Dave Simon, the 2003-2004 AEG President will address the technical controversies and geopolitics in Salt Lake City, Utah in his case study discussion of the Holocene “Downtown Fault”.

In 1999, investigations for expansion of the Salt Palace Convention Center in downtown Salt Lake City revealed the presence of three grabens, bounding faults, liquefaction dikes, and offset paleosols and alluvial fan sediments of Holocene age. These were judged to be caused by multiple displacements of an on-site Holocene fault, the southern terminus of the Warm Springs fault, previously mapped through the site and physically documented at the Washington Elementary School ~1.5 km to the north. A second-party opinion agreed with this view.

This interpretation would necessitate substantial setbacks in accordance with State of Utah active-fault criteria, major delays in construction schedules, or possibly abandonment of the site. Accordingly, the Convention Center expansion would not have been ready for the 2002 Winter Olympics in Salt Lake City, nor for three major income-producing trade shows already under contract. The client therefore sought a “third-party” opinion. The third-party firm concluded that the downtown features were solely the result of liquefaction-induced, lateral spread caused by off-site seismic events, and that CPT-interpreted displacement (up to 9 ft) of the underlying, ~12-27 ka Bonneville Lake beds were minor anomalies. The divergent technical opinions were sent to an independent reviewer who, with only hours remaining until the bond issuance would expire, agreed with the “liquefaction only” scenario. Construction on the site was completed in 2001. The technical controversies and geopolitics of the project were well documented by the local press.

Lessons to be learned (and relearned): (1) differences in interpretation of technical data have been and continue to be common, particularly when first- or second-party opinions have potentially adverse economic consequences; (2) high-value, high-visibility projects almost invariably invite political “manipulation” when short-term social and economic interests are at stake; and (3) legislating public safety (e.g., Holocene faults) is one matter, enforcing such legislation is another. However, at least one benefit has apparently accrued from the “Downtown Fault” investigations: the local geologic standard-of-care, we hope, has now been substantially upgraded.

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