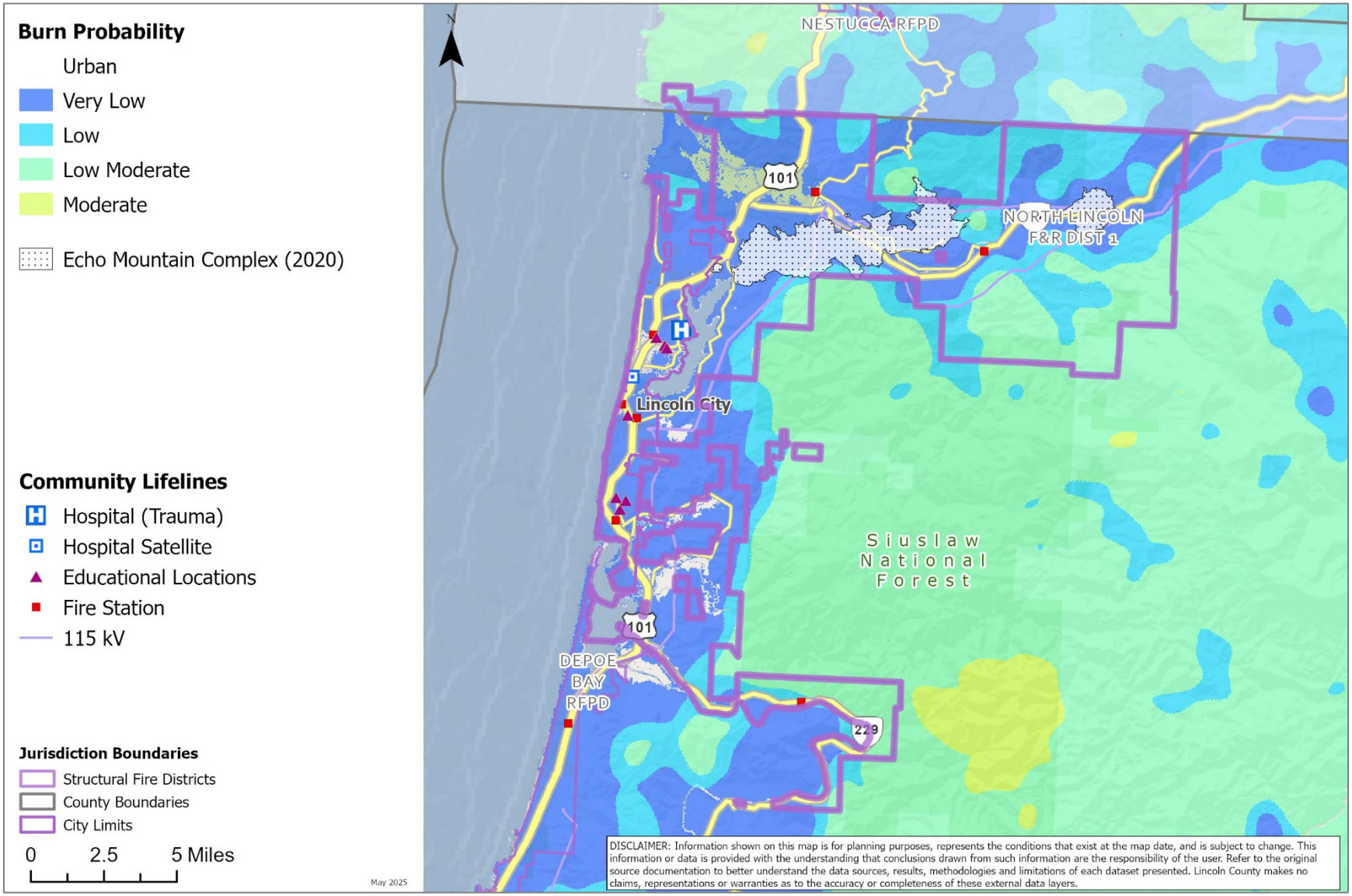
Source: Oregon Explorer: Map Viewer – To view map detail click hyperlink to left.

Map FD-8 Landslide Susceptibility Exposure



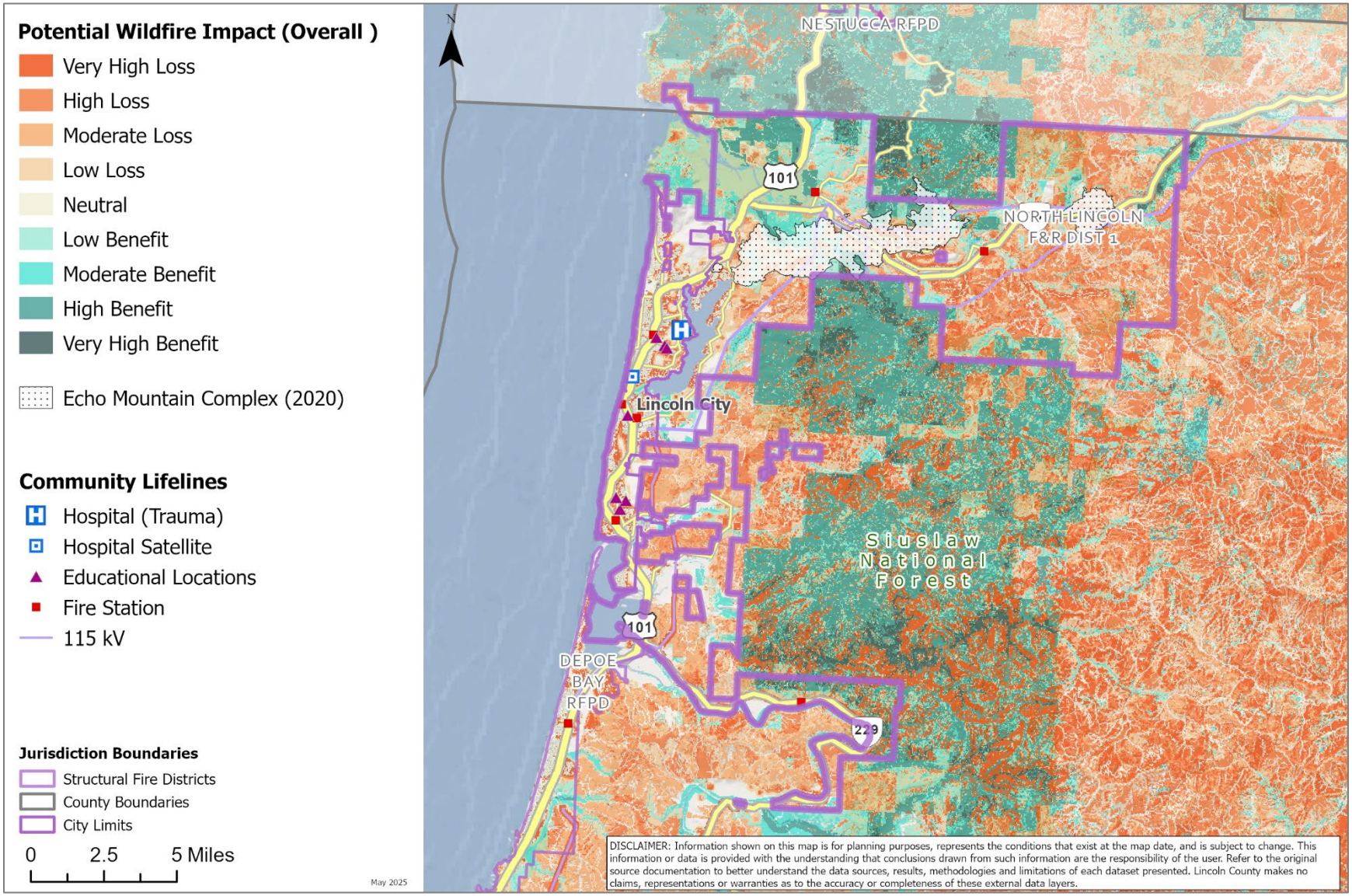
Source: Oregon Explorer: Map Viewer – To view map detail click hyperlink to left.

Map FD-9 Burn Probability and Fire History (1992-2022)



Source: Oregon Explorer: Map Viewer – To view map detail click hyperlink to left.

Map FD-10 Potential Wildfire Impact (Overall)



Source: PNW Quantitative Wildfire Risk Assessment (2023, layer name = icNVC), To view map detail click hyperlink to left..