

## 4.0 MISSION STATEMENT, GOALS, OBJECTIVES AND ACTION ITEMS

### 4.1 Overview

The overall purpose of the Multnomah County Hazard Mitigation Plan is to reduce the impacts of future natural disasters on Multnomah County. That is, the purpose is to make Multnomah County more disaster resistant and disaster resilient, by reducing the vulnerability to disasters and enhancing the capability of the County and its citizens to respond effectively to and recover quickly from future disasters.

Completely eliminating the risk of future disasters in Multnomah County is neither technologically possible nor economically feasible. However, substantially reducing the negative impacts of future disasters is achievable with the adoption of this pragmatic Hazard Mitigation Plan and ongoing implementation of risk reducing action items.

Incorporating risk reduction strategies and action items into Multnomah County's existing programs and decision making processes will facilitate moving Multnomah County toward a safer and more disaster resistant future. This mitigation plan provides the framework and guidance for both short- and long-term proactive steps that can be taken to:

- Protect life safety,
- Reduce property damage,
- Minimize economic losses and disruption, and
- Shorten the recovery period from future disasters.

In addition, the Multnomah County Hazard Mitigation Plan is intended to meet FEMA's (Federal Emergency Management Agency) mitigation planning requirements so that Multnomah County remains eligible for pre- and post-disaster mitigation grant funding from FEMA.

The Multnomah County Hazard Mitigation Plan is based on a four-step framework that is designed to help focus attention and action on successful mitigation strategies: Mission Statement, Goals, Objectives and Action Items.

- **Mission Statement.** The Mission Statement states the purpose and defines the primary function of the Multnomah County Hazard Mitigation Plan. The Mission Statement is an action-oriented summary that answers the question "Why develop a hazard mitigation plan?"
- **Goals.** Goals identify priorities and specify how Multnomah County intends to work toward reducing the risks from natural and human-caused hazards. The Goals represent the guiding principles toward which the community's

efforts are directed. Goals provide focus for the more specific issues, recommendations and actions addressed in Objectives and Action Items.

- **Objectives.** Each Goal has Objectives which specify the directions, methods, processes, or steps necessary to accomplish the plan's Goals. Objectives then lead directly to specific Action Items.
- **Action Items.** Action items are specific well-defined activities or projects that work to reduce risk. That is, the Action Items represent the steps necessary to achieve the Mission Statement, Goals and Objectives.

## 4.2 Mission Statement

The mission of the Multnomah County Hazard Mitigation Plan is to:

**Proactively facilitate and support county-wide policies, practices, and programs that make Multnomah County more disaster resistant and disaster resilient.**

The Multnomah County Hazard Mitigation Plan documents Multnomah County's commitment to promote sound public policies designed to protect citizens, critical facilities, infrastructure, private property and the environment from natural hazards by increasing public awareness, identifying resources for risk assessment, risk reduction and loss reduction, and identifying specific activities to help make Multnomah County more disaster resistant and disaster resilient.

## 4.3 Mitigation Plan Goals and Objectives

Mitigation plan goals and objectives guide the direction of future policies and activities aimed at reducing risk and preventing loss from disaster events. The goals and objectives listed here serve as guideposts and checklists as the cities, other agencies, businesses and individuals begin implementing mitigation action items within Multnomah County.

Multnomah County's mitigation plan goals and objectives are based broadly, on and consistent with, the goals established by the State of Oregon Hazard Mitigation Plan. However, the specific priorities, emphasis and language are Multnomah County's. These goals were developed with extensive input and priority setting by the Multnomah County Natural Hazard Mitigation Plan (NHMP) Committee and the other stakeholders and citizens of Multnomah County.

## **Goal 1: Protect Life Safety**

### **Objectives:**

- A. Enhance life safety by minimizing the potential for deaths and injuries in future disaster events.
- B. Enhance life safety by improving public awareness of earthquakes and other natural hazards posing life safety risk to the Multnomah County community.

## **Goal 2: Protect Multnomah County Buildings and Infrastructure**

### **Objectives:**

- A. Identify buildings and infrastructure at high risk from one or more hazards addressed in the Multnomah County Hazard Mitigation Plan.
- B. Conduct risk assessments for critical buildings, facilities and infrastructure at high risk to determine cost effective mitigation actions to eliminate or reduce risk.
- C. Implement mitigation measures for buildings, facilities and infrastructure which pose an unacceptable level of risk.
- D. Ensure that new buildings and infrastructure in Multnomah County are adequately designed and located to minimize damages in future disaster events.

## **Goal 3: Enhance Emergency Management Capability, Emergency Planning and Post-Disaster Recovery**

### **Objectives:**

- A. Ensure that critical facilities and critical infrastructure are capable of withstanding disaster events with minimal damages and loss of function.
- B. Enhance emergency planning to facilitate effective response and recovery from future disaster events.
- C. Increase collaboration and coordination between Multnomah County, nearby communities, utilities, businesses and citizens to ensure the availability of adequate emergency and essential services for the Multnomah County community during and after disaster events.

## **Goal 4: Increase Public Awareness of Natural Hazards and Enhance Education, Outreach and Partnership Efforts**

### **Objectives:**

- A. Develop and implement education and outreach programs to increase public awareness of the risks from natural hazards.

- B. Provide information on resources, tools, partnership opportunities and funding resource sources to assist the community in implementing mitigation activities.
- C. Strengthen communication and coordinate participation among and within public agencies, non-profit organizations, business, industry and the public to encourage and facilitate mitigation actions.

## **Goal 5: Environmental Stewardship**

### **Objectives:**

- A. Balance and coordinate natural resource management, land use planning and natural hazard mitigation to protect life, property and the environment.
- B. Preserve, rehabilitate and enhance natural systems to both enhance habitats and serve natural hazard mitigation functions.
- C. Build and reinforce alliances with sustainability and climate adaptation initiatives that promote community resilience.

## **4.4 Critical and Essential Facilities**

Many of the high priority action items focus on facilities which are critical or essential for Multnomah County. Critical facilities are facilities defined as those necessary for emergency response and recovery activities, especially public safety facilities and hospitals. Critical facilities also include:

- Public works facilities that are essential for disaster response, repairs, debris removal and recovery operations.
- Emergency Shelters
- Essential utility services such as water, wastewater, electric power, natural gas and telecommunications are also extremely important to communities, especially after a disaster. Such utilities are often characterized as “lifeline” utilities because they are so important to a community for life safety (e.g., services to hospitals) and for the economic recovery after a disaster.
- Key transportation system elements that are important for evacuation, emergency response and recovery.
- Major flood control infrastructure, including dams and the levee systems along the Columbia River and Willamette River.

Schools are not critical facilities, per the definition above. However, Multnomah County considers life safety for schools, especially for earthquakes, to be a very high priority because most schools have high occupancies and our community considers ensuring the safety of school children to be among our most important commitments. In this context, schools are essential facilities.

This plan focuses primarily on the following critical and essential facilities because they lie within the geographical unincorporated areas or house County services and they do not fall under the hazard mitigation planning scope of another jurisdiction's plan. While some facilities like fire stations and water towers may be located in the unincorporated areas, it is assumed that for the sake of this plan, their governing authority has adequately addressed hazard mitigation activities related to their vulnerabilities.

**County Assets:** County assets are located throughout the County in both incorporated and unincorporated areas. All major county assets are included in the scope of this plan, including:

- County Buildings, owned and leased,
- County Roads, especially major arteries and designated evacuation routes, and
- County Bridges, especially those on major arteries or designated evacuation routes.

Multnomah County's priorities for restoration of services for County buildings after disasters are summarized in Appendix 4.

**Fire Stations:** All fire stations within Multnomah County are essential for emergency response during disasters. The fire agencies within the unincorporated areas that are not covered by another jurisdiction's hazard mitigation plan include:

- Multnomah County Rural Fire Protection District (MCRFPD) #14
- Sauvie Island Fire Department (SIVFD) #30

**Law Enforcement Assets:** All law enforcement assets within Multnomah County are essential for emergency response during disasters. Law enforcement agencies within the county that are not covered by another jurisdiction's hazard mitigation plan include:

- Multnomah County Sheriff's Office

**Emergency Services:** Emergency services within the County that are not currently addressed in another jurisdiction's hazard mitigation plan.

- Multnomah Building County Emergency Coordination Center (ECC)
- Juvenile Justice Center County ECC
- Amateur Radio Emergency Services (ARES) repeaters

**Medical services facilities:** All citizens in the unincorporated areas are served by hospitals and medical facilities in the incorporated areas of the County which are covered by another jurisdiction’s hazard mitigation plans.

**Emergency Shelters:** There are no pre-designated emergency shelters located in the unincorporated areas of the County.

**Schools:** The following are schools in the unincorporated areas.

**Table 4.1  
School Districts in Unincorporated Multnomah County**

<b>School</b>	<b>Address</b>	<b>District</b>
West Orient Middle	29805 SE Orient Dr	Gresham-Barlow
East Orient Elementary	7431 SE 302nd Ave	Gresham-Barlow
Pleasant Valley Elementary	17625 SE Foster Rd	Centennial
Riverdale Grade	11733 SW Breyman Ave	Riverdale
Corbett Elementary	35800 E Historic Columbia River Hwy	Corbett
Terra Nova High School	10351 NW Thompson Rd	Beaverton
Springdale Job Corps Center	31224 E Historic Columbia River Hwy	Not Applicable
Skyline Elementary	11536 NW Skyline Blvd	Portland
Sauvie Island Elementary	14445 NW Charlton Rd	Scappoose
Corbett High	35800 E Historic Columbia River Hwy	Corbett
Corbett Middle	35800 E Historic Columbia River Hwy	Corbett
Sam Barlow High	5105 SE 302nd Ave	Gresham-Barlow

## **Lifeline Utility Systems**

### **Potable Water**

**Table 4.2  
Potable Water Supplies in Unincorporated Multnomah County**

Potable water supply in unincorporated Multnomah County and County facilities is provided by several public water agencies, including:

Corbett Water District
Springdale Water District
Lusted Water District
Burlington Water District
Plainview Water District
Pleasant Home Water District
West Slope Water District
Portland Water Bureau

These agencies rely on both surface water and groundwater supplies. For water systems, the most critical components are raw water sources, pumping plants, treatment plants and transmission mains. Local distribution systems, while important, are less important than the components listed above because damage to distributions systems results in outages to fewer customers and is often easier and quicker to repair than damage to the major system components.

In addition, many residents in unincorporated areas rely on individual wells.

### **Wastewater**

Wastewater collection and treatment in unincorporated Multnomah County and County facilities is provided by two wastewater agencies.

**Table 4.3**  
**Wastewater Agencies Serving Unincorporated Multnomah County**

Portland Environmental Services
Sauvie Island Moorage along Multnomah Channel for floating homes

In addition, many residents in the more rural areas of the county rely on individual septic systems. For wastewater systems, the most critical components are the treatment plants, large pump stations and large diameter collection pipes. Local distribution systems, while important, are less important than the major components for the same reasons given above.

### **Electric Power**

Electric power in Multnomah County is provided by Portland General Electric and PacifiCorp, both of which are private, investor owned utilities. Wholesale power to both Portland General Electric and PacifiCorp is provided by the Bonneville Power Administration, a federal agency. For electric power utilities, the most critical components are generation facilities (hydroelectric dams, fossil fuel power plants, and others), transmission lines and high voltage substations. Local distribution systems, including distribution lines and low-voltage substations, while important, are less important than the major components for the same reasons given above.

### **Natural Gas**

Natural gas in Multnomah County is provided by Northwest Natural Gas, a private, investor-owned utility. For the natural gas system, the most critical components are large, high-pressure transmission mains. Local distribution systems, while important, are less important than the major components for the same reasons given above.

## Telecommunications

Telecommunications, including voice, data and internet services, within Multnomah County are provided by several private investor-owned companies.

**Table 4.4**  
**Telecommunications Company Serving Unincorporated Multnomah County**

Quest
Century Link
Comcast
Frontier
Cascade
Reliance Connects

For telecommunications, the most critical system components are the central offices which contain the switch gear necessary to connect telephone calls. For data and internet services, the most critical system components are high capacity fiber-optic links and peering facilities which transfer traffic between carriers.

## Transportation Systems

### Surface Transport Systems

The most critical highways within and to/from Multnomah County as a whole, and especially for the unincorporated areas, include I-5, I-84 and I-45, State Highway 26, State Highway 30, Historical Columbia Gorge Highway, and NW Cornelius Pass Road (which connects Highways 26 and 30 in the west Portland hills). The major bridges on the Interstates and State Highways, especially the bridges across the Columbia, Willamette and Sandy Rivers are also critically important.

Other important surface transportation systems include Trimet's MAX light rail and bus networks, Interstate Bus' system, the Amtrak passenger rail service and the freight rail systems, especially BNSF and Union Pacific.

### Marine, Riverine and Air Transport Systems

The Port of Portland is charged with promoting aviation, maritime, commercial and industrial interests within Clackamas, Multnomah and Washington counties (including the city of Portland). It is a special district that is directed by a nine-member commission, whose members are appointed by the governor of the state of Oregon and confirmed by the Oregon Senate.

The Port most critical facilities are the four marine terminals (T6 on the Columbia River and T2, T4, & T5 on the Willamette River) and Oregon's primary commercial airport (Portland International Airport or PDX). The Port also operates three general aviation airports (Troutdale, Hillsboro and Mulino).



## **Drainage Districts**

The Multnomah County Drainage District No. 1 (MCDD) provides flood protection for people, property and the environment within a 25 square mile managed floodplain along the Columbia River in Northeast Portland, Gresham and Fairview. The District also manages and controls three other drainage districts in the managed floodplain- Peninsula Drainage District #1 (PEN1), Peninsula Drainage District #2 (PEN2), and the Sandy Drainage Improvement Company (SDIC). The Portland International Airport (PDX), the Troutdale Airport, and Marine Terminals 2, 4, 5 & 6 are located within this consortium of floodplain districts (part of the Columbia River Basin).

The Sauvie Island Drainage Improvement Company manages the levee and canal system on the southern half of Sauvie Island. The levee protects 11,200 acres from flooding and is surrounded by the Columbia and Willamette Rivers as well as the Multnomah Channel and Sturgeon Lake. The levee is approximate 18 miles in length and divided into four segments. The elevation of the levee ranges from 33 to 36 feet.

## **Education Special Districts**

The following special districts have critical or essential facilities:

- Multnomah County Education Service District, and
- The School Districts listed in Table 4.1.

## **4.5 Progress Report: 2006 Multnomah County Natural Hazard Mitigation Plan**

### **4.5.1 Goals**

The 2006 Multnomah County Natural Hazard Mitigation Plan had five main long-term goals:

Goal 1: Maintain a comprehensive, countywide risk assessment.

Goal 2: Reduce risk to people, property and environment.

Goal 3: Support a disaster resistant economy.

Goal 4: Promote public education, awareness and understanding of risk.

Goal 5: Develop and maintain collaborative partnerships and funding strategies for implementing the mitigation plan.

Multnomah County has made significant progress on many of these goals from 2006 to 2012, as evidenced by the full or partial completion of a number of action items. This progress is documented in the following section.

#### **4.5.2 Action Items**

The 2006 Multnomah County Natural Hazard Mitigation Plan had a total of 35 action items. These items are listed in Table 4.5, along with information whether the action item has been completed, has been partially completed, or has not yet been completed.

Of the 35 action items in the 2006 Multnomah County Natural Hazard Mitigation Plan, 25 actions have been completed or partially completed, while 10 actions have not been completed due to lack of funding availability or staff resources or because the item has been deleted upon further consideration.

**Table 4.5  
Progress Report:  
Action Items from 2006 Multnomah County Natural Hazard Mitigation Plan**

Goals Short Term (ST) Long Term (LT)	Action Item	Comments/Notes	Coordinating Organization / Internal Partners	Status			
				Completed	Partially Completed	No Action	Reason for No Action
<b>Goal 1 (Risk Assessment ) Action Items</b>							
ST 1.1	Acquire LIDAR data (Airborne Light Detection and Ranging) to improve hazard mapping in Multnomah County.	The county is acquiring LIDAR data as it becomes available during FEMA map modernization work	Multnomah County Emergency Management / Land Use Transportation Division, Information Technology / GIS	x			
ST 1.2	Develop and implement inundation modeling for the urban managed floodplain managed by the combined Drainage Districts.		Multnomah County Emergency Management, Multnomah County Drainage District #1		x		
ST 1.3	Update Hillside Development Overlay Zone maps to identify areas of recurring loss.	Updated maps in 2012 mitigation plan	Multnomah County Community Services Department / Multnomah County Emergency Management		x		
ST 1.4	Partner with the Oregon Department of Forestry and Rural Fire Districts to promote home site assessment programs for the wildlife hazard.	This work was accomplished as part of the development and adoption of the Multnomah Community Wildfire Protection Plan (MCWPP)	Land Use and Transportation Division / Multnomah County Emergency Management			x	Lack of resources
ST 1.5	Acquire heat intensity imaging of levees.	Multnomah County Facilities Department has acquired the necessary equipment to conduct heat intensity imaging when required and in coordination with appropriate responding partners.	Multnomah County Emergency Management	x			
LT 1.1	Update Flood Insurance Rate Maps (FIRMs) and participate in FEMA's map modernization process.	Flood Insurance Study and FIRM maps updated in 2009	Land Use and Transportation Division / Multnomah County Emergency Management	x			
LT 1.2	Update and maintain the County's risk assessment.	The County's Hazard Identification and Analysis was conducted in 2008.	Multnomah County Emergency Management and the Hazard Mitigation Technical Advisory Committee	x			

Goals Short Term (ST) Long Term (LT)	Action Item	Comments/Notes	Coordinating Organization / Internal Partners	Status			
				Completed	Partially Completed	No Action	Reason for No Action
<b>Goal 2 (Reduce Risk) Action Items</b>							
ST 2.1	Complete seismic upgrades for Mt. Hood Community College gymnasium and Main Academic Center (shelter sites).	Seismic upgrades were completed for the Horticulture/Fisheries building. The actual grant award resulted in a smaller project than initially proposed.	Multnomah County Emergency Management		x		
ST 2.2	Upgrade Multnomah County Drainage District Command Center.	The command center was upgraded with real time monitoring and alarm capabilities.	Multnomah County Emergency Management	x			
ST 2.3	Develop a funding strategy to reduce the risk of loss to the critical infrastructure of the Willamette River bridges managed by Multnomah County from seismic and landslide hazards.	The new Sauvie Island Bridge was completed and the Sellwood Bridge is currently in design phase.	Multnomah County Emergency Management / Board of Commissioners	x			
ST 2.4	Seismic upgrades Multnomah County Courthouse.	SERA architects completed a feasibility study on possible strategies for completing seismic upgrades while maintaining routine operations.	Multnomah County Facilities & Property Management County Sheriff, District Attorney, Board of County Commissioners		x		
ST 2.5	Analyze each repetitive loss property to identify viable mitigation options.	Analysis done, properties being annexed by Gresham	Land Use and Transportation Division	x			
LT 2.1	Evaluate current zoning codes to incorporate mitigation principles related to flood and landslide.	An assessment was completed and provided to the Planning Commission in March of 2011.	Land Use and Transportation Division	x			
LT 2.2	Explore the development of management strategies to preserve the function of the floodplain.	Ordinance 1120 (2008) added regulatory requirements to preserve floodplain function	Land Use and Transportation Division	x			
LT 2.3	Qualify Multnomah County for the FEMA Community Rating System (CRS) program.		Multnomah County Emergency Management / Land Use Planning and Transportation Division			x	Deleted, too few NFIP polices in unincorporated areas
LT 2.4	Assess, design, and repair County waterways that are in danger of failure due to high water.		Multnomah County Emergency Management		x		
LT 2.5	Develop a food distribution contingency plan.	Accomplished via the adoption of the Multnomah County Food Action Plan.	Multnomah County Emergency Management / Departments of Planning and Transportation		x		
LT 2.6	Create mechanisms and incentives for home retrofit, including grants and tax incentives.		Multnomah County Emergency Management / Multnomah County Commissioners			x	Lack of staff resources
LT 2.7	Develop acquisition and management strategies to preserve parks, trails, and open space in the floodplain.		Environmental Services Division			x	Migrated to Portland's Hazard Mitigation Plan
LT 2.8	Develop and implement programs to keep trees from threatening lives, property, and public infrastructure from severe weather events.		Multnomah County Emergency Management			x	Lack of staff resources

Goals Short Term (ST) Long Term (LT)	Action Item	Comments/Notes	Coordinating Organization / Internal Partners	Status			
				Completed	Partially Completed	No Action	Reason for No Action
<b>Goal 3 (Disaster Resilient Economy) Action Items</b>							
ST 3.1	Develop and implement the Multnomah County Information Technology Disaster Recovery Plan.	County IT has hired a Sr. Disaster Recovery Coordinator to begin the development of a county-wide IT disaster recovery plan to address Continuity of Operations Plan (COOP).	Multnomah County Information Technology Infrastructure Group / County Business Units	x			
ST 3.2	Encourage small businesses to undertake business continuity planning.	Multnomah County Emergency Management participates in Oregon Continuity Planners Association, a local business continuity forum for private business.	Multnomah County Emergency Management	x			
ST 3.3	Install fiber optic communications network to fill 7,000 foot gap in existing conduit path for emergency communications and transportation	Project was completed in 2007 by the City of Gresham.	Multnomah County Emergency Management	x			
LT 3.1	Provide secondary power grids to flood protection storm water pump stations.		Multnomah County Emergency Management			x	Lack of staff resources
LT 3.2	Create a back-up river crossing system that uses barges or ferries to assure that people and goods can cross the rivers if the bridges are down.		Multnomah County Emergency Management / Multnomah County Land Use and Transportation			x	Lack of staff resources
LT 3.3	Assess the condition of and, if necessary, replace or repair the stormwater infrastructure under major County transportation routes, such as I-84 and Marine Drive.	A 48 inch culvert was installed across Marine Drive in 2007 for Arcata Creek.	Multnomah County Emergency Management		x		
<b>Goal 4 (Education and Awareness) Action Items</b>							
ST 4.1	Develop public official information kit that can be distributed to elected officials and community decision makers. The kit should include pertinent information regarding the Natural Hazard Mitigation Plan as well as the risk the County faces.		Multnomah County Emergency Management / Hazard Mitigation Technical Advisory Committee			x	Lack of staff resources
ST 4.2	Develop and distribute Natural Hazard Community Resource Maps and risk reduction tips that include instructions about how to prepare and reduce risks posed by natural hazards.		Multnomah County Emergency Management / Land Use and Transportation Division and GIS		x		
ST 4.3	Conduct earthquake awareness and mitigation outreach assistance.		Multnomah County Emergency Management	x			
ST 4.4	Research ways to create and disseminate a message that will cause people to act to reduce individual risk. Target education and outreach actions to reach marginalized populations.		Multnomah County Emergency Management / Public Affairs Office	x			
ST 4.5	Involve the public in updating the Natural Hazard Mitigation Plan.	The public has been involved in the renewal of this plan. See Chapter 3.	Multnomah County Emergency Management / Hazard Mitigation Technical Advisory Committee	x			

Goals Short Term (ST) Long Term (LT)	Action Item	Comments/Notes	Coordinating Organization / Internal Partners	Status			Reason for No Action
				Completed	Partially Completed	No Action	
<b>Goal 5 (Plan Implementation) Action Items</b>							
ST 5.1	Develop formal agreements (such as Memoranda of Understanding) with internal (departments) and external partners (non-profits, cities, and state agencies) to work together on risk reduction efforts in the County.		Multnomah County Commissioners and Hazard Mitigation Technical Advisory Committee / Multnomah County Emergency Management and Land Use and Transportation Division			x	Action item deleted upon further analysis.
ST 5.2	Encourage and support the development of local community plan addenda to the County Natural Hazard Mitigation Plan.	The cities of Wood Village, Fairview and Troutdale have completed individual hazard mitigation plans.	Hazard Mitigation Technical Advisory Committee / Land Use and Transportation Division	x			
ST 5.3	Develop a web-based or other electronic communication tool for the Hazard Mitigation Technical Advisory Committee and for the public to comment on the plan.	Two online tools have been developed. An internal collaboration site is used for coordinating the Hazard Mitigation Plan Committee and a web page on the County's public site serves as an interface where the public is able to review plan status and provide comment.	Multnomah County Emergency Management / Hazard Mitigation Technical Advisory Committee	x			
ST 5.4	Establish mitigation benchmarks to assist in evaluating and updating the plan.		Land Use and Transportation Division / Hazard Mitigation Technical Advisory Committee			x	Lack of staff resources

## **4.6 Multnomah County 2012 Hazard Mitigation Plan Action Items**

The Mission Statement, Goals and Objectives for Multnomah County, as outlined above, are achieved via implementation of specific mitigation action items. Action items may include refinement of policies, data collection to better characterize hazards or risk, education, outreach or partnership-building activities, as well as specific engineering or construction measures to reduce risk from one or more hazards to specific buildings, facilities, or infrastructure within the Multnomah County community.

Action items identified and prioritized during the development of the Multnomah County Hazard Mitigation Plan are summarized in the tables on the following pages. Individual action items may address a single hazard (such as floods, or earthquakes) or they may address two or more hazards concurrently. The first group of action items is for multi-hazard items that address more than one hazard. The remaining action items address each of the hazards considered in this plan, for which significant vulnerabilities were identified, as addressed in Chapters 6 to 12.

**Table 4.6  
Multnomah County Action Items**

Hazard	Action Item	Coordinating Organizations	Timeline	Plan Goals Addressed				
				Life Safety	Protect Property and Infrastructure	Emergency Management Capabilities	Public Awareness and Education	Environmental Stewardship
<b>Multi-Hazard Mitigation Action Items</b>								
Short-Term #1	Integrate the Mitigation Plan findings into planning and regulatory documents and programs.	Emergency Management Leadership Team	Ongoing		x	x	X	X
Short-Term #2	Collaborate with municipalities within Multnomah County on a unified approach to community outreach and education.	Multnomah County Emergency Management	Ongoing			X	X	
Short-Term #3	Explore a multi-jurisdictional unified strategy for developing a Threat and Hazard Identification and Risk Assessment (THIRA).	Multnomah County Emergency Management	1-2 Years			X	X	
Short-Term #4	Explore the desirability and feasibility of developing a County multi-jurisdictional plan that integrates the Local Hazard Mitigation Plans of Portland, Gresham, Wood Village, Troutdale and Fairview.	Multnomah County Emergency Management	1-2 Years			X	X	
Short-Term #5	Integrate 2011 DOGAMI Hazard Assessment data into the plan.	GIS	1 Year			X	X	
Short-Term #6	Collaborate with libraries, historical information groups and neighboring jurisdictions to develop a community workshop that uses storytelling and historical anecdotal experience to share natural hazard information.	Multnomah County Emergency Management	1-2 Years			X	X	
Short-Term #7	Develop and implement a community outreach and training portfolio that includes all hazards and hazard specific education.	Multnomah County Emergency Management	3 Years	X		X	X	
Short-Term #8	Publish the plan and natural hazard maps on the emergency management website along with basic information surrounding each hazard.	Multnomah County Emergency Management	1 Year			X	X	
Long-Term #1	Identify and pursue funding opportunities to implement mitigation actions.	Multnomah County Emergency Management	Ongoing	X	X	X	X	X



Hazard	Action Item	Coordinating Organizations	Timeline	Plan Goals Addressed				
				Life Safety	Protect Property and Infrastructure	Emergency Management Capabilities	Public Awareness and Education	Environmental Stewardship
<b>Earthquake Mitigation Action Items</b>								
Short-Term #1	Evaluate the structural vulnerability of critical county buildings and retrofit or replace when necessary.	Facilities	Ongoing	X	X	X		X
Short-Term #2	Encourage school districts, fire agencies and private building owners to evaluate the structural vulnerability of buildings and retrofit or replace when necessary. Example: grant workshops.	Multnomah County Emergency Management	Annually	X	X	X	X	
Short-Term #3	Evaluate the nonstructural vulnerabilities in county buildings and implement mitigation measures where necessary, including: automatic seismic shut off valves on gas lines, flexible connections to gas-fueled equipment, bracing of fire sprinklers, bracing of contents and others.	Facilities	1-2 Years	X	X	X		X
Short-Term #4	Obtain and update earthquake map data as it becomes available through DOGAMI and other partners.	GIS	Ongoing			X	X	
Short-Term #5	Complete and maintain an inventory of critical facilities and lifelines that are susceptible to severe disruption due to earthquake hazards.	Multnomah County Emergency Management	Ongoing		X	X	X	
Short-Term #6	Enhance Multnomah County's staff earthquake expertise by attending training classes on nonstructural mitigation, post-earthquake seismic evaluations of buildings, and FEMA mitigation grants.	Multnomah County Emergency Management	Ongoing	X	X	X	X	
Long-Term #1	Retrofit suspended ceilings including light fixtures as replacement becomes necessary.	Facilities	Ongoing	X	X			
Long-Term #2	Retrofit or replace key bridges with substantial seismic vulnerabilities.	Transportation	Ongoing	X	X	X	X	X
Long-Term #3	Seismic upgrades Multnomah County Courthouse	Facilities	5 Years	X	X			

Hazard	Action Item	Coordinating Organizations	Timeline	Plan Goals Addressed				
				Life Safety	Protect Property and Infrastructure	Emergency Management Capabilities	Public Awareness and Education	Environmental Stewardship
<b>Wildland/Urban Interface Fire Mitigation Action Items*</b>								
Short-Term #1	Track and report progress of action items in the Community Wildfire Protection Plan.	Multnomah County Emergency Management	Annually	X	X	X	X	X
Short-Term #2	Review and amend as necessary planning and development regulations to incorporate mitigation strategies for urban/wildland interface fires considering the recommendations in the 2011 Multnomah County Community Wildfire Protection Plan.	Multnomah County Land Use Planning	3 Years	X	X	X	X	X
Short-Term #3	Consider how Multnomah County Land Use Planning should coordinate with fire agencies' planning for wildland/urban interface fires.	Planning	1-2 Years	X	X	X	X	X

\* See the 2011 Multnomah County CWWP for a long list of potential mitigation action items.

Hazard	Action Item	Coordinating Organizations	Timeline	Plan Goals Addressed				
				Life Safety	Protect Property and Infrastructure	Emergency Management Capabilities	Public Awareness and Education	Environmental Stewardship
<b>Landslide Mitigation Action Items</b>								
Short-Term #1	Inventory utility and communication infrastructure in areas with a history of landslides or which are within mapped landslide hazard areas.	GIS	1-2 Years		X	X	X	
Short-Term #2	Compile inventory of county road segments with a history of landslides or which are within mapped landslide hazard areas.	Transportation	3 Years		X	X		
Short-Term #3	Review the Hillside Development ordinance to consider amendments that address areas at risk from landslides for areas not already identified on the County Slope Hazard Map or otherwise subject to the Hillside Development zoning code.	Planning	3 Years	X	X		X	X
Short-Term #4	Obtain completed detailed lidar-based inventory of historical and active landslides and areas with high landslide risk to update the County's slope hazard maps.	GIS	Ongoing		X	X	X	
Long-Term #1	Encourage the relocation of identified critical or essential facilities and high occupancy facilities in high landslide hazard areas or mitigation of the landslide hazard if feasible.	Multnomah County Emergency Management	Ongoing	X	X	X	X	

Hazard	Action Item	Coordinating Organizations	Timeline	Plan Goals Addressed				
				Life Safety	Protect Property and Infrastructure	Emergency Management Capabilities	Public Awareness and Education	Environmental Stewardship
<b>Flood Mitigation Action Items: Within FEMA-Mapped Floodplains</b>								
Short-Term #1	Complete an inventory and GIS mapping of structures, critical facilities and important transportation or utility system components within mapped floodplains and/or within areas subject to flood in the event of levee or dam failures, including elevation data.	GIS	1-2 Years			X	X	
Short-Term #2	Facilitate an identification and prioritization process for the purpose of defining a candidate list of localized inundation scenarios related to levee failures that result from different hazard events.	Multnomah County Emergency Management	1-2 Years	X	X	X		
Short-Term #3	Conduct a targeted risk assessment for all areas within the county containing public facilities, private industry and/or residential facilities which were previously flooded or flood prone.	Multnomah County Emergency Management	3 Years	X	X	X	X	
Short-Term #4	Use targeted flood risk assessments to educate stakeholders on need to take mitigation and/or preparedness actions in order to reduce flood hazard impacts.	Multnomah County Emergency Management	5 Years	X	X	X	X	
Short-Term #5	Encourage local jurisdictions to post high water marks around the county to aid citizens and first responders in visually assessing flood hazards.	Multnomah County Emergency Management	1-2 Years	X		X	X	
Long-Term #1	Implement mitigation actions for identified high risk buildings or infrastructure as funding becomes available.	Multnomah County Emergency Management	Ongoing	X	X	X	X	
<b>Flood Mitigation Action Items: Outside of FEMA-Mapped Floodplains</b>								
Short-Term #1	Complete an inventory and GIS Mapping of structures, critical facilities and important transportation or utility system components in locations with a history of severe or repetitive flooding.	GIS	1-2 Years	X	X	X	X	X
Long-Term #1	For locations with repetitive flooding and significant damages or road closures, determine and implement mitigation measures such as upsizing culverts or storm water drainage capacity.	Transportation	Ongoing	X	X	X		X

Hazard	Action Item	Coordinating Organizations	Timeline	Plan Goals Addressed				
				Life Safety	Protect Property and Infrastructure	Emergency Management Capabilities	Public Awareness and Education	Environmental Stewardship
<b>Severe Weather Mitigation Action Items</b>								
Short-Term #1	Ensure that all critical facilities in Multnomah County have backup power and/or coordination of operations plans in place to withstand loss of grid power.	Facilities	5 Years	X	X	X		
Short-Term #2	Conduct tree trimming activities on county roads where County Transportation has jurisdictional responsibility.	Transportation	Ongoing	X	X			X
Short-Term #3	Develop a strategy that encourages property owners to trim trees that could impact life safety and damage property.	Multnomah County Emergency Management	1-2 Years	X	X		X	X
Short-Term #4	Work with stakeholder groups to identify common criteria for defining extreme heat and cold events for the sake of determining proper mitigation, protection or preparedness strategies.	Multnomah County Emergency Management	1 Year	X		X	X	X
Long-Term #1	Encourage utilities to upgrade lines and poles to improve wind/ice loading, undergrounding critical lines, and adding interconnect switches to allow alternative feed paths and disconnect switches to minimize outage areas.	Multnomah County Emergency Management	5 Years	X	X	X	X	

<b>Volcanic Hazards Mitigation Action Items</b>								
Short-Term #1	Develop emergency evacuation protocols for lahar events and conduct exercises to test the protocols.	Multnomah County Emergency Management	3 Years	X		X	X	
Short-Term #2	Update public education, emergency notification procedures and emergency planning for ash fall and lahar events.	Multnomah County Emergency Management	1-2 Years	X		X	X	