

POLICY IMPLICATIONS OF LEGAL LIABILITY FOR
GOVERNMENT INVOLVEMENT IN EARTHQUAKE ENGINEERING

J.L. Huffman*

SUMMARY

Earthquake engineering is one of several tools available to governments seeking to mitigate losses from earthquakes. Governments seek to maximize benefits while minimizing costs. An important cost factor is the potential liability of the government for harm resulting from its mitigation efforts. Government mitigation policy should reflect a recognition of the impact of liability assignment on private and public behavior. In particular, liability rules should reflect the general importance placed on the protection of human life and the determination of fault for harm to innocent people. It must also recognize the values important to the particular society it serves.

MITIGATING THE EFFECTS OF EARTHQUAKES

Earthquake engineering is centrally concerned with the mitigation of losses resulting from earthquakes. Although reasonable people debate the merits of particular approaches to earthquake damages mitigation, no one seriously contends that mitigation efforts are ill-advised under all circumstances. If the losses which result from earthquakes can be reduced, it is not seriously debatable whether they should be reduced under proper circumstances. The primary policy problem should be the definition of what circumstances are proper for earthquake loss mitigation efforts.

A not uncommon reaction to the foregoing assertion is that if we can mitigate earthquake losses, we ought to do so. It is a reaction which is reflected in some of our laws and in much of our disaster planning. The most commonly debated issue among disaster planners is not whether, or under what circumstances, we should employ the mitigation techniques which have been developed, but rather how we get private and public entities to adopt and implement those mitigation techniques (Ref. 1). It is an inadequate conception of the policy issues posed by the availability of earthquake hazard mitigation technologies and methods.

Inappropriate Mitigation Actions

A simple example will illustrate that mitigating actions should only be undertaken under proper circumstances. People have known for far longer than there has been anything resembling earthquake engineering that a simple and sure way of avoiding loss from earthquakes is to live and work in areas where earthquakes do not occur. Historically, people were unable to employ this mitigation technique because of ignorance

* Professor of Law, Lewis and Clark Law School, Portland, Oregon, U.S.A.

about the earth's seismic characteristics. Often this ignorance was relieved by the occurrence of an earthquake, at which time the possibility of mitigating future losses from earthquakes through the expedient of relocation must surely have presented itself (Ref. 2). San Francisco remains where it was in 1906. Perhaps in 1906 it was thought to be a one-time event, but every San Franciscan is aware today of the prospect of another major earthquake in the city, yet no one proposes moving the city.

The modern earthquake hazard mitigator includes among his bag of tricks the powerful tool of land use planning and regulation, but no one would suggest that the city of San Francisco, or any of the multitude of smaller towns which line the San Andreas Fault, be zoned against human occupancy. To do so would mitigate future earthquake losses, but the reasons for not adopting this mitigation alternative are too obvious to require explanation. The reasons are not so obvious, however, that explanation is not required in the less extreme cases of potentially unjustified mitigating action. Is it clear, for example, that every new building in the state of California should be engineered to withstand an earthquake of a particular magnitude? (Ref. 3) There is no technical or legal reason why that mitigation action cannot be implemented, but there are policy reasons why it might be concluded that it ought not be implemented. It will depend upon how much we value the losses which will be avoided and how much we value the costs we will incur in implementing the mitigating action (Ref. 4). This is not an argument for reducing all costs and benefits to dollars and cents. Rather it is an argument against the presumption that earthquake loss mitigation is worth the price, whatever that price may be.

Private Mitigation Decisions

Private decision-makers regularly confirm that, within their particular value systems, there are some available mitigation actions which are not worth implementing. Individuals or other private entities may choose to remain in an earthquake-prone area because of the economic costs of relocation or because of non-quantifiable factors which influence people to live in one area rather than another. But these private decisions are not the direct concern of earthquake hazard mitigation policy (Ref. 1).

Formulating Mitigation Policy

Earthquake hazard mitigation policy is concerned with public decision-making which, among other things, may be designed to impact upon private decision-making (Ref. 5). What mitigation actions should the government undertake on its own? What mitigation actions should the government encourage or require private parties to undertake? Because earthquake risks vary with location, earthquake hazard mitigation techniques continually improve, and human values vary with both time and place, there is not a single correct answer to these questions. However, every time government decides to undertake a mitigation action, it has unconsciously, if not consciously, decided that the benefits of mitigation will outweigh the costs.

GOVERNMENT LIABILITY AS AN ELEMENT OF MITIGATION POLICY

An emerging cost of government disaster mitigation activities is the prospect of legal liability for the unintended consequences of the mitigation actions or for the failure of those actions. If a government orders the evacuation of an area believed to be threatened by an earthquake resulting in significant costs to those people required to leave their homes and jobs, is the government responsible to reimburse people for those costs if the anticipated earthquake does not occur? If a government mandates that all buildings be constructed to standards which the government claims will withstand a magnitude 8.0 earthquake, is the government responsible to those injured when the building collapses in a magnitude 7.0 earthquake? Given some time to research the question, any good lawyer will be able to offer a reasoned opinion about the prospects for government liability in a particular jurisdiction (Ref. 6). The lawyers will not all agree, in part because the questions are relatively new ones for every legal system. From a policy point of view, however, what the law of government liability is on these questions is not nearly so important as what the law of government liability ought to be in light of the earthquake hazard mitigation objectives of any given society (Ref. 7). The law of government liability should not be treated as an unalterable given like the seismic character of the earth's crust. It should be treated as an important policy variable, with proper recognition being given to the prospects for and processes of legal change.

THE GOVERNMENT LIABILITY PROJECT

The Lewis and Clark Law School Government Liability Project has investigated the law of government liability as it relates to earthquake hazard mitigation in seven countries: China, Italy, Japan, New Zealand, Peru, the Soviet Union and the United States. The results of these investigations will be the subject of the final report of the Government Liability Project which will be presented to the National Science Foundation which has supported the research. For the purposes of this brief paper, it is sufficient to note that the laws of these seven countries have numerous, anticipated differences and some surprising similarities (Ref. 7). Notwithstanding the historical, cultural, political and economic differences, the concept of sovereign immunity has been important, although not always under that name, in each country. This has led to a common formulation of the issue. It makes sense in each country to ask whether or not the government is liable for the harms which result from government involvement in earthquake hazard mitigation. If there is any surprise when the question is posed, it reflects a presumption of government immunity, not a presumption of government liability.

The Impact of Alternative Rules of Liability

The concept of sovereign immunity represents an extreme position on the range of possible resolutions to the question of government liability (Refs. 7 & 8). The government might, at the other extreme, accept responsibility for all harms resulting from government action, or it might adopt any one of a number of intermediate possibilities. Which position a government should adopt is the policy issue which earthquake hazard mitigators need to address. Both private and public action will be influenced by the existing law of government liability. If private parties perceive that they will be able to demand compensation under particular circumstances, their behavior with respect to those circumstances will be different than it would be if they perceive that they will have to bear the costs associated with government action. Similarly, it must be assumed that government behavior will be influenced in some way by the prospect of government liability for the consequences of its actions. Assuming that government is in the business of earthquake hazard mitigation for the purpose of reducing the net losses which will result from an earthquake, the government must be concerned with both public and private behavior in response to mitigation efforts. To the extent that behavior is influenced by the laws of government liability, the content of those laws must be a concern of the general hazard mitigation policy.

It is impossible to conclude in the abstract whether loss mitigation will be helped or hampered by a particular resolution of the government liability question. The question can only be answered in relation to the values, objectives and circumstances of a particular society. In some cases the policy implications of a particular government liability law will not be clear until there is practical experience with the application of the law. As with any policy question, it should be expected that the wisdom of a particular rule of liability will be reassessed in light of the available experience. This is not to suggest that rules of government liability can be changed without regard to other considerations and constraints, but only that the best choice from a policy point of view will not always be adopted at the first opportunity. Furthermore, the best policy choice today, may not be the best policy choice tomorrow, depending upon changes in human values and circumstances.

Guidelines For Policy Formulation

There are some conclusions which can be stated as abstract guidelines for policy formulation. First, it can be assumed that every government will prefer a policy on government liability which results in fewer net costs to a policy which results in greater net costs. This does not mean that governments will necessarily seek to minimize the impact of liability on governmental payments of damages. A government interested in mitigating earthquake hazard losses may choose to bear significant liabilities if the result will be a net gain in terms of mitigation. The net costs which it is assumed every government will

seek to minimize are those which must be offset against the benefits of mitigation in assessing the ultimate impact of the mitigation effort. The practical implication of this generalized assumption is that all governments should be willing to evaluate alternative policies on government liability.

COMMON FACTORS IN LIABILITY POLICY

The conclusion that all governments have a common objective with respect to disaster mitigation does not mean that all governments will agree on which disaster mitigation policies are to be preferred, nor on what government liability policy is to be preferred. Societal values differ, and so will the policies adopted pursuant to the satisfaction of those values (Ref. 7). However, it is possible to generalize, at least with reference to the seven countries considered by the Government Liability Project, to the extent that two values have had an important influence in each country, notwithstanding their diverse backgrounds and legal institutions. These generalizations reflect the empirical reality in the countries studied, but there is no suggestion that these values will necessarily prevail in every society.

Protection Of Human Life

The dominant concern of the earthquake hazard mitigation program in each of the countries is for the protection of human life (Ref. 7). Implicit, if not explicit, is the assumption that human life is to be highly valued, and that more should be invested in the protection of human life than in other aspects of disaster mitigation (Ref. 1). In the case of earthquakes, structural engineering may serve both the protection of human life and of property, although it is clear that a building which has protected human life by not collapsing during an earthquake may have no remaining value as property (Ref. 9).

The high value placed on the protection of human life has direct implications for government liability policy. Focusing on the life-saving aspect of earthquake loss mitigation may lead policymakers to underestimate or ignore the other costs associated with hazard mitigation. Although costs in the form of economic disruptions, interferences with private property, and interferences with individual autonomy may be small in relation to the costs of lost lives, they are nonetheless real costs which must be borne by someone. The assignment of these costs is a direct function of the assignment of liability. The existence of these costs is, to some degree, an indirect function of the assignment of liability.

Determination of Fault

Every legal system studied evidences some concern with the determination of fault. Even Soviet law, which sought to abandon any reference to fault as a basis of liability in the early years of the Soviet Union, has permitted a concern for fault to find its way into the modern law of government liability (Ref. 7). New Zealand law has

abandoned fault as a factor in assigning liability for personal injuries, but fault remains an important factor in other aspects of New Zealand tort law (Ref. 7). The common belief that fault is a relevant factor in assigning liability has two distinct implications for government liability policy. First, it evidences that people in several societies share a sense of the unfairness of being saddled with injuries which are the result of the actions of another individual or human entity. Government liability policy must take account of the resultant belief that people have some sort of entitlement to recover for losses caused by the actions of others. Second, the affront which people seem to suffer when they experience these externally imposed losses is probably ameliorated to a degree by the fact that efforts to mitigate earthquake losses are themselves externally directed. Perhaps government should not be held at fault for injuries resulting from purely beneficent actions directed to the general population.

Variable Factors In Policy Formulation

There are a multitude of variable factors which will and should influence the government liability policy of any particular government (Ref. 8). These factors will reflect the historical, cultural, political, and economic characteristics of the society being governed and the particular values of those controlling the government. Ideology and political philosophy probably have less influence on hazard mitigation policies than on most other aspects of government policy, but the question of government liability is not peculiar to hazard mitigation activities of government. Consequently, as an aspect of mitigation policy, the law of government liability is more closely tied to the general values and structures of the society than are most aspects of disaster mitigation policy.

Two critical factors stand out from the Government Liability Project studies. The prevailing theory about the proper role of government has an obvious and dominant impact on the law of government liability (Ref. 7). In those countries where government plays a central role in all aspects of social existence, and where the state is valued for its own sake, considerations of social impact and burden on the state play an important role in defining the scope of government liability. In those countries where government plays a less central role, particularly in the economic arena, and where the state is sometimes viewed as a threat to individual autonomy, considerations of individual entitlement and individual impact play an important role in defining the scope of government liability. The other factor which has a significant influence on government liability policy in particular countries is wealth distribution. Attitudes and beliefs about wealth distribution and the appropriate role of government in influencing wealth distribution are of central importance because liability policy can be an effective tool in redistributing wealth or in preserving existing distributions of wealth. Disaster or the anticipation of disaster will always serve to underscore existing wealth distribution making it an inevitable issue in the formulation of disaster mitigation policy.

CONCLUSION

The final report of the Government Liability Project will address this issue in much greater detail and will make very specific recommendations on American government liability policy in the context of earthquake hazard mitigation. The conclusion to be drawn from the brief discussion in this paper is that the law of government liability is an important aspect of earthquake hazard mitigation policy, including policy with respect to earthquake engineering as a particular approach to mitigation. People and governments are influenced by liability laws. Although it is possible to generalize about government liability policy in the seven countries studied in the Government Liability Project, it is at least as important to recognize that government liability policy, like most aspects of public policy, will be understood only in the context of the society which it is intended to serve.

REFERENCES

1. Foster, H.D. 1980. Disaster Planning: The Preservation of Life and Property. Springer-Verlag, New York, 275 pp.
2. Saul, E. and Deneni, D. 1981. The Great San Francisco Earthquake and Fire, 1906. Celestial Arts, Millbrae, California, 168 pp.
3. Annotated California Codes 1983. Health and Safety Code § 19162.
4. Petak, W.J.; Atkisson, A.A. and Gleye, P.H. 1978. Natural Hazards: A Building Loss Mitigation Assessment. J.H. Wiggins Co., Redondo Beach, California, 508 pp.
5. Orabek, T.E.; Mushkatel, A.H. and Kilijanek, T.S. 1983. Earthquake Mitigation Policy: The Experience of Two States. Institute of Behavioral Science, University of Colorado, Boulder, 238 pp.
6. Huffman, J.L. and Rosen, S.R. 1977. Legal Constructs on the Planning and Development of Disaster Home Warning Systems. Lewis and Clark Law School, Portland, Oregon, 149 pp.
7. Huffman, J.L. 1983. "Government Liability and Natural Hazard Mitigation in Japan, the Soviet Union, China, New Zealand, and the United States." International Journal of Mass Emergencies and Disasters, Volume I.
8. Huffman, J.L. 1979. "The Government's Liability for the External Costs of Earthquake Prediction." International Symposium on Earthquake Prediction, UNESCO, Paris.
9. Scoular, P.G. 1981. "A City Engineer's Problems in Implementing Countermeasures," in Large Earthquakes in New Zealand. Royal Society of New Zealand, Wellington, pp. 97-99.

