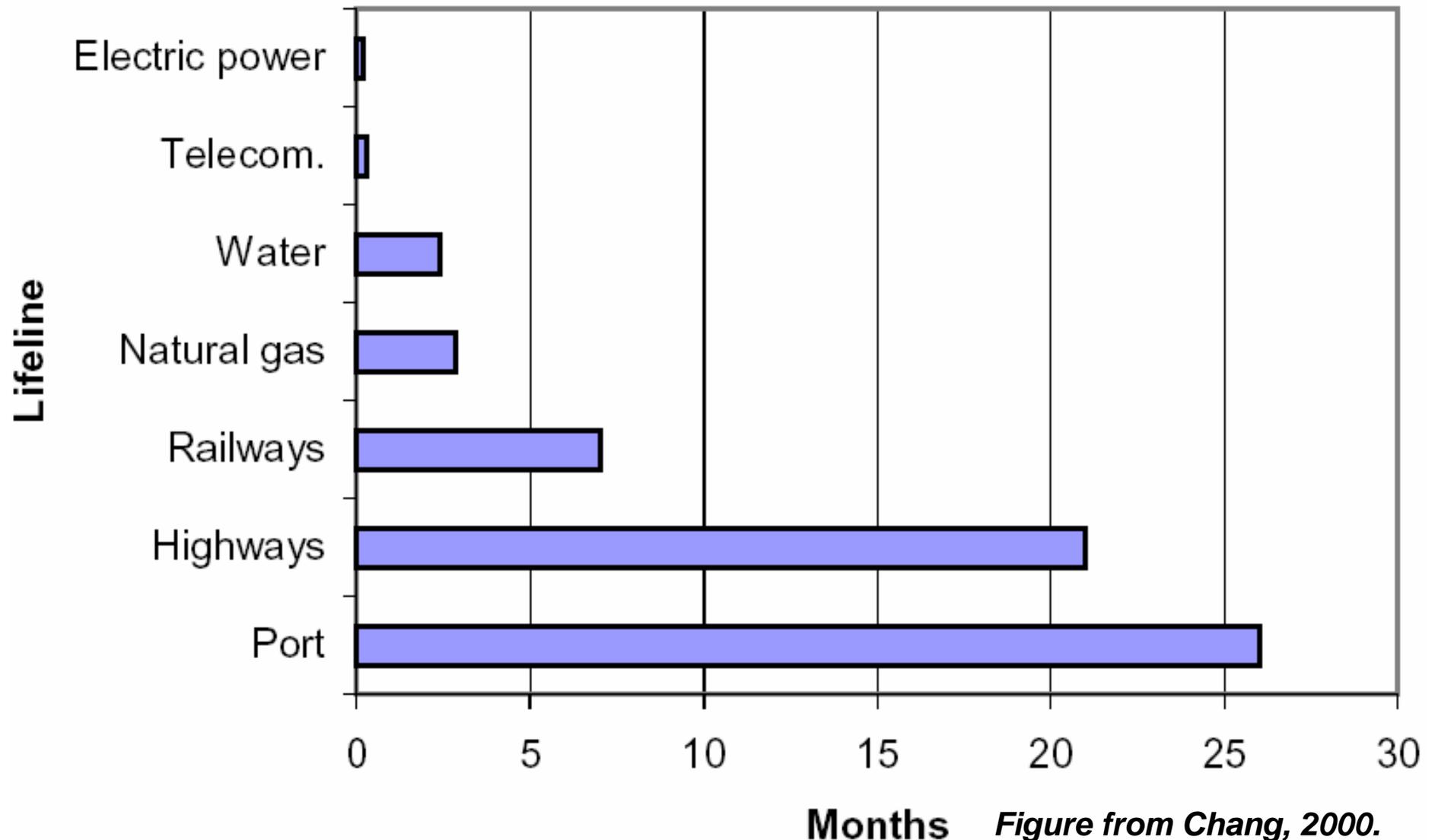


Moderate Failure, Severe Disruption



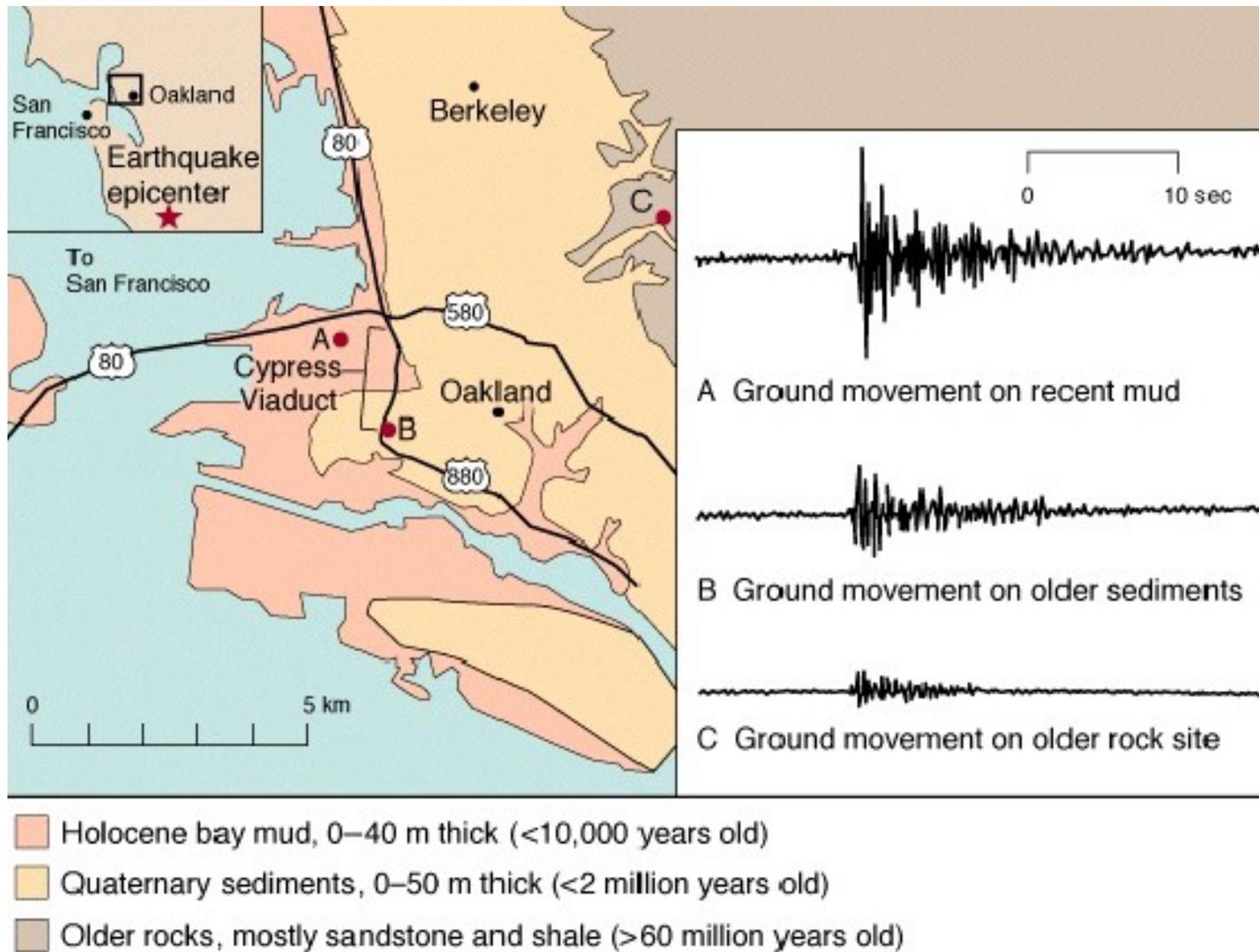
Photo credit: CalTrans

Time Required for Lifeline Restoration Following the 1995 Kobe, Japan EQ



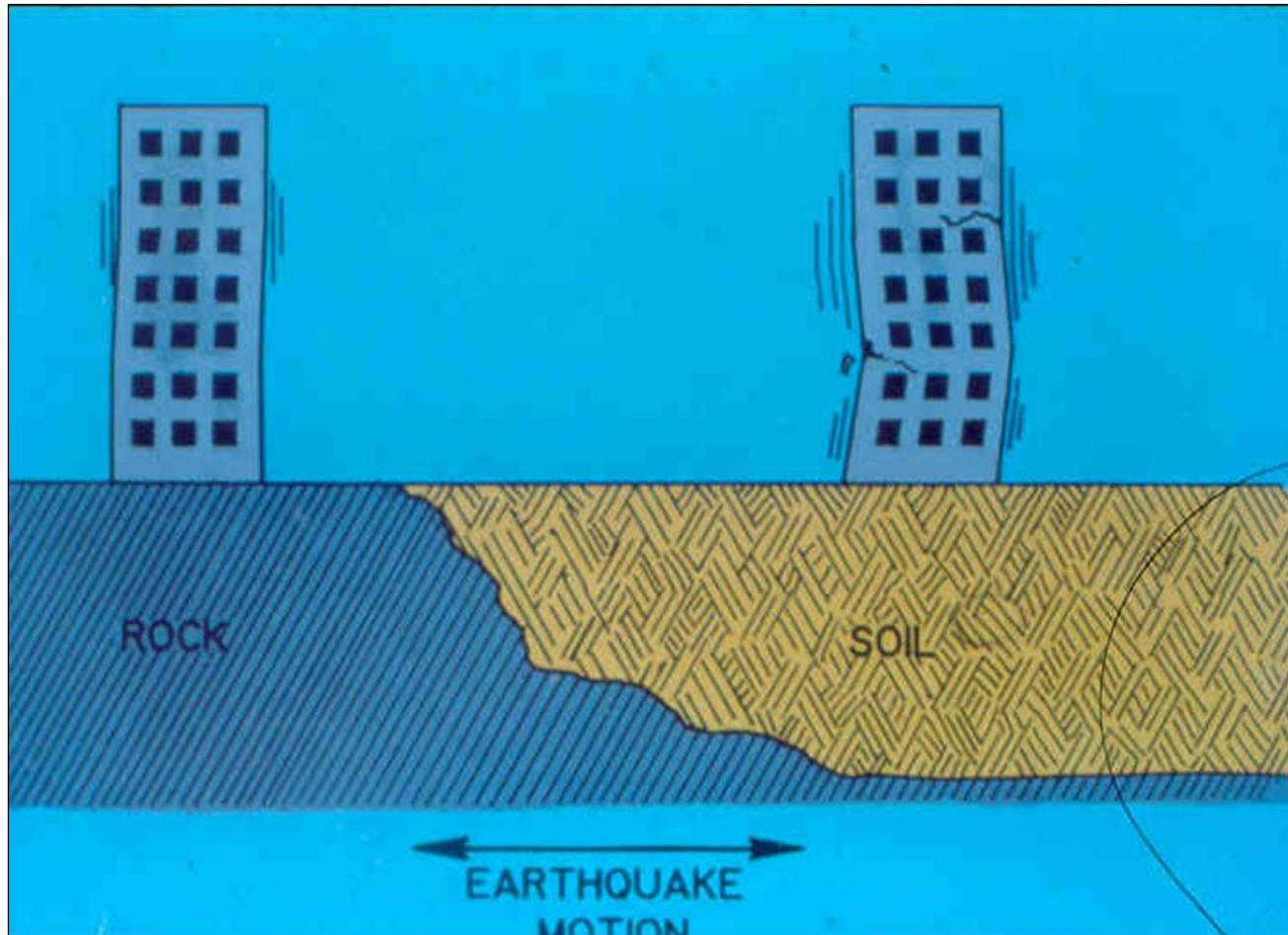
Months *Figure from Chang, 2000.*

Influence of Geology on shaking levels during the 1989 LPE:

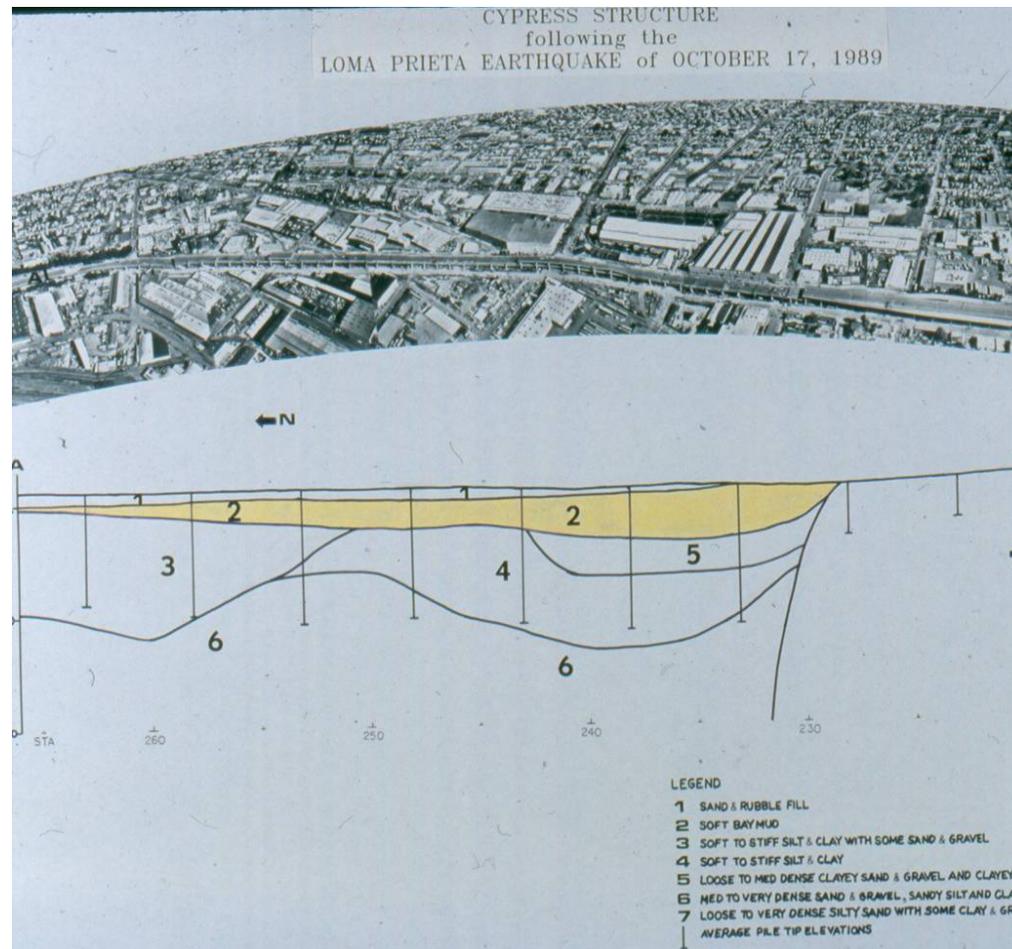


Visual 7.3

Stronger shaking on softer sites



Influence of soft sediments



Credit: I. Idriss

Ground shakes erratically

MOTION AT A SITE



scratch left on the floor
by a kitchen range in the 1933
Long Beach, California earthquake.

Figure adapted from BSSC, 2000

Liquefaction damages infrastructure



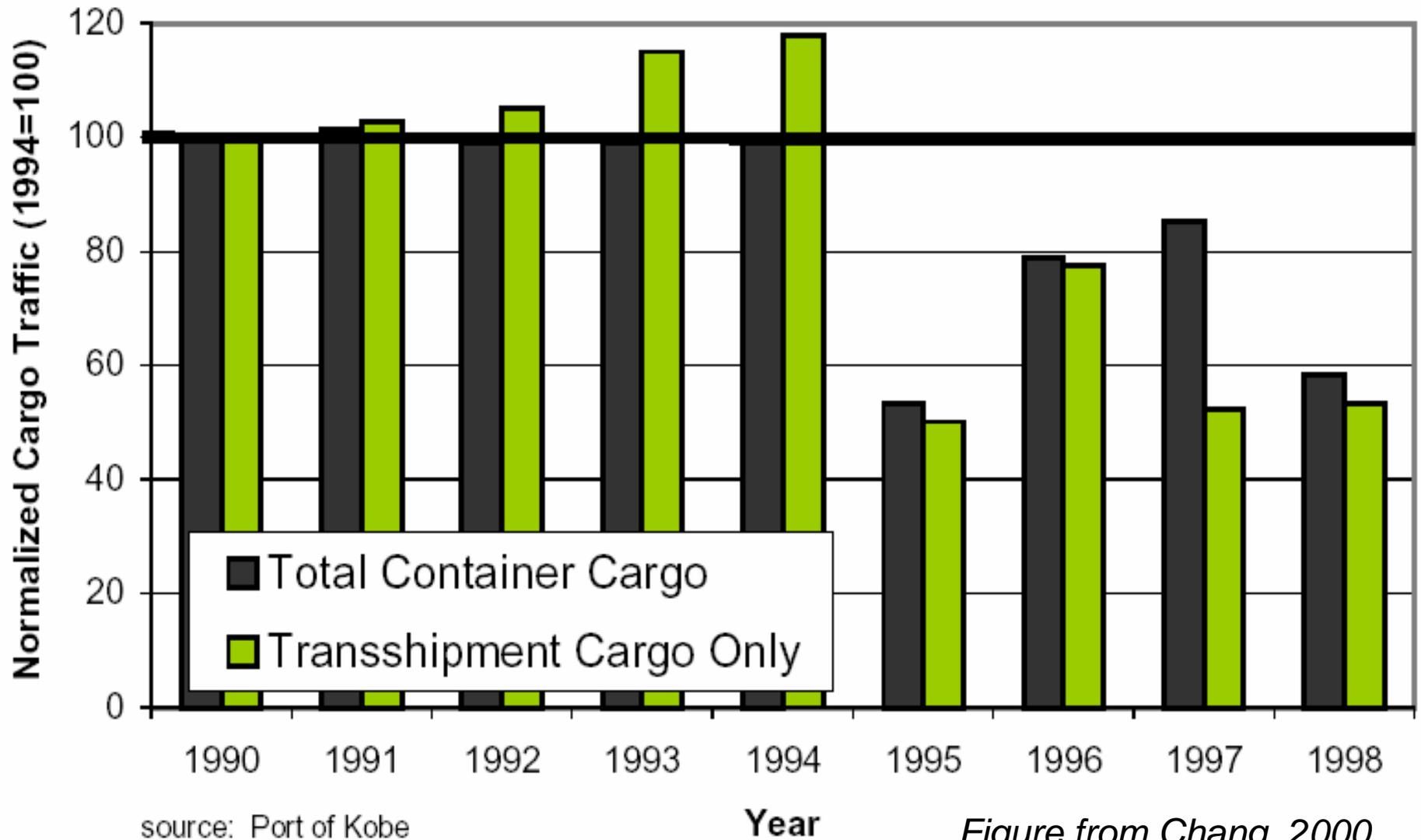
Credit: *Japan National Committee on Earthquake Engineering*

Liquefaction and Lateral Spreading at Port 1995 Kobe, Japan Earthquake



Photo credit: Gifu University Researchers

Effect of 1995 Kobe, Japan EQ on Trade at Port of Kobe



Soil being densified to avoid liquefaction

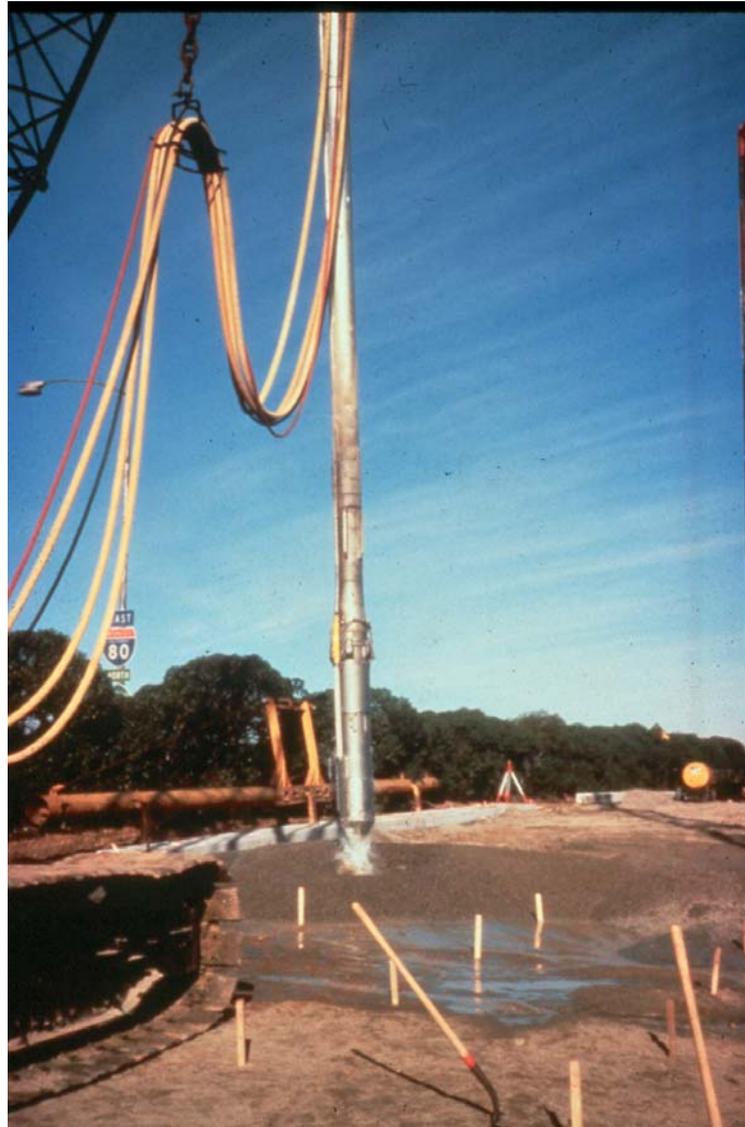


Photo credit: J. Mitchell

Slope failure during 1989 LPE



Photo credit: J. Martin

Lateral ground shifting due to fault



Photo credit: G. W. Clough

Breach of Dam During 1999 Chi-Chi EQ



Photo credit: R. Boulanger

Broken gas line due to ground movements during 1994 Northridge Earthquake



Photograph by M. Rymer

Death or injury can be caused by contents



Credit: USGS

Collapse of Cypress Freeway During 1989 LPE



Effect of 1923 Japan EQ on that economy

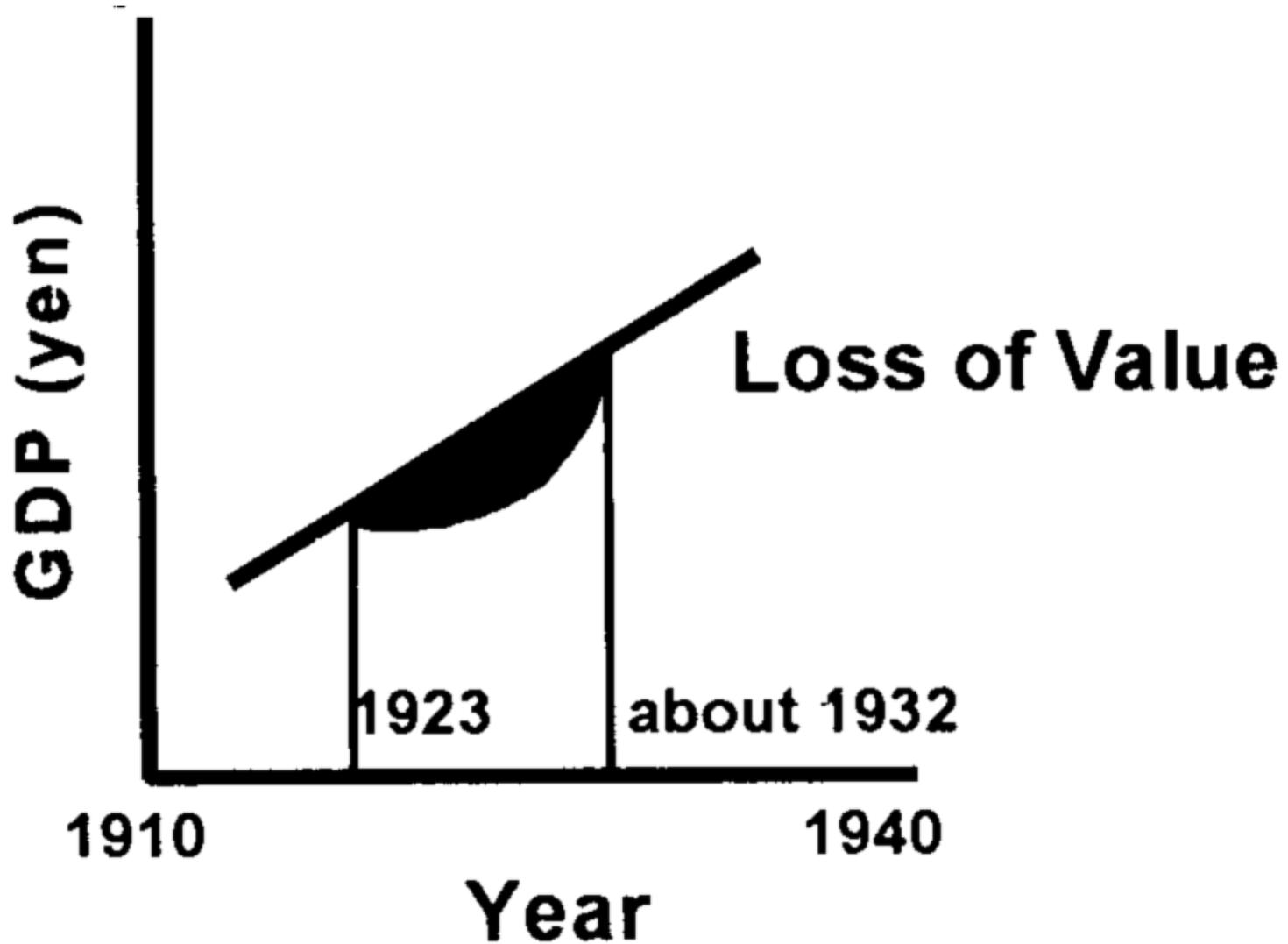


Figure adapted from *Natural Hazards Observer* (1995)