The purpose of the Natural Hazard Mitigation plan is to enhance disaster safety and resilience at the University of Oregon, thereby protecting the University’s core mission of teaching, research, and public service.
Understanding Risk
Natural hazards are normal earth processes. They include: floods, earthquakes, coastal erosion, tsunami, volcanic eruption, severe winter storm, windstorm, drought, and wildfire. A natural disaster occurs when a natural hazard impacts people or property and creates adverse conditions within a community. Planning for natural disasters requires understanding the characteristics of the natural hazard and the community that it might impact.

Natural Hazard
*Sudden Events and Chronic Issues:*
- Past Recurrence Intervals
- Future Probability
- Magnitude
- Duration
- Areal Extent

Vulnerable System
*Exposure, Sensitivity and Resilience of:*
- Population
- Research
- Built Environment
- Infrastructure
- Critical Facilities

Source: ONHW and USGS
Why develop a Mitigation Plan?

This plan focuses on the three natural hazards that could directly affect the University of Oregon: earthquakes, floods, and severe storms (winter and wind storms).

The purpose of this natural hazard mitigation plan is to assist the University of Oregon in reducing risk. The plan will also help guide and coordinate mitigation activities on campus.

Planning for mitigation activities provides the university with a number of benefits:

- reduced vulnerability to future hazard events, specifically: reduced loss of life, property, essential services, critical facilities and economic hardship;
- reduced short-term and long-term recovery and reconstruction costs;
- quicker resumption of university operations, including education, research, and business systems,
- increased cooperation and communication within the campus community through the planning process; and
- increased potential for state and federal funding for mitigation and recovery projects.

The natural hazard mitigation plan is non-regulatory in nature, meaning that it does not set forth any new policy. Rather, it is designed to help build a foundation and a vision for enhanced coordination and collaboration among university departments and administrative units to prepare for and reduce the risks posed by natural hazards. To be successful, mitigation practices must be integrated into current and future university plans and policies.
What is Integrated Emergency Management?
Mitigation is only one of the four phases of what is commonly referred to as the disaster cycle. Every risk or vulnerability we mitigate today reduces our overall exposure, thereby decreasing the pressure on the response side of the disaster cycle and lowering our recovery costs from future events. To effectively reduce risk, all phases of the disaster cycle need to be carefully evaluated, and plans need to be developed to guide activities during each phase.

Key Definitions

Mitigation: a method to reduce or eliminate injuries and loss of life and/or property from natural hazards through short and long-term activities.

Preparedness: refers to activities, programs, and systems developed prior to a disaster, designed to build and enhance capabilities to support the response to and recovery from disasters.

Response: begins as soon as a disaster event occurs. Response is the provision of search and rescue, medical services, access control, and repairing and restoring communication and data systems.

Recovery: operations that provide for basic needs and restore the community. The process of recovery can take months or even years to accomplish.
Since the adoption of the original Hazard Mitigation Plan in 2006 the university established an Emergency Management & Continuity program (UOEMC) that now oversees mitigation activities on campus. In 2009, UOEMC started the process to update the 2006 University of Oregon Natural Hazards Mitigation Plan.

The plan update process, started in 2009 and completed in 2011, was funded in part by an Emergency Management in Higher Education (EMHE) grant from the Department of Education and FEMA’s Hazard Mitigation Grant Program.

The primary tasks of the plan update process included:

- Reconvening of the steering committee
- Interviews of steering committee members and stakeholders
- Research of University characteristics
- Development of risk assessment
- Revision of goals and action items
- Revision of the plan maintenance and implementation schedule
- Development of an appendix to address the Oregon Institute of Marine Biology
The University of Oregon serves a dynamic population of nearly 30,000 students, faculty, and staff, plus a large number of visitors for athletic events, performances, and other public gatherings.

The 300+ acre Eugene campus consists of over 100 buildings, ranging from the 136-year old Deady Hall to the brand-new Lewis Integrative Science Building. In addition, the campus contains 140 acres of diverse open space, from historic quads to riverfront property.

The scale of the University of Oregon becomes most apparent when its economic impact is considered. Direct spending by the University, its students, and visitors totals $1.14 billion annually, representing a broader economic impact that exceeds $2 billion each year.
The university’s geographic position makes it susceptible to earthquakes from three sources:

1. The off-shore Cascadia Fault Zone
2. Deep, intra-plate events within the subducting Juan de Fuca plate
3. Shallow crustal events within the North America Plate.

Tsunamis are common after earthquakes and pose a considerable risk for the Oregon Institute for Marine Biology. Appendix E of the full plan addresses OIM specifically.

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The majority of the University of Oregon campus is located outside the 100-year floodplain (one of the most common ways for designating flood risk). The areas most vulnerable to flooding are those along the Willamette River and near Autzen Stadium. It should be noted that most buildings within the 100-year floodplain were constructed at raised elevations to reduce the potential for flood damage.
Severe Storm

Key Issues

Life Safety: Falling branches and other debris from trees pose a threat to people living, working, and studying on campus.

Property Vulnerability: During a severe storm trees can damage structures and the contents of buildings. Water damage may also threaten the campus.

Emergency Routes: Fallen trees and other debris may block essential routes and hinder emergency response.
Mission: The mission of the University of Oregon Natural Hazard Mitigation Plan is to create a disaster resilient University of Oregon.

Goal 1: Reduce risks posed by seismic, flood, and severe storm events on campus.

Goal 2: Continue to advance the integration of institutional and hazard data to better identify campus risk and enhance emergency planning.

Goal 3: Increase awareness and promote risk reduction activities through education and outreach.

Goal 4: Integrate risk reduction strategies into university plans, policies and practices.

Goal 5: Establish and maintain methods to ensure plan implementation and further mitigation practices on campus.

Key Definitions
The goals and action items form the core of the plan. They work together to create tangible ways that the university can implement the plan and reduce risk on campus.

Mission:
The mission statement is a philosophical or value statement that answers the question “Why develop a plan?”

Goals:
Goals are intended to represent the general ends toward which the plan is directed. They are guiding principles for the specific recommendations outlined in the action items, but do not specify how the university is to achieve the desired level of performance.
Each of the five goals in the plan has a set of related action items. To facilitate implementation, each of these action items is fully described in a worksheet contained within the full plan. The template below illustrates the information recorded in each worksheet, while the tables on the following pages summarize the 34 action items contained in the plan.

**Action Item 1.1**

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- Short Term (0-2 years)
- Long Term (2-4+ years)
- Ongoing

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Goal 1: Reduce risk posed by seismic, flood, and severe storm events to the physical campus.

Action Item 1.1
Continue redundancy planning for Telecom/Network Services

Action Item 1.2
Evaluate the vulnerability of campus utilities

Action Item 1.3
Assess the structural vulnerability of building stock by qualified engineers

Action Item 1.4
Develop proposals and secure funding to complete retro-fit projects for buildings that qualify for FEMA funding

Action Item 1.5
Implement non-structural retrofits to specialized building content

Action Item 1.6
Relocate the university's and state's one-of-a-kind historical and legal paper records out of Baker Building basement or install water alarms in, on, or near the basement flooring.

Action Item 1.7
Install water alarms in basements and ground floors throughout campus, particularly for areas housing sensitive assets or records.

Action Item 1.8
Conduct appraisals on antiquities and artifacts in library special collections and insure or secure accordingly.

Action Item 1.9
Fully sprinkler all residence halls.

Action Item 1.10
Establish off-campus hot site for recovery and retrieval of university data, systems, networks, network hubs, and communications systems.

Action Item 1.11
Analyze the possibility of moving radio towers from PLC to another campus building.

Action Item 1.12
Complete priority tasks listed in June 2010 Paradigm Engineering report (“U of O Science Complex Electrical Equipment Survey and Master Plan”)

Action Item 1.13
Form Seismic Tethering, Readiness, and Positioning Team (STRAP)

Action Item 1.14
Replace east tunnel to ensure continuity of utilities from the Central Power Plant to main campus.

Action Item 1.15
Replace aged main water line that runs through campus.
Goal 2: Continue to advance the integration of institutional and hazard data to better identify campus risk and enhance emergency management.

Action Item 2.1
Develop a comprehensive business continuity plan for the university.

Action Item 2.2
Develop a post-disaster recovery plan for campus.

Action Item 2.3
Develop appropriate annexes to be included in the University of Oregon Natural Hazard Mitigation Plan for university properties outside the approved campus boundaries.

Action Item 2.4
Develop a post-disaster debris management plan.

Action Item 2.5
Continue to enhance and integrate risk reduction attributes into building-level, room-level, utility-level, and spatial data sets for campus.

Action Item 2.6
Evaluate and develop new campus Storm Water Management Plan.

Goal 3: Increase awareness and promote risk-reduction activities through education and outreach.

Action Item 3.1
Develop public awareness information campaign for incoming and current students. The campaign should focus on pertinent information regarding natural hazards, the campus, and what students can do to reduce their own risk.

Action Item 3.2
Develop outreach strategy for educating faculty and staff about ways that they can reduce risk to personal spaces and intellectual property (i.e., non-structural mitigation practices for offices, data back-up practices).

Action Item 3.3
Provide outreach and training to decision makers (i.e., Academic Deans, Department Heads, and the President’s Policy Council) to educate them about ways to integrate mitigation into everyday practices throughout campus.

Action Item 3.4
Develop an awareness strategy targeted at visitors (i.e., camps, sporting events).

Action Item 3.5
Develop cohesive hazmat evacuation and response drills/systems for science complex.

Action Item 3.6
Create a “How Ready Is Your Lab?” checklist.

Action Item 3.7
Identify shelter-in-place locations for each building; publicize location to building users.

Action Item 3.8
Publicize assembly points with signage.
**Goal 4:** Integrate risk reduction strategies into university plans, policies and practices.

**Action Item 4.1**
Develop a campus-wide strategy to implement non-structural mitigation practices throughout facility.

**Action Item 4.2**
Develop a comprehensive, department-by-department data backup plan that 1) requires users to perform regular backups; and 2) requires users to transport that backed-up information to an offsite location or third party.

**Action Item 4.3**
Incorporate emergency planning and mitigation into job descriptions of relevant UO positions.

**Goal 5:** Establish and maintain methods to ensure plan implementation and further mitigation practices on campus.

**Action Item 5.1**
Develop a shared Mitigation Specialist position for the Oregon University System.

**Action Item 5.2**
Work with cities of Eugene and Springfield to develop a regional emergency operations center.
UO faculty, staff, administration and the Advisory Committee can identify new projects and potential action items to be included in the Plan. Establishing and implementing a project prioritization process is important because it: (1) is a required element of the Disaster Mitigation Act of 2000 [44 CFR Part 201.6]; (2) can assist the Advisory Committee in making decisions about how to move forward; (3) can assist in directing the effective use of limited mitigation dollars; and (4) helps develop recommendations for high, medium, and low priority Action Items.

**Implementation**

**Prioritization Process**

**Step 1: Assess Availability of Funding**
Potential funding stream requirements will be assessed to ensure that the mitigation activity would be eligible.

**Step 2: Complete Cost-Benefit Analysis**
Depending on the type of project and the funding source, either a quantitative or qualitative assessment of cost effectiveness will be completed.

**Step 3: Integrate Actions into Existing Plans and Policies**
Where possible, the university should implement mitigation action items through existing plans and policies.
This plan is overseen by the University of Oregon Natural Hazards Mitigation Steering Committee, which is a subset of the Emergency Management Advisory Committee. UOEMC provides staff support to both groups.

This Steering Committee is responsible for overseeing and guiding the implementation of the mitigation plan. This group, composed of directors of many administrative units that have an expressed role or responsibility for any element in the emergency management phases (e.g. response, recovery, preparedness, and mitigation), reports to the Emergency Management Advisory Committee. UO central administration appoints members to this group. UOEMC will hold the title of Convener and will ensure that the committee regularly meets and achieves its objectives.

The Steering Committee will be responsible for maintaining and updating the plan by holding semi-annual meetings and 3-Year Review Meetings.
Contact Information

University of Oregon
Enterprise Risk Services | Emergency Management & Continuity
emc.uoregon.edu
uoem@uoregon.edu

Krista Dillon, Senior Planner
kristam@uoregon.edu

UOEMC Staff
Andre Le Duc, Executive Director, Enterprise Risk Services
Krista Dillon, Senior Planner & Training and Exercise Coordinator
Emma Stocker, Emergency Management Specialist
Tina Orem, Graduate Teaching Fellow
Andy Fenstermacher, Graduate Teaching Fellow

Mitigation Committee

Brad Black, Housing
Kay Coots, Environmental Health and Safety
Krista Dillon, Emergency Management (Committee Chair)
Mike Eyster, Student Affairs
Clark Hansen, Department of Public Safety
Normandy Helmer, Knight Library
Ken Kato, InfoGraphics Lab
Tim King, Facilities Services
Chris Ramey, Campus Planning
Sara Stubbs, Information Services
Kelly Wolf, Business Affairs
Blake Andrew, InfoGraphics
Jacob Bartruff, InfoGraphics