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*Earthquake Hazards in the Pacific Northwest of the United States*

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**LIABILITY FOR EARTHQUAKE HAZARDS OR LOSSES AND ITS  
IMPACTS ON WASHINGTON'S CITIES AND COUNTIES**

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## *Foreword*

This paper is one of a series dealing with earthquake hazards of the Pacific Northwest, primarily in western Oregon and western Washington. This research represents the efforts of U.S. Geological Survey, university, and industry scientists in response to the Survey initiatives under the National Earthquake Hazards Reduction Program. Subject to Director's approval, these papers will appear collectively as U.S. Geological Survey Professional Paper 1560, tentatively titled "Assessing Earthquake Hazards and Reducing Risk in the Pacific Northwest." The U.S. Geological Survey Open-File series will serve as a preprint for the Professional Paper chapters that the editors and authors believe require early release. A single Open-File will also be published that includes only the abstracts of those papers not included in the pre-release. The papers to be included in the Professional Paper are:

### **Introduction**

Rogers, A.M., Walsh, T.J., Kockelman, W.J., and Priest, G.R., "Earthquake hazards in the Pacific Northwest: An overview"

### **Tectonic Setting**

#### Paleoseismicity

Adams, John, "Great earthquakes recorded by turbidites off the Oregon-Washington margin"

Atwater, B.F., "Coastal evidence for great earthquakes in western Washington"

Nelson, A.R., and Personius, S. F., "The potential for great earthquakes in Oregon and Washington: An overview of recent coastal geologic studies and their bearing on segmentation of Holocene ruptures, central Cascadia subduction zone"

Peterson, C. D., and Darienzo, M. E., "Discrimination of climatic, oceanic, and tectonic forcing of marsh burial events from Alsea Bay, Oregon, U.S.A."

#### Tectonics/Geophysics

Goldfinger, C., Kulm, L.D., Yeats, R.S., Appelgate, B., MacKay, M., and Cochrane, G., "Active strike-slip faulting and folding in the Cascadia plate boundary and forearc, in central and northern Oregon"

Ma, Li, Crosson, R.S., and Ludwin, R.S., "Focal mechanisms of western Washington earthquakes and their relationship to regional tectonic stress"

Snively, P. D., Jr., and Wells, R.E., "Cenozoic evolution of the continental margin of Oregon and Washington"

Weaver, C. S., and Shedlock, K. M., "Estimates of seismic source regions from considerations of the earthquake distribution and regional tectonics"

Yeats, R.S., Graven, E.P., Werner, K.S., Goldfinger, C., and Popowski, T.A., "Tectonic setting of the Willamette Valley, Oregon"

### **Earthquake Hazards**

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Cohee, B.P., Sommerville, P.G., and Abrahamson, N.A., "Ground motions from simulated  $M_w=8$  Cascadia earthquakes"

King, K.W., Carver, D.L., Williams, R.A., and Worley, D.M., "Site response studies in west and south Seattle, Washington"

Madin, I. P., "Earthquake-hazard geology maps of the Portland metropolitan area, Oregon"

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#### Ground Failure

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Grant, W. P., Perkins, W. J., and Youd, L., "Liquefaction susceptibility maps for Seattle, Washington North and South Quadrangles"

#### Earthquake Risk Assessment

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**Implementation**

Kockelman, W. J., "Techniques for reducing earthquake hazards--An introduction"

Booth, D.B., and Bethel, J.P., "Approaches for seismic hazard mitigation by local governments--An example from King County, Washington"

May, P.J., "Earthquake risk reduction prospects for the Puget Sound and Portland Areas"

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## ABSTRACT

A legal analysis of Washington State tort law concludes that local governments can be held liable for some earthquake losses. The most likely sources of liability are injuries or damage caused by the dangerous condition of its own properties. Local governments also have potential liability for injuries on private properties, although the exposure is less than on public property. *Discretionary immunity* is the only defense for losses resulting from the issuing of earthquake warnings or from emergency response activities. The *act of God* defense may work in only two very limited situations. Local government employees in Washington, California, Utah, and Alaska rank potential liability as one of the top five factors motivating earthquake-hazards reduction programs.

## THE EXTENT OF LOCAL GOVERNMENT LIABILITY IN WASHINGTON

Local governments *can* be held liable for some losses.

The Washington Tort Claims Act provides that all political subdivisions and municipal corporations of the state are held liable for damages for their, or their employees', tortious conduct to the same extent as if they were a private person or a corporation. (Revised Code of Washington, Sec.4.96.010.) Thus, sovereign immunity in the State of Washington is abolished without any *statutory* exceptions.

The legal defense that earthquakes are an *act of God* will no longer work in most circumstances. In the legal sense, an *act of God* is a natural event causing damage over which people have no control. Although in one sense an earthquake is beyond our control, the facts are that earthquakes occur in Washington State and scientists are gaining increased knowledge about them and their processes. Earthquakes and the damage resulting from earthquakes may be foreseeable and under some circumstances the losses can be mitigated, at least partially. Therefore, the *act of God* defense to tort liability may work in only two very limited situations: (1) if the earthquake was of such type or size as to be unforeseeable and the local government did not act negligently with respect to dealing with a foreseeable earthquake; or (2) if the earthquake was foreseeable, and the local government took all *reasonable* actions to prevent harm, but nonetheless damage still occurred.

## SOME KEY LEGAL CONCEPTS

A *tort* is a civil (as opposed to criminal) wrong, other than a breach of contract, for which courts award damages. There are four elements of a tort:

- a pertinent duty must be imposed on the defendant (local government);
- the defendant (local government) must have violated that duty;
- the victim must have been injured or suffered damages; and
- there must be a causal connection between the negligence and the harm suffered by the victim.

The usual standard by which a defendant's actions are judged in order to determine whether it has violated a duty is *negligence*. The concept of *negligence* is usually based on the rule of *reasonableness*. How would a reasonable person have acted under similar circumstances? Could the injury or loss have been foreseen? What was the apparent magnitude of the risk? What were the relative costs and benefits of action vs. inaction? Has the defendant complied with applicable statutory or regulatory standards?

If negligence is established, the local government can raise applicable defenses. The most important of these is the *discretionary immunity*.

The discretionary immunity applies to basic policy decisions which have a planning, rather than an operational, character. For example, a city council's decision to enact a law requiring landowners to disclose geologic and soils conditions prior to selling the property or building on it would be immune as a discretionary function. The city manager's decision to waive the requirement may or may not be immune, depending on the language of the ordinance, the factors used to make the decision, and the state in which he is located. The clerk who issues a building permit without requiring the disclosure document is not immune under the discretionary function theory.

The discretionary function immunity was created by the Washington judiciary as an exception to the rule of general liability of local governments. [See *Evangelical United Brethren v. State*, 67 Wn. 2d 246, 407 P.2d 440 (1965).] To avail itself of the immunity, a local government must meet a four-part test. The challenged act must (1) involve a basic governmental policy, program or objective; (2) be essential to the realization or accomplishment

of that same policy, program or objective; (3) require the exercise of basic policy evaluation, judgment and expertise; and (4) be performed by the government agency having the requisite authority and duty to perform the act.

In addition, the municipality must demonstrate that it actually exercised "discretion". [See *King v. Seattle*, 84 Wn. 2d 239, 525 P.2d 228 (1974).] Finally, Washington appears to give some weight to the position of the decision maker in the governmental hierarchy in assessing whether the decision was truly "discretionary." [See *Chambers-Castanas v. King County*, 100 Wn. 2d 275, 869 P.2d 451 (1983).] However, the issue of position in the hierarchy is less important than in some other states, such as California.

A duty may be imposed on the local government under the *public duty doctrine* which applies when a "special relationship" exists between the local government and the victim. If the enabling statute for the governmental action states a clear legislative intent to protect an identifiable class of persons and a member of the class is injured, then a "special relationship" exists. [See *Baerlein v. State*, 92 Wn. 2d 229, 595 P.2d 930 (1979).] A general duty to regulate private sector activity for the benefit of the general public does not create a "special relationship." If a statute obligates a local entity to abate a special known and dangerous condition, failure to do so will create a "special relationship" between a plaintiff and a defendant. [See *Campbell v. City of Bellevue*, 85 Wn. 2d 1, 530 P.2d 234 (1975).] If an injured party relies on expressed or implied assurances by a governmental agency with whom the party had direct contact, a "special relationship" also may be created.

It is important to understand the role of *judges and juries* in a jury trial. *Questions of fact* (concerning whether something is factually true or untrue or whether something did or did not occur) are the province of the jury except under extreme circumstances. *Questions of law* (requiring that the law be interpreted or applied) are the exclusive province of the judge. However, it is the jury that decides, as a matter of fact, whether or not it would have been *reasonable* to do more, thereby determining, as a matter of law, that negligence exists. The legal community refers to such questions as "*mixed questions of fact and law*."

## LIABILITY VARIES WITH THE CIRCUMSTANCES

The most likely sources of liability for a local government in Washington are injuries or damages caused by the dangerous condition of its own property -- its hospitals, city halls, jails and public works. In most situations, the injured party will rely on traditional tort analysis in establishing liability. The possible use of the discretionary immunity for certain decisions regarding public facilities (such as decisions to build and siting) is undeveloped at this time.

Washington's local governments also have potential liability for injuries on private property, although the exposure is less than on public property. Local governments in most states are immune from liability for most actions relating to the issuing of permits or inspection activities. Washington courts, on the other hand, have consistently found liability for building inspection and permitting activities so long as the injured party can establish a "special relationship" under Washington's *public duty doctrine*.

For losses resulting from emergency response activities, discretionary immunity is the only defense for local governments in Washington. Emergency response field decisions are probably not immune. Therefore, the question of whether the public entity owes a duty to the injured party is pivotal. However, this is difficult to analyze without knowing the specific circumstances of the situation.

In Washington, there is no statute granting immunity for the issuance of an earthquake warning. The discretionary function immunity is the only defense to liability.

## THE IMPACT OF LIABILITY ON LOCAL GOVERNMENT DECISION MAKING

Based on a written questionnaire and in-person interviews with local government staff in four states, we arrived at several conclusions about the effects of liability on motivating earthquake mitigation programs.

Even though a higher risk of earthquakes and earthquake events can trigger the initiation of programs, this is an incomplete picture of the motivation process. Local government staff ranked ten factors motivating earthquake hazard reduction programs in their jurisdiction. The top five (in order) were:

- (1) leadership of a staff member or elected official;
- (2) the need to maintain local government functions;
- (3) concern for potential liability;
- (4) improved public safety; and
- (5) a state or federal government requirement.

The top five in order in Washington were:

- (1) a state or federal government requirement;
- (2) leadership of a staff member or elected official;
- (3) the need to maintain local government functions;
- (4) avoiding employee injury ((3) and (4) are tied); and
- (5) concern for potential liability.

Liability was ranked even higher among those with most types of "active" earthquake programs in the four states surveyed. However, it was listed first very few times when compared to the other top motivators; it achieved its high ranking because it is pervasive. There is no single motivator for earthquake programs; the motivators are as diverse as the jurisdictions themselves.

Over 90 percent of those surveyed in the four-state area (and 80 percent of those in Washington) believe that the law is at least sometimes uncertain. In the four-state area, half of those noting uncertainty feel that this uncertainty is having little or no effect on their jurisdiction, a quarter feel that it encourages aggressive programs, and a quarter feel that it discourages programs. In the Washington State area, approximately 40 percent feel that the uncertainty is having little or no effect on their jurisdiction, 30 percent feel that it encourages action and 30 percent feel that it discourages action. Managers from jurisdictions which have the most comprehensive earthquake mitigation programs are more likely to believe that this uncertainty is encouraging action.

Managers from jurisdictions with active earthquake programs do NOT see significantly more or less liability exposure than the entire group surveyed. Thus, *there is no indication that any major change in rules governing liability or immunity would result in more active earthquake programs.* A general concern for liability, rather than how they perceived their degree of liability exposure, appears to motivate earthquake hazard reduction programs. About two-thirds of those surveyed reported concern for liability for earthquake hazards within their jurisdictions, double the number of ten years ago.

Jurisdictions with "active" earthquake programs tend to be self-insured with active risk management programs. However, project staff concluded that the existence of active risk management programs and active earthquake programs are the result of a progressive top management and stable elected bodies promoting safety awareness, rather than risk management somehow "causing" the earthquake program to be more active.

## **PROMOTING SAFETY WHILE COPING WITH LIABILITY--SOME ADVICE FOR LOCAL GOVERNMENTS**

As a result of the findings from this study, the following are recommendations for local government to promote public safety and cope with liability.

1. Local governments should comply with any statutory or regulatory standards imposed by the state or federal governments.
2. A program should be developed to inspect, repair and maintain the city's or county's public buildings and facilities.
3. Your local government's risk manager is useful as an ally in promoting increased earthquake safety of all public facilities and buildings.
4. Local government staff should NOT assume that liability exposure exists for any mitigation program involving private property. Ask advice from your legal counsel.
5. Act to promote the safety and welfare of the people in your community. If you act reasonably, your liability exposure can be minimized.

The above is a summary that highlights the findings of a research project conducted by Perkins and Moy (1989). In addition, a companion document (Perkins and Moy, 1988) contains the background legal research, summaries of case law and statutes, and the results of the survey of local government behavior. Both reports are available from the Association of Bay Area Governments.

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## REFERENCES

- Perkins, J.B., and Moy, Kenneth, 1988, Liability of local governments for earthquake hazards and losses--Background and research reports: Oakland, Calif., 94604, P.O. Box 2050, Association of Bay Area Governments, 250 p.
- 1989, Liability of local governments for earthquake hazards and losses--A guide to the law and its impacts in the states of California, Alaska, Utah, and Washington: Oakland, Calif., 94604, P.O. Box 2050, Association of Bay Area Governments, 52 p.