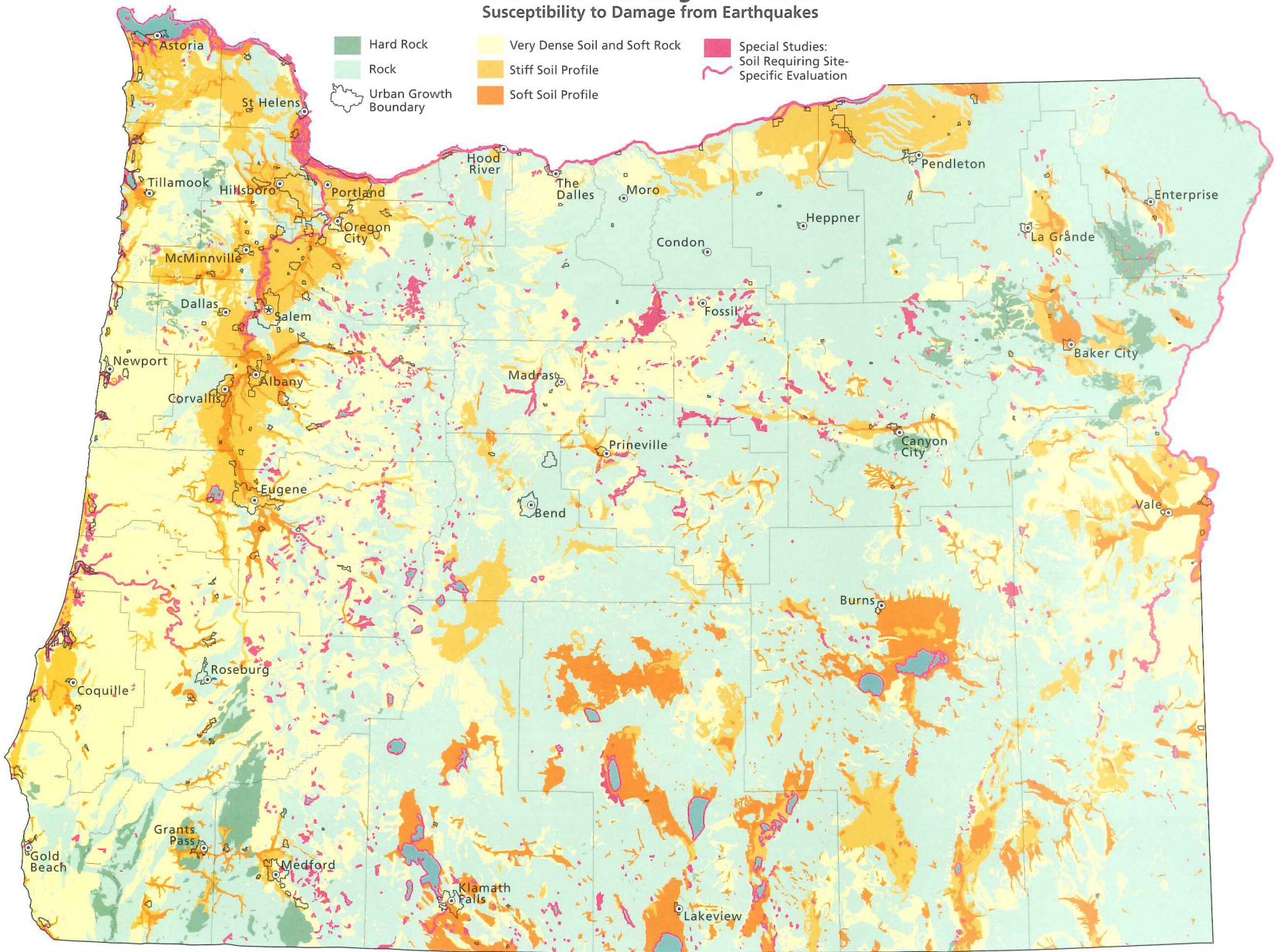
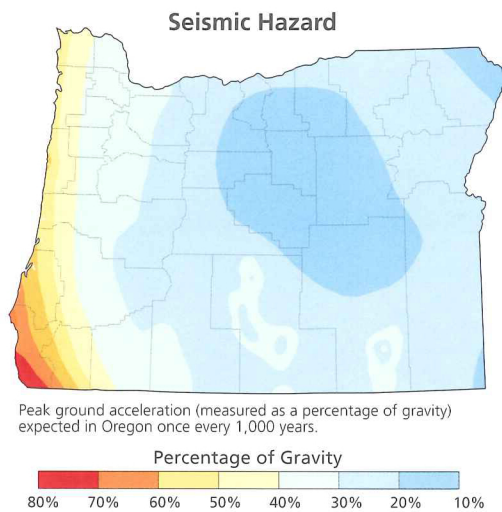


## Universal Building Code Soils Susceptibility to Damage from Earthquakes



called swarms or clusters, shown on the Historic Earthquakes map. In the short interval of time represented by the instrumented record, only a few of these faults have produced such clusters. Recent activity has been concentrated in zones near Klamath Falls and in the Warner Valley. Adding the historic earthquakes to the instrumented record fills in the picture to some degree. Over a much longer, geologic period of time, all the active faults can be expected to experience earthquakes.

Earthquakes cause shaking, ground rupture, liquefaction, landslides and other forms of ground failure that can lead to loss of life and property. The large map above locates various types of soils which respond differently during earthquakes. Soft, porous, unconsolidated soils amplify shaking and are more susceptible to ground failure during earthquakes. The particularly unstable "Special Study" soils indicated on the map are mostly wetlands or old landslides. The Seismic Hazard map shows the maximum level of shaking likely to occur during a fixed interval of time (here, 1,000 years) from all possible earthquakes. Damage becomes significant at shaking levels of about 20 percent of the pull of gravity and becomes almost total above 60 percent. The third map



shows the projected economic value of damage expected from all possible earthquakes during a 500 year period. The loss ratio is the expected loss divided by the economic base. Settlement in Oregon is heavily concentrated along rivers, where there are abundant unconsolidated soils and wetlands (often covered with loose fill for development purposes), and projected losses are accordingly very high.

