This system could be adapted by the County of Riverside to respond to short-term increases in hazard from the San Andreas fault. For example, at level D, emergency response equipment might be moved out of any collapsible structures, and some gas lines could be put on automatic cut-off. At level B, all non-essential leave for key personnel could be postponed.

Certainly, thoughtfulness and care must be exercised to construct a system that will enhance public safety without promoting rumors or fear. Also, the system must not be a substitute for long-term mitigation efforts. Such potential difficulties do not reduce the usefulness of short-term, pre-event response plans.

Over time, new data and additional research should allow similar systems to be developed for other major southern California faults.

1.5.4 Uses and Limitations of Seismic Hazard Mapping

The Seismic Hazard Maps developed for this study do not show areas that automatically should be excluded from development. Instead, they show areas where the potential for damage from the mapped hazard is great. Thus it is prudent to conduct geologic investigations to identify and mitigate the hazard prior to development. It is less costly to incorporate hazard mitigation into a structure before it is built than to later try to add mitigating features.

One-plan-fits-all design of mitigation features is not feasible. The hazards present at each site and the multiplicity of structural configurations makes it impossible to predict how much mitigation will cost without scrutiny of the individual site. In some areas, it may be possible to adequately mitigate liquefaction hazard by strengthening the foundation to withstand displacements of 1½ feet, typically costing only $3,000-4,000. Expert engineers indicate that in many locations this simple measure could reduce the payout for repair of liquefaction damage from an average of $65,000 to $70,000 to about $10,000 to $15,000. Insurance industry representatives indicate that such potential savings could be passed on to consumers in the form of lower earthquake insurance premiums. In other cases, however, the cost of mitigation is likely to be much greater. For example, expensive sites include those likely to experience more that 1 foot of liquefaction-caused displacement or with significant landslide hazard.

In the past, land-use planners have often assumed that lower density developments were appropriate where geologic hazards are present. However, planners may find that the high cost of mitigating liquefaction hazards along streams, bays, canals, and coastal zones requires a higher density of development to be economically feasible.

Due to the complex nature of earthquake occurrence, damage and mitigation, there will always be uncertainties associated with seismic hazard mapping. It must be remembered that:

- Seismic Hazard Zone Maps may not show all areas that have the potential for liquefaction, landsliding, strong ground shaking or other earthquake and geologic hazards.
- A single earthquake capable of causing liquefaction or triggering landslide failures will not uniformly affect the entire area zoned.
- The identification and location of liquefaction and earthquake-induced landslide hazard areas are based on available data, of variable quality. The information depicted on the maps has been drawn as accurately as possible at 1:24,000-scale.
- Information on the Seismic Hazard Zone Maps is not sufficient to serve as a substitute for the geologic and geotechnical site investigations required under the Seismic Hazard Mapping Act or the Alquist-Priolo Earthquake Fault Zoning Act.