Hazard Annex
Earthquake

ISSN 0270-952X

STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
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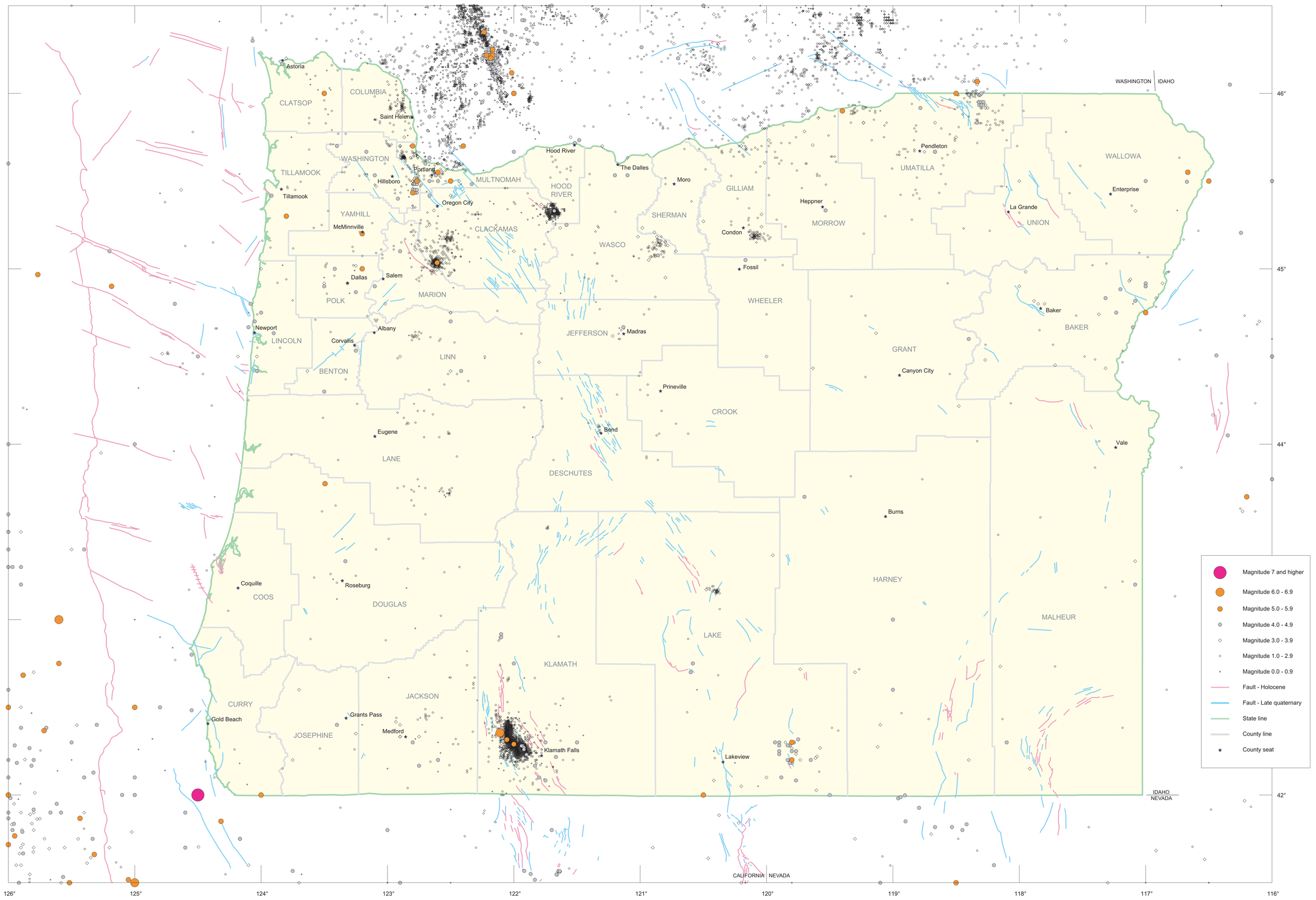
Map of Selected Earthquakes for Oregon, 1841 through 2002

2003

OPEN-FILE REPORT 03-02

Map of Selected Earthquakes for Oregon,
1841 through 2002

By Clark A. Niewendorp and Mark E. Neuhaus



WHAT DOES THE MAP SHOW?

This map shows over 14,000 known earthquakes from 1841 to 2002. The Table to the right is a summary of major quakes that have affected Oregon, causing ground shaking and damage (Wang and Clark, 1999). It shows that Oregonians face injury and property damage from earthquakes originating throughout the Pacific Northwest. For this reason, the Oregon Department of Geology and Mineral Resources produced this map of the epicenters of historic earthquakes in Oregon, off the coast, and along Oregon's border with southern Washington and northern California. Historic patterns show areas in Oregon that are especially vulnerable to earthquakes.

The earthquake dataset for this map was compiled from two sources: the Oregon Department of Geology and Mineral Resources' Earthquake Database for Oregon (Johnson and others, 1994) and data from the Pacific Northwest Seismograph Network (PNSN) at the University of Washington Geophysics Department. You can view and retrieve earthquake data in PNSN's earthquake catalog from the following website:

http://www.geophys.washington.edu/SEIS/PNSN/CATDAT/welcome.html.

Johnson and others' (1994) dataset covered the area shown on this map. However, PNSN's current earthquake catalog contains records for earthquakes located between -125° and -117° longitude and 42° and 49° latitude. Earthquakes outside PNSN's coverage are recorders older than October of 1993. A remaining task in preparing a comprehensive earthquake map for Oregon is to incorporate data from other earthquake catalogs, particularly those that cover extreme eastern and southeastern Oregon. Also, the magnitudes of some earthquakes before 1962, roughly 250 events, were determined using intensity data (Jacobson, 1986). Data of this kind are not always precisely accurate. The data reflects poorly determined locations or magnitudes, and are often incomplete.

Earthquake epicenters are displayed on this map as diamonds and circles. These symbols are plotted at different sizes so as to provide a scale. Filled diamonds correspond to an earthquake with a magnitude between 0 and 0.9. Open diamonds represent earthquakes with magnitudes between 0.9 and 3.9. The colored circles represent larger magnitude earthquakes, those over 3.9. A legend explaining these symbols is shown in the lower right margin of the map.

The blackened areas on the map are the concentration of many symbols. This clustering is a result of earthquake activity that occurs in swarms. The largest earthquake in a swarm is the mainshock, sometimes preceded by foreshocks, and almost always followed by aftershocks. Also, within one cluster, there could be many earthquake swarms.

Geologically active faults are shown on this map (Geomatrix Consultants, 1995). Active faults are defined as those that moved in the last 780,000 years. Faults active in the last 20,000 years are color-coded red. Faults that moved between 20,000 and 780,000 years are color-coded blue. A less-than-straightforward connection between earthquakes and active faults exist in Oregon. The uncertainties in earthquake locations can be large and not all faults are known. Often this uncertainty makes it difficult to associate an earthquake with a particular fault.

Seismicity Patterns

We can make some general observations regarding the seismicity patterns shown on this map. Overall, earthquakes in Oregon are associated with four zones of seismicity: the Cascade seismic zone, Portland Hills (Portland-Vancouver metropolitan area), south-central (Klamath Falls), and northeastern Oregon.

Cascade

The earthquakes in the Cascade seismic zone are part of the Cascade Range of Washington, Oregon, and California, an active volcanic mountain chain where magma ascends into the crust because of the underlying subduction processes. The portion of the Cascade seismic zone in southwestern Washington contains the earthquake (magnitude 5.1) triggering the major lateral blast that ripped away the northern side of the Mount St. Helens volcano. The blast probably happened 20 to 30 seconds after the earthquake began. Approximately 440 earthquakes were associated with the 1980 eruption of Mount St. Helens.

In a typical year, one to several, short-lived swarms of small earthquakes are recorded on the south flake and below the summit of Mount Hood volcano in Oregon. These swarms probably represents a reaction to regional tectonic stresses, not pre-eruption volcanic activity.

Portland Hills

A scattered, northwest-trending cluster of earthquakes, called the Portland Hills seismicity zone, lies in the Portland-Vancouver metropolitan area (Blakely and others, 1995). Notable earthquakes in this zone included the 4.7 magnitude earthquake on November 7, 1961 and the November 5, 1962, earthquake of 5.5 magnitude. The Portland Hills seismicity zone is in a portion of northwestern Oregon sheared into a series of juxataposed blocks moving in different directions.

Movement of the blocks induces earthquakes along northwest- and northeast-trending fault zones. Two have particular significance: the north northwest-trending Portland Hills and the Mount Angel-Gales Creek fault zones. The Portland Hills fault can be traced through downtown Portland and the fault may be a reason for the unusually steep scarp of Portland's West Hills. To the west, the Mount Angel-Gales Creek fault zone is a single, potentially active fault system that has been mapped from the Cascades into the Willamette Valley through to the Coast Range (Dougherty and Trehu, 2002). The 5.6 magnitude March 25, 1993, Scotts Mills (near Silverton and Woodburn in Marion County, Oregon) earthquake with an epicenter near Mount Angel, in Marion County, Oregon, may be associated with this fault zone (Madin and others, 1993). Other active faults in the Willamette Valley, no less significant, can produce future earthquakes as well.

South-Central Oregon

The dense cluster of earthquakes in south-central Oregon is associated with the September 20, 1993, earthquakes of 5.9 and 6.0 magnitude (Wiley and others, 1993). Aftershocks as large as magnitude 5.1 continued to disturb residents for six months (Sherrod and others, 1997). Epicenters for these earthquakes are near north- to northwest-trending faults about 19 miles northwest of Klamath Falls. Quakes in this area are related to the northernmost part of the Basin and Range geologic province, a vast area extending from south-central Oregon to Arizona and encompassing most of Nevada. The Basin and Range in south-central Oregon is stretching in an east-west direction causing the crust to break into blocks along steeply dipping faults (Wong and Bott, 1995; Wells and others, 1998). Earthquakes such as those near Klamath Falls and the earthquake swarm near the town of Adel (magnitude 5.1) to the east of Lakeview were probably triggered as the crust broke along existing faults.

Northeastern Oregon

In northeastern Oregon, several diffuse areas of seismicity fall on the Oregon-Washington border. The area near Milton-Freewater was the site of the 1936 magnitude 6.4 earthquake. This earthquake and the scattered seismicity in the region are related to the Olympic-Wallowa lineament. The lineament is a broad zone of northwest-trending faults and intervening basins and uplifts stretching from the Olympic Mountains of western Washington across the Cascades and Columbia Basin into the northeast side of the Wallowa Mountains in northeastern Oregon.

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Historical Earthquakes affecting Oregon

Date	Location	Magnitude	Comments
Approximate years 1400 BCE 1050 BCE 600 BCE 400, 750, 900	Offshore, Cascadia subduction zone[1]	Probably 8-9	Researchers Brian Atwater and Eileen Hemphill-Haley have dated earthquakes and tsunamis at Willapa Bay, Washington; these are the midpoints of the age range for these six events.
January 26, 1700	Offshore, Cascadia subduction zone[1]	Approximately 9	Generated a tsunami that struck Oregon, Washington and Japan; destroyed Native American villages along the coast.
November 23, 1873	Oregon/California border, near Brookings	6.8	Felt as far away as Portland and San Francisco; may have been an intraplate event because of lack of aftershocks.
July 15, 1936	Milton-Freewater	6.4	Two foreshocks and many aftershocks felt; $100,000 damage (in 1936 dollars).
April 13, 1949	Olympia, Washington[1]	7.1	Eight deaths and $25 million damage (in 1949 dollars); cracked plaster, other minor damage in northwest Oregon.
November 5, 1962	Portland/Vancouver	5.5	Shaking lasted up to 30 seconds; chimneys cracked, windows broke, furniture moved.
1968	Adel	5.1	Swarm lasted May through July, decreasing in intensity; increased flow at a hot spring was reported.
April 12, 1976	Near Maupin	4.8	Sounds described as distant thunder, sonic booms, and strong wind.
April 25, 1992	Cape Mendocino, California[1]	7.0	Subduction earthquake at the triple-junction of the Cascadia subduction zone and the San Andreas and Mendocino faults.
March 25, 1993	Scotts Mill	5.6	On Mount Angel-Gales Creek fault; $30 million damage, including Molalla High School and Mount Angel church.
September 20, 1993	Klamath Falls	5.9 and 6.0	Two deaths, $10 million damage, including county courthouse; rockfalls induced by ground motion.
February 28, 2001	Near Olympia Washington[1]	6.8	About 400 injuries, $2 to 3.9 billion damage in the Seattle/Tacoma area. Felt area: Vancouver BC, Northwest Oregon, Salt Lake City UT.

[1] not shown on the map

EARTHQUAKE TERMS

An earthquake is defined as the "perceptible trembling to violent shaking of the ground, produced by the sudden displacement of rocks below the Earth's surface." Rocks respond to stress (being squeezed or pulled apart) near the Earth's surface by breaking. Where the rocks break and move, we call it a fault. The buildup of tectonic forces and release of stress on individual faults is what causes quakes. Higher stresses lead to larger earthquakes.

The earthquake's epicenter is the position on the Earth's surface directly above the focus of the earthquake. The focus is the location within the Earth where underground rock moves and sends out earthquake energy waves. We feel these waves as ground shaking. Earthquakes produce three main types of energy waves: P-waves (push-pull waves), S-waves (side-to-side waves), and L-waves (surface waves). Each radiates from the earthquake focus through the Earth at different rates. The distribution of earthquakes over time is known as seismicity.

The energy released from the earthquake is a basic quantity scientists have measured for more than fifty years. This energy release, or magnitude, is measured on the familiar Richter scale, invented by Charles F. Richter in 1934. Scientists calculate the magnitude of the earthquake from the largest seismic wave or vibration, and a seismograph records the vibrations (seismogram) that an earthquake makes. Earthquakes with a magnitude of about 2 or less are usually called microquakes. They are not usually felt and are generally recorded only on local seismographs. Magnitude 3 and 4 earthquakes are commonly felt, but rarely cause damage. Damaging ground shaking can accompany a magnitude 5 or 6 event, and major damage commonly occurs from earthquakes of magnitude 7 and greater. The Richter scale has no upper limit. Recently, another scale called the moment magnitude scale has been devised for more precise study of seismic activity. Moment magnitude is generally used now to describe earthquakes, but the categories are about the same.

Earthquake intensity is not the same as Richter's earthquake magnitude. They are frequently confused in media reports. Earthquake intensity describes the strength of shaking at a particular place, based on observations made of building damage. The intensity of an earthquake is expressed today as the Modified Mercalli Scale, devised in 1902 by Giuseppe Mercalli. The scale provides a series of idealized descriptions of the effects of an earthquake. Intensity 1 is imperceptible shaking. Intensity increases by steps to 10, which is total destruction. The intensity scale requires no instrumentation because any observer can make a classification. It provides a basis to estimate the size of historic earthquakes. Also, it is useful because an earthquake has only a single magnitude, but different intensities can be distributed throughout the affected area.

SOURCE OF EARTHQUAKES

Three sources cause earthquakes in Oregon (Mabey and others, 1993). First, shallow earthquakes (depths of 0-10 miles) occur on active faults in the crust. Second, deeper earthquakes (depths of 10-31 miles) are associated with the subducting Juan de Fuca plate. Third, deep earthquakes (depths of 31-62 miles) happen where the continental crust and ocean floor plates are locked against each other and periodically snap loose.

The Juan de Fuca plate is a slab of ocean floor moving eastward from the Juan de Fuca Ridge, which is about 300 miles off the coastline of Oregon and Washington. The term Cascadia subduction zone was given to the part of the plate that has descended beneath the westbound continental crust of western Oregon. Earthquakes can be very large in the subduction zone and often produce damaging tsunamis. The last great Cascadia subduction zone earthquake happened off the coast of Oregon and Washington in 1700, with an estimated magnitude of 9.0. Geological evidence indicates that huge subduction zone earthquakes have struck Oregon's coast every 300-800 years, with a record that extends back at least 11,000 years (Atwater and others, 1995; Atwater and Hemphill-Haley, 1997; Goldfinger, 1999). These earthquakes are not evenly spaced in time, and the calculated average intervals between events can be less or more. The Cascadia subduction zone is still continuing to creep and undoubtedly western Oregon will again experience the affects of a subduction-zone earthquake (Shedlock and Weaver, 1991).

The earthquakes shown on the above map were triggered within the Earth's crust at depths less than 25 miles (Jacobson, 1986). The largest of these earthquakes struck the coastline of Oregon and California near Brookings, Oregon, on November 23, 1873, with an estimated 6.8 magnitude. Wong (2002) suspects that this earthquake could be an exception and the quake was deeper within the descending Juan de Fuca plate.

This map is available from:

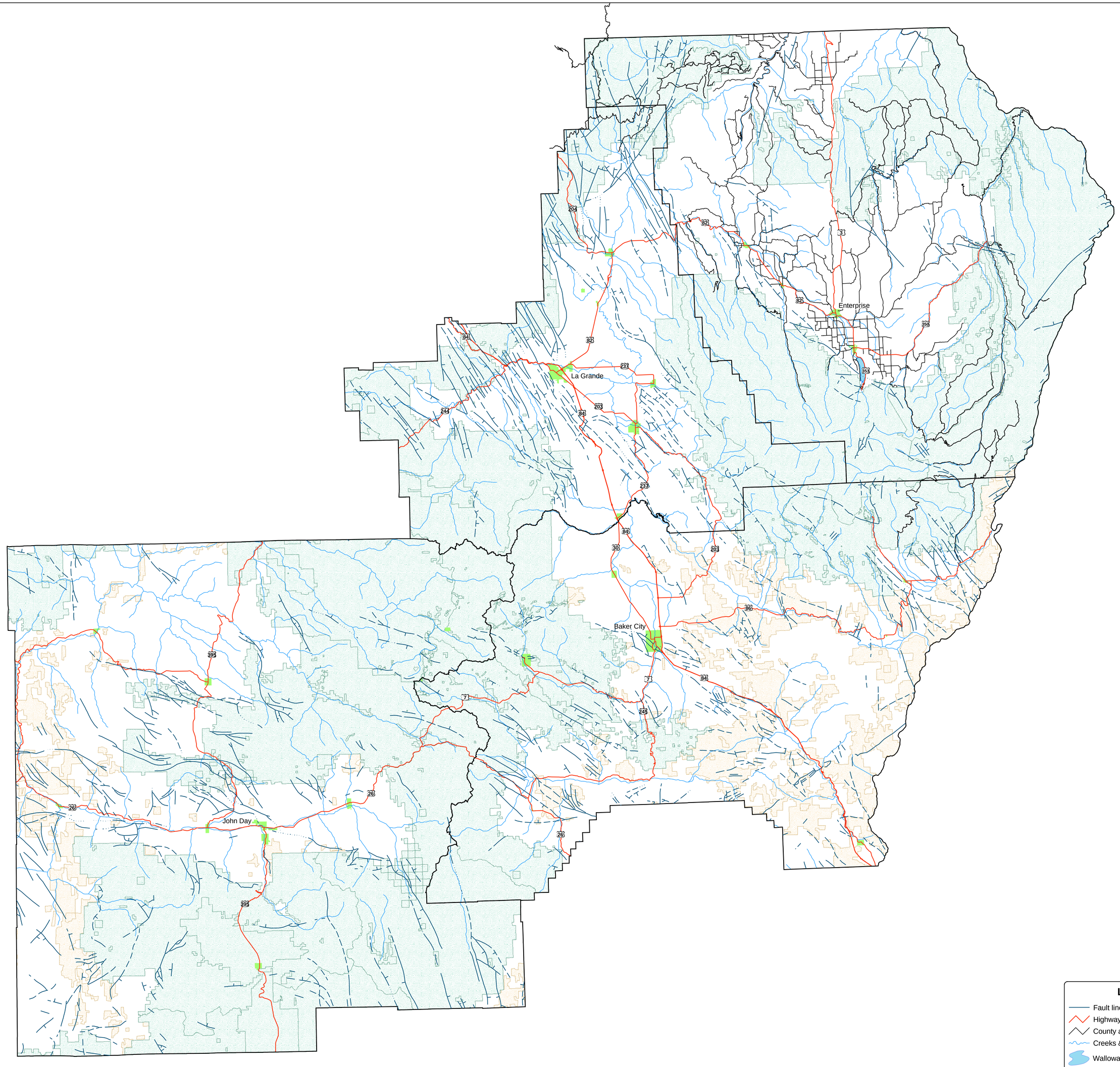
The Nature of the Northwest Information Center
800 NE Oregon Street #5
Portland, OR 97232
503/872-2750 www.naturenw.org
and the Baker City (541-523-3133) and Grants Pass (541-476-2496), Field Offices of the Oregon Department of Geology and Mineral Industries

Epicenter Map

The following map shows over 14,000 known earthquakes from 1841 to 2002. The Table to the bottom right is a summary of major quakes that have affected Oregon, causing ground shaking and damage. It shows that Oregonians face injury and property damage from earthquakes originating throughout the Pacific Northwest. For this reason, the Oregon Department of Geology and Mineral Resources produced this map of the epicenters of historic earthquakes in Oregon, off the coast, and along Oregon's border with southern Washington and northern California. Historic patterns show areas in Oregon that are especially vulnerable to earthquakes.

Wallowa County Oregon
GIS Department

Natural Hazard Mitigation Area: Fault Lines



Legend

- Fault lines
- Highways
- County and Forest Service Roads
- Creeks & Rivers
- Wallowa Lake
- City Limits
- Forest Service Lands
- BLM Lands

0 5 10 20 30 40 Miles

Data Sources: County Boundary, BLM lands, Cities, Highways, Streams, and Faults are from the Geospatial Data Clearinghouse; Roads, and Forest Service Boundary are maintained by the respective Forest Service offices; and Wallowa Lake is maintained by Wallowa County GIS.

Faults_pres.mxd

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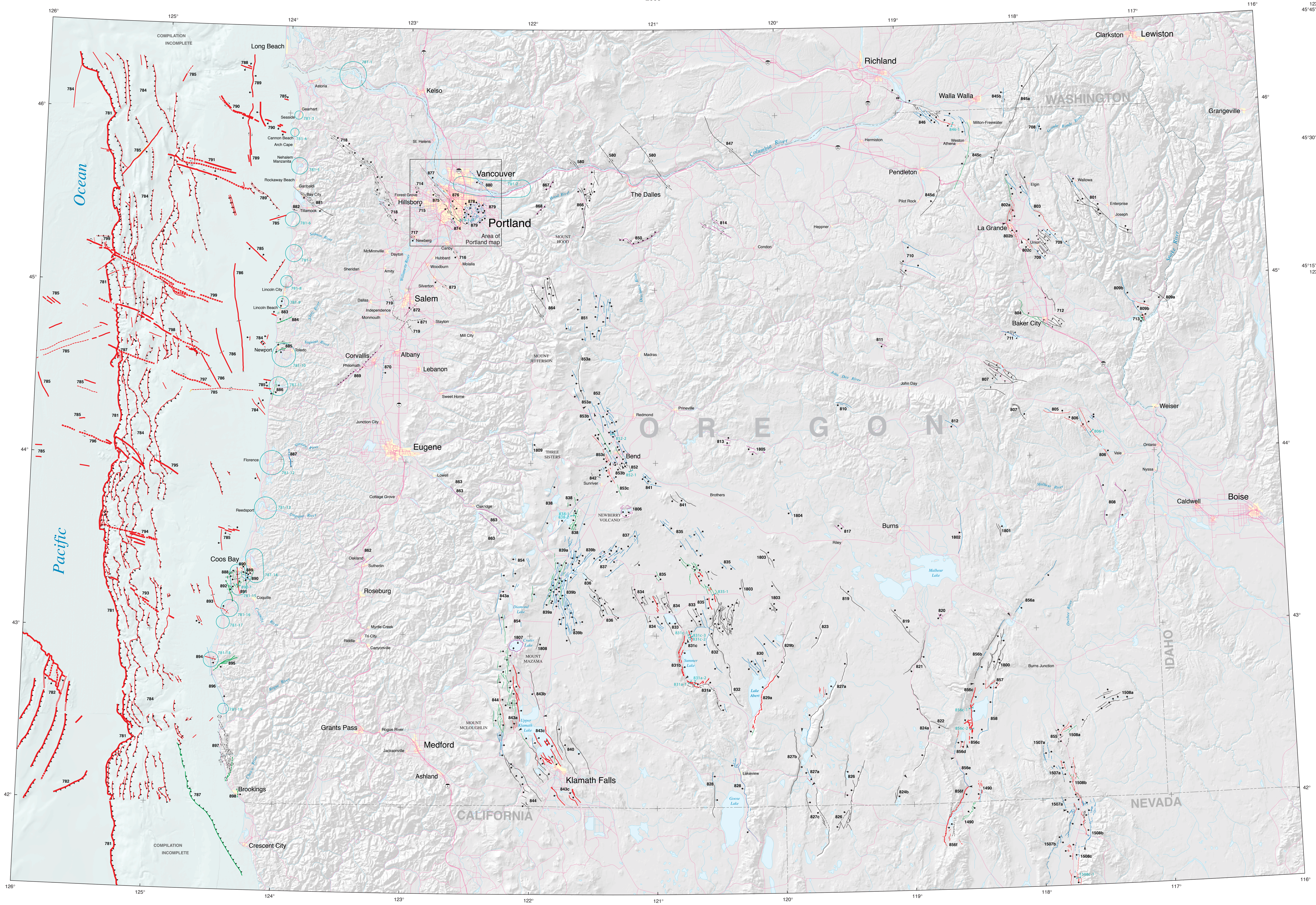
OPEN FILE REPORT
OFR 03-095
Version 1.1
Pamphlet accompanies map

Map of Quaternary Faults and Folds in Oregon

by

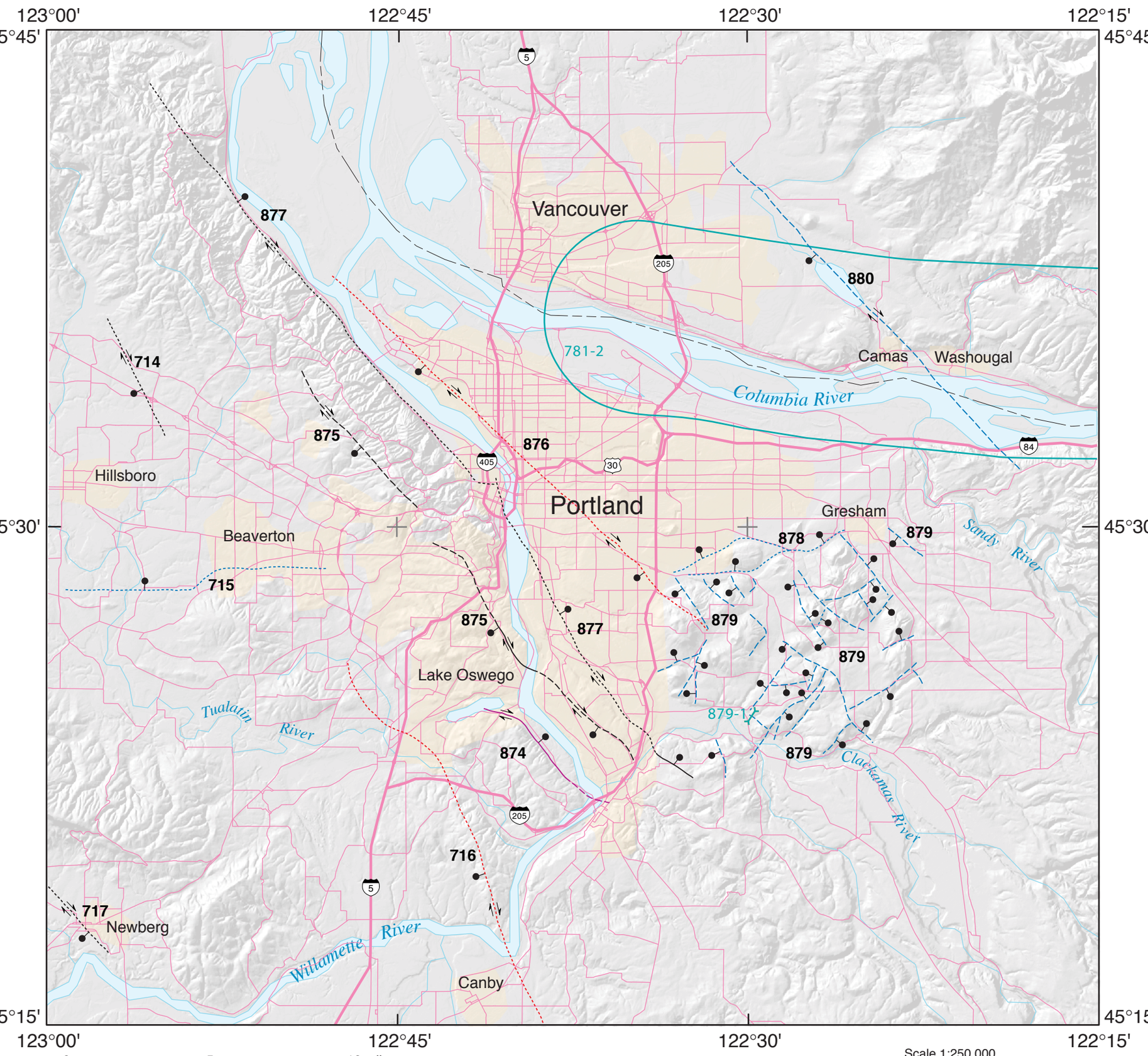
Stephen F. Personius, Richard L. Dart, Lee-Ann Bradley and Kathleen M. Haller

2003



Scale 1:750,000
Lambert Conformal Conic Projection, Clarke 1866
(1st standard parallel 33° N, 2nd standard parallel 45° N;
longitude of central meridian 121°30' W; latitude of origin 42°)

0 50 100 miles
0 50 100 150 kilometers



Enlargement of the Portland Area

Scale 1:250,000
Lambert Conformal Conic Projection, Clarke 1866
(1st standard parallel 33° N, 2nd standard parallel 45° N;
longitude of central meridian 122°37'30" W; latitude of origin 42°)

MAP EXPLANATION

TIME OF MOST RECENT SURFACE RUPTURE
- Holocene (<10,000 years) or post last glaciation (<15,000 years; 15 ka); no historic ruptures in Oregon to date
- Late Quaternary (<130,000; post penultimate glaciation)
- Late and middle Quaternary (<750,000 years; 750 ka)
- Quaternary, undifferentiated (<1,600,000 years; <1.6 Ma)
- Class B structure (age or origin uncertain)

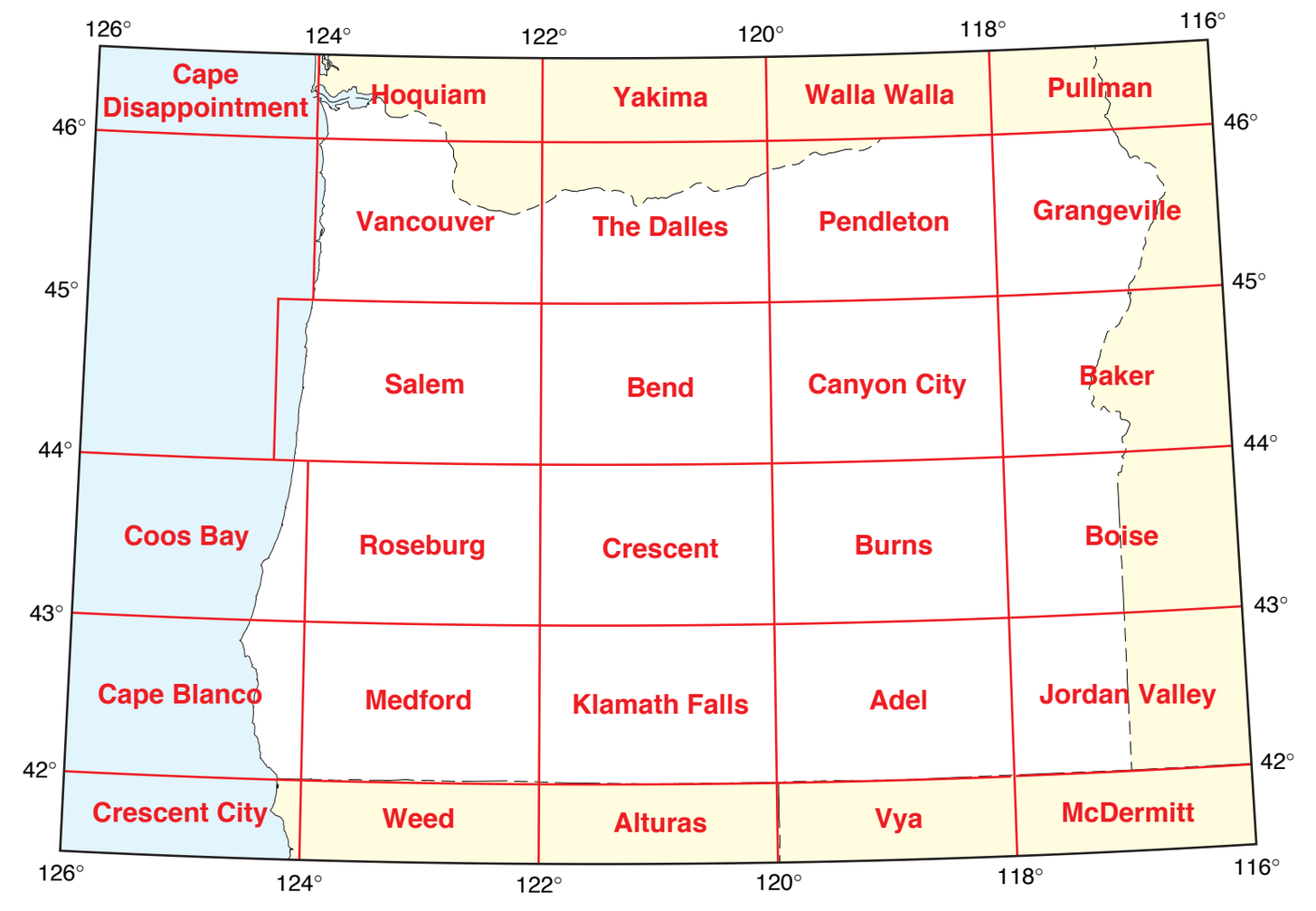
SLIP RATE
- >5 mm/year
- 1.0-5.0 mm/year
- 0.2-1.0 mm/year
- <0.2 mm/year

TRACE
- Mostly continuous at map scale
- Mostly discontinuous at map scale
- Inferred or concealed

STRUCTURE TYPE AND RELATED FEATURES
- Normal or high-angle reverse fault
- Strike-slip fault
- Thrust fault
- Anticlinal fold
- Synclinal fold
- Monoclinal fold
- Plunge direction of fold
- Fault section marker

DETAILED STUDY SITES
- 731-2 Trench site
- 781-2 Subduction zone study site

CULTURAL AND GEOGRAPHIC FEATURES
- Divided highway
- Primary or secondary road
- Permanent river or stream
- Intermittent river or stream
- Permanent or intermittent lake



Index of 1° x 2° topographic map sheets for Oregon

DATA ON SUSPECT (CLASS C) FAULTS AND FOLDS IN OREGON

Name of structure	Reason for exclusion
Unnamed feature near Applegate	No evidence of Quaternary offset
Unnamed features in Camas Valley	No evidence of Quaternary offset
Unnamed faults on Cedar Mountain	No evidence of Quaternary offset
Unnamed fault southeast of Condon	No evidence of Quaternary offset
Unnamed features near Drews Reservoir	No evidence of Quaternary offset
Firn Hill fault zone	No evidence of Quaternary offset; reported scarps probably caused by differential erosion
Fulmar fault	No evidence of Quaternary offset on seafloor
Unnamed feature near Grants Pass	No evidence of Quaternary offset
Harrisburg anticline	No geomorphic expression; no unequivocal evidence of Quaternary deformation
Unnamed faults near Ireland Flat	No evidence of Quaternary offset
Limekiln fault	No evidence of Quaternary offset
Mount Hood fault	No evidence of Quaternary offset
Pony Slough faults	No geomorphic expression; no unequivocal evidence of Quaternary deformation
Salmon River fault zone	No evidence of Quaternary offset
Sandy River fault zone	No evidence of Quaternary offset
Sherwood/Lake Oswego fault	No evidence of Quaternary offset
Swan Island fault	No geomorphic expression; no unequivocal evidence of Quaternary deformation
Unnamed faults near Wagontire Mountain	No evidence of Quaternary offset

DATA ON QUATERNARY FAULTS AND FOLDS IN OREGON

Abbreviations: ka, thousands of years ago; Ma, millions of years ago; —, not reported or not applicable. Fault numbers not used on map or in database are 783, 792, 800, 815, 816, 818, 825, 848, 849, 859, 860, 861 and 865.

Fault Number	Name of structure	Most recent event	Slip rate (mm/yr)	Length, end to end (km)	Length, cumulative (km)	Azimuth (average)	Fault type
580	**Faults near The Dalles**	<1.6 Ma	<0.2	54.3	96.7	N 38° W	Dextral, Normal, Thrust
708	**Unnamed faults near Jaussaud Creek**	<750 ka	<0.2	5.8	11.1	N 18° E	Normal
709	**South Grande Ronde Valley faults**	<750 ka	<0.2	20.1	98.3	N 39° W	Normal
710	**Ukiah Valley faults**	<750 ka	<0.2	32.0	56.7	N 61° W	Normal
711	**Sumpter Valley faults**	<750 ka	<0.2	12.3	22.3	N 44° W	Normal
712	**Unnamed East Baker Valley faults**	<1.6 Ma	<0.2	27.3	30.2	N 40° W	Normal
713	**Powder River Peninsula fault zone**	<15 ka	<0.2	5.4	16.9	N 28° W	Normal-Sinistral
714	**Helvetia fault**	<1.6 Ma	<0.2	7.4	7.4	N 26° W	Normal?, Reverse?, Dextral?
715	**Beaverton fault zone**	<750 ka	<0.2	14.7	15.1	N 86° E	Normal?, Reverse?
716	**Canby-Molalla fault**	<15 ka	<0.2	50.0	52.5	N 34° W	Dextral-Reverse?
717	**Newberg fault**	<1.6 Ma	<0.2	5.0	5.0	N 42° W	Dextral-Reverse
718	**Gales Creek fault zone**	<1.6 Ma	<0.2	72.7	152.1	N 41° W	Dextral-Reverse
719	**Salem-Eola Hills homocline**	<1.6 Ma	<0.2	31.2	34.3	N 26° W	Monocline
781	**Cascadia subduction zone**	<15 ka	>5	>535.6	>547.1	N 28° W	Thrust
782	**Blanco transform fault zone**	<15 ka	>5	>106.5	>362.6	N 11° E	Dextral-Normal, Normal, Thrust
784	**Cascadia fold and thrust belt**	<15 ka	1-5	>483.4	>3188.0	N 30° W	Anticline, Syncline, Thrust
785	**Unnamed offshore faults**	<15 ka	1-5	>196.3	>334.6	N 11° W	Sinistral, Dextral, Reverse, Normal
786	**Stonewall anticline**	<15 ka	1-5	80.2	124.9	N 13° W	Anticline, Reverse?
787	**Bald Mountain-Big Lagoon fault zone**	<130 ka	0.2-1	95.0	96.7	N 27° W	Thrust or Reverse
788	**Fault "J"**	<15 ka	1-5	7.6	10.5	N 69° W	Normal, Sinistral?
789	**Nehalem Bank fault**	<15 ka	1-5	101.0	113.2	N 15° W	Dextral, Reverse
790	**Fault "H"**	<15 ka	>5	48.7	81.3	N 49° W	Normal, Sinistral?
791	**Fault "G"**	<15 ka	>5	56.7	138.3	N 74° W	Sinistral
793	**Thompson Ridge fault**	<15 ka	>5	48.6	34.5	N 56° W	Sinistral
794	**Coos Basin fault**	<15 ka	>5	35.4	67.5	N 74° W	Sinistral
795	**Heceta Bank structure**	<15 ka	>5	18.2	18.2	N 58° W	Sinistral?, Monocline?
796	**Heceta South fault**	<15 ka	>5	60.3	84.3	N 54° W	Sinistral
797	**Alvin Canyon fault**	<15 ka	>5	71.2	60.0	N 68° W	Sinistral
798	**Daisy Bank fault**	<15 ka	>5	80.1	91.0	N 63° W	Sinistral
799	**Wecoma fault**	<15 ka	>5	96.0	178.5	N 66° W	Sinistral
801	**Wallowa fault**	<750 ka	<0.2	56.4	118.8	N 51° W	Normal
802	**West Grande Ronde Valley fault zone**	—	—	48.5	86.5	N 19° W	Normal
802a	Mount Emily section	<15 ka	<0.2	29.0	44.9	N 02° W	Normal
802b	La Grande section	<15 ka	<0.2	14.5	25.8	N 30° W	Normal
802c	Craig Mountain section	<15 ka	<0.2	9.6	15.7	N 49° W	Normal
803	**East Grande Ronde Valley fault zone**	<15 ka	<0.2	49.9	79.6	N 35° W	Normal
804	**West Baker Valley fault**	<130 ka	<0.2	32.6	68.5	N 54° W	Normal
805	**Juniper Mountain fault**	<15 ka	<0.2	17.4	23.8	N 81° W	Normal
806	**Cottonwood Mountain fault**	<15 ka	<0.2	41.9	69.4	N 33° W	Normal
807	**Faults near Unity Valley**	<15 ka	<0.2	46.3	151.5	N 61° W	Normal
808	**Faults near Owyhee Dam (Class B)**	<1.6 Ma	<0.2	37.4	59.5	N 13° W	Normal
809	**Pine Valley graben fault system**	—	—	35.2	57.2	N 44° W	Normal
809a	Brownlee section	<1.6 Ma	<0.2	17.1	18.9	N 45° W	Normal
809b	Halfway-Posey Valley section	<15 ka	<0.2	25.4	38.2	N 43° W	Normal
810	**Unnamed faults near Murderers Creek**	<750 ka	<0.2	10.8	15.9	N 71° W	Normal? Reverse?
811	**Unnamed fault in Fox Basin (Class B)**	<1.6 Ma	<0.2	6.1	6.1	N 64° W	Normal
812	**Unnamed fault in Logan Valley**	<750 ka	<0.2	9.4	9.4	N 57° W	Normal
813	**Unnamed fault near Polk Butte (Class B)**	<1.6 Ma	<0.2	5.5	8.6	N 80° W	Normal? Reverse?
814	**Unnamed faults northwest of Condon (Class B)**	<1.6 Ma	<0.2	21.8	43.3	N 52° W	Normal? Dextral?
817	**Unnamed faults on Dry Mountain (Class B)**	<1.6 Ma	<0.2	6.2	9.8	N 44° W	Normal
819	**Brothers fault zone**	<1.6 Ma	<0.2	62.4	56.5	N 43° W	Normal? Dextral?
820	**Unnamed faults near Diamond Craters (Class B)**	<15 ka	<0.2	4.8	7.0	N 37° W	Normal? Dextral?
821	**Donner und Blitzen fault**	<1.6 Ma	<0.2	25.8	34.0	N 18° E	Normal
822	**Unnamed fault near V lake**	<1.6 Ma	<0.2	12.8	13.0	N 69° W	Normal? Dextral?
823	**Unnamed fault near Dry Valley**	<1.6 Ma	<0.2	19.2	20.7	N 21° E	Normal
824	**Unnamed fault near Catlow Valley**	—	—	77.0	76.4	N 00°	Normal
824a	Catlow Valley section	<1.6 Ma	<0.2	55.8	61.1	N 02° W	Normal
824b	Hawksy Walksy Valley section	<1.6 Ma	<0.2	11.3	15.4	N 08° E	Normal
826	**Guano Valley faults**	<1.6 Ma	<0.2	49.2	130.3	N 09° E	Normal, Normal-Dextral
827	**Warner Valley faults**	—	—	132.0	259.8	N 09° E	Normal
827a	East Warner Valley section	<15 ka	<0.2	89.0	135.2	N 09° E	Normal
827b	West Warner Valley section	<1.6 Ma	<0.2	42.1	45.8	N 03° E	Normal
827c	Coleman Valley section	<1.6 Ma	<0.2	43.5	78.8	N 07° W	Normal
828	**Goose Lake graben faults**	<750 ka	<0.2	55.4	107.2	N 09° W	Normal
829	**Abert Rim fault**	—	—	77.1	84.8	N 15° E	Normal
829a	Lake Abert section	<15 ka	0.2-1	41.5	46.8	N 14° E	Normal
829b	Northern section	<1.6 Ma	<0.2	35.4	38.0	N 17° E	Normal
830	**Unnamed faults north of Abert Lake**	<750 ka	<0.2	28.6	86.2	N 36° W	Normal
831	**Winter Rim fault system**	—	—	57.9	122.3	N 38° W	Normal
831a	Slide Mountain section	<15 ka	0.2-1	32.8	75.8	N 57° W	Normal
831b	Winter Ridge section	<15 ka	0.2-1	25.9	38.2	N 04° W	Normal
831c	Ana River section	<15 ka	0.2-1	7.5	8.4	N 15° W	Normal
832	**Faults east of Summer Lake**	<750 ka	<0.2	62.1	96.7	N 16° W	Normal
833	**Faults north of Summer Lake**	<750 ka	<0.2	25.7	270.6	N 10° W	Normal
834	**Paulina Marsh fault**	<15 ka	0.2-1	34.6	131.0	N 25° W	Normal, Sinistral?
835	**Southeast Newberry fault zone**	<15 ka	0.2-1	66.3	204.5	N 34° W	Normal-Sinistral
836	**Unnamed fault near Antelope Mountain**	<1.6 Ma	<0.2	37.6	80.3	N 36° W	Normal
837	**Southwest Newberry fault zone**	<750 ka	<0.2	35.6	121.9	N 41° E	Normal
838	**La Pine graben faults**	<130 ka	<0.2	45.6	149.3	N 20° E	Normal
839	**Chemult graben fault system**	—	—	69.6	514.6	N 07° E	Normal
839a	Western section	<130 ka	<0.2	48.8	226.0	N 14° E	Normal
839b	Walker Rim section	<750 ka	<0.2	60.4	288.5	N 01° E	Normal
840	**Faults on the Modoc Plateau**	<1.6 Ma	<0.2	39.5	83.5	N 20° W	Normal
841	**Unnamed faults near Millican Valley**	<750 ka	<0.2	39.7	50.9	N 54° W	Normal
842	**Unnamed faults near Kiwa Butte**	<1.6 Ma	<0.2	6.9	5.1	N 45° W	Unknown
843	**Klamath graben fault system**	—	—	147.7	446.6	N 17° W	Normal
843a	West Klamath Lake section	<15 ka	0.2-1	90.6	220.5	N 05° W	Normal
843b	East Klamath Lake section	<1.6 Ma	<0.2	25.3	25.7	N 15° W	Normal
843c	South Klamath Lake section	<15 ka	0.2-1	59.3	200.4	N 31° W	Normal
844	**Sky Lakes fault zone**	<15 ka	<0.2	77.3	198.3	N 18° W	Normal
845	**Hite fault system**	—	—	140.7	184.0	N 20° E	Sinistral-Normal
845a	Hite section	<1.6 Ma	<0.2	87.0	90.0	N 27° E	Sinistral-Normal
845b	Kooskooskie section	<750 ka	<0.2	18.9	18.9	N 00°	Sinistral-Normal
845c	Thorn Hollow section	<130 ka	<0.2	44.0	45.5	N 10° E	Sinistral-Normal
845d	Agency section	<1.6 Ma	<0.2	27.9	29.4	N 26° E	Sinistral-Normal
846	**Wallula fault system**	<15 ka	<0.2	62.9	160.2	N 53° W	Dextral? Reverse? Normal?
847	**Arlington-Shutler Butte fault**	<750 ka	<0.2	52.2	53.4	N 43° W	Dextral? Normal?
850	**Unnamed faults near Tygh Ridge (Class B)**	<1.6 Ma	<0.2	26.3	31.7	N 83° E	Reverse or Thrust, Dextral
851	**Warm Springs fault zone**	<750 ka	<0.2	31.7	115.3	N 03° E	Normal
852	**Sisters fault zone**	<130 ka	<0.2	52.9	131.5	N 26° W	Normal, Normal-Dextral?
853	**Metolius fault zone**	—	—	93.6	155.9	N 22° W	Normal-Dexral?
853a	Green Ridge section	<750 ka	<0.2	29.4	50.2	N 11° W	Normal-Dextral?
853b	Rimrock-Tumalo section	<750 ka	<0.2	44.7	56.6	N 29° W	Normal-Dextral?
853c	Northwest Rift zone section	<15 ka	<0.2	42.9	49.1	N 26° W	Normal-Dextral?
854	**Unnamed faults NE of Diamond Lake**	<750 ka	<0.2	44.4	39.6	N 00°	Normal
855	**Unnamed fault zone near Blue Mountain**	<1.6 Ma	<0.2	8.7	6.7	N 23° W	Normal
856	**Steens fault zone**	—	—	192.1	264.7	N 11° E	Normal
856a	Crowley section	<750 ka	<0.2	42.6	27.5	N 39° E	Normal
856b	Mann Lake section	<750 ka	<0.2	42.8	42.6	N 29° E	Normal
856c	Alvord section	<15 ka	0.2-1	36.1	69.3	N 01° W	Normal
856d	Fields section	<15 ka	<0.2	15.6	23.0	N 13° E	Normal
856e	Tum Tum section	<750 ka	<0.2	18.4	17.5	N 24° W	Normal
856f	Denio section	<15 ka	0.2-1	37.3	84.8	N 09° E	Normal
857	**Mickey Basin faults**	<15 ka	<0.2	8.1	18.0	N 33° E	Normal
858	**Tule Springs Rims fault**	<750 ka	<0.2	33.4	33.5	N 11° E	Normal
862	**Unnamed faults near Sutherlin (Class B)**	<750 ka	<0.2	27.7	34.5	N 49° E	Normal?
863	**Upper Willamette River fault zone (Class B)**	<1.6 Ma	<0.2	44.0	50.8	N 52° W	Dextral?
864	**Clackamas River fault zone**	<1.6 Ma	<0.2	28.6	92.9	N 19° W	Dextral, Normal
866	**Hood River fault zone**	<1.6 Ma	<0.2	44.3	80.8	N 11° W	Normal, Dextral?
867	**Eagle Creek thrust fault (Class B)**	<1.6 Ma	<0.2	8.1	9.0	N 44° E	Thrust
868	**Bull Run thrust fault (Class B)**	<1.6 Ma	<0.2	9.4	9.5	N 44° E	Thrust
869	**Corvallis fault zone (Class B)**	<1.6 Ma	<0.2	40.4	44.6	N 33° E	Thrust, Sinistral?
870	**Owl Creek fault**	<750 ka	<0.2	14.9	14.9	N 05° E	Reverse
871	**Mill Creek fault**	<1.6 Ma	<0.2	18.4	20.1	N 66° E	Reverse-Sinistral?
872	**Waldo Hills fault**	<1.6 Ma	<0.2	11.8	11.8	N 45° E	Normal?, Reverse?
873	**Mount Angel fault**	<15 ka	<0.2	29.7	30.4	N 43° W	Reverse-Dextral
874	**Bolton fault (Class B)**	<1.6 Ma	<0.2	8.8	9.2	N 53° W	Reverse-Dextral
875	**Oatfield fault**	<1.6 Ma	<0.2	28.7	27.3	N 41° W	Reverse-Dextral
876	**East Bank fault**	<15 ka	<0.2	28.9	29.0	N 46° W	Reverse-Dextral
877	**Portland Hills fault**	<1.6 Ma	<0.2	49.3	50.4	N 37° W	Reverse-Dextral? Thrust?
878	**Grant Butte fault**	<750 ka	<0.2	9.9	16.6	N 77° E	Normal
879	**Damascus-Tickle Creek fault zone**	<750 ka	<0.2	16.7	83.8	N 00°	Dextral-Reverse
880	**Lacamas Lake fault**	<750 ka	<0.2	23.7	23.8	N 43° W	Dextral-Normal? or Reverse?
881	**Tillamook Bay fault zone**	<1.6 Ma	<0.2	31.8	47.6	N 56° W	Reverse-Sinistral
882	**Happy Camp fault**	<1.6 Ma	<0.2	3.3	3.4	N 73° W	Thrust
883	**Siletz Bay faults**	<130 ka	<0.2	11.6	10.0	N 73° W	Normal? Reverse?
884	**Cape Foulweather fault**	<130 ka	0.2-1	10.4	10.8	N 69° E	Reverse? Sinistral?
885	**Yaquina faults**	<130 ka	0.2-1	12.7	18.5	N 79° E	Reverse? Sinistral?
886	**Waldport faults**	<130 ka	<0.2	14.5	18.9	N 13° E	Normal? Reverse? Sinistral?
887	**Unnamed Siuslaw River anticline**	<750 ka	0.2-1	11.6	21.0	N 10° W	Anticline
888	**Sunset Bay-Cape Arago folds and faults**	<130 ka	0.2-1	4.2	9.5	N 52° W	Dextral Normal? Reverse?
889	**East South Slough faults**	<750 ka	<0.2	7.8	14.1	N 70° W	Reverse? Sinistral?
890	**South Slough thrust and reverse faults**	<130 ka	<0.2	13.3	62.0	N 08° E	Reverse, Thrust
891	**South Slough syncline**	<15 ka	0.2-1	17.2	17.3	N 07° W	Syncline
892	**Pioneer anticline**	<130 ka	0.2-1	13.8	24.8	N 33° W	Anticline
893	**Coquille fault**	<15 ka	0.2-1	27.1	28.3	N 30° W	Reverse?
894	**Cape Blanco anticline**	<15 ka	0.2-1	8.1	8.1	N 74° W	Anticline, Reverse or Thrust?
895	**Beaver Creek fault zone**	<130 ka	0.2-1	17.0	33.2	N 65° E	Normal
896	**Battle Rock fault zone**	<750 ka	<0.2	48.0	48.7	N 16° W	Normal Dextral?
897	**Whaleshead fault zone**	<130 ka	0.2-1	43.0	139.0	N 12° W	Dextral, Sinistral
898	**Chetco River fault**	<130 ka	0.2-1	5.6	7.8	N 05° W	Reverse? Dextral?
1490	**East Pueblo Valley fault zone**	<130 ka	<0.2	28.1	58.3	N 17° E	Normal
1507	**Hoppin Peaks fault zone**	—	—	91.1	140.1	N 01° E	Normal
1507a	Oregon Canyon Mountains section	<750 ka	<0.2	44.0	54.2	N 16° W	Normal
1507b	Hoppin Peaks section	<130 ka	<0.2	54.9	85.9	N 12° E	Normal
1508	**Santa Rosa Range fault system**	—	—	127.6	374.3	N 11° E	Normal
1508a	Owyhee River section	<15 ka	<0.2	46.7	112.4	N 48° E	Normal
1508b	Quinn River section	<15 ka	<0.2	57.5	192.6	N 07° W	Normal
1508c	Santa Rosa Peak section	<15 ka	<0.2	27.8	69.4	N 01° E	Normal
1800	**Unnamed Sheepshead Mountains faults**	<1.6 Ma	<0.2	28.7	77.6	N 12° E	Normal
1801	**Warm Springs fault**	<1.6 Ma	<0.2	8.7	16.3	N 16° W	Normal
1802	**Harney fault**	<750 ka	<0.2	29.5	30.6	N 02° W	Normal
1803	**Unnamed East Christmas Lake Valley faults**	<1.6 Ma	<0.2	41.9	62.2	N 24° W	Normal, Dextral?
1804	**Unnamed fault east of the Dust Bowl**	<750 ka	<0.2	14.1	12.6	N 14° W	Normal
1805	**Unnamed faults near Arrowwood Point (Class B)**	<750 ka	<0.2	13.1	15.4	N 68° W	Normal
1806	**Newberry volcano ring faults (Class B)**	<15 ka	<0.2	7.6	26.5	N 16° W	Normal
1807	**Mount Mazama ring faults (Class B)**	<15 ka	<0.2	8.0	27.1	N 87° W	Normal
1808	**Unnamed fault near Lookout Butte**	<1.6 Ma	<0.2	8.1	8.2	N 19° E	Normal
1809	**White Branch fault zone**	<750 ka	<0.2	18.3	18.6	N 06° E	Normal

A Project of International Lithosphere Program Task Group II-2, Major Active Faults of the World
Project coordination by Michael N. Machette (Co-chairman, ILP Task Group II-2)

A PDF file for this map is available at http://pubs.usgs.gov/of/2003/ofr-03-095/

Facility Tracking Data:

Site Unique ID	Site_Type	Public K12 District_Name	Individual Public K12 Facility Name	Address	City	ZIP	County	USGS Seismic Zone	Field Plaque	Estimate Decade	ODE Yr Built	Facility Sq Ft	Students Enrolled	NEHRP Soil	Primary 1 Type	1 RVS	Secondary 2 Type	2 RVS	Tertiary 3 Type	3 RVS	Type Final	F RVS	FEMA 154-Based Collapse Potential	Site Summary Report link
Bake_fir01	Fire - City	City of Unity	Unity Fire Department	311 Main	Unity	97884	Baker	Moderate		1970				D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_fir01.pdf
Bake_fir02	Fire - City	City of Baker City	Baker City Fire	1616 2nd St	Baker City	97814	Baker	Moderate	1980	1980	1980			D	PC1	1.7					PC1	1.7	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_fir02.pdf
Bake_fir03	Fire - RFPD	Pine Valley RFPD	Pine Valley RFPD	125 W Record St	Halfway	97834	Baker	Moderate		1960	1960	7,840		D	RM1	1.9	W1	4.1			RM1	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_fir03.pdf
Bake_fir06	Fire - City	City of Huntington	Huntington VFD	50 E Adams St	Huntington	97907	Baker	Moderate		1950				C	URM	2.5					URM	2.5	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_fir06.pdf
Bake_fir12	Fire - RFPD	Eagle Valley RFPD	Eagle Valley Fire Dept	89 Main St	Richland	97870	Baker	Moderate		1960				D	RM1	1.9					RM1	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_fir12.pdf
Bake_fir13	Fire - City	City of Sumpter	Sumpter FD	240 N Mill St	Sumpter	97877	Baker	Moderate		1970				C	W2	0.5					W2	0.5	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_fir13.pdf
Bake_fir14	Fire - RFPD	Mosquito Flat North RFPD	Mosquito Flat North RFPD	39744 Sumpter Valley Hwy	Sumpter	97877	Baker	Moderate		1990				B	S3	3.8					S3	3.8	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_fir14.pdf
Bake_hos01	Hospital	Catholic Health Initiatives NFP	St. Elizabeth Hospital - Ba	3325 Pocahontas Rd	Baker City	97814	Baker	Moderate		1970	1987			D	PC1	1.7					PC1	1.7	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_hos01.pdf
Bake_hos01	Hospital	Catholic Health Initiatives NFP	St. Elizabeth Hospital - Ba	3325 Pocahontas Rd	Baker City	97814	Baker	Moderate	1987	1980	1987			D	W2	4.7	RM1	1.9			RM1	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_hos01.pdf
Bake_pol01	Police - State	Oregon State Police	OSP - Baker City	1050 S Bridge St	Baker City	97814	Baker	Moderate		1950	1930	435,600		D	W2	3.1	RM1	1.9			RM1	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_pol01.pdf
Bake_pol02	EOC-Public Safety Answering Point - County	Baker County	Baker County Sheriff's Off	3410 K Street	Baker City	97814	Baker	Moderate		1970	1990			D	RM1	1.9					RM1	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_pol02.pdf
Bake_pol03	Fire - City	City of Baker City	Baker City Police Dept	1655 1st St	Baker City	97814	Baker	Moderate		1910	1910			D	RM1	1.5					RM1	1.5	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_pol03.pdf
Bake_sch01	School	Baker SD 5J	North Baker Elementary S	2725 Seventh St	Baker City	97814	Baker	Moderate		1910	1913	36,302	298	D	URM	0.2					URM	0.2	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch01.pdf
Bake_sch01	School	Baker SD 5J	North Baker Elementary S	2725 Seventh St	Baker City	97814	Baker	Moderate		1970	1913	36,302	298	D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch01.pdf
Bake_sch02	School	Baker SD 5J	South Baker Elementary S	1285 Third St	Baker City	97814	Baker	Moderate	1953	1950	1953	34,200	283	D	W2	0.1	C2	(0.1)	RM1	(0.1)	C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch02.pdf
Bake_sch02	School	Baker SD 5J	South Baker Elementary S	1285 Third St	Baker City	97814	Baker	Moderate		1970	1953	34,200	283	D	W2	3.1	RM1	1.9			RM1	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch02.pdf
Bake_sch03	School	Baker SD 5J	Baker High School	2500 E St	Baker City	97814	Baker	Moderate	1991	1990	1950	126,904	647	D	W2	1.7					W2	1.7	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch03.pdf
Bake_sch03	School	Baker SD 5J	Baker High School	2500 E St	Baker City	97814	Baker	Moderate		1980	1950	126,904	647	D	W2	1.7					W2	1.7	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch03.pdf
Bake_sch03	School	Baker SD 5J	Baker High School	2500 E St	Baker City	97814	Baker	Moderate		1960	1950	126,904	647	D	C2	(0.1)					C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch03.pdf
Bake_sch03	School	Baker SD 5J	Baker High School	2500 E St	Baker City	97814	Baker	Moderate		1950	1950	126,904	647	D	C2	(0.1)					C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch03.pdf
Bake_sch03	School	Baker SD 5J	Baker High School	2500 E St	Baker City	97814	Baker	Moderate		1950	1950	126,904	647	D	C2	1.9					C2	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch03.pdf
Bake_sch03	School	Baker SD 5J	Baker High School	2500 E St	Baker City	97814	Baker	Moderate		1960	1950	126,904	647	D	C2	1.9					C2	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch03.pdf
Bake_sch04	School	Pine Eagle SD 61	Halfway Elementary Scho	150 W Bell St	Halfway	97834	Baker	Moderate		1960	1945	35,600	94	D	W2	0.1					W2	0.1	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch04.pdf
Bake_sch04	School	Pine Eagle SD 61	Halfway Elementary Scho	150 W Bell St	Halfway	97834	Baker	Moderate		1970	1945	35,600	94	D	W2	3.1					W2	3.1	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch04.pdf
Bake_sch05	School	Pine Eagle SD 61	Pine Eagle High School	375A N Main St	Halfway	97834	Baker	Moderate		1960	1967	38,700	74	D	PC2	0.0	C1	(0.5)			C1	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch05.pdf
Bake_sch05	School	Pine Eagle SD 61	Pine Eagle High School	375A N Main St	Halfway	97834	Baker	Moderate		1960	1967	38,700	74	D	PC2	2.0	C1	2.0	RM1	2.4	PC2	2.0	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch05.pdf
Bake_sch06	School	Baker SD 5J	Baker Middle School	2090 4th St	Baker City	97814	Baker	Moderate		1920	1916	54,000	350	D	URM	0.2					URM	0.2	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch06.pdf
Bake_sch06	School	Baker SD 5J	Baker Middle School	2320 Washington Ave	Baker City	97814	Baker	Moderate	1916	1910	1916	54,000	350	D	URM	0.2					URM	0.2	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch06.pdf
Bake_sch07	School	Baker SD 5J	Brooklyn Elementary Scho	1350 Washington St	Baker City	97814	Baker	Moderate	1955	1950	1955	32,812	316	D	W2	0.1	C2	(0.1)	RM1	(0.1)	C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch07.pdf
Bake_sch08	School	Baker SD 5J	Haines Elementary Schoo	2090 4th St	Haines	97814	Baker	Moderate		1910	1911	17,500	75	D	URM	0.7					URM	0.7	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch08.pdf
Bake_sch09	School	Burnt River SD 30J	Burnt River School	PO Box 8 Highway 26	Unity	97884	Baker	Moderate		1960	1968	55,000	76	D	W2	0.1	RM1	(0.1)			RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch09.pdf
Bake_sch09	School	Burnt River SD 30J	Burnt River School	PO Box 8 Highway 26	Unity	97884	Baker	Moderate		1960	1968	55,000	76	D	W2	3.6					W2	3.6	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch09.pdf
Bake_sch09	School	Burnt River SD 30J	Burnt River School	PO Box 8 Highway 26	Unity	97884	Baker	Moderate		1970	1968	55,000	76	D	RM1	1.9					RM1	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Bake_sch09.pdf
Gran_fir02	Fire - City	City of Mt Vernon	Mount Vernon Fire Depart	199 W Main	Mount Vernon	97865	Grant	Moderate		1950				C	W1	4.5					W1	4.5	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_fir02.pdf
Gran_fir03	Fire - City	City of Canyon City	Canyon City VFD	123 S Washington St	Canyon City	97820	Grant	Moderate		1960				B	RM1	3.1					RM1	3.1	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_fir03.pdf
Gran_fir04	Fire - City	City of Seneca	Seneca Volunteer FD	106 A Avenue	Seneca	97873	Grant	Moderate		1950				D	W1	0.6	RM1	(0.1)			RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_fir04.pdf
Gran_fir05	Fire - City	City of John Day	John Day Fire Departmen	209 SE Dayton	John Day	97845	Grant	Moderate		1940				D	RM1	(0.5)	C2	(0.5)			RM1	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_fir05.pdf
Gran_fir05	Fire - City	City of John Day	John Day Fire Departmen	209 SE Dayton	John Day	97845	Grant	Moderate		1950				D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_fir05.pdf
Gran_fir06	Fire - RFPD	Long Creek FD	Long Creek FD	250 Hardisty St	Long Creek	97856	Grant	Moderate		1980				C	RM1	0.3					RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_fir06.pdf
Gran_fir06	Fire - RFPD	Long Creek FD	Long Creek FD	250 Hardisty St	Long Creek	97856	Grant	Moderate		1950				C	RM1	0.3					RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_fir06.pdf
Gran_fir07	Fire - City	City of Prairie City	Prairie City FD and Police	133 S Bridge St	Prairie City	97869	Grant	Moderate	1978	1970	1978			C	RM1	0.3					RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_fir07.pdf
Gran_fir08	Fire - City	City of Dayville	Dayville Fire	155 School House Dr.	Dayville	97828	Grant	Moderate		1940				C	RM1	1.9					RM1	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_fir08.pdf
Gran_hos01	Hospital	NFP (BM Hospital District)	Blue Mountain Hospital - J	170 Ford Rd	John Day	97845	Grant	Moderate		1960	2003			C	RM1	0.3	C2	0.3			RM1	0.3	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_hos01.pdf
Gran_pol01	Police - State	Oregon State Police	OSP	420 W Main St.	John Day	97845	Grant	Moderate		1960				D	C2	0.4					C2	0.4	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_pol01.pdf
Gran_pol02	Police - County	Grant County	Grant County Sheriff	205 S Humbolt St	Canyon City	97820	Grant	Moderate			1997			B									Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_pol02.pdf
Gran_pol04	Police - City	City of John Day	John Day Police Dept	450 E Main St.	John Day	97845	Grant	Moderate		1950				C	W1	1.0	RM1	0.3			RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_pol04.pdf
Gran_sch01	School	Long Creek SD 17	Long Creek School	375 E Main St.	Long Creek	97856	Grant	Moderate		1950	1971	11,885	50	C	RM1	0.3					RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch01.pdf
Gran_sch01	School	Long Creek SD 17	Long Creek School	375 E Main St.	Long Creek	97856	Grant	Moderate		1960	1971	11,885	50	C	W2	0.5					W2	0.5	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch01.pdf
Gran_sch01	School	Long Creek SD 17	Long Creek School	375 E Main St.	Long Creek	97856	Grant	Moderate		1960	1971	11,885	50	C	RM1	0.3	S3	2.7			RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch01.pdf
Gran_sch02	School	Prairie City SD 4	Prairie City School	740 Overholt St	Prairie City	97869	Grant	Moderate		1920	1929	13,356	157	D	URM	0.2					URM	0.2	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch02.pdf
Gran_sch02	School	Prairie City SD 4	Prairie City School	740 Overholt St	Prairie City	97869	Grant	Moderate		1940	1929	13,356	157	D	W2	(0.1)					W2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch02.pdf
Gran_sch02	School	Prairie City SD 4	Prairie City School	740 Overholt St	Prairie City	97869	Grant	Moderate		1930	1929	13,356	157	D	W2	2.9					W2	2.9	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch02.pdf
Gran_sch02	School	Prairie City SD 4	Prairie City School	740 Overholt St	Prairie City	97869	Grant	Moderate		1960	1929	13,356	157	D	W2	0.1	RM1	(0.1)			RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch02.pdf
Gran_sch02	School	Prairie City SD 4	Prairie City School	740 Overholt St	Prairie City	97869	Grant	Moderate		1970	1929	13,356	157	D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch02.pdf
Gran_sch02	School	Prairie City SD 4	Prairie City School	740 Overholt St	Prairie City	97869	Grant	Moderate		1980	1929	13,356	157	D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch02.pdf
Gran_sch02	School	Prairie City SD 4	Prairie City School	740 Overholt St	Prairie City	97869	Grant	Moderate		1980	1929	13,356	157	D	S3	2.3					S3	2.3	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch02.pdf
Gran_sch03	School	Dayville SD 16J	Dayville School	285 School House Dr	Dayville	97825	Grant	Moderate	1924	1920	1924	5,825	58	C	URM	2.1					URM	2.1	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch03.pdf
Gran_sch03	School	Dayville SD 16J	Dayville School	285 School House Dr	Dayville	97825	Grant	Moderate		1950	1924	5,825	58	C	RM1	0.8					RM1	0.8	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch03.pdf
Gran_sch03	School	Dayville SD 16J	Dayville School	285 School House Dr	Dayville	97825	Grant	Moderate		1960	1924	5,825	58	C	RM1	2.3					RM1	2.3	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch03.pdf
Gran_sch04	School	John Day SD 3	Mount Vernon Middle Sch	35 School Ln	Mount Vernon	97865	Grant	Moderate		1910	1916	28,990	163	C	W2	0.3					W2	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch04.pdf
Gran_sch04	School	John Day SD 3	Mount Vernon Middle Sch	35 School Ln	Mount Vernon	97865	Grant	Moderate		1940	1916	28,990	163	C	C2	(0.1)	RM1	(0.1)			C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch04.pdf
Gran_sch04	School	John Day SD 3	Mount Vernon Middle Sch	35 School Ln	Mount Vernon	97865	Grant	Moderate		1940	1916	28,990	163	C	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch04.pdf
Gran_sch04	School	John Day SD 3	Mount Vernon Middle Sch	35 School Ln	Mount Vernon	97865	Grant	Moderate		1960	1916	28,990	163	C	RM1	0.3					RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch04.pdf
Gran_sch04	School	John Day SD 3	Mount Vernon Middle Sch	35 School Ln	Mount Vernon	97865	Grant	Moderate		1970	1916	28,990	163	C	W2	4.0					W2	4.0	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch04.pdf
Gran_sch05	School	John Day SD 3	Grant Union High School	911 S Canyon Blvd	John Day	97845	Grant	Moderate		1930	1936	82,824	275	D	C2	(0.5)	URM	0.2			C2	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch05.pdf
Gran_sch05	School	John Day SD 3	Grant Union High School	911 S Canyon Blvd	John Day	97845	Grant	Moderate		1950	1936	82,824	275	D	C2	1.9	RM1	1.9	PC1	1.7	PC1	1.7	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch05.pdf
Gran_sch05	School	John Day SD 3	Grant Union High School	911 S Canyon Blvd	John Day	97845	Grant	Moderate		1950	1936	82,824	275	D	C2	(0.1)	RM1	(0.1)			C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch05.pdf
Gran_sch05	School	John Day SD 3	Grant Union High School	911 S Canyon Blvd	John Day	97845	Grant	Moderate		1940	1936	82,824	275	D	RM1	(0.5)	C2	(0.5)			RM1	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch05.pdf
Gran_sch05	School	John Day SD 3	Grant Union High School	911 S Canyon Blvd	John Day	97845	Grant	Moderate		1970	1936	82,824	275	D	RM1	(0.1)	C2	(0.1)			RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch05.pdf
Gran_sch06	School	John Day SD 3	Humbolt Elementary Scho	329 N Humbolt St	Canyon City	97820	Grant	Moderate		1950	1956	28,990	286	D	W2	0.1	RM1	(0.1)			RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch06.pdf
Gran_sch06	School	John Day SD 3	Humbolt Elementary Scho	329 N Humbolt St	Canyon City	97820	Grant	Moderate		1960	1956	28,990	286	D	W2	3.6	RM1	2.4			RM1	2.4	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch06.pdf
Gran_sch06	School	John Day SD 3	Humbolt Elementary Scho	329 N Humbolt St	Canyon City	97820	Grant	Moderate		1970	1956	28,990	286	D	W1	4.6	RM1	2.4			RM1	2.4	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch06.pdf
Gran_sch07	School	John Day SD 3	Seneca Elementary Scho	101 Park Ave	Seneca	97873	Grant	Moderate		1930	1932	13,674	61	D	C2	(0.5)	URM	0.2			C2	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch07.pdf
Gran_sch07	School	John Day SD 3	Seneca Elementary Scho	101 Park Ave	Seneca	97873	Grant	Moderate		1940	1932	13,674	61	D	C2	0.0	RM1	0.0			C2	0.0	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch07.pdf
Gran_sch07	School	John Day SD 3	Seneca Elementary Scho	101 Park Ave	Seneca	97873	Grant	Moderate		1950	1932	13,674	61	D	S3	2.3	W2	0.1			W2	0.1	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch07.pdf
Gran_sch08	School	Monument SD 8	Monument School	127 North St	Monument	97864	Grant	Moderate		1920	1929	10,000	56	C	URM	0.6					URM	0.6	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch08.pdf
Gran_sch08	School	Monument SD 8	Monument School	127 North St	Monument	97864	Grant	Moderate		1940	1929	10,000	56	C	C2	(0.1)	RM1	(0.1)			C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch08.pdf
Gran_sch08	School	Monument SD 8	Monument School	127 North St	Monument	97864	Grant	Moderate		1950	1929	10,000	56	C	W2	1.0					W2	1.0	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch08.pdf
Gran_sch08	School	Monument SD 8	Monument School	127 North St	Monument	97864	Grant	Moderate		1980	1929	10,000	56	C	W2	5.1					W2	5.1	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Gran_sch08.pdf
Unio_fir01	Fire - City	City of La Grande	City of LaGrande	18000 Cove	Island City	97850	Union	Moderate		1910	2002	8,030		D									Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_fir01.pdf
Unio_fir02	Fire - RFPD	LaGrande RFPD	LaGrande RFPD	10200 S Mcalister Rd	La Grande	97850	Union	Moderate	1992	1990	1992	2,268		D	S3	2.3					S3	2.3	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_fir02.pdf
Unio_fir03	Fire - RFPD	Imbler RFPD	Imbler RFPD	180 Hwy 82	Imbler	97841	Union	Moderate	1977	1970	1977			D	S3	2.3					S3	2.3	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_fir03.pdf
Unio_fir04	Fire - RFPD	Imbler RFPD	Imbler RFPD	310 Patton St	Summerville	97876	Union	Moderate		1990				D	S3	2.3					S3	2.3	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_fir04.pdf
Unio_fir05	Fire - RFPD	North Powder RFPD	North Powder RFPD	919 E St	North Powder	97867	Union	Moderate		1970				D	RM1	1.9					RM1	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_fir05.pdf
Unio_fir06	Fire - RFPD	Cove RFPD	Cove RFPD	607 Main	Cove	97824	Union	Moderate		1960				B	S3	3.3	RM1	1.1			RM1	1.1	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_fir06.pdf
Unio_fir07	Fire - City	City of Union City	Union Emergency Service	570 E Beakman	Union	97883	Union	Moderate		1990	1992	6,000		D	S3	2.3					S3	2.3	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_fir07.pdf
Unio_hos01	Hospital	Private, NFP	Grande Ronde Hospital -	900 Sunset Dr	La Grande	97850	Union	Moderate		1967	1966			D	C1	(0.5)					C1	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_hos01.pdf
Unio_hos01	Hospital	Private, NFP	Grande Ronde Hospital -	900 Sunset Dr	La Grande	97850	Union	Moderate	1981	1980	1966			D	C1	(0.5)					C1	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_hos01.pdf
Unio_hos01	Hospital	Private, NFP	Grande Ronde Hospital -	900 Sunset Dr	La Grande	97850	Union	Moderate	1986	1980	1966			D	C1	(0.5)					C1	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_hos01.pdf
Unio_hos01	Hospital	Private, NFP	Grande Ronde Hospital -	900 Sunset Dr	La Grande	97850	Union	Moderate	1991	1990	1966			D	W2	1.7					W2	1.7	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_hos01.pdf
Unio_pol01	Police - City	City of Union City	Union City Police Dept	342 S Main St	Union	97883	Union	Moderate	1891	Pre 1900	1891	5,536		D	URM	0.7					URM	0.7	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_pol01.pdf
Unio_pol02	Police - State	Oregon State Police	OSP - La Grande Patrol	3014 Island Ave	La Grande	97850	Union	Moderate		1973	1973	26,596		C	W2	3.5					W2	3.5	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_pol02.pdf
Unio_pol03	EOC-Public Safety Answering Point - City	City of La Grande	La Grande City Police Dep	1109 K Ave	La Grande	97850	Union	Moderate		1980	1977			D	RM1	(0.1)	W2	1.7			RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_pol03.pdf
Unio_pol06	Police - City	City of Elgin	Elgin Police Dept	180 N 8th Ave	Elgin	97827	Union	Moderate		1980				D	W1	6.2					W1	6.2	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_pol06.pdf
Unio_sch01	School	La Grande SD 1	Willow Elementary Schoo	1305 Willow St	La Grande	97850	Union	Moderate		1920	1924	17,919	155	D	URM	0.2					URM	0.2	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch01.pdf
Unio_sch01	School	La Grande SD 1	Willow Elementary Schoo	1305 Willow St	La Grande	97850	Union	Moderate		1950	1924	17,919	155	D	C2	(0.1)	RM1	(0.1)			C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch01.pdf
Unio_sch01	School	La Grande SD 1	Willow Elementary Schoo	1305 Willow St	La Grande	97850	Union	Moderate		1950	1924	17,919	155	D	C2	(0.1)	RM1	(0.1)			C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch01.pdf
Unio_sch02	School	La Grande SD 1	La Grande Middle School	1108 4th St	La Grande	97850	Union	Moderate	1976	1970	1976	50,357	341	D	PC1	1.7					PC1	1.7	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch02.pdf
Unio_sch02	School	La Grande SD 1	La Grande Middle School	1108 4th St	La Grande	97850	Union	Moderate		1920	1976	50,357	341	D	URM	0.7					URM	0.7	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch02.pdf

Unio_sch03	School	La Grande SD 1	La Grande High School	708 K Ave	La Grande	97850	Union	Moderate		1950	1951	162,327	761	D	C2	(0.1)	RM1	(0.1)			C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch03.pdf
Unio_sch03	School	La Grande SD 1	La Grande High School	708 K Ave	La Grande	97850	Union	Moderate		1970	1951	162,327	761	D	C2	(0.1)	PC1	1.7	C1	(0.5)	C1	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch03.pdf
Unio_sch03	School	La Grande SD 1	La Grande High School	708 K Ave	La Grande	97850	Union	Moderate		1950	1951	162,327	761	D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch03.pdf
Unio_sch03	School	La Grande SD 1	La Grande High School	708 K Ave	La Grande	97850	Union	Moderate		1970	1951	162,327	761	D	PC1	1.7	S1	0.1			S1	0.1	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch03.pdf
Unio_sch03	School	La Grande SD 1	La Grande High School	708 K Ave	La Grande	97850	Union	Moderate		1990	1951	162,327	761	D	S3	2.8	RM1	2.4			RM1	2.4	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch03.pdf
Unio_sch04	School	Union SD 5	Union Elementary School	166 W Dearborn St	Union	97883	Union	Moderate		1950	1929	48,303	240	C	W2	0.5					W2	0.5	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch04.pdf
Unio_sch04	School	Union SD 5	Union Elementary School	166 W Dearborn St	Union	97883	Union	Moderate		1960	1929		240	C	RM1	0.3	W2	0.5			RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch04.pdf
Unio_sch04	School	Union SD 5	Union Elementary School	340 1st St	Union	97883	Union	Moderate		1930	1929		240	C	C2	1.9	URM	2.1			C2	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch04.pdf
Unio_sch05	School	Union SD 5	Union High School	540 S Main St	Union	97883	Union	Moderate		1910	1905	53,385	218	C	URM	0.6					URM	0.6	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch05.pdf
Unio_sch05	School	Union SD 5	Union High School	540 S Main St	Union	97883	Union	Moderate		1940	1905	53,385	218	C	C2	(0.1)	RM1	(0.1)			C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch05.pdf
Unio_sch06	School	Imbler SD 11	Imbler High School	6th St and Esther Ave	Imbler	97841	Union	Moderate		1910	1977		147	D	URM	0.2					URM	0.2	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch06.pdf
Unio_sch06	School	Imbler SD 11	Imbler High School	6th St and Esther Ave	Imbler	97841	Union	Moderate		1930	1977		147	D	W2	(0.1)					W2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch06.pdf
Unio_sch06	School	Imbler SD 11	Imbler High School	6th St and Esther Ave	Imbler	97841	Union	Moderate		1950	1977		147	D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch06.pdf
Unio_sch06	School	Imbler SD 11	Imbler High School	6th St and Esther Ave	Imbler	97841	Union	Moderate		1950	1977		160	D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch06.pdf
Unio_sch08	School	Elgin SD 23	Stella Mayfield Elementar	1111 Division St	Elgin	97827	Union	Moderate		1940	1947	45,300	285	D	C2	(0.1)	RM1	(0.1)			C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch08.pdf
Unio_sch08	School	Elgin SD 23	Stella Mayfield Elementar	1111 Division St	Elgin	97827	Union	Moderate		1950	1947	45,300	285	D	C2	(0.1)	RM1	(0.1)			C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch08.pdf
Unio_sch08	School	Elgin SD 23	Stella Mayfield Elementar	1111 Division St	Elgin	97827	Union	Moderate		1960	1947	45,300	285	D	W2	0.1					W2	0.1	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch08.pdf
Unio_sch09	School	La Grande SD 1	Central Elementary Schoo	402 K Ave	La Grande	97850	Union	Moderate		1950	1960	34,690	355	C	W2	0.5	RM1	0.3			RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch09.pdf
Unio_sch10	School	North Powder SD 8J	Powder Valley School	333 G St	North Powder	97867	Union	Moderate		1910	1937	47,764	211	D	URM	0.7					URM	0.7	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch10.pdf
Unio_sch10	School	North Powder SD 8J	Powder Valley School	333 G St	North Powder	97867	Union	Moderate	1937	1930	1937	47,764	211	D	W2	0.4	C2	0.0			C2	0.0	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch10.pdf
Unio_sch10	School	North Powder SD 8J	Powder Valley School	333 G St	North Powder	97867	Union	Moderate	1955	1950	1937	47,764	211	D	RM1	(0.1)	S3	2.3			RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch10.pdf
Unio_sch10	School	North Powder SD 8J	Powder Valley School	333 G St	North Powder	97867	Union	Moderate		1960	1937	47,764	211	D	W2	0.1					W2	0.1	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch10.pdf
Unio_sch11	School	Cove SD 15	Cove School	803 Main St	Cove	97824	Union	Moderate		1960	1935	34,801	254	D	W2	0.1					W2	0.1	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch11.pdf
Unio_sch11	School	Cove SD 15	Cove School	803 Main St	Cove	97824	Union	Moderate		1960	1935	34,801	254	D	W2	3.6					W2	3.6	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch11.pdf
Unio_sch11	School	Cove SD 15	Cove School	803 Main St	Cove	97824	Union	Moderate		1940	1935	34,801	254	D	C2	(0.5)	W2	(0.1)			C2	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch11.pdf
Unio_sch11	School	Cove SD 15	Cove School	803 Main St	Cove	97824	Union	Moderate		1980	1935	34,801	254	D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch11.pdf
Unio_sch11	School	Cove SD 15	Cove School	803 Main St	Cove	97824	Union	Moderate		1930	1935	34,801	254	D	W2	(0.1)					W2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch11.pdf
Unio_sch11	School	Cove SD 15	Cove School	803 Main St	Cove	97824	Union	Moderate		1990	1935	34,801	254	D	W2	4.7					W2	4.7	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch11.pdf
Unio_sch12	School	La Grande SD 1	Greenwood Elementary S	2300 N Spruce St	La Grande	97850	Union	Moderate		1950	1960	34,919	354	D	W2	0.1	RM1	(0.1)			RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch12.pdf
Unio_sch12	School	La Grande SD 1	Greenwood Elementary S	2300 N Spruce St	La Grande	97850	Union	Moderate		1960	1960	34,919	354	D	C2	(0.1)	RM1	(0.1)			C2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch12.pdf
Unio_sch13	School	La Grande SD 1	Island City Elementary Sc	10201 W 4th St	Island City	97850	Union	Moderate		1970	1970	25,029	222	D	W2	0.1					W2	0.1	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch13.pdf
Unio_sch13	School	La Grande SD 1	Island City Elementary Sc	10201 W 4th St	Island City	97850	Union	Moderate		1970	1970	25,029	222	D	PC1	1.7					PC1	1.7	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch13.pdf
Unio_sch14	School	Elgin SD 23	Elgin High School	1400 Birch St	Elgin	97827	Union	Moderate		1950	1957	40,000	139	D	W2	0.1	RM1	(0.1)			RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch14.pdf
Unio_sch14	School	Elgin SD 23	Elgin High School	1400 Birch St	Elgin	97827	Union	Moderate		1960	1957	40,000	139	D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Unio_sch14.pdf
Wall_eoc01	EOC-Public Safety Answering Point - County	Wallowa County	Emergency Operations C	104 West Greenwood	Enterprise	97828	Wallowa	Moderate	1909	1900	1909			D	URM	0.2					URM	0.2	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_eoc01.pdf
Wall_fir01	Fire - City	City of Joseph	Joseph Fire Dept	201 N Russell St	Joseph	97846	Wallowa	Moderate		1980				D	S3	2.8					S3	2.8	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_fir01.pdf
Wall_fir02	Fire - RFPD	Wallowa FD	Wallowa FD	104 N Pine St	Wallowa	97885	Wallowa	Moderate		1990				D	S3	2.3					S3	2.3	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_fir02.pdf
Wall_fir03	Fire - City	City of Enterprise	Enterprise Fire Departme	108 NE 1st St	Enterprise	97828	Wallowa	Moderate		1950				D	RM1	(0.1)					RM1	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_fir03.pdf
Wall_fir04	Fire - RFPD	Wallowa FD	Wallowa FD	60000 Mt Howard Ln	Joseph	97846	Wallowa	Moderate		2000				D	S3	2.3					S3	2.3	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_fir04.pdf
Wall_fir05	Fire - RFPD	Lostine VFD	Lostine VFD	128 Hwy 82	Lostine	97857	Wallowa	Moderate		1960				D	W1	0.6					W1	0.6	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_fir05.pdf
Wall_hos01	Hospital	NFP - Wallowa	Wallowa Memorial Hospit	401 Ne 1st St	Enterprise	97828	Wallowa	Moderate			2007	40,000		D									Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_hos01.pdf
Wall_pol01	Police - City	City of Enterprise	Enterprise PD	104 W Greenwood	Enterprise	97828	Wallowa	Moderate			2005			D									Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_pol01.pdf
Wall_pol02	Police - City	City of Joseph	Joseph PD	201 N Main St	Joseph	97846	Wallowa	Moderate		1940				D	C2	2.0	RM1	2.0			C2	2.0	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_pol02.pdf
Wall_pol03	Police - State	Oregon State Police	OSP	65495 Alder Slope Rd	Enterprise	97828	Wallowa	Moderate		2000				D	W1	6.2					W1	6.2	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_pol03.pdf
Wall_pol04	Police - City	City of Enterprise	Enterprise PD	104 W Greenwood	Enterprise	97828	Wallowa	Moderate			2005			D									Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_pol04.pdf
Wall_pol05	Police - County	Wallowa County	Wallowa County Sheriff's	104 W Greenwood	Enterprise	97828	Wallowa	Moderate			2005			D									Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_pol05.pdf
Wall_sch02	School	Wallowa SD 12	Wallowa Elementary Sch	315 1st St	Wallowa	97885	Wallowa	Moderate		1920	1922	43,098	143	D	URM	0.2					URM	0.2	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch02.pdf
Wall_sch02	School	Wallowa SD 12	Wallowa Elementary Sch	315 1st St	Wallowa	97885	Wallowa	Moderate		1940	1922	43,098	143	D	C2	(0.5)					C2	(0.5)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch02.pdf
Wall_sch02	School	Wallowa SD 12	Wallowa Elementary Sch	315 1st St	Wallowa	97885	Wallowa	Moderate		1950	1922	43,098	143	D	RM1	2.4					RM1	2.4	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch02.pdf
Wall_sch02	School	Wallowa SD 12	Wallowa Elementary Sch	315 1st St	Wallowa	97885	Wallowa	Moderate		1940	1922	43,098	143	D	W2	(0.1)					W2	(0.1)	Very High (100%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch02.pdf
Wall_sch02	School	Wallowa SD 12	Wallowa Elementary Sch	315 1st St	Wallowa	97885	Wallowa	Moderate		1950	1922	43,098	143	D	W2	0.1					W2	0.1	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch02.pdf
Wall_sch04	School	Enterprise SD 21	Enterprise High School	201 Se 4th St	Enterprise	97828	Wallowa	Moderate	1917	1910	1917	35,293	159	C	URM	0.6					URM	0.6	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch04.pdf
Wall_sch04	School	Enterprise SD 21	Enterprise High School	201 Se 4th St	Enterprise	97828	Wallowa	Moderate		1950	1917	35,293	159	C	RM1	0.3					RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch04.pdf
Wall_sch04	School	Enterprise SD 21	Enterprise High School	201 Se 4th St	Enterprise	97828	Wallowa	Moderate		1950	1917	35,293	159	C	RM1	0.3					RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch04.pdf
Wall_sch04	School	Enterprise SD 21	Enterprise High School	201 Se 4th St	Enterprise	97828	Wallowa	Moderate		1970	1917	35,293	159	C	RM1	0.3					RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch04.pdf
Wall_sch04	School	Enterprise SD 21	Enterprise High School	201 Se 4th St	Enterprise	97828	Wallowa	Moderate		1970	1917	35,293	159	C	RM1	0.3	W2	0.5			RM1	0.3	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch04.pdf
Wall_sch06	School	Joseph SD 6	Joseph High School	400 E Williams E Williams Ave	Joseph	97846	Wallowa	Moderate		1960	1968	50,800	118	D	W2	0.1					W2	0.1	High (>10%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch06.pdf
Wall_sch06	School	Joseph SD 6	Joseph High School	400 E Williams E Williams Ave	Joseph	97846	Wallowa	Moderate		1960	1968	50,800	118	D	RM1	2.4					RM1	2.4	Low (<1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch06.pdf
Wall_sch07	School	Joseph SD 6	Joseph Elementary Schoo	201 E 2nd St.	Joseph	97846	Wallowa	Moderate		1960	1940	13,900	85	D	RM1	1.9	C2	1.9	W2	3.1	RM1	1.9	Moderate (>1%)	http://www.oregongeology.com/sub/projects/rvs/reports/Wall_sch07.pdf

From the La Grande Observer:

Published: March 3, 2001

President Bush has proposed eliminating a federal program that provides funding for disaster preparedness. The timing of the president's announcement couldn't have come at a worse time — the day of the 6.8-magnitude earthquake near Seattle, one of the cities that has used Project Impact funds to promote safer homes, schools and businesses. The cutback doesn't make sense — being prepared for disasters is a whole lot cheaper than paying the bill for not being prepared after disaster strikes.

Administration officials said the cuts were proposed because the preparedness programs weren't effective. Washington officials believe differently.

U.S. Sen. Patty Murray, D-Wash., said the fact that Wednesday's quake didn't cause more damage was "a wonderful show of what the project has done.''

The administration needs to rethink its position and consider some sage advice from the Boy Scouts: Be Prepared.

Here's to-do list:

Living in Northeast Oregon, some of us might think we are far removed from the possibility of an earthquake. But faults run through our region, too, and earthquakes are possible. The Eastern Oregon Chapter of the American Red Cross is reminding residents that we, too, need to be prepared.

Here's what we should have on hand, according to the Red Cross:

• A flashlight with extra batteries.
• A battery-operated radio with extra batteries.
• A one- to three-day supply of bottled water.
• Non-perishable food.
• An extra supply of prescription medication and a list of those medications.
• A wrench to turn off gas and water supply if necessary.
• A family evacuation plan.

Here's what we can do to be ready:

• Know where to shut off gas and water to the house.
• Prepare a kit with items listed above. A duffel bag can hold the items.
• Assess your house for earthquake danger such as heavy pictures and art with glass, and display cases with breakable collectibles that could pose a hazard should they fall. In most cases pictures and display cases can be secured to minimize the hazard.
• Take a first aid/CPR class.

People who would like to learn more about disaster preparedness can visit the Red Cross office in the basement of Pierce Library at
Eastern Oregon University, or call 962-3036.

WE CAN BE BETTER PREPARED FOR QUAKE

Published: March 2, 2001

Aside from bricks and shattered glass that needed to be cleaned up on Seattle's sidewalks, some structural damage to Washington's Capitol in Olympia and other buildings, and several minor injuries, the Northwest got by fairly well in Wednesday's 6.8-magnitude earthquake.

Fortunately the quake southwest of Seattle was centered 33 miles underground. If an earthquake of that severity occurred much closer to the surface, the area might have experienced more devastation.

Still, Wednesday's jolt is a reminder that the Northwest is vulnerable to the sudden shifting of the earth's plates. The region does not have to wait for 50 to 100 years for the ground to move. In fact, Oregon and Washington have experienced 10 earthquakes of various magnitudes over the past 25 years. Even areas like the Grande Ronde Valley are not immune from the possibility of an earthquake.

Can we do a better job preparing our houses, buildings and public roads, bridges and other infrastructure for an earthquake? Millions of dollars already have been spent in recent years in stabilizing buildings, and that helped the Northwest weather this week's quake. Additional money must be invested to reduce the effects of the next inevitable major earthquake.

People, too, need to think about how they would behave in an earthquake. The ones who crawled under desks and tables to protect themselves from possible falling debris responded properly. The folks who quickly ran from buildings might have been putting themselves and others at risk. People should consider the age and structural integrity of the building where they work or live. They're often better off staying put than moving rapidly outdoors.

People should also look at the valuables perched on mantles and bookshelves in their homes. Can some of that expensive china, glassware or trinkets be better protected from the pulling and swaying of an earthquake? In Saturday's editorial we will list some specific things people should do to be ready for an earthquake.

Wednesday's Puget Sound event shows that more forethought and preparation are needed to reduce a quake's potential horrible effects.

No harm in responding

La Grande's city fire department won the race to the barn fire on N. Cherry Street Wednesday morning. City firefighters arrived before their counterparts from the La Grande Rural Fire Department in Island City could get there.

As it turned out, the fire was actually in the rural fire district, outside La Grande's city limits. It was the rural firefighters' responsibility to report first to a fire within their district, and call for mutual aid from La Grande if necessary.

But what was the harm of city firefighters getting to the fire first? Precious minutes, property and lives could be wasted while waiting to decide if a fire is within one's territory. That would not serve the public's interests very well at all.