Volume III: City Addenda
Dunes City

Overview

Dunes City developed this addendum to the City of Florence Natural Hazards Mitigation Plan in an effort to increase the community's resilience to natural hazards. The addendum focuses on the natural hazards that could affect Dunes City, Oregon, which include coastal erosion, drought, earthquake, flood, landslides, tsunami, volcano, wildfire, and windstorms. It is impossible to predict exactly when disasters may occur, or the extent to which they will affect the City. However, with 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 hazards.

The addendum provides a set of actions that aim to reduce the risks posed by natural hazards through education and outreach programs, the development of partnerships, the implementation of preventative activities such as land use or watershed management programs, and identification of critical facilities and their level of resiliency to natural hazards. The actions described in the addendum are intended to be implemented in partnership with the City of Florence, and through existing plans and programs within Dunes City.

The addendum is comprised of the following sections: 1) Addendum Development Process 2) Community Profile; 3) Risk Assessment; 4) Action Items.

Addendum Development Process

In the fall of 2007, the Oregon Partnership for Disaster Resilience (OPDR) at the University of Oregon's Community Service Center partnered with Oregon Emergency Management to develop a Pre-Disaster Mitigation Planning Grant proposal to create and/or update existing natural hazard mitigation plans for Oregon's southern coastal cities. Upon award of funding, planning activities began in October 2007, and were completed by August, 2008.

The City of Florence and Dunes City's natural hazard mitigation planning processes occurred in tandem. Both cities have existing working relationships, intergovernmental agreements, and shared resources, as well as co-representation on the Western Lane Emergency Operations Group. Dunes City chose to create an addendum to Florence's Plan: 1) to build upon existing relationships; and 2) to efficiently utilize limited staff time and resources. Dunes City has a population of about 1360, and 64% of the

population is 65 years or older. The City has zero tax base, a tourist-based economy, no active police force, and no city-operated water/sewer systems. Additionally, Dunes City and Florence are about 5.8 miles apart from one another, and share many of the same risks to natural hazards.

The following persons and/or groups participated in the addendum's development:

- West Lane Emergency Operations Group: The WLEOG served as Florence's Natural Hazard Mitigation Plan Steering Committee, and additionally served a similar role for Dunes City. The WLEOG is comprised of governmental entities and private citizen groups; it is a collaborate group that identifies, plans for, and executes activities related to emergency preparedness, mitigation, response, and recovery. The WLEOG meets on the third Monday of every month.

- Dunes City Emergency Management: The Dunes City Emergency Manager served as the Local Lead for Dunes City's addendum development process. As such, he organized city-specific work sessions, and provided valuable input in the planning process. The Dunes City Emergency Manager is a member of the West Lane Emergency Operations Group, and participated in Florence's Natural Hazard Mitigation Planning process as well.

- Graduate Teaching Fellow: The Oregon Partnership for Disaster Resilience (OPDR) provided a staff person, the GTF, to facilitate and document Dunes City's addendum development process. The GTF facilitated a city-specific work session with Dunes City representatives on December 6, 2007; attended Florence's risk assessment work session on March 17, 2008; documented the planning process; and completed a portion of the Dunes City Addendum.

- Oregon Partnership for Disaster Resilience: OPDR developed the planning process and associated resources that were used to create both Florence's Plan and Dunes City's addendum. OPDR additionally provided the Graduate Teaching Fellow with technical support and planning resources, and attended each of the WLEOG meetings pertaining to Florence and Dunes City's planning processes. OPDR maintained contact with Dunes City staff, and completed a final draft of the Dunes City Addendum.

Dunes City held a city-specific meeting on December 6, 2007 to: 1) identify and characterize natural hazards that affect, or may affect, the City; and 2) assess the City's vulnerability to natural hazards. The following persons attended:

- Nick Kraemer, Graduate Teaching Fellow, OPDR (facilitated and documented meeting);
- Megan Findley, OPDR

- Krista Dillon, OPDR
- Bret Feingold, Dunes City Emergency Manager
- Susie Navetta, City Councilor, Dunes City
- John Buchanan, Siuslaw Valley Fire Chief
- Denise Ruttan, Siuslaw News Reporter

OPDR used the information from December's work session to develop Dunes City's Risk Assessment.

The WLEOG met monthly over the course of Florence's natural hazard mitigation planning process. Four meetings were devoted to planning work sessions. See Appendix B of Florence's Natural Hazard Mitigation Plan for meeting dates, agendas, and minutes. WLEOG members reviewed and provided comments on Dunes City's addendum during the months of July and August, 2008. Florence's Natural Hazard Mitigation Plan was submitted to FEMA in October, 2008, and Dunes City adopted Florence's Plan via resolution on [*insert date*, year].

Public participation played a key role in the development of Florence's Natural Hazards Mitigation Plan (See Volume I, Section 1 of Florence's Natural Hazards Mitigation Plan). The development of Dunes City's addendum benefited from Florence's public outreach and engagement. Denise Ruttan, of Siuslaw News, attended Dunes City's risk assessment work session on December 6, 2007, and wrote an article that appeared on December 11, 2007. See article in Appendix B of Florence's Plan, in addition to documentation of Florence's public outreach.

The WLEOG will serve as the coordinating body for Florence's Mitigation Plan and the Dunes City's Addendum. In addition to their standing representation on the WLEOG, additional representatives from Dunes City will be invited to attend future WLEOG meetings that are dedicated to natural hazards planning and/or project implementation. Similarly, Dunes City representatives will be invited to participate in Florence's five-year Natural Hazards Mitigation Plan update process, as well as future public outreach activities. Please see Section 4 of Florence's Plan, 'Plan Implementation & Maintenance' for details regarding the update plan maintenance and update processes.

Community Profile

In 1958, following the completion of a Coastal Recreation Survey, the National Park Service initiated plans to convert what is now Dunes City into national parkland. To avoid losing their homes and properties, Dunes City residents incorporated their land and became a fully functioning municipality. Dunes City was formally recognized in August, 1963.

Geography and Climate

Dunes City is located in the southwestern corner of Lane County on the Central Oregon Coast. Siltcoos and Woahink Lakes surround most of the City, and a large stretch of sand dunes provide a one-mile buffer from the Pacific Ocean. The Siltcoos River runs through the center of Dunes City,

and the larger Suislaw River lies to the north between Florence and Dunes City. See Map below.

The climate in Dunes City is moderate. The monthly average temperatures range from 50 - 70 degrees in the summer and from 36 – 50 degrees in the winter. The City receives approximately 73 inches of rain annually. Monthly precipitation averages range from 10 to 12 inches during the wetter months of November through January, to less than 2 inches during the drier summer months of July and August.

TO FLORENCE

R. 12 W. R. 11 W.

OCEAN

PACIFIC

Sand Dunes

Sand Pasture

Geese

OREGON DUNES NATIONAL RECREATION AREA

Cleawox Lake

Lily Lake

Pond

Lake Woahink

Little Woahink Lake

Siltcoos Lagoon

Siltcoos Lake

Woahink Lake

Clear Creek

Miller Creek

Erhart Cove

North Beach

Bay

Arrowhead Point

Jernigan Island

Butterfly Island

Booth Island (IN DUNES CITY)

Reed Island

Georgia Lake

Erhart Lake

Loon Lake

Clear Lake

Carter Lake

CAMP CLEAWOX (GIRL SCOUT CAMP)

JESSE M. HONEYMAN MEMORIAL STATE PARK

WOAHINK

CAMP BAKER BOY SCOUT CAMP

SUBSTATION

BOAT RAMP

DRIFTWOOD CAMPGROUND

LAGOON CAMPGROUND

WAXMYRTLE CAMPGROUND

LODGEPOLE CAMPGROUND

TYEE FOREST CAMPGROUND

SILTCOOS WESTLAKE LANDING

Westlake

HWY. NO. 9 COAST

OREGON COAST HWY. NO. 9

RIVER HWY.

M.P. 195.12

M.P. 195.24

M.P. 195.34

M.P. 195.37

MILE 0

MILE 1

MILE 2

MILE 3

MILE 4

MILE 5

MILE 6

CANARY RD.

GREEN GATE RD. (PVT.)

E. LAKE DR.

LAKEVIEW DR.

HUCKLEBERRY AVE.

LEANZA DR.

SHIRLEY LN.

ALDER LN.

PENINSULA RD.

WRIGHT 7TH HEAVEN

LEAVITT LP.

COLLINS RD.

CEDAR LN.

SHADY (PVT.) LN.

VIEW TER.

CLEAR LAKE RD.

CLOUD DR.

SUMMERBELL DR.

NINE RD.

MEADOW LAKE WAY

SALAL ST.

RIO RUSSELL DR.

KIECHLE ARM RD.

ALDER CT.

MAPLE DR.

WOODLAND WY.

COLD SPRINGS RD.

LAKE BERRY LN.

MANZANITA DR.

JENSEN LN.

DAVIS WY. (PVT.)

SILTCOOS DR.

SILTCOOS TERR.

SILTCOOS LN.

PARKWAY DR.

SYRD MEMORIAL PARK

PETERSDORF PARK

SPRUCE ST.

OSPREY WY.

TOP HILL

FIRE STA.

BOB'S PARKWAY RD.

BUCKSKIN TRAIL

PLUTO'S PROMENADE

BOY SCOUT TRAIL

HELKAT RD.

BRENTWOOD CT.

BRENTWOOD DR.

S. COVE (PVT.) WAY

PANORAMA DR. (PVT.)

S. COVE DR.

N. PIONEER RD. (PVT.)

KA TEECH DR.

DARLINGS RD.

DOROTHY LN.

DIER WY. (PVT.)

PIONEER RD.

S. CREEK WY. (PVT.)

CHIETS TRAIL

KENDELL (PVT.) LN.

FOOTHILL DR.

PACIFIC AVE.

LAUREL AVE.

HEMLOCK ST.

SPRUCE ST.

FIR ST.

LAKE BLVD.

CHERRY ST.

MAPLE ST.

FISH TRAP LN.

SUMMIT AVE.

LAGUNA LN.

OCEAN BLVD.

LAKE SHORE DR.

FORD WY.

LAKE DR.

ALDER DR.

MITCHELL LOOP RD.

BRANCH RD.

DR.

CENTRAL ADA PARK

LANE COUNTY

DOUGLAS COUNTY

T. 20 S. T. 19 S.

T. 19 S. T. 20 S.

TO REEDSPORT

R. 12 W. R. 11 W.

LEGEND

FUNCTIONAL CLASSIFICATION (STATE / OTHER)

FOR FURTHER FUNCTIONAL CLASSIFICATION INFORMATION, CONTACT O.D.O.T. REGION OFFICE.

- INTERSTATE
- PRINCIPAL ARTERIAL
- MINOR ARTERIAL
- URBAN COLLECTOR / RURAL MAJOR COLLECTOR
- MINOR COLLECTOR
- LOCAL ROAD
- ORE. ROUTE – US. ROUTE – INTERSTATE ROUTE
- NATIONAL HIGHWAY SYSTEM ROUTE
- URBAN GROWTH BOUNDARY
- CITY LIMIT
- AMTRAK RAIL PASSENGER STATION
- BRIDGE
- GRADE SEPARATIONS : STATE – OTHER FUNCTIONALLY CLASSED – LOCAL ROAD

- PUBLIC BUILDING
- COURTHOUSE
- CITY HALL
- ARMORY
- POST OFFICE
- SCHOOL
- LIBRARY
- SAFETY REST AREA
- WEIGH STATION
- PARK & RIDE LOCATION
- INTERCITY – CITY TRANSIT
- COMMERCIAL – GENERAL AVIATION
- AMTRAK STOP – PORT FACILITY
- GRAVEL PIT – QUARRY – ODOT STOCKPILE SITE

PUBLISHED BY

GEOGRAPHIC INFORMATION SERVICES — OREGON DEPARTMENT OF TRANSPORTATION

PREPARED DIGITALLY BY THE OREGON DEPARTMENT OF TRANSPORTATION IN COOPERATION WITH THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

NORTH

"This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information."

SCALE

800 0 800 1600 FEET

250 0 250 500 METERS

DUNES CITY
Population 1,360 *

T. 19 S. R. 12 W.

PRELIMINARY COPY SUBJECT TO CORRECTION

OREGON TRANSPORTATION MAP

Showing Functional Classification of Roads

City of

DUNES CITY

LANE COUNTY
2007

PARK & RIDE | INTERBUS | AMTRAK
AVAILABLE TRANSPORTATION SERVICES SHOWN WITH YELLOW BACKGROUND

PORT | AIRPORT | COMM. AIR
AVAILABLE TRANSPORTATION SERVICES SHOWN WITH YELLOW BACKGROUND

Copies available from the Oregon Department of Transportation, Map Distribution Unit, Mill Creek Office Park, 555 13th St. NE, Suite 2, Salem, Oregon 97301–4178, Telephone (503) 986–3154, http://egov.oregon.gov/ODOT/TD/TDATA/gis/CityMaps.shtml

* Based on current Oregon Population Report, College of Urban and Public Affairs, Portland State University, http://pdx.edu/prc

DUNES CITY - LANE COUNTY

Population and Demographics

As shown in Table 2.1 below, Dunes City was estimated to have about 1,360 residents in July, 2007. This is a nearly 10% growth from the 2000 census.

Table 2.1: Population Growth, Dunes City, 1990-2007

Census	Population	Percent Change
1970	976	-
1980	1,124	15.16%
1990	1,081	-3.83%
2000	1,241	14.80%
2007*	1,360	9.59%

Source: United States Census. American FactFinder. 2000.
*Portland State Population Research Center. Population Estimates. July 2007.

Disaster impacts (in terms of loss and ability to recover) vary among population groups following a disaster. Historically, 80% of the disaster burden falls on the public. Of this number, a disproportionate burden is placed upon special needs groups, especially children, the elderly, the disabled, minorities, and low income persons. In Dunes City, 27.3% of the population is 65 years of age or older, and 42.7% of the disabled population is 65 years or older. About 12% of the population was living below the federal poverty level in 2000. Elderly individuals require special consideration due to their sensitivities to heat and cold, their reliance upon public transportation for medications, and their comparative difficulty in making home modifications that reduce risk to hazards. More information on special needs populations is shown in tables 2.2 – 2.4 below.

Table 2.2: Age Distribution, Dunes City, 2000

Age Distribution	Percent of Population
Under 5 years of age	2.2%
Under 20 years of age	18.1%
20 to 44 years of age	17.4%
Over 44 years of age	64.5%
Over 65 years of age	27.3%

Source: United States Census. American FactFinder. 2000.

Table 2.3: Disabled Population by Age, Dunes City, 2000

Disabled Residents by Age	Percent of Population
5 to 20 years of age	5.7%
21 to 64 years of age	17.0%
Over 65 years of age	42.7%

Source: United States Census. American FactFinder. 2000.

Table 2.4: Poverty Distribution by Age, Dunes City, 2000

Poverty by Age	Individuals	Percent of Population
Under 18 years of age	39	17.5%
Over 18 years of age	92	10.6%
Over 65 years of age	25	8.7%

Source: United States Census. American FactFinder. 2000.

Employment and Economics

Historically, Dunes City has been highly dependent on Florence's services and economy. Dunes City has eleven businesses, and hosts a number of tourists during the summer months. Over one million visitors come to Honeyman State P ark each year, and Dunes City businesses depend on recreation in Siltcoos and Woahink Lakes. Despite the business that benefit from tourists, much of Dunes City's employment base is likely to work in Florence. As a result, many residents commute to Florence on a daily basis, and cross the Siuslaw River Bridge. The following industries constitute the principle employers for Dunes City residents:

Table 2.5: Employment by Industry, Dunes City, 2000

Industry	Percent
Agriculture, forestry, fishing and hunting, and mining	3.8%
Construction	11.2%
Manufacturing	3.8%
Wholesale trade	0.7%
Retail trade	10.8%
Transportation and warehousing, and utilities	5.2%
Information	2.5%
Finance, insurance, real estate, and rental and leasing	8.3%
Professional, scientific, management, administrative, and waste management services	10.1%
Educational, health and social services	25.1%
Arts, entertainment, recreation, accommodation and food services	11.4%
Other services (except public administration)	4.9%
Public administration	2.2%

Source: United States Census. American FactFinder. 2000.

Median income can be used as an indicator of the strength of the region's economic stability. In 1999, the median household income in Dunes City was $39,100. This is nearly $3,000 below the 2000 national median household income of $41,994, and almost $3,000 above the $36,942 median household income for Lane County.[i] Although it can be used to compare areas as a whole, this number does not reflect how income is divided among area residents.

Housing

Housing type and year-built dates are important factors in mitigation planning. Certain housing types tend to be less disaster resistant and

warrant special attention: mobile homes, for example, are generally more prone to wind and water damage than standard stick-built homes. Generally the older the home is, the greater the risk of damage from natural disasters. This is because stricter building codes have been developed following improved scientific understanding of plate tectonics and earthquake risk. For example, structures built after the late 1960s in the Northwest and California use earthquake resistant designs and construction techniques. In addition, FEMA began assisting communities with floodplain mapping during the 1970s, and communities developed ordinances that required homes in the floodplain to be elevated to one foot above Base Flood Elevation. In 2000, Dunes City had 717 housing units. Of those, 68.4% (482) were owner occupied, 10.9% (76) were renter occupied, and 20.9% (147) were vacant.[ii] Two-thirds of the city's housing stock was built prior to 1980, before stronger seismic building codes were put into place. Other housing characteristics for Dunes City are provided in Tables 2.6 and 2.7.

Table 2.6: Housing Type, Dunes City, 2000

Housing Type	Percent
Total Housing Units	717
Single Family	87.0%
Multi-family	0.3%
Mobile home	11.3%
Boat, RV, van, etc.	1.4%

Source: United States Census. American FactFinder. 2000.

Mobile homes and other non-permanent housing structures are particularly vulnerable to certain natural hazards, such as wind storms, and special attention should be given to securing these types of structures.

Table 2.7: Housing Structure, Age, Dunes City, 2000

Year Built	Percent
Before 1959	24.5%
1960 to 1979	38.1%
1980 to 2000	37.4%

Source: United States Census. American FactFinder. 2000.

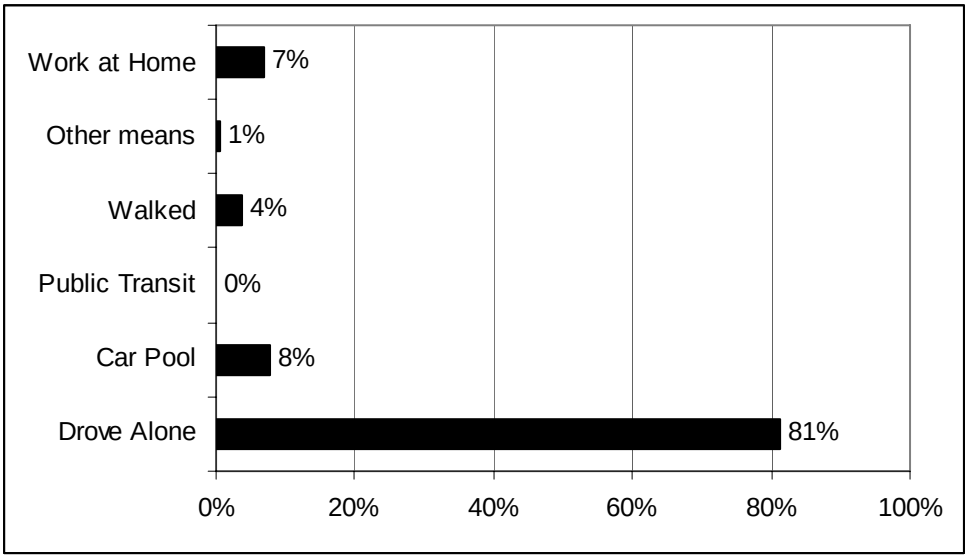
Transportation & Critical Facilities

Federal Highway 101 is the one major transportation route that serves Dunes City. The Highway runs North and South along the City's west side, and several county roads run nearby. The community does not have access to public transportation or rail services, and the closest airport is in Florence, 5.7 miles north.

Transportation is an important consideration when planning for emergency service provisions. Growth within the City will put pressure on both major and minor roads, especially if the main mode of travel is by single occupancy vehicles. How people travel to work is indicative of the prevalence of single occupancy vehicle travel, and can help predict the

amount of traffic congestion and the potential for accidents. As shown in Figure 2.1, the majority of Dunes City residents drive to work alone (81%).

Figure 2.1: Residents' Mode of Travel to Work, Dunes City, 2000



Source: US Census, 2000

Dunes City residents rely on Florence for access to critical facilities, infrastructure, schools, health services, emergency response vehicles, and others. The Siuslaw Bridge is an important link between the two cities; alternative connections are limited and much more distant.

Critical Facilities and Infrastructure

Critical facilities are those that support government and first responders' ability to take action in an emergency. They are a top priority in any comprehensive hazard mitigation plan. Individual communities should inventory their critical facilities to include locally designated shelters and other essential assets, such as fire stations, and water and waste treatment facilities. Dunes City has a city hall, and one volunteer fire station. The Lady of Dunes Church is an emergency shelter for local residents, and the City is hoping to make the Clear Lake fire station earthquake resilient for community meetings and shelter.

Historic and Cultural Resources

Historic and cultural resources such as historic structures and landmarks can help to define a community and may also be sources of tourism dollars. Because of their role in defining and supporting the community, protecting these resources from the impact of disasters is important.

In Dunes City, Woahink and Siltcoos Lakes are important assets for existing residents and tourists. Honeyman State Park brings tourists to the community. Nearby recreational amenities additionally include Neptune State Park, Washburne Memorial State Park, Lincoln National Forest, Devils Elbow State Park, Morton State Park, Willamette National Forest,

Cummins Creek Wilderness, Rock Creek Wilderness, Howard Buford Recreation Area, Armitage State Park, and Elijah Bristow State Park.

Government Structure

The Dunes City Council is comprised of a seven person non-compensated board consisting of a mayor and six councilors. The Mayor is elected for a two-year term and councilors are elected on a rotating basis for four-year terms. Each councilor chairs a committee made up of Dunes City residents and/or oversees a particular area of city interest.

City staff includes a City Recorder, Administrative Assistant, Planning Secretary, Road Secretary, and Road Inspector. The office is open three days a week.

Planning Commission: The Dunes City Planning Commission consists of five voting members, each of whom is a resident of the City and is appointed by the council for three-year terms. The commission reviews land use applications and recommends related decisions to the City Council. Members promote interest and understanding of the purposes, principles and proposals expressed in the City's Comprehensive Plan, as well as cooperating with other planning agencies within the state.

Communications and Education: The Dunes City Communications and Education Committee is comprised of a City Council person and at least two citizen members appointed by the Council for three-year terms. The Committee will meet as needed each year to review and possibly revise informative events, mailers and the Dunes City Web Site throughout the year.

Road Commission: The Dunes City Road Commission consists of seven members, one non-voting who is a member of the Council and serves as chair, a second non-voting position held by the Road Inspector and five voting citizen members who are appointed by the City Council for 3-yr terms. The Road Commission is responsible for planning, improvements and safety of the City's road system.

Budget Committee: The Dunes City Budget Committee is comprised of the Mayor, City Council and seven citizen members appointed by the Council for 3-yr terms. The Committee will meet one to three times in the spring of each year to review and possibly revise the proposed city budget before it is formally adopted.

Conservation Committee: The Dunes City Conservation Committee consists of four members, one non-voting who is a member of the Council and serves as chair and three voting citizen members appointed by the City Council for 3-yr terms. The Conservation Committee works towards controlling soil erosion, protecting wildlife habitats and water quality in Dunes City shore land and riparian areas.

Parks & Recreation Committee: Parks and Recreation promotes tourism in conjunction with city business owners. As outlined in Dunes City Code, Title III-Administration, Chapter 32, an ordinance establishing a Parks and Recreation Commission.

Site Review Committee: The Dunes City Site Review Committee consists of four members, one non-voting who is a member of the Council and serves as chair and three voting citizen members appointed by the City Council. The Site Review Committee investigates complaints on eyesore infractions, zoning violations and nuisance infractions.

Water Quality Control Committee: The Dunes City Water Quality Control Committee shall consist of a Councilor designated by the City Council to act as a non-voting chair and seven members appointed by the City Council, (with at least two members who shall be water testers, one Siltcoos Lake and one Woahink Lake), who shall be a legal resident or land owner in the City. The purpose of the committee is to maintain the public health, welfare and safety of its citizens in regard to water quality.

[All of the above information was obtained from the Dunes City website at www.dunescity.com]

Existing Plans, Policies, and Community Organizations

Communities often have existing plans and policies that guide and influence land use, land development, and population growth. Such existing plans and policies can include comprehensive plans, zoning ordinances, and technical reports or studies. Plans and policies already in existence have support from local residents, businesses and policy makers. Many land-use, comprehensive, and strategic plans get updated regularly, and can adapt easily to changing conditions and needs.

Dunes City has a Comprehensive Plan that was last updated in 2005, as well as a Development Code, Master Road Plan, and a capital improvements program.

The Dunes City addendum includes action items that, when implemented, will reduce the City's vulnerability to natural hazards. These recommendations may be consistent with the goals and objectives of the City's comprehensive plan, as well as the plans and projects identified within the City's Road Plan and capital improvements program. Implementing the addendum's action items through the comprehensive plan will increase their likelihood of being supported and getting updated, and maximizes the City's resources.

The City's Development Code currently includes a requirement that asks for the identification of potential natural hazards within the developer's preliminary plat application. The following language is an excerpt from that portion of the Code.

- Preliminary Plan Information: In addition to the general information… the preliminary plat application shall consist of

drawings and supplementary written material (i.e., on forms and/or in a written narrative) adequate to provide the following information:

2. Site Analysis:

    f. Potential natural hazard areas, including any flood plains, areas subject to high water table, landslide areas, and areas having high erosion potential;

Risk Assessment

Dunes City assessed its risks to the following hazards during a work session on December 6, 2007. Following the development of Florence's Natural Hazard Mitigation Plan, the Partnership's Graduate Teaching Fellow assessed how Dunes City's risks differ from Florence's.

Coastal Erosion

The City of Florence's Natural Hazard Mitigation Plan adequately describes the causes and characteristics of coastal erosion hazards. Although Dunes City is considered a coastal community, none of its incorporated lands actually border the coast (see Map above on page 5). Dunes City is located inland, and the southern portion of the Dunes National Recreation Area dunes borders the City's west side. The dunes provide about a ¾ mile buffer between the City and the ocean. Thus, Dunes City has chosen not to address coastal erosion as a hazard within their community.

Drought

The City of Florence's Natural Hazard Mitigation Plan adequately describes the causes and characteristics of drought hazards in western Lane County, and the location and extent of an event would be experienced region-wide. There is no known history of drought within Dunes City, and due to the wet climate, the community is unlikely to experience a drought in the near future. Dunes City estimates that its probability of experiencing a drought event is very 'low,' meaning one incident is unlikely to occur more than once in a 75-100 year period. The City's vulnerability to drought, however, would be 'high,' meaning more than 10% of the population or regional assets would be affected by a major event. Dunes City retrieves its water from Woahink and Siltcoos Lakes, and in the event of a drought (or, any situation that would limit the City's ability to use water from these two lakes), Dunes City would become reliant upon outside assistance for its water needs. Additional drought-related impacts (i.e., reduced tourism & economic impacts) described within Florence's Mitigation Plan are accurate of Dunes City as well.

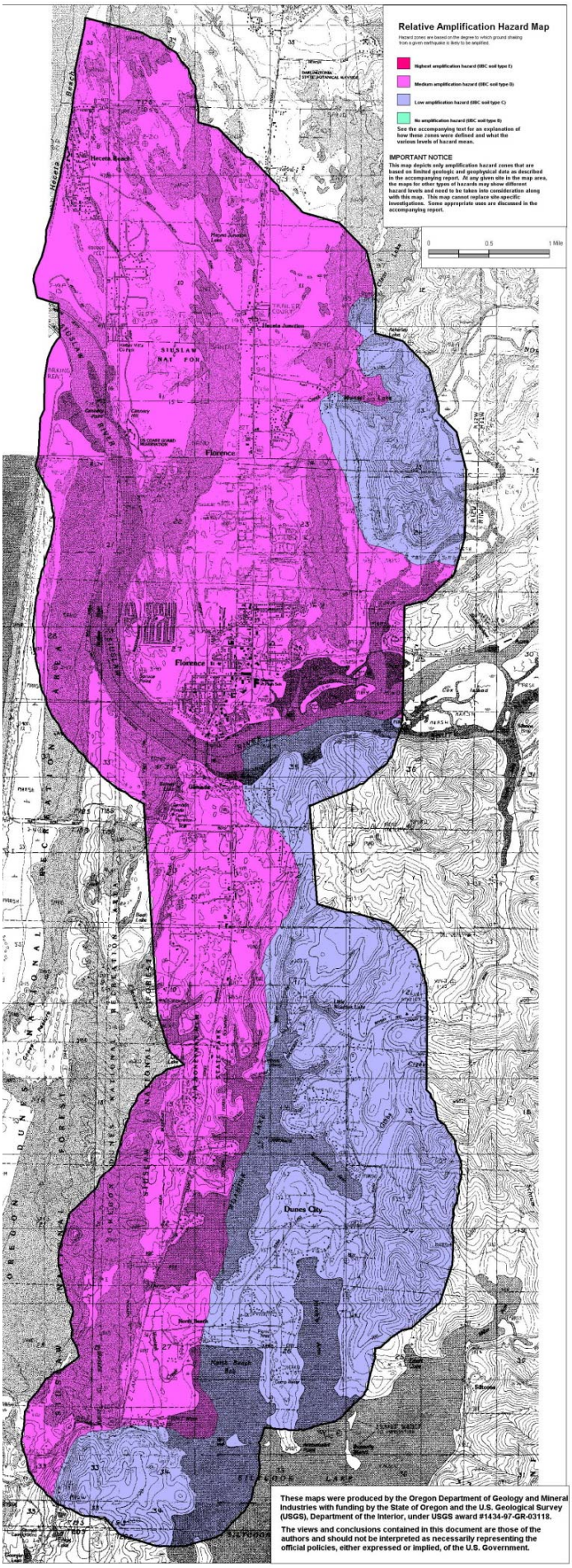
Although Dunes City has not experienced naturally-occurring drought conditions, residents have suffered from toxic algae blooms in Siltcoos Lake. Most recently, residents were issued public health advisories on

September 18, 2007 and November 9, 2007. Residents are issued warnings when dangerous levels of blue-green algae (also known as cyanobacteria) are present in harmful amounts. Toxins are absorbed when ingesting water, swimming or bathing, or inhaling water droplets. About a third of the town's residents draw their water from Siltcoos Lake, as do several hundred lakeside residents outside city limits. In the past, the City of Florence, Heceta Water District, and Siuslaw Valley Fire and Rescue have teamed up to truck water into Dunes City.

Earthquake

The City of Florence's Natural Hazard Mitigation Plan adequately describes the causes and characteristics of an earthquake, and appropriately identifies the location of Dunes City's earthquake hazards. The extent to which an earthquake would impact the two cities differs slightly. As shown in the map below, Florence is located in a medium amplification hazard zone and Dunes City is located in a low zone. [Hazard zones are based on the degree to which ground shaking from a given earthquake is likely to be amplified.] Damage and loss of life can be very severe if structures are not designed to withstand shaking, are on ground that amplifies shaking, or ground which liquefies due to shaking. As shown in the Relative Liquefaction Hazard Map, Dunes City is also in a much lower liquefaction zone than Florence. In fact, Florence has the highest liquefaction hazard rating possible; Dunes City has no liquefaction hazard.

As described in Table 2.7 above on page 8, 62.6% of the City's housing was built before 1980. The older a home is, the greater its risk of damage from an earthquake. Structures built after the late 1970's in the Northwest used earthquake resistant designs and construction techniques.



Relative Amplification Hazard Map

Hazard zones are based on the degree to which ground shaking from a given earthquake is likely to be amplified.

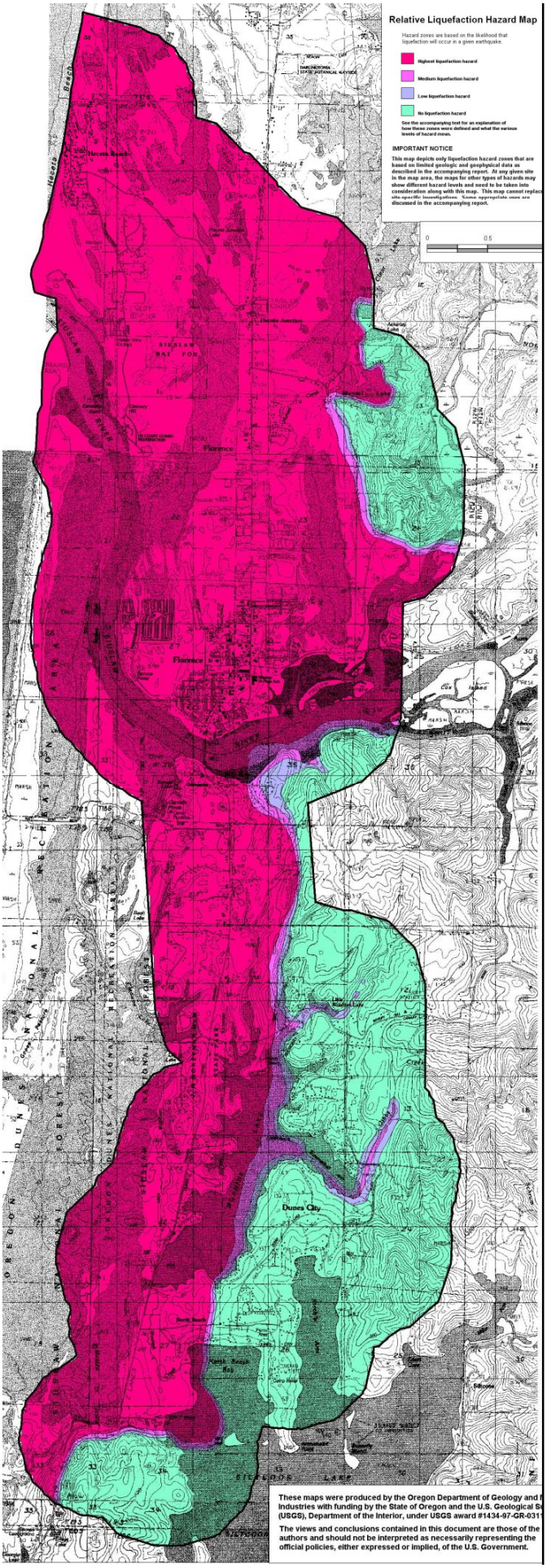
Highest amplification hazard (UBC soil type E)

Medium amplification hazard (UBC soil type D)

Low amplification hazard (UBC soil type C)

No amplification hazard (UBC soil type B)

See the accompanying text for an explanation of how these zones were defined and what the various levels of hazard mean.



Relative Liquefaction Hazard Map

Hazard zones are based on the likelihood that liquefaction will occur in a given earthquake.

Highest liquefaction hazard

Medium liquefaction hazard

Low liquefaction hazard

No liquefaction hazard

See the accompanying text for an explanation of how these zones were defined and what the various levels of hazard mean.

Florence's Natural Hazard Mitigation Plan adequately describes previous occurrences for Dunes City, as well as the probability of future earthquake occurrences. It is difficult to estimate recurrence intervals, but the state has experienced seven Cascadia Subduction Zone (CSZ) events in the last 3500 years – some of which were probably as large as magnitude (M) 9. These events are estimated to have an average recurrence interval between 500 and 600 years, although the time interval between individual events ranges from 150 to 1000 years. The last CSZ event occurred approximately 300 years ago. Scientists estimate that there is a 10-20% probability that a subduction zone earthquake will occur within the next 50 years.[iii]

Although Dunes City is less vulnerable to amplification and liquefaction than Florence, an M8-9 CSZ would cause major damage within the community. Unless mitigated, damage to the Siuslaw Bridge (linking Dunes City to Florence) could potentially separate Dunes City from Florence. The Dunes City volunteer fire station is composed of unreinforced masonry, and Siltcoos Dam is expected to suffer damage in an earthquake (thus allowing saltwater to infiltrate the water supply, while impacting fish and aquatic plans as well). Any degradation of the environment would significantly damage the tourist economy, and regional landslides are expected to isolate the City following a major earthquake (see landslide section below). Florence rates its vulnerability to earthquakes as 'high,' meaning more than 10% of the population or assets are likely to be affected by a major event or emergency. The same is true for Dunes City.

Flood

The City of Florence's Natural Hazard Mitigation Plan adequately describes the causes and characteristics of a flood hazard (see Flood Hazard Annex within Florence's Plan). Unlike the City of Florence, however, flooding is of relatively little concern in Dunes City. There is no known history of this hazard in the community, although a small amount of flooding may have occurred in the February 1996 floods. Dunes City is a participating community in the National Flood Insurance Program (NFIP) and has three national flood insurance policies in effect. Two properties are located in the A zone, which corresponds to the 100-yr floodplain (or, 1-percent annual chance floodplain). NFIP insurance holders have filed zero claims since 1978, and there are no repetitive loss properties within the City.

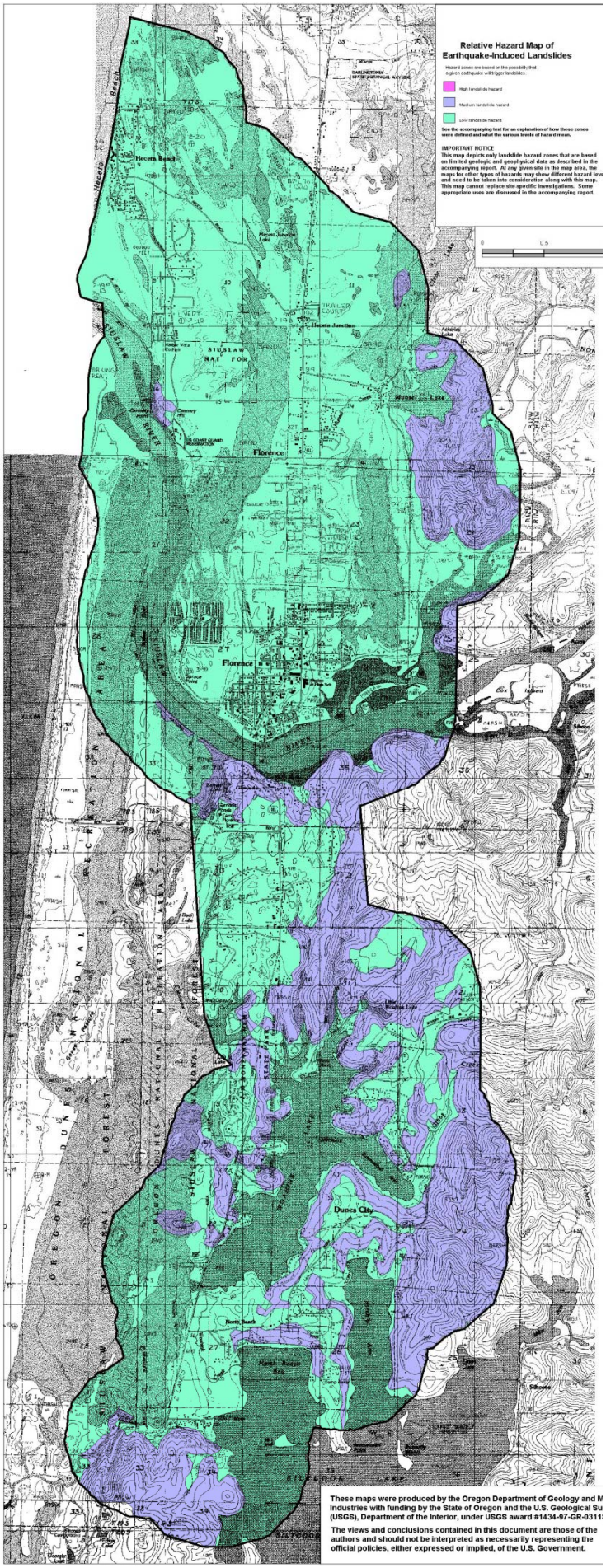
If and when flooding occurs, there are minimal impacts to the Siltcoos and Siuslaw rivers (as well as properties along the river), and very little impact on the lakes due to dam controls. The community itself has not sustained any flooding induced losses and/or damages, but presumably, properties within the floodplain would be at risk of experiencing damage. As such, the Dunes City Steering Committee agreed that the City's probably of experiencing a flood is low, and its vulnerability to a flooding event would be low as well. The 'low' probability ranking estimates that one event would be likely within a 75 to 100 year period. The "low" vulnerability

ranking indicates that less than 1% of the population is likely to be affected by a flooding event. Dunes City's probability and vulnerability rankings are both lower than Florence's rankings.

Landslide

Dunes City does not have any recorded history of landslides occurring within City limits, but residents recall the occurrence of several landslides within the immediate region. As shown in the map below, much of the City is in a "low" landslide hazard area, but small elevations surrounding the City are moderately prone to landslides. As elevations increase in the Coastal Range, the probability of landslide increases. The estimates in this map are based on the possibility that a given earthquake will trigger landslides, but the same locations are presumably susceptible to non-seismic events as well. As mentioned in Florence's Plan, landslides accompany almost every major storm that impacts western Oregon. Intense rainfall on recently and past logged land (as well as previously un-logged areas) is also likely to produce landslides and debris flows.

Florence's Natural Hazard Mitigation Plan adequately describes the general causes, characteristics, and extent of landslide hazards, as well as the community impacts of regional landslide events. Both cities are vulnerable to landslides that block transportation routes, disrupt utilities, and prohibit the emergency services of police, fire, and medical responders. Events that cause serious damages are likely to impact both cities' economies and their abilities to attract – and benefit from – tourist activities. Dunes City estimates that the probability of a landslide occurring within the region (as opposed to city limits) is 'high,' meaning one incident is likely within a 10-35 year period. Similarly, Dunes City rated its vulnerability to landslide events as 'high,' meaning more than 10% of the population or region assets would be affected by a major event. Dunes City's probability and vulnerability estimates are the same as Florence's.



Relative Hazard Map of Earthquake-Induced Landslides

Hazard zones are based on the possibility that a given earthquake will trigger landslides.

High landslide hazard

Medium landslide hazard

Low landslide hazard

See the accompanying text for an explanation of how these zones were defined and what the various levels of hazard mean.

Tsunami

The City of Florence's Natural Hazard Mitigation Plan adequately describes the causes and characteristics of a tsunami event. In regards to the location of a tsunami hazard, portions of Florence are located within the tsunami inundation zone, but Dunes City is not. Although Dunes City is considered a coastal community, the City is located about one mile inland from the coast. The southern portion of the Dunes National Recreation Area borders the City's west city, and the dunes provide a buffer between the City and the ocean. As such, the City is not located in a tsunami inundation zone, and has no record of any previous hazard occurrences. The Map below identifies the tsunami inundation zone for Florence; as shown, no part of Dunes City is within, or near, the inundation zone.

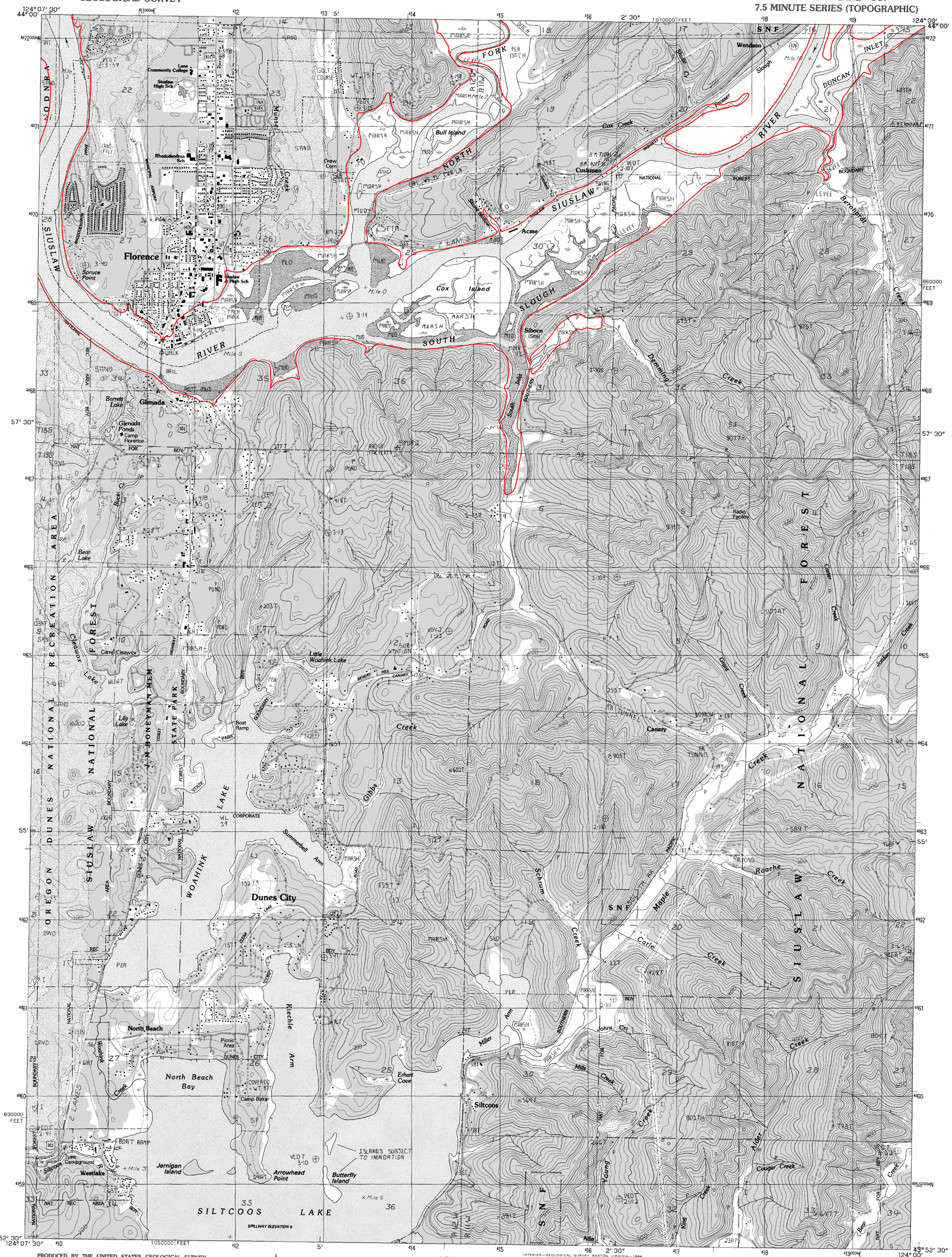
Potential impacts, specifically regarding a Cascadia Subduction Zone (CSZ) magnitude 8-9 earthquake (and tsunami following), include damage to the Siltcoos River dam, which would cause the Siltcoos Lake to flood. Additionally, closure of the Siuslaw River Bridge or tunnel would result in Dunes City's separation from Florence, and its emergency services and hospital. South-bound travel to Reedsport also requires crossing two bridges that may or may not survive a CSZ event. No impacts were recorded from previous tsunami events (1994, 1968, 1960, 1964 – see Florence's tsunami hazard annex for additional information). Florence rates its vulnerability to a tsunami as 'high,' meaning more than 10% of its population or assets are likely to be affected by a major emergency or disaster. Due to expected isolation, flooding, and resultant economic impacts, the same is true for Dunes City.

It is difficult to predict when the next tsunami will occur. Oregon has experienced 10 tsunamis in the last 135 years with only 3 causing measurable damage. It is estimated that all Cascadia tsunamis would cause extensive damage, and the last Cascadia Subduction Zone event occurred about 300 years ago.[iv] Geologists predict a 10-14% chance that a Cascadia tsunami will be triggered by a shallow, undersea earthquake offshore Oregon in the next 50 years. The forecast comes from evidence for large but infrequent earthquakes and tsunamis that have occurred at the Oregon coast every 500 years, on average.[v]

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
DONALD A. HULL, STATE GEOLOGIST

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FLORENCE QUADRANGLE
OREGON—LANE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY
CONTROL BY ..... USGS, NOS/NOAA
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN 1975-76
FIELD CHECKED ..... 1978. MAP EDITED 1984
PROJECTION ..... LAMBERT CONFORMAL CONIC
GRID: 1000-METER UNIVERSAL TRANSVERSE MERCATOR ..... ZONE 10
10,000-FOOT STATE GRID TICKS ..... OREGON, SOUTH ZONE
UTM GRID DECLINATION ..... 0°44′ WEST
1980 MAGNETIC NORTH DECLINATION ..... 19°30′ EAST
VERTICAL DATUM ... NATIONAL GEODETIC VERTICAL DATUM OF 1929
HORIZONTAL DATUM ..... 1927 NORTH AMERICAN DATUM
To place on the predicted North American Datum of 1983, move the projection lines as shown by dashed corner ticks (23 meters north / 98 meters east)
There may be private inholdings within the boundaries of any Federal and State Reservations shown on this map

PROVISIONAL MAP
Produced from original manuscript drawings. Information shown as of date of field check.

SCALE 1:24 000
1 KILOMETERS 1 2
1000 0 METERS 1000 2000
1 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 FEET

CONTOUR INTERVAL 40 FEET
SUPPLEMENTARY CONTOUR INTERVAL 20 FEET
CONTROL ELEVATIONS SHOWN TO THE NEAREST 0.1 FOOT
OTHER ELEVATIONS SHOWN TO THE NEAREST FOOT
To convert meters to feet multiply by 3.2808
To convert feet to meters multiply by 0.3048
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 6 FEET

1	2	3	1 Mercer Lake 2 Tiernan 3 Goose Pasture 4 Goodwin Peak 5 Tahkenitch Creek 6 Fivemile Creek 7 North Fork 8
4		5	
6	7	8	

ADJOINING 7.5′ QUADRANGLE NAMES

OREGON
QUADRANGLE LOCATION

ROAD LEGEND
Improved Road
Unimproved Road
Trail
Interstate Route U.S. Route State Route

FLORENCE, OREG.
PROVISIONAL EDITION 1984
43124–H1–TF–024

FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1984

Open File Report O-95-37
Tsunami Hazard Map of the Florence Quadrangle, Lane County, Oregon

Tsunami inundation boundary
upper limit of area expected to be covered by flood water from a tsunami caused by a magnitude 8.8 undersea earthquake

See accompanying text for use of this map, mapping methodology, and acknowledgments.

Mapping by:

George R. Priest, Oregon Department of Geology and Mineral Industries, October-November, 1995.

Volcano

The City of Florence's Natural Hazard Mitigation Plan adequately describes the causes and characteristics of volcanic hazards, as well as previous occurrences, location, extent, probability (low) and vulnerability (low) for Dunes City. Because of the distance between the Cascade Range and Dunes City, and the likelihood that winds will blow ash to the east, the coast has very little risk of experiencing volcanic hazards. Furthermore, volcanoes in the Three Sisters Region (closest volcanoes to Dunes City) have been inactive for over 1,000 years.

Large eruption clouds can extend for hundreds of miles downwind resulting in ash fall over enormous areas. Heavy ash fall, particularly when mixed with rain, can collapse buildings and even a minor ash fall can damage crops, electronics and machinery. See Florence's Volcano Hazard Annex for a comprehensive description of potential community impacts. Florence intends to update their Emergency Response Plan to account for such an event. Dunes City plans to partner with Florence on this action (see Action Items below).

Wildfire

The City of Florence's Natural Hazard Mitigation Plan adequately describes the causes and characteristics of wildfire hazards in western Lane County, as well as potential community impacts. Dunes City has no recorded history of wildfire events, and due to the damp, cool climate, their probability of experiencing a wildfire is very low. Nevertheless, an event is possible in most forested or grass/rangeland areas, and risk will increase in the dryer summer months.

According to the Lane County Community Wildfire Protection Plan (CWPP), the number of days per season that forest fuels are capable of producing a major fire event is significantly lower on the coast than in other parts of Lane County.[vi] Dunes City is considered to be a wildland urban interface (WUI) community,[vii] and would be highly vulnerable to a wildfire event should one occur (meaning more than 10% of the population or regional assets would be affected by a major event). Vulnerability estimates take the following considerations into account: home density, location of critical facilities, percentage of homes in the wildland/urban interface, the presence or lack of community infrastructure in harm's way, and the community's ability to prepare for and respond to the threat of wildfire.

Wind and Winter Storm

The Dunes City Steering Committee considers windstorms to be the City's biggest threat. Loss of power often occurs when winds reach 80mph or greater, and the Mount Peak repeater site (i.e., provides for first responder communication) is structurally vulnerable to wind damage. The City of Florence's Natural Hazard Mitigation Plan adequately describes the causes

and characteristics of wind and winter storm hazards, as well as the extent of potential events and previous occurrences within the region. Wind and winter storms can affect the entire City; buildings, utilities, and transportation systems in Dunes City are particularly vulnerable to wind damage. Trees are especially hazardous in high wind events, and can damage electrical transmission lines, homes, and property. The probability that a winter/wind storm would happen in Dunes City is high, meaning one incident is likely within a 10-35 year period. Dunes City is also highly vulnerable to a winter/wind storm event, meaning 1-10% of the population or region assets are likely to be affected by a major event or emergency. Both probability and vulnerability ratings are the same as Florence's ratings.

Action Items

The following action items are detailed recommendations for activities that local departments, citizens, and others could engage in to reduce risk. Action item worksheets are located at the end of the addendum.

- Enter into a contract or intergovernmental agreement to provide potable water in the event that Woahink or Siltcoos Lakes are contaminated.
- Build an addition to the Clear Lake fire station to accommodate community meetings and/or shelter in the event of a disaster. Seismically retrofit the existing building.
- Strengthen the Mount Peak repeater site to withstand high winds.
- Continue compliance with the National Flood Insurance Program.

Additionally, Dunes City has chosen to partner with Florence on the following actions. Several of Florence's actions identify the West Lane Emergency Operations Group as the lead agency. Because the WLEOG is a regional body with Dunes City representation, several of the WLEOG actions can be implemented on a regional scale, and/or have regional benefit. Dunes City has chosen to partner with Florence on several actions due to this existing relationship and co-representation on the WLEOG. Please see Appendix A in Florence's Multi-Jurisdictional Natural Hazards Mitigation Plan for more detail regarding each of the actions listed below.

- MH 1: Develop education programs aimed at mitigating risk posed by hazards.
- MH 2: Encourage the public to have supplies, emergency kits and plans in place. Information on developing family emergency plans and kits should be disseminated through several different channels – television, radio, mail, web, etc.
- MH6: Expand existing special needs population data to include a detailed inventory of all at-risk communities (elderly, homeless, disabled, etc.) that are without access to transportation and

communication. Determine effective means of alert, warning and evacuation.

- MH 7: Amend West Lane Emergency Operations Group IGA to include Hazard Mitigation as a Purpose.
- MH 9: Establish an annual Natural Hazard Preparedness Expo.
- MH 10: Develop a hazard awareness plan specifically targeted at tourists and visitors.
- MH 11: Map alternative routes that could provide access across the Coast Range in the event a hazard causes isolation from resources.
- MH 13: Develop a food distribution plan in the wake of an extended isolation period due to natural hazard.
- MH 15: Establish mutual aid agreements between governmental agencies and commercial businesses in the event of an emergency (e.g. fuel, heavy equipment, food, etc.)
- EQ 1: Develop a comprehensive outreach program to educate businesses and residents about Florence's vulnerability to earthquakes and non-structural and structural retrofits they can implement to reduce the impact of a future earthquake event.
- EQ 3: Retrofit public buildings and critical facilities to meet or exceed current standards for earthquake resistance.
- EQ 4: Seismically retrofit the historic Siuslaw River Bridge.
- T 1: Review signage and warnings for tsunami evacuation routes, new siren tone meanings, etc.
- T 2: Examine costs and benefits of installing a Tsunami Siren in Old Town Florence
- VE 2: Update emergency response planning for ash fall events.
- WF 1: Identify evacuation routes and procedures for high risk areas and educate the public.

Dunes City will utilize the same prioritization process and plan maintenance schedule as outline in Florence's Plan [See Section 4: Plan Implementation and Maintenance of Florence's Natural Hazard Mitigation Plan and Appendix C: Economic Analysis of Natural Hazard Mitigation Projects].

[i] United States Census Bureau. 2000. Fact Sheet: Lane County, Oregon. www.census.gov.

[ii] United States Census Bureau. 2000. Fact Sheet: Lane County, Oregon. www.census.gov.

[iii] Geologic Hazards on the Oregon Coast. Oregon Department of Geology and Mineral Industries. http://www.oregongeology.com/sub/earthquakes/Coastal/OrGeoEqNTsu.htm

[iv] Kenji Satake et al., 1995 (State's Enhanced Natural Hazard Mitigation Plan, Region 1: Oregon Coast. March, 2006).

[v] Oregon Geology Fact Sheet, Tsunami Hazards in Oregon. Department of Geology and Mineral Industries. http://www.oregongeology.com/sub/publications/tsunami-factsheet_onscreen.pdf

[vi] Oregon Natural Hazards Workgroup. 2004. *Lane County Community Wildfire Protection Plan.* *https://scholarsbank.uoregon.edu/dspace/bitstream/1794/5797/1/Lane_County_CWPP.pdf*

[vii] August 17, 2001, *Federal Register*. V.66, N.160.

Action Item

Proposed Action Item:	**Alignment with Plan Goals:**
Enter into a contract or intergovernmental agreement to provide potable water in the event that Woahink or Siltcoos Lakes are contaminated.	1. Protect Human Life, Commerce, Property, and Natural Systems 2. Enhance Emergency Services 3. Improve Partnerships for Communication and Coordination to Ensure the Implementation of Mitigation Measures

Rationale for Proposed Action Item:

Siltcoos Dam is expected to suffer damage in an earthquake (thus allowing saltwater to infiltrate the water supply, while impacting fish and aquatic plans as well). Any degradation of the environment would significantly damage the tourist economy.

The City's vulnerability to drought is 'high,' meaning more than 10% of the population or regional assets would be affected by a major event. Dunes City retrieves its water from Woahink and Siltcoos Lakes, and in the event of a drought (or, any situation that would limit the City's ability to use water from these two lakes), Dunes City would become reliant upon outside assistance for its water needs.

Although Dunes City has not experienced naturally-occurring drought conditions, residents have suffered from toxic algae blooms in Siltcoos Lake. Most recently, residents were issued public health advisories on September 18, 2007 and November 9, 2007. Residents are issued warnings when dangerous levels of blue-green algae (also known as cyanobacteria) are present in harmful amounts. Toxins are absorbed when ingesting water, swimming or bathing, or inhaling water droplets. About a third of the town's residents draw their water from Siltcoos Lake, as do several hundred lakeside residents outside city limits. In the past, the City of Florence, Heceta Water District, and Siuslaw Valley Fire and Rescue have teamed up to truck water into Dunes City.

Ideas for Implementation:

Establish an IGA with nearby coastal communities, water districts, and the Siuslaw Valley Fire and Rescue to provide water supplies in the event of an emergency (i.e., drought, contamination, etc.)

Establish reserve water supplies in the event of an emergency that additionally affects communities with backup supplies.

Determine potential needs (quantity, frequency of water supply). In the event of a long-term emergency, establish back-up agreements with larger nearby communities.

Lead Agency:	Dunes City Water Quality Control Committee

Internal Partners:	**External Partners:**
	West Lane Emergency Operations Group; City of Florence; Heceta Water District; Siuslaw Valley Fire and Rescue; City of Eugene

Timeline:		**If available, estimated cost:**
Short Term (0-2 years)	Long Term (2-4 or more years)	
1-3 years		

Form Submitted by:	Dunes City Steering Committee

Action Item Status: Pending

Action Item

Proposed Action Item:	**Alignment with Plan Goals:**
Build an addition to the Clear Lake fire station to accommodate community meetings and/or shelter in the event of a disaster. Seismically retrofit the existing building.	1. Protect Human Life, Commerce, Property, and Natural Systems.

Rationale for Proposed Action Item:

Dunes City is highly vulnerable to earthquake hazards due to its proximity to the Cascadia Subduction Zone (CSZ). The City's existing volunteer fire station is composed of unreinforced masonry. "Earthquake damage to unreinforced masonry structures can be severe and hazardous. The lack of reinforcement coupled with poor mortar and inadequate roof-to-wall ties can result in substantial damage to the building as a whole as well as to specific sections of it. Severely cracked or leaning walls are some of the most common earthquake damages. Also hazardous, but slightly less noticeable, is the damage that may occur between the walls, and roof and floor diaphragms. Separation between the framing and the walls can jeopardize the vertical support of roof and floor systems which could lead to the collapse of the structure." *– Association of Bay Area Governments*

Currently, the City has no identified means of sheltering community residents in the aftermath of a natural disaster. An addition to the Clear Lake fire station is needed to accommodate community meetings. The addition could be built to additionally accommodate post-disaster sheltering needs.

The Disaster Mitigation Act of 2000 requires communities to identify comprehensive actions that protect new and existing buildings [201.6(c)(3)(ii)]. Retrofitting critical facilities to meet or exceed current standards for earthquake resistance can significantly reduce Dunes City's vulnerability to future earthquakes.

Ideas for Implementation:

Seek funding to retrofit the existing fire station building; work with structural engineers and architects to develop techniques for proper seismic retrofit.

Seek funding to construct an addition to the Clear Lake fire station. Note: pre-disaster mitigation grant programs will not fund new constructions; identify alternative funding sources to assist in the completion of this project.

Lead Agency:	Dunes City Volunteer Fire Department

Internal Partners:	**External Partners:**
Dunes City Planning Commission	West Lane Emergency Operations Group; Siuslaw Valley Fire and Rescue

Timeline:		**If available, estimated cost:**
Short Term (0-2 years)	Long Term (2-4 or more years)	
	5-7 years	

Form Submitted by:	Dunes City Steering Committee

Action Item Status: Pending

Action Item

Proposed Action Item:	**Alignment with Plan Goals:**
Strengthen the Mount Peak repeater site to withstand high winds.	2. Enhance Emergency Services

Rationale for Proposed Action Item:

Loss of power often occurs when winds reach 80mph or greater, and the Mount Peak repeater site (i.e., provides for first responder communication) is structurally vulnerable to wind damage.
The probability that a winter/wind storm would happen in Dunes City is high, meaning one incident is likely within a 10-35 year period. Dunes City is also highly vulnerable to a winter/wind storm event, meaning 1-10% of the population or region assets are likely to be affected by a major event or emergency.

Interoperable communications are integral to a community's continued operations post-disaster.

Ideas for Implementation:

Seek funding to strengthen the Mount Peak repeater site.

Consult an engineer to determine the best strategy for strengthening the repeater site.

Lead Agency:	Dunes City Roads Commission

Internal Partners:		**External Partners:**
Budget Committee		West Lane Emergency Operations Group
Timeline:		**If available, estimated cost:**
Short Term (0-2 years)	Long Term (2-4 or more years)	
	3-4 years	

Form Submitted by:	Dunes City Steering Committee

Action Item Status: Pending

Action Item

Proposed Action Item:	**Alignment with Plan Goals:**
Continue compliance with the National Flood Insurance Program (NFIP).	1. Protect Human Life, Commerce, Property, and Natural Systems.

Rationale for Proposed Action Item:

The National Flood Insurance Program (NFIP) provides communities with federally backed flood insurance, provided that communities develop and enforce adequate floodplain management measures. According to the NFIP, buildings constructed in compliance with NFIP building standards suffer approximately 80 percent less damage annually than those not built in compliance.

The Disaster Mitigation Act of 2000 requires that communities identify actions and projects that reduce the impact of a natural hazard on the community, particularly to new and existing buildings and infrastructure [201.6(c)(3)(ii)]. Continued participation in the NFIP will diminish flood damage to new and existing buildings in communities while providing homeowners, renters, and business owners additional flood insurance protection.

Ideas for Implementation:

Actively participate with DLCD and FEMA during Community Assistance Visits. The Community Assisted Visit (CAV) is a scheduled visit to a community participating in the NFIP for the purpose of: 1) conducting a comprehensive assessment of the community's floodplain management program; 2) assisting the community and its staff in understanding the NFIP and its requirements; and 3) assisting the community in implementing effective flood loss reduction measures when program deficiencies or violations are discovered.

Lead Agency:	Dunes City Planning Commission

Internal Partners:		**External Partners:**
Planning Secretary		FEMA
Timeline:		**If available, estimated cost:**
Short Term (0-2 years)	Long Term (2-4 or more years)	
	Ongoing	

Form Submitted by:	Dunes City Steering Committee

Action Item Status: Ongoing