
Chapter 1: Natural Hazards Mitigation Plan

Section 1: Introduction

The City of Cottage Grove, Oregon is subject to various hazards that pose threats to public safety and property. Developing a strategy over time best achieves the goal of reducing the impact of hazards that directly and indirectly affect all community members. This Hazard Mitigation plan is a locally specific guide for risk assessment and mitigation strategies and is a necessary component in assessing and mitigating the hazards to which the City of Cottage Grove and its residents are vulnerable to.

The geographic boundaries represented by this plan are the areas within the City limits and Urban Growth Boundary of Cottage Grove, hereafter referred to as the 'planning area' or the City.

An approved NHMP is a basic requirement for federal mitigation funds eligibility per section 322 of the Stafford Act, 42 U.S.C. 5165. Detailed requirements are outlined in Code of Federal Regulations (CFR) Title 44, Part 201, Part 206, Subpart N, et. Al. DMA 2000 also established a new requirement for local mitigation plans and authorized up to 7 percent of HMGP funds available to a State for development of State, local, and Indian Tribal mitigation plans.

A Natural Hazard Mitigation Plan is distinguished from an emergency operation plan to the extent that it outlines the proactive implementation of mitigation projects and response activities prior to a hazard or disaster occurrence. Mitigation projects (or "Action Items") can be short or long term activities that reduce a community's vulnerability to hazard impact through various means including avoidance, protection, and preparedness.

What is Natural Hazard Mitigation?

Natural hazard mitigation is defined as permanent reduction or alleviation of loss of life, property and injuries resulting from natural hazards on the built environment through long and short-term strategies. Example strategies include: policy changes, such as updated ordinances; projects, such as seismic retrofits to critical facilities; and education and outreach to targeted audiences, such as Spanish speaking residents, or the elderly. Mitigation is the responsibility of individuals, private

businesses and industries, state and local governments, and the federal government.

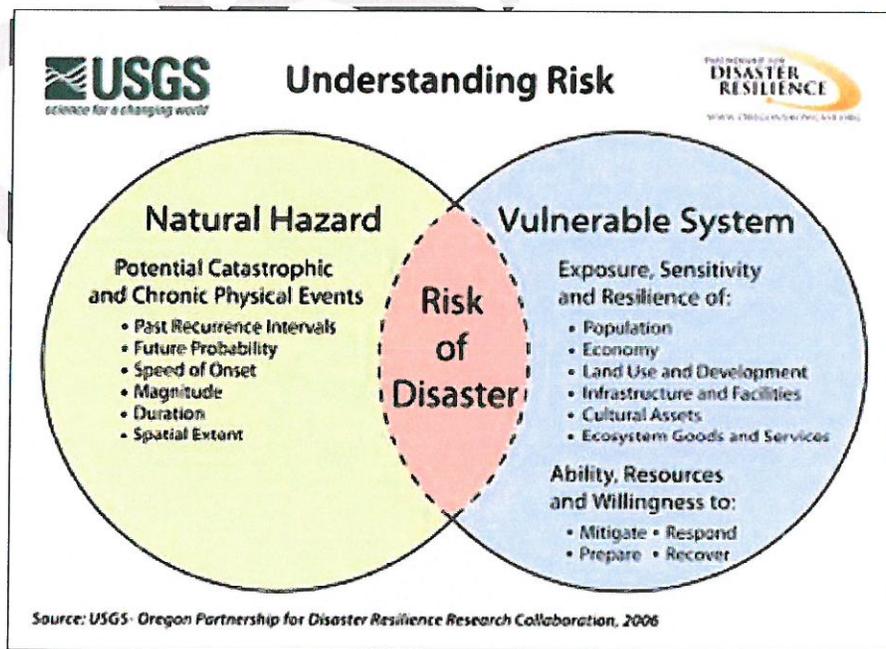
Identified as one of the 5 stages of Emergency Management (Planning, Preparation, Mitigation, Response and Recovery), engaging in mitigation activities provides jurisdictions with a number of benefits, including: reduced loss of life, property, essential services, critical facilities and economic hardship; reduced short-term and long-term recovery and reconstruction costs; increased cooperation and communication with the community through the planning process; and increased potential for state and federal funding for recovery and reconstruction projects.

Why Develop a Mitigation Plan?

Cottage Grove developed this Natural Hazard Mitigation Plan in an effort to reduce future loss of life and property resulting from natural disasters. It is impossible to predict exactly when these disasters will occur, or the extent to which they will affect the City. However, with deliberate awareness, careful planning and collaboration among public agencies, private sector organizations, and citizens within the community, it is possible to minimize the losses that can result from natural disasters.

A natural hazard mitigation plan can assist the community in understanding what puts the community at risk. When a community can identify and understand the relationship between the natural hazards it faces, its vulnerable systems, and its existing capabilities, it becomes better equipped to identify and implement actions aimed at reducing the community's overall risk of disasters.

Figure 1: Understanding Hazard Vulnerability and Risk



This plan focuses on the primary natural hazards that could affect Cottage Grove and the Southern Willamette Valley, which include earthquakes, floods, landslides, severe weather, volcanoes, drought, and wildland-urban interface fires. The dramatic increase in the costs associated with natural disasters over past decades has fostered interest in identifying and implementing effective means of reducing vulnerability. This Natural Hazard Mitigation Plan Update is intended to assist Cottage Grove in reducing its risks from natural hazards by identifying resources, information, and strategies for risk reduction.

The plan is strategic and non-regulatory in nature, meaning that it does not set forth any new policy. It does, however, provide: (1) a foundation for coordination and collaboration among agencies and the public in the city; (2) identification and prioritization of future mitigation activities; and (3) aid in meeting federal planning requirements and qualifying for assistance programs. The mitigation plan works in conjunction with other municipal plans and programs including the Comprehensive Land Use Plan, Emergency Operations Plan, and Capital Improvement Plan as well as the State of Oregon Natural Hazards Mitigation Plan and Lane County Natural Hazard Mitigation Plan.

Authorities:

Federal Authorities

The Cottage Grove Natural Hazard Mitigation Plan was developed in accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) which is the primary authority for providing federal disaster recovery and hazard mitigation financial assistance to states and local governments. The Stafford Act was amended in 1996, 2000 (Disaster Mitigation Act), and 2007. The basic provisions of these acts are implemented as federal rules in CFR Title 44. The program requirements related to hazard mitigation are included in 44 CFR Parts 9, 10, 13, 14, 78, 201 and 206.

Federal administrative authority for hazard mitigation planning in the northwestern United States resides with FEMA's Region X (10) office in Bothell, Washington. This plan was reviewed by FEMA Region X, and found to meet or exceed all requirements outlined in the FEMA publication *Local Mitigation Plan Review Guide* circa October 2011, *Mitigation Ideas: A resource for Reducing Risk to Natural Hazards* January 2013.

State Authorities

This document was developed in accordance with ORS Chapter 401 — Emergency Management and Services and subordinate administrative rules. State administrative authority for hazard mitigation planning resides with the Oregon Office of Emergency Management, Mitigation, and Recovery Services based in Salem.

Local Authorities

The City of Cottage Grove Community Development Department is the primary overseer of plan development, implementation, and maintenance. The Community Development Department is responsible for monitoring implementation over time and tracking the status of identified hazard mitigation actions.

Policy Framework for Natural Hazard Mitigation in Oregon

Planning for natural hazards is an integral element of Oregon's statewide land use planning program, which began in 1973. All Oregon cities and counties have comprehensive plans and implementing ordinances that are required to comply with the statewide planning goals. The challenge faced by state and local governments is to keep this network of local plans coordinated in response to the changing conditions and needs of Oregon communities.

Statewide land use planning Goal 7: Areas Subject to Natural Hazards calls for local plans to include inventories, policies and ordinances to guide development in hazard areas. Goal 7, along with other land use planning goals, has helped to reduce losses from natural hazards. Through risk identification and the recommendation of risk-reduction actions, this plan aligns with the goals of the City of Cottage Grove Comprehensive Plan, and helps Cottage Grove meet the requirements of statewide planning Goal 7.

The primary responsibility for the development and implementation of risk reduction strategies and policies lies with local jurisdictions. However, resources exist at the state and federal levels. Some of the key agencies in this area include Oregon Emergency Management (OEM), Oregon Building Codes Division (BCD), Oregon Department of Forestry (ODF), Oregon Department of Geology and Mineral Industries (DOGAMI), Oregon Department of Transportation (ODOT), and the Department of Land Conservation and Development (DLCD).

The Disaster Mitigation Act of 2000 (DMA 2000) is the latest federal legislation addressing mitigation planning. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions and replacing them with a new set of requirements that emphasize the need for State, local, and Indian Tribal entities to closely coordinate mitigation planning and implementation efforts. It reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur. As such, this Act established the Pre-Disaster Mitigation (PDM) grant program and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP). Section 322 of the Act specifically addresses mitigation planning at the state and local levels. State and local communities must have approved mitigation plans in place in order to qualify to receive post-disaster HMGP funds. Mitigation plans must demonstrate that their proposed mitigation measures are based on a sound planning process that accounts for the risk to the individual and their capabilities.

Local Adoption

44 CFR requirement 201.6(c)(5):

The local hazard mitigation plan shall include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan. For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

Upon provisional approval of this Plan by the State of Oregon Office of Emergency Management (OEM) and the Federal Emergency Management Agency, governing bodies for each participating jurisdiction will formally adopt the document in public session. Copies of local adoption instruments are included in this document as an appendix.

Planning Process

44 CFR Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:*

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests to be involved in the planning process;*
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*

Requirement §201.6(c) (1): *[The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

Update of the Natural Hazard Mitigation Plan for the City of Cottage Grove marks the completion of the second full planning cycle undertaken by the city. During the first planning cycle 2005-2010, numerous mitigation projects were identified, many of which were either implemented, or identified for future action. Several activities were accomplished during the previous planning cycle, which this update takes into account, and builds upon for future updates.

The process to update the Plan followed a four-step outline prescribed in FEMA publication, *Local Multi-Hazard Mitigation Planning Guidance*:

- 1) Organize resources
- 2) Assess risks
- 3) Develop the mitigation plan
- 4) Implement the plan and monitor progress

The first step (organize resources) was addressed by assembling the Natural Hazard Mitigation Advisory Committee as coordinated by the Cottage Grove Community Development Department. In keeping with the goal of including multiple stakeholders - neighboring communities, agencies, businesses, academia, non-profits, and other interested parties - were invited to review the plan document and participate in the planning process.

The second step (assess risks), was conducted via review and consideration of the original version of the Risk Assessments done for the 2005 NHMP by the City Community Development Department, and again for the 2012 NHMP Update. Existing technical reports provided by Lane County Emergency Management, studies and planning documents and input from various data sources brought forth by members of City Staff, and members of the Advisory Committee were all utilized in the 2016 Update. This included a review of Lane County's update to its Hazard Mitigation Action Plan (HMAP) (equivalent to a Natural Hazard Mitigation Plan or NHMP), and the City of Eugene's Natural Hazard Mitigation Plan Update. A detailed listing of data sources for current risk assessments is found in Section 2, Table 5, "City of Cottage Grove Hazard and Risk Assessment".

The third step (develop the mitigation plan) includes input from the HMAP and data sources referred to in Step 2. Mitigation project development and prioritization for the Plan emphasized a review of costs vs. benefits and the social, technical, administrative, political, legal, economic, and environmental considerations of mitigation related projects. Plan update involved preparing a public review draft and a public comment period to solicit input from the public and interested parties. Comments and recommendations from these sources were incorporated into the final version of the Natural Hazard Mitigation Plan submitted to the State and FEMA and ultimately adopted by the City.

The fourth step (plan implementation and monitoring) will occur on an ongoing and annual basis prior to and following State and FEMA approval. Adoption of the approved plan is the first step toward implementing the plan. Feasibility study and scoping of mitigation projects are secondary steps, followed by grant writing coordinated through OEM to secure funding and ultimately the implement the projects. Other mitigation projects that do not require outside funding will be enacted on an ongoing basis. Monitoring will also occur on an ongoing basis as action items are implemented, following major disaster events, and during annual meetings of the Hazard Mitigation Advisory Committee.

Adjustments to implementation and review processes are made over time. Reviews are conducted on a project-by-project basis which proved to generate more enthusiasm, improved results, and ultimately engaged more people in the process. Additionally, it was recognized that unforeseen incidents and situations will inevitably emerge; therefore the NHMP is purposely designed to be flexible enough to address new projects and evolving priorities relevant to hazard mitigation.

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Section 2: Community Profile

Overview

History

Cottage Grove, known as the *Covered Bridge Capital of Oregon*, is located approximately 20 miles south of Eugene. The city is bisected by Interstate 5 (I-5), with its downtown situated west of the interstate. Cottage Grove is a friendly, recreation-and-family-oriented town. The city's tree-covered hillsides, river greenways, water courses, natural vegetation, and colorful heritage add variety and give the urban area its distinctive form and livability.

In 1853, early Cottage Grove settlers built the first sawmill in the area that is now Dorena Lake. Four years later, Harvey Hazelton built the region's first commercial mill on Silk Creek. The post office, originally located near Creswell, kept moving south until it was established in what became known as Cottage Grove. The Cottage Grove Post Office was so named because it originally operated near Creswell out of a cottage in a grove of trees. The City of Cottage Grove, named after the post office, officially incorporated in 1887.

Early settlers farmed in and around the Cottage Grove area, raising sheep and cattle and growing fruits, vegetables, and grasses. The population of the area began to increase significantly after 1858 when gold was discovered 30 miles east of the present city. While the Civil War briefly put extraction activity on hold, this discovery lured thousands of prospectors to the area. In 1871, the Oregon and California Railroad reached Cottage Grove and expanded the city's access to markets. Originally, the town was on the west side of the river. When the railroad came, it spurred growth down Main Street toward the tracks and the stretch between the river and the railroad tracks became the downtown core. By the end of the nineteenth century, Cottage Grove had begun developing its timber-based economy and its population grew quickly.

Historically, the timber industry supported families in and around the city. Through the years, Cottage Grove diversified and expanded its lumber and wood product industries. Since the mid 1980's, this sector has been in decline. Agricultural activities currently play a minor role in the economy. Recreation and tourism have recently become more of a focus, partly due to the presence of six historic covered bridges in the area. Flood control reservoirs build in the late 1940's provide the superb recreational opportunities now available at Dorena and Cottage Grove Lakes. Cottage Grove and Dorena dams are part of a system that controls 28 percent of the water flow in the larger Willamette Watershed.

Geography and Climate

Cottage Grove is located in the south end of the Willamette Valley, at the confluence of the Coast Fork of the Willamette River and the Row River, between the Coast

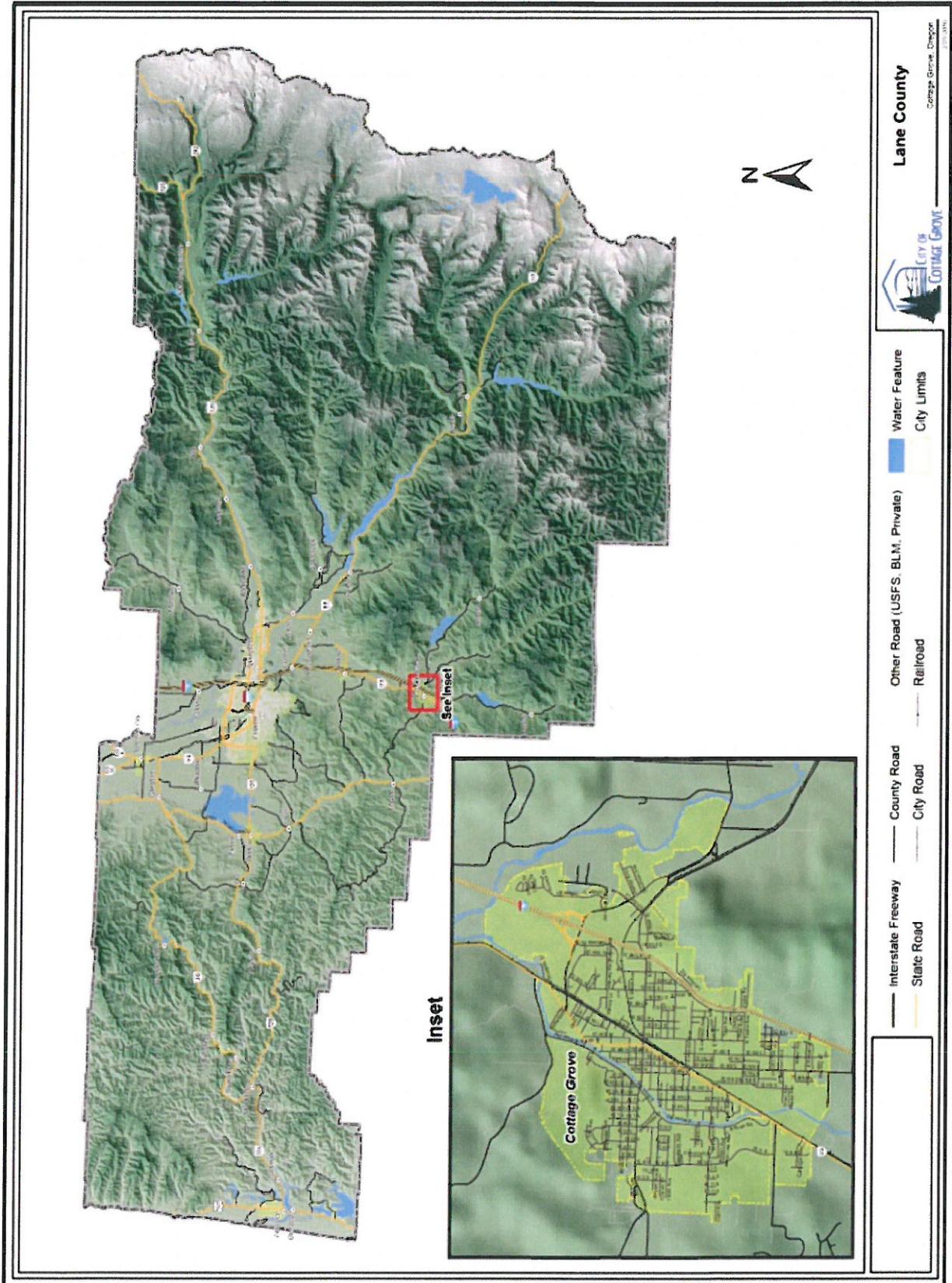
Range and the Cascade Mountains. In addition to the Coast Fork and Row Rivers, there are numerous creeks and streams in the area, including Bennett, Silk and Mosby Creek, and two large flood control reservoirs operated by the U.S. Army Corps of Engineers. The City lies wholly within the Coast Fork Willamette Watershed Basin.

The defining feature of the Willamette Valley is the remarkably broad and level floodplain of the Willamette River. The Willamette Valley begins just south of the City of Cottage Grove and runs northward approximately 110 miles to the urbanized areas and foothills south of Portland. Along its course the valley averages 15-30 miles in width. The city of Cottage Grove is located near the southern border of Lane County, which is located in the southern portion of the Willamette Valley with cool, wet winters and warm, dry summers. Average annual precipitation is less than 40 inches.

Extreme temperatures in Cottage Grove are rare. Days with a maximum temperature above 90°F degrees occur only 5-15 times per year on average, and days with below zero temperatures occur only about once every 25 years. Although snow falls every few years on the South Willamette Valley floor, typical depth is less than 6 inches, though it is more frequent and deeper at higher elevations in the foothills. Ice storms occasionally occur and high winds typically occur several times per year in association with major weather systems.

The climate of Cottage Grove is moderate. The average high temperature in January is 46 degrees while the average low is 34 degrees. In August the average high is about 82 degrees with an average low of 51 degrees. Each year the area receives about 38 inches of precipitation.

Figure 2: Lane County & City of Cottage Grove



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Population and Demographics

Cottage Grove is home to approximately 9,840 persons as of 2015. The annual average growth rate for the period 2015–2035, developed by the Portland State University Population Research Center, is estimated to be 1.3%.

The most recent demographic United States Census data for the City of Cottage Grove is the 5-year American Community Survey 2009–2013 Census. This census data describes the population of Cottage Grove as being 47.7% male and 52.3% female. The racial makeup of Cottage Grove is predominately White, at 90% of the population. African American, Native American, Asian, Hawaiian or Pacific Islander, two or more races, and other race alone represent approximately 10% of the population.

Disaster impacts in terms of loss and the ability to recover quickly to pre-disaster levels can vary between population groups. Historically 80% of disaster burdens fall onto the shoulders of the public, and disproportionately affects certain populations more than others. The elderly, the very young, the disabled, minorities, non-English-speakers, and low income persons are often impacted to a greater degree than others. These vulnerable populations will need more assistance during and after a disaster. In Cottage Grove as of 2013:

- 23% are children under the age of 14.
- 18% are elders over the age of 65.
- 17% of families and 12% of the elderly population have incomes at or below the poverty level.
- 10% of the adult population, 18–64 years old, and 8% of elders over 65 are classified as disabled.

These groups are likely to have greater needs during and after a disaster, a factor which must be taken into account when planning for disaster response and recovery operations.

Per the 2010 Census, 16.5% of Cottage Grove's population is over 64 years old, as compared to 14.5% of Lane County's; 24.4% of Cottage Grove's population is under 18, as compared to 19.9% in the County as a whole. Hence the city has both larger numbers of children, and larger numbers of retirees than the county as a whole. The region also has a higher share of retirement workers (17.9%) than the state average of 16.6%.

Business Oregon lists Cottage Grove as a Distressed Community, with 21.3% of population living under the Poverty Line based on data from the U.S. Census Bureau, 2009-2013 American Community Survey Five-Year Estimates.

Economy

Due to the City's location at the outer end of a comfortable commute to the Eugene-Springfield metro area, Cottage Grove has the feeling of a relatively self-contained, independent community. Despite its size and relative independence, the City has

struggled in recent years to sustain its economy, and Cottage Grove residents depend heavily on the metro area for employment.

In 1998, Cottage Grove's 313 employers provided a total of 3,200 jobs. In 2006, the City had 4,423 jobs. In the 2009 Economic Opportunities Analysis, ECONorthwest projected that employment in Cottage Grove will increase at an average of 1.4% per year—to 6,075 employees in 2029. This means 1,652 new jobs—a 37% increase during this 20-year planning period. Cottage Grove currently has a jobs-to-population ratio of 1:2.1, or one job for every 2.1 people. This is low compared with Springfield (1:1.7) and the state as a whole (1:1.6).

Major economic generators within the City include Weyerhaeuser, Kimwood, Cottage Grove Community Medical Center, South Lane School District, and the City of Cottage Grove.

Land Use

Residential uses occupy the largest share of development land within the urban growth boundary (UGB), comprising 26 percent of the total land area. Residential development, mostly single family and duplex development, has been occurring slowly on infill lots throughout the community and in several large subdivisions under development (River Walk and Sunrise Ridge). Industrial development has continued in the Cottage Grove Industrial Park. In the last five years, the City has seen its park land inventory expand to include the 14-acre Bohemia Park, the .62 acre Chambers Bridge Park, the All-America Square, and expanded acreage at Coiner Park and the Row River Trailhead Park. In 2011, the City's Urban Growth Boundary was expanded to include 240 acres of industrial and commercial property along Hwy 99 S and S. 6th Street. With this expansion, Weyerhaeuser was included within the City's UGB.

Housing

According to the Population Research Center (Portland State University) Coordinated Population Forecast (2015-2065) Housing Data, there are 4,353 housing units in Cottage Grove, less than 7% of which are unoccupied. The minimum lot size is 6,000 square feet in Low Density Residential districts, and 5,500 in Medium Density Residential districts. New housing is built on lots ranging from 5,500 to 9,000 square feet.

Transportation

In 2004, approximately 40 percent of workers living in Cottage Grove commuted to Eugene-Springfield, along Highway 99 and I-5.

Over the years, the city's streets have developed primarily in a grid pattern. More recently, the City has begun to develop a beltway arterial along the outer edges of the city to facilitate ease of movement.

The Oregon Department of Transportation (ODOT) maintains bridges on I-5 and Highway 99, and the Cottage Grove Connector, all of which are within City limits. There are 23 bridges and overpasses in the City, three of which are maintained by Lane County; the remaining 20 are maintained by the Oregon Department of Transportation (ODOT).

Bicycle and pedestrian travel in Cottage Grove has been emphasized in local transportation planning for many years. A bike path system provides links to two natural resource parks within the city and to regional multi-use trails. The 16.3-mile Row River Trail "*Rails-to-Trails*" project is a popular recreational amenity for residents and visitors alike. This trail, a former short line railroad right-of-way, runs from downtown Cottage Grove, along Dorena Lake, to Culp Creek. These improvements have helped make the City more welcoming to pedestrians and bicyclists.

Public transit bus service is provided to commuters by Lane Transit District, and South Lane Wheels provides local fixed route and on-demand service within Cottage Grove. A taxi service also provides local service in and around the city. The Central Oregon and Pacific Railroad provides daily freight service.

Cottage Grove State Airport is located at 78803 Airport Road, east of downtown along the Row River with a 3,188-foot runway. The airport does not have a control tower; however, it is attended Monday through Saturday 10am to 7pm. The State Aviation Division owns the airport.

The Central Oregon & Pacific Railroad has three to five scheduled freight trains running through the City during weekdays travelling on the Union Pacific Railroad rail line. The rail line parallels Highway 99, N. Douglas Ave., and N. Lane St. within the City limits.

Public Facilities and Services

Cottage Grove owns and operates its own water supply system. Since the late 1970's, the City has planned major improvements to its water production and storage facilities to ensure a continued water supply for the future. Construction was completed on a new water intake and treatment facility at the Row River Nature Park in 2007, and continued improvements include covering the reservoir to improve water quality and developing new drying ponds at the water treatment plant.

The City owns and operates its own wastewater treatment system, which was upgraded in 2005 to accommodate growth and increase effluence quality. Effluent discharge is treated through irrigation of the Middlefield Golf Course and other properties owned by the city. This system has numerous limitations and storm water is contributing to inflow and infiltration problems.

Electricity is provided by Pacific Power and Emerald People's Utility District. Natural Gas is provided by Northwest Natural Gas. Qwest is the local telephone service provider. Cottage Grove is a member of the Fibersouth Consortium, a cooperative effort among local governments to provide modern fiber optic services to their communities. There are two fiber optic lines installed along the railroad tracks running through town: the main north-south West Coast fiber optic backbone and a new Fibersouth Consortium line. Both of these lines run just outside the Cottage Grove Industrial Park. Over 80% of the city is covered by WiFi, which is provided as a public utility by the City of Cottage Grove. Cellular phone service is available from several national companies that provide regional coverage.

The South Lane School District provides education services to Cottage Grove students. The district operates three K -5, two pre K - 8, one middle school, one 9-12 alternative high school, one 9-12 comprehensive high school, and two Charter Schools. Elementary Schools range in population from 100 to 500 students. Lincoln Middle School serves grades 6-8 and has approximately population of 550. Cottage Grove High School (CGHS) serves grades 9-12 with a population of approximately 850 students.

Cottage Grove maintains its own police force, which operates out of City Hall. The South Lane County Fire & Rescue provides fire protection, emergency medical response, and other specific rescue services for the City of Cottage Grove and surrounding rural areas. Fire Station #1 is located within city limits at Hwy 99 S and Harrison Avenue.

Cottage Grove Community Medical Center is located at 1515 Village Drive, and maintains landing and support facilities for the LifeFlight Air-Ambulance service.

Natural Resources, Open Space, and the Environment

Cottage Grove includes part of the floodplain of the Coast Fork of the Willamette River that flows north to the Willamette River, and is situated just upstream of the confluence of the Coast Fork and Row Rivers. The surrounding hillsides and waterways contribute to the attractiveness of the area. Cottage Grove area residents and visitors can choose from a variety of water-oriented and urban parks, ranging from pocket parks to regional parks and the Willamette River Greenway. The hillside surrounding Cottage Grove provides an aesthetic environment for the community. The hillsides also present a specific set of development challenges and limitations. The complex system of slopes, soils, vegetation, and hydrology require sensitive, responsible development. In recognition of the importance of the hillsides to the city, Cottage Grove developed a major report on hillside development and included it as a specific focus of the *Cottage Grove Comprehensive Plan*.

Waterways are also significant features in Cottage Grove. Land in the city drains into the Coast Fork of the Willamette River, Row River, and Silk Creek. The section of the Coast Fork running through town is part of the Willamette River Greenway.

The most important wildlife habitat areas in and around Cottage Grove centers on the Coast Fork of the Willamette River, the Row River, and the backwater slough areas at the confluence of these two rivers. There is significant fish spawning area in

the Coast Fork, about one mile upstream of the UGB. The fishing of native cutthroat trout, steelhead, Chinook, and Coho is a primary recreation activity.

Future Expectations

Land Use

The City of Cottage Grove Community Development Department enforces building and development codes to promote public safety and preserve the quality of life in Cottage Grove. The *Cottage Grove Comprehensive Plan's* development-related goals for future land use are:

- “To preserve our prime agricultural and forest lands considering their potential for both short and long term productivity.
- To encourage rural non-farm forest uses to locate on marginal lands where environmental and development constraints are limited.
- To protect our natural and cultural features from inappropriate and hazardous development
- To assure wise and efficient use of our urbanized lands.”

The UGB contains a total of 3,294 acres. The comprehensive plan designates 63 percent of Cottage Grove’s UGB for residential use, and about 19 percent for commercial uses.

Economic Goals

Cottage Grove faces some challenges over the next 50 years to stimulate its economy. The city’s pleasant, attractive neighborhoods and well-established infrastructure give it a good foundation upon which to build. The Downtown Historic District has long been recognized as an economic center in the city, and is a key resource in the continued economic success of the community.

Concerted efforts are underway to diversify and strengthen the economy in order to provide more opportunities for employment and to continue improving city services. The City recognized a need for additional industrial land in order to diversify its industrial and manufacturing sector, a key to rebuilding and sustaining the local economy, and expanded its UGB in 2011 to incorporate 240 additional acres. Planned improvements in the water, storm water, and wastewater systems are integral to continued development and renewal of Cottage Grove’s commercial and industrial sectors.

Cottage Grove has the potential to draw visitors from I-5, directing them to the downtown core, to the lakes, and around the community. The Economic Development Committee, Economic/Business Improvement District, the Cottage Grove Area Chamber of Commerce, the City of Cottage Grove, and other groups of citizens have worked to make Cottage Grove more attractive to tourists, to draw more dollars to the community while keeping intact the City’s small town charm.

As the economy rejuvenates, Cottage Grove's vision is to emerge as a vibrant, independent, leading community in the Southern Willamette Valley region.

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Section 3: Mission, Goals, and Action Items

What are the Plan's Missions and Goals

Plan Mission

The mission of the City of Cottage Grove Natural Hazards Mitigation Plan is to promote sound public policy designed to protect citizens, critical facilities, infrastructure, and property from natural hazards. This can be achieved by increasing public awareness, documenting resources for risk reduction and loss-prevention, and identifying activities to guide the City towards a safer, more sustainable community.

Plan Goals

The plan goals provide guidance in developing specific action items from the general mission statement. The goals describe the overall direction the City of Cottage Grove desires to work towards in mitigating the effects of natural hazards.

Protect Life and Property

- Implement activities that assist in protecting life and property from losses due to natural hazards.
- Reduce losses and repetitive damage from chronic hazard events.
- Improve hazard assessment information to make recommendations for discouraging new development in areas vulnerable to natural hazards.
- Encourage preventative measures in existing vulnerable areas.
- Ensure ability to recover from disaster.

Public Awareness

- Develop and implement educational outreach programs to increase public awareness of the hazards associated with natural disasters.
- Provide information on tools, partnerships, and funding resources to assist in implementing hazard mitigation actions.

Emergency Services

- Establish policy to ensure mitigation for critical facilities, services, and infrastructure.
- Coordinate and integrate natural hazard mitigation activities with emergency operations plans and procedures.

Partnerships and Implementation

- Strengthen communication and coordinate participation among and within public agencies, citizens, non-profit organizations, businesses, and industry.
- Encourage leadership within the public and private sectors to prioritize and implement local, county, and regional hazard mitigation activities.

State/National Guidelines

- Meet the Federal Emergency Management Associations (FEMA) mitigation planning requirements so Cottage Grove remains eligible for pre- and post-disaster mitigation funding from FEMA.
- Continue to comply with National Flood Insurance Program requirements.
- Meet Oregon Emergency Management's mitigation planning evaluation criteria.
- Meet Oregon's Goal 7 natural hazard planning guidelines.

These goals were originally developed as part of the 2005 Cottage Grove Natural Hazards Mitigation Plan and are still relevant for the 2015 update. Advisory committee members agreed at the December 18th, 2015 meeting that these goals still adequately guide the direction of the City of Cottage Grove as they relate to natural hazards mitigation.

Mitigation Strategies

Short and long-term action items identified through the planning process are an important part of the mitigation plan. Action items are detailed recommendations for activities that local developments, citizens and others could engage in to reduce risk. They address both All-Hazard and hazard-specific issues.

The Cottage Grove Community Development Department staff and Natural Hazards Advisory Committee developed the action items presented in this plan. These action items are a combination of revised action items from the 2005 and 2010 mitigation plans and new action items that address hazards and opportunities identified during the 2016 update process. During the update process, city staff identified which actions from the 2005 and 2010 plans had been completed or not, and whether or not these actions should be completed. Previous action items can be found in the appendix sections.

Current 2016 action items are located in Chapter 3: Natural Hazards. Within each individual Hazard description is a narrative describing the hazard and its potential impacts and consequences for the City. Located in individual tables, the Action Items are specific, and detail the *Estimated Cost*, expected *Timeline*, *Responsible Agency(s)*, and *Priority* level. These action items can assist the community in pre-packaging potential projects for grant funding.

Action items include both short-term (1-3 years, or 3-5 years) and on-going activities. Each action item includes an estimate of timeline for implementation. Short-term action items are activities that may be implementing with existing resources and

authorities within one to five years. On-going action items may require new or additional resources and/or authorities, may be part of the city's annual work program, or may take over five years to implement.

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Section 4: Implementation, Maintenance and Public Participation

The plan maintenance section of this document details the formal process that ensures that the City of Cottage Grove Natural Hazards Mitigation Plan remains an active and relevant document. The plan maintenance process includes a schedule for monitoring and evaluating the plan annually and producing an updated plan every five years. This section also describes how the City will integrate public participation throughout the plan maintenance and implementation process. Finally, this section includes an explanation of how the City intends to incorporate the mitigation strategies outlined in this Plan into existing planning mechanisms and programs such as the City of Cottage Grove comprehensive land use planning process, capital improvement planning process, and building codes enforcement and implementation.

The plan's format allows the City to review and update sections when new data becomes available. New data can be easily incorporated, resulting in a natural hazards mitigation plan that remains current and relevant to Cottage Grove.

Plan Implementation

After the plan is adopted via ordinance by the Cottage Grove City Council, the Community Development Director or their designee will be responsible for submitting it to the State Hazard Mitigation Officer at Oregon Emergency Management. Oregon Emergency Management will then submit the plan to the Federal Emergency Management Agency (FEMA–Region X) for review. This review will address the federal criteria outlined in FEMA Interim Final Rule 44 CFR Part 201. Upon acceptance by FEMA, the City will gain eligibility for the Pre-Disaster Mitigation Grant Program, the Hazard Mitigation Grant Program funds, and Flood Mitigation Assistance program funds. The Plan Team will remain intact after the plan is adopted and focus its efforts on plan implementation and maintenance. The Plan Team will serve as the coordinating body for implementation and plan updates. This coordinating group's role is described in detail later in this document. The City of Cottage Grove Community Development Department will serve as the convener of the Plan Team.

The effectiveness of the City's non-regulatory Natural Hazard Mitigation Plan will be contingent on the implementation of the plan and incorporation of the outlined action items into existing City plans, policies, and programs. The Natural Hazard Mitigation Plan includes a range of action items that, if implemented, would reduce loss from hazard events in the City of Cottage Grove. Together, the action items in the City of Cottage Grove Natural Hazard Mitigation Plan provide the framework for activities that city departments can choose to implement over the next five years. The Plan Team prioritizes the plan's goals and action items, which will be implemented, as resources permit, through existing plans, policies, and programs.

Implementation through Existing Programs

The Natural Hazard Mitigation Plan includes a range of action items that, when implemented, will reduce loss from hazard events in Cottage Grove. Within the framework of the plan, FEMA requires the identification of existing programs that might be used to implement these action items. The City of Cottage Grove addresses statewide planning goals and legislative requirements through its Comprehensive Plan, Development Code, Emergency Operations Plan, utility Master Plans, and Building Codes. The Natural Hazards Mitigation Plan provides recommendations that are tied to the goals of existing plans and programs. The City of Cottage Grove will be able to implement action items through existing programs and procedures, as well as apply for additional assistance for projects requiring funding currently outside existing programs.

Multi-Jurisdictional Planning Efforts

The City of Cottage Grove is committed to regional hazard planning as an integral part of the Natural Hazards Mitigation planning process. The City has a representative on the Lane County Countywide Preparedness Group and takes part in regional meetings and exercises. This involvement ensures that the City is represented in broader scale natural hazard planning activities. The City of Cottage Grove partnered with the Lane County Geo-Spatial Information Services (GIS) to create natural hazard maps for the 2015 City of Cottage Grove Natural Hazards Mitigation Plan. These maps were updated and/or verified as part of the 2015 Update process for the City's Emergency Operation Plan (EOP). The City will continue to partner with other agencies on the local, county, state, and federal level in order to effectively mitigate loss to life and property from natural hazards.

Plan Maintenance

Plan maintenance is a critical component of the Natural Hazard Mitigation Plan. Proper maintenance of the plan will ensure that this plan will benefit Cottage Grove's efforts to reduce the risks posed by natural hazards. This section was developed by the University of Oregon's Oregon Natural Hazards Workgroup as an aspect of the 2010 NHMP, and presents a process to ensure that a regular review and update of the plan occurs. The Plan Team and local staff will be responsible for implementing this process in addition to maintaining and updating the plan through a series of meetings outlined in the maintenance schedule below.

Table 1: Plan Maintenance Meeting Schedule

Semi-Annual Meeting	Annual Meeting	Five-Year Review
Review Current Actions	Update Risk Assessment Data and Findings	Review plan update questions
Identify New Issues and Needs	Discussion of Methods of Continued Public Involvement	Update plan sections as necessary
Prioritize Potential Projects	Document Successes and Lessons Learned	Review entire plan and update as needed

Project Prioritization Process

The requirements of Disaster Mitigation Act of 2000 through the Pre-Disaster Mitigation Program state that the plan must identify a process for prioritizing potential actions. Potential mitigation activities will often come from a variety of sources; therefore the project prioritization process needs to be flexible. Examples of the methods in which projects may be identified include: Committee members, local government staff, other planning documents, or the Risk Assessment. Depending on the potential project’s intent and implementation methods, several funding sources may be appropriate. Examples of mitigation funding sources include, but are not limited to: FEMA’s Pre-Disaster Mitigation competitive grant program (PDM), Flood Mitigation Assistance (FMA) program, National Fire Plan (NFP), Title II funds, Title III funds, Community Development Block Grants (CDBG), local general funds, and private foundations, among others. Some of these examples are used in the figure below to illustrate the project prioritization process. The prioritization process utilizes a four step process to prioritize activities to help ensure that mitigation dollars are used in a cost-effective manner.

Step 1: Examine Funding Requirements

The committee will examine the selected funding stream’s requirements to ensure that the mitigation activity would be eligible through the funding source. The committee may consult with the funding entity, Oregon Emergency Management, or other appropriate state or regional organization about the project’s eligibility.

Step 2: Complete Risk Assessment Evaluation

The second step in prioritizing the plan’s action items is to examine which hazards they are associated with and where these hazards rank in terms of community risk. The committee will determine whether or not the plan’s Risk Assessment supports the implementation of the mitigation activity. This determination will be based on the

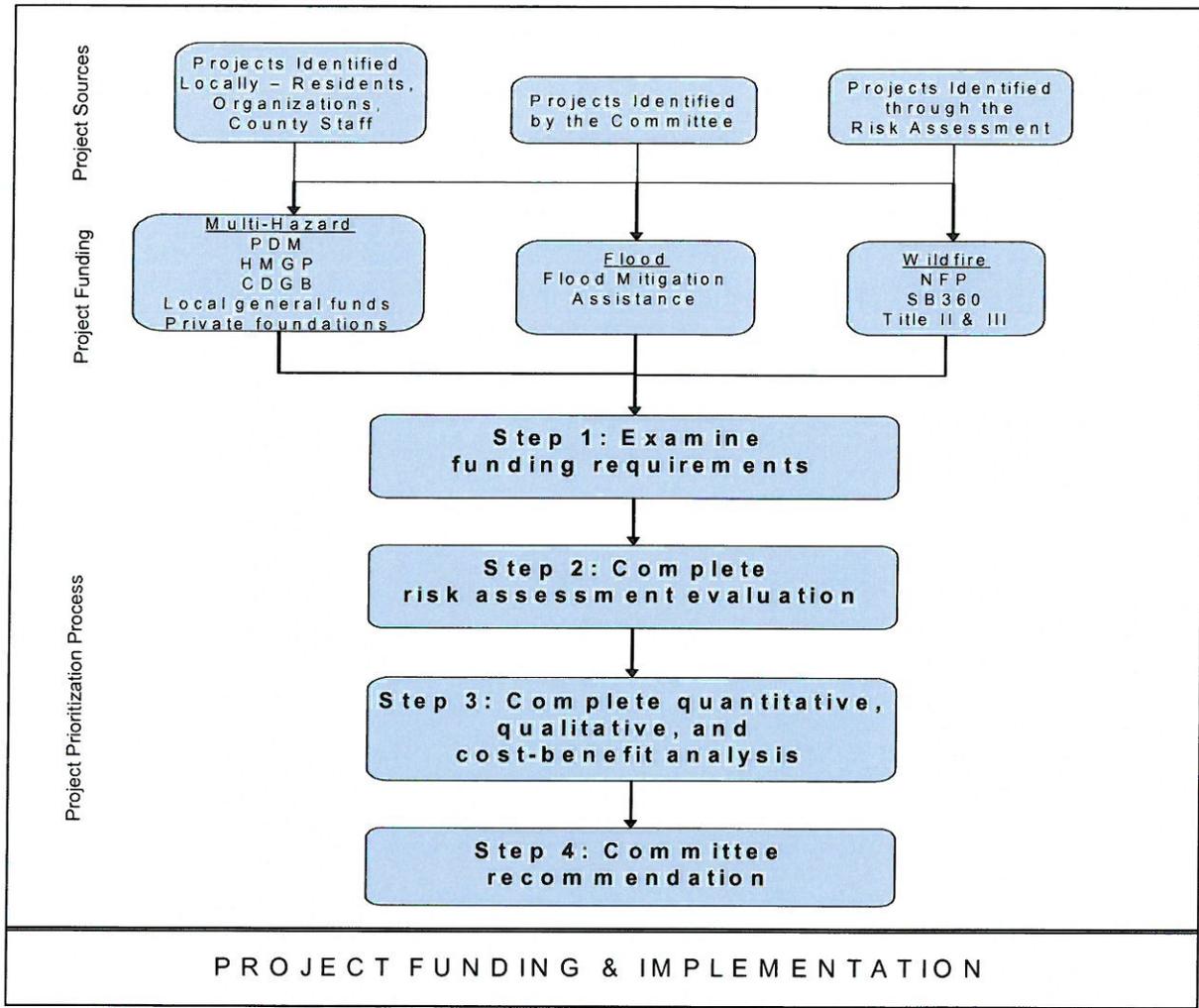
location of the potential activity and the proximity to known hazard areas, historic hazard occurrence, and the probability of future occurrence documented in the plan.

To rank the hazards, the community's natural hazard risk assessment was utilized. This risk assessment identified various hazards that may threaten community facilities in a range from:

- None/Low
- Limited
- Moderate
- High
- Severe

Table 5, "[City of Cottage Grove Hazard and Risk Assessment](#)", presents the relative probability of occurrence, and the city's vulnerability to a given event.

Figure 3 Project Prioritization Process Overview



The City of Cottage Grove is subject to the following natural hazards in order of likelihood of occurrence:

- 1) Flood
- 2) Winter/Severe Storm
- 3) Earthquake
- 4) Wildfire
- 5) Landslide
- 6) Volcano
- 7) Drought

Each of the action items in the plan addresses risk from one or more of these hazards.

Step 3: Complete Quantitative, Qualitative Assessment, and Economic Analysis

Depending on the type of project and the funding source, either a quantitative or qualitative assessment of cost effectiveness will be completed to assist in prioritizing potential actions. Conducting benefit/cost analysis for a mitigation activity can assist communities in determining whether a project is worth undertaking now, in order to avoid disaster-related damages later. Cost-effectiveness analysis evaluates how best to spend a given amount of money to achieve a specific goal. Determining the economic feasibility of mitigating natural hazards provides decision-makers with an understanding of the potential benefits and costs of an activity, as well as a basis upon which to compare alternative projects.

If the activity is seeking federal funding for a structural project the committee will use a FEMA-approved cost-benefit analysis tool to evaluate the appropriateness of the activity. A project must have a benefit cost ratio of greater than 1 in order to be eligible for FEMA funding.

For FEMA-funded non-structural projects or projects funded through entities other than FEMA, a qualitative assessment will be completed to determine the project's cost effectiveness. The committee will use a multi-variable assessment technique called STAPLE/E to prioritize these actions. STAPLE/E stands for Social, Technical, Administrative, Political, Legal, Economic, and Environmental. Assessing projects based upon these seven variables can help define a project's qualitative cost effectiveness. The STAPLE/E technique has been tailored for natural hazard action item prioritization by the University of Oregon's Oregon Natural Hazards Workgroup.

Step 4: Committee Recommendation

Based on the steps above, the committee will recommend whether or not the mitigation activity should be moved forward. If the committee decides to move forward with the action, the coordinating organization designated for the activity will be responsible for taking further action and documenting success upon project completion. The Hazard Mitigation Advisory Committee will convene a meeting to review the issues surrounding grant applications and shared knowledge and/or resources. This process will afford greater coordination and less competition for limited funds.

The Hazard Mitigation Advisory Committee and the community's leadership have the option to implement any of the action items at any time (regardless of the prioritized order). This allows the committee to consider mitigation strategies as new opportunities arise, such as funding for action items that may not be of highest priority. This methodology was used by the Hazard Mitigation Steering Committee to initially prioritize the plan's action items in addition to maintaining the action list during annual review and update.

Annual Meeting

The Committee will meet annually to review updates of the Risk Assessment data and findings, discuss methods of continued public involvement, and document successes and lessons learned based on actions that were accomplished during the past year. The convener will be responsible for documenting the outcomes of the annual meeting.

Five Year Review of Plan

This plan will be updated every five years in accordance with the update schedule outlined in the Disaster Mitigation Act of 2000. During this plan update, the following questions should be asked to determine what actions are necessary to update the plan. The convener will be responsible for convening the Committee to address the questions outlined below.

- Are the plan goals still applicable?
- Do the plan's priorities align with State priorities?
- Are there new partners that should be brought to the table?
- Are there new local, regional, state, or federal policies influencing natural hazards that should be addressed?
- Has the community successfully implemented any mitigation activities since the plan was last updated?
- Have new issues or problems related to hazards been identified in the community?
- Do existing actions need to be reprioritized for implementation?
- Are the actions still appropriate given current resources?
- Have there been any changes in development patterns that could influence the effects of hazards?
- Have there been any significant changes in the community's demographics that could influence the effects of hazards?
- Are there new studies or data available that would enhance the risk assessment?
- Has the community been affected by any disasters? Did the plan accurately address the impacts of this event?

The questions above will help the committee determine what components of the mitigation plan need updating. The Committee will be responsible for updating any deficiencies found in the plan based on the questions above.

Continued Public Involvement and Participation

44 CFR Requirement 201.6(b):

An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process. (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

The City of Cottage Grove is dedicated to involving the public directly in the continual reshaping and updating of the Natural Hazard Mitigation Plan. The public will have the opportunity to submit comments on the plan to the Community Development Department at any time. Copies of the plan will be kept in the Community Development Department, the Cottage Grove Public Library, and online at <http://www.cottagegrove.org>. The City recognizes that involvement by and with the public is an effective means of engaging the public's active involvement and participation in increasing the whole community's resilience to natural hazards and disasters in general, a city priority.

Public input was obtained through several concurrent means including:

- Contact with committee members and their organizations
- As part of Public Education and Outreach events in which committee members participated and Plan elements were discussed
- An internet web page located at www.CottageGrove.org
- A public "Open House" held on (Month, Day, 2016)