



# OREGON LEGISLATIVE POLICY, RESEARCH, & COMMITTEE SERVICES

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## Basics on Landslides and Public Safety

### What is a Landslide?

Oregon's geographic diversity results in many areas of the state being subject to land movement (slides). Land movement can be gradual or they can be rapid, such as debris flows experienced during or subsequent to extreme storm events.

Generally, slow moving slides are not an imminent threat to human life. Debris flows (also called mudslides, mudflows, lahars, or debris torrents) move rapidly, often strike with little or no warning, and can destroy property and take lives. The latter flows generally occur during periods of intense rainfall or rapid snowmelt and usually start on steep hillsides as shallow landslides that liquefy and accelerate to speeds that are typically about 10 mph, but can exceed 35 mph.

### Joint Interim Task Force on Landslides and Public Safety

Senate Bill 1211 (1997) established the Joint Interim Task Force on Landslides and Public Safety following catastrophic, fast moving landslides experienced during 1996. The purpose of the task force was to "develop a comprehensive, practicable, and equitable solution to the problem or risks associated with landslides" through a problem assessment and risk analysis process.

The task force investigated landslide sites in urban and rural areas of Western Oregon, including landslide sites in the Umpqua Basin, the West Hills of Portland, coastal erosion in Tillamook County, and at The Capes near Oceanside. Testimony was received from subject-matter experts including state agencies, university professors, professional loggers, and homeowner's associations. Testimony was also received from general interests and concerned private citizens regarding landslides and their affects on public safety.

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The task force determined, based on-site visits and testimony, that landslides within the state occur on a regular basis, due to Oregon's climate, geology and land use. They are a natural geologic hazard occurring throughout areas evidencing specific hazard criteria. The task force also determined that Oregon's landslide-public safety problem is urban, suburban, and rural. Generally speaking, it affects potentially all kinds of lands within Oregon and all Oregonians.

## 1996 Storms and Landslides

Three significant storm events occurred in 1996, each causing widespread damage in Western Oregon. These storms occurred on February 5-9, November 18-19, and in late December. They produced record rainfall totals, which triggered debris flows in forested and non-forested, urban, and rural lands. Each of these events also resulted in a "Major Presidential Disaster Declaration" (See ORS 401).

The November storm event was the most costly in terms of lives lost. The 8.05 inches of rain<sup>1</sup> in the Rock Creek area of Douglas County and 9.84 inches of rain at Highway 38 (MP 13) that fell during the forty-eight hours of November 18 & 19, 1996 resulted in five deaths.<sup>2</sup>

Other debris torrents in Western Oregon during 1996 storm events also caused widespread damage to the natural resource and public infrastructure of the state. For the calendar year 1996, according to the Oregon Department of Transportation, approximately \$150 million was spent for landslide related road repair and, according to the state's Office of Emergency Management, the three storm events resulted in \$18,653,783 in "Infrastructure Assistance," impacting 32 of Oregon's 36 counties.

Subsequent to these storm events, and attributable at least in part to "El Nino,"<sup>3</sup> land subsidence (erosion or slow moving land movement) during the past three years has also occurred in several areas along the Oregon Coast. Specifically, changes in ocean current, temperature, tides, and even elevation have led to retreat of

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<sup>1</sup> See Report on Rock Creek and Highway 38 (MP 13) Debris Flows, Storm Event of November 1996, Squier Associates, April 8, 1998.

<sup>2</sup> Four people died in the Rock Creek debris torrent event and one person perished in the Highway 38 debris torrent event. Measurements of Highway 38 site taken from the Elkton 3 SW Climate Station.

<sup>3</sup> Deputy State Geologist (DOGAMI): On site briefing at The Capes development, near Oceanside.

existing ground, and therefore have placed homes and communities along portions of the coast<sup>4</sup> in danger.

## Current Law

Oregon law requires “prepared and coordinated comprehensive plans for cities and counties, regional areas and the state as a whole” (ORS 197.010). Since 1973, the state has maintained a strong statewide land use program, consistent with land use statutes. The foundation of that program is a set of nineteen statewide planning goals which express the state’s policies on all issues related to land use planning. Of these, Goal 7’s purpose is to “protect life and property from natural disasters and hazards”. Landslides are a natural hazard.

Senate Bill 1211 (1997) amends ORS 527.610 to 527.770 (Oregon Forest Practices Act): It allows the State Forester to declare a moratorium on steep slope logging and also allows the State Forester to consider public safety in forest practices. Section 4 of the Act amends ORS 810.030, authorizing the Oregon Department of Transportation to close roads when landslide hazards are extreme. Section 6 of the Act amends ORS 455 (Building Codes), mandating that “copies of information on general hazards of construction on sites that could be affected by landslides in any area that is located outside of the urban growth boundary. This Act and its amendments are repealed on January 1, 2000, or when superseded by legislation.

## Policy Issues & Proposed Legislation

The Task Force identified five areas requiring statutory amendment:

1. Amend Oregon’s Forest Practices Act (ORS 527.610 – 527.992) to give the State Forester the ability to protect public safety.
2. Amend Oregon’s Beach Law (ORS 390) and Oregon’s Removal-Fill Law (ORS 196) to consolidate overlapping authorities.
3. Consider Oregon’s Zoning Laws (ORS 215.130), to limit restoration or replacement of structures that have been adversely affected by natural hazards, in known hazardous areas.
4. Require geotechnical peer review of proposed building site grading plans when appropriate [for newly created plans] and

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<sup>4</sup> The Capes Development, located near Oceanside, has seen its resident dune creep approximately 400’.

5. Amend ORS 105.465 (Real Estate Disclosure Law) requiring disclosure by the seller of known natural hazards affecting a property.

These five areas resulted in the drafting of three Legislative Concepts:

**LC 1450:** Transfers administration of fill and removal permits for portions of ocean shore from Division of State Lands to State parks and Recreation Department. Establishes procedures, including process for appeal of order on permit. Establishes application fee to pay for administrative costs of issuing improvement permits. Allows injunction and civil or criminal penalty for violation of improvement permit requirements.

**LC 1451:** Establishes policy for protection of public from landslide hazards. Directs agencies to implement specific responsibilities related to protecting public from landslides. Appropriates monies to state agencies to implement responsibilities related to landslides.

**LC 1452:** Requires seller to disclose information on geotechnical hazards that affect property at the time of sale or transfer.

Aside from proposed legislation, the task force developed one recommendation addressing land use planning within the state:

**Direction to LCDC  
for Goal 7 Rule  
Making and Agency  
Resources**

The task force recommends that the LCDC begin rulemaking during the 1999-2001 biennium to provide for the protection of people and development from landslide hazards. Based on the outcome of its evaluation of Goal 7, the task force recommends LCDC consider integrating its landslide rules into a broader effort to enact amendments to Goal 7 and/or adopt a Goal 7 administrative rule.

The task force further recommends that, as a part of this process of adopting and implementing LCDC's landslide rules, DLCD and other affected agencies should:

1. Prepare information and examples of model landslide mitigation policies, land use regulations, and other tools for local governments to use in addressing landslide hazards.

2. Assist local governments, particularly those communities with limited planning resources, in acquiring and utilizing updated landslide inventory information and incorporating this material into comprehensive plans and land use regulations. This effort should provide for the characterization of the landslide hazard and reasonably provide for the reduction of landslide risk within proposed development areas.
3. Provide landslide information to local jurisdictions for use in updating local land use plans and in making land use decisions. To the extent possible, such information from state agencies shall be provided in a timely, coordinated manner, at a scale usable by local planning officials.
4. Consider public reporting and peer review of geotechnical reports required by local landslide development regulations.
5. Help local jurisdictions avoid potential taking claims arising from the enactment and implementation of local landslide regulations by emphasizing public safety and employing alternative ways of mitigating the effects of such hazards.
6. Consider severe hazard areas where development prohibition should be considered and addressed in rules.

## **Funding**

State agencies, including DOGAMI and the Department of Land Conservation and Development, have identified a need for \$1,602,646 associated with identified legislative concepts and recommendations, for the 1999-2001 biennium..