

CEEn-2016CPST-013

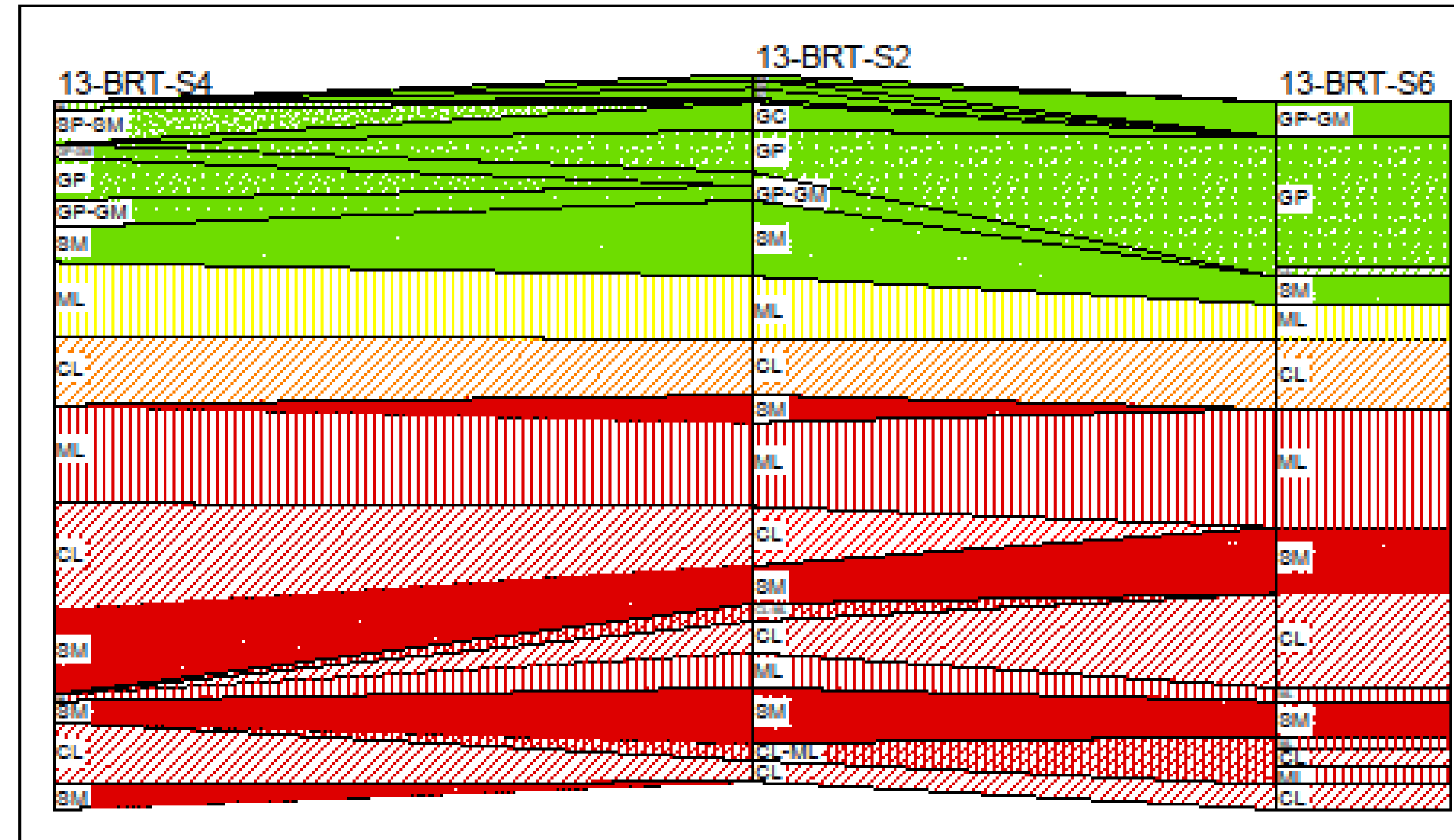
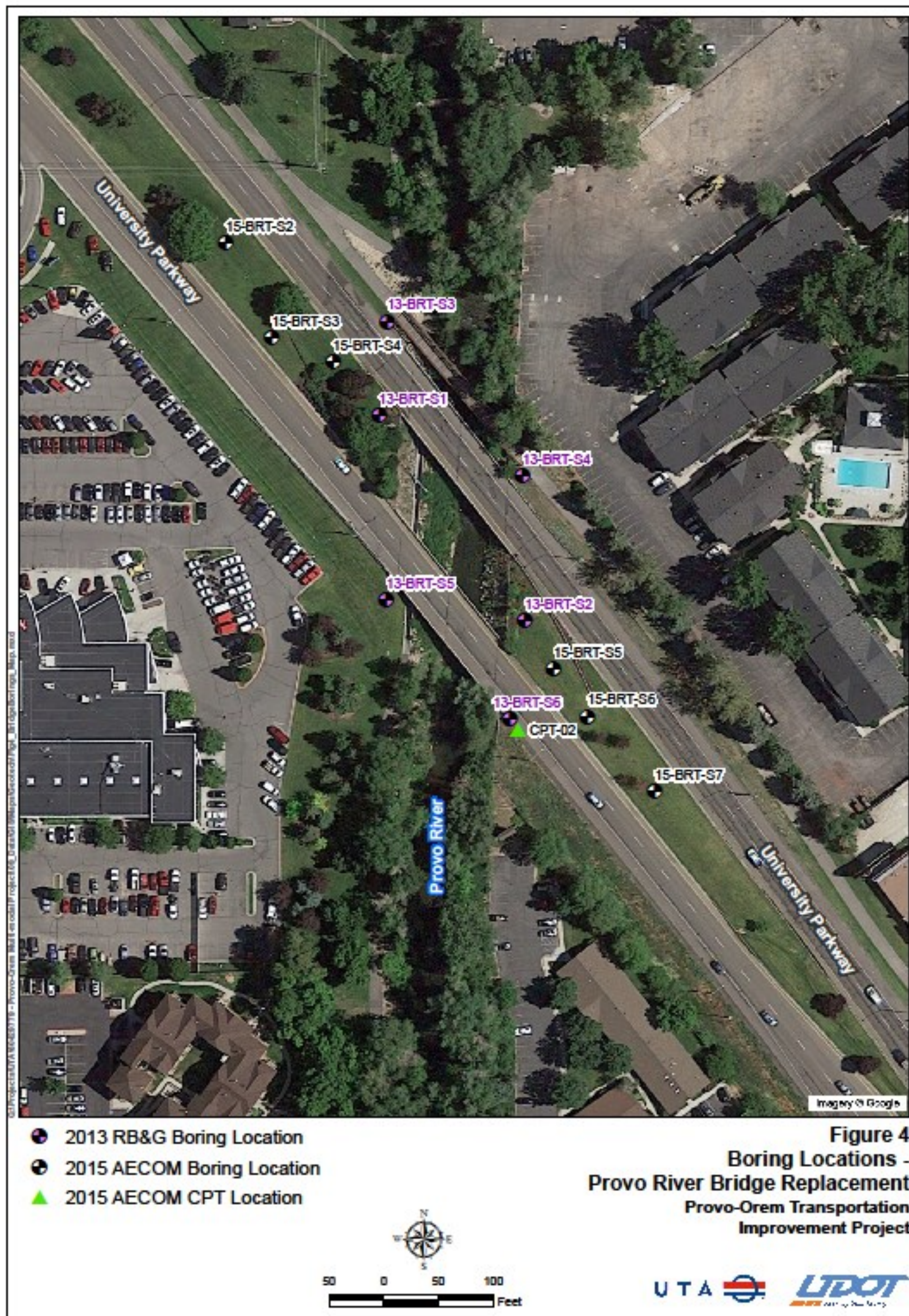
Liquefaction Potential & Post-Earthquake Stability Assessment

Team Members: Joshua Peterson, Heidi Dacayanan, Joel Yellowhorse

AECOM

Project Description and Scope of Services

The New BRT route in Provo will require a new bridge located on University Parkway, between Freedom Boulevard and 550 West. The purpose of this project was to determine the soil liquefaction potential at this location.

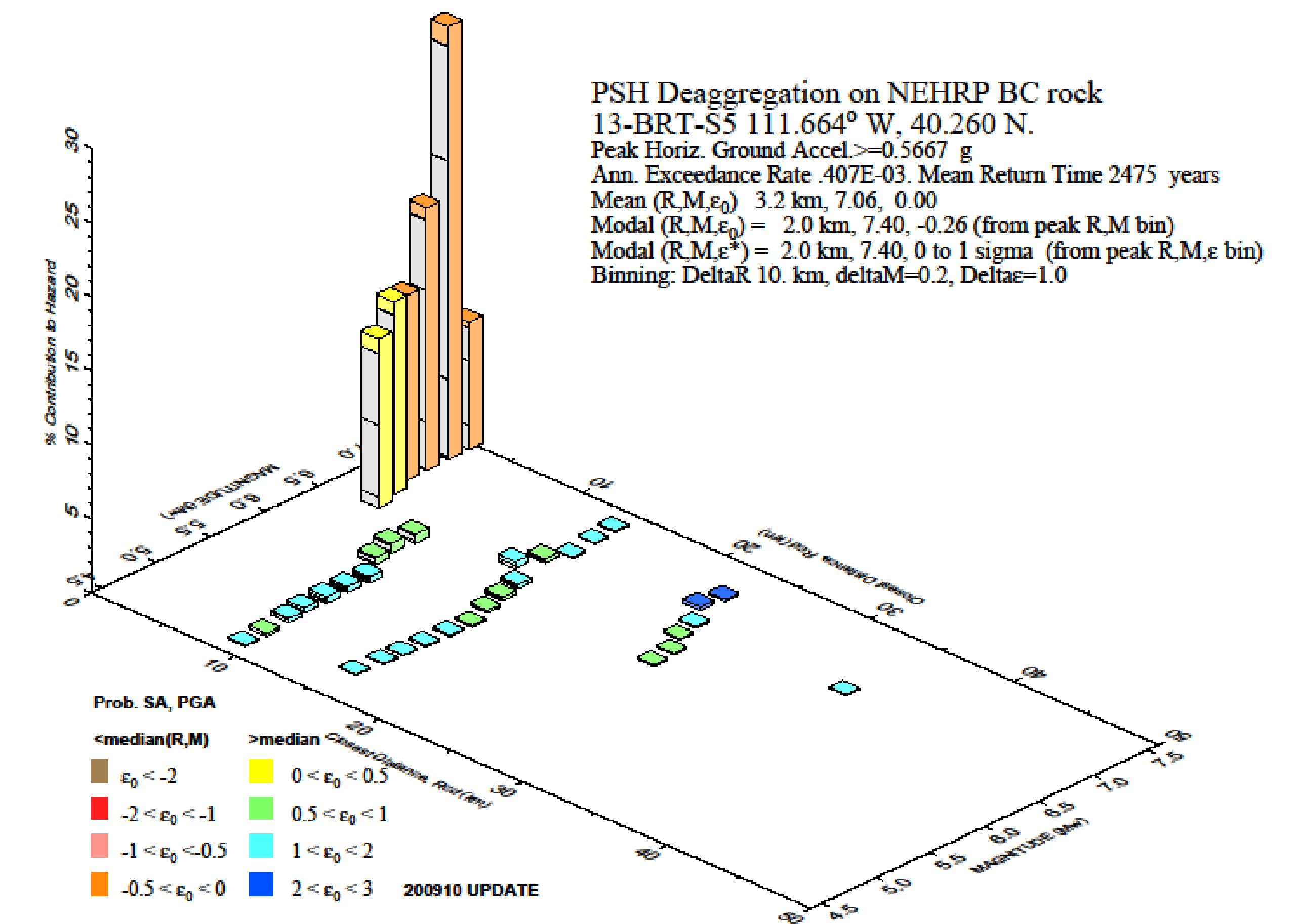


Results

The results show that there is a potential for liquefaction at the bridge location. The cross section shown illustrates the potential for liquefaction with depth. The green areas have a low potential for liquefaction and the red areas show a high potential for liquefaction. Some possible solutions could be to bear the bridge further from the river or drive pilings to get below the liquefiable layers

Procedure

Boring logs were provided at the locations shown in the figure to the left. Using the provided information our team of expert engineers researched liquefaction analysis procedures and used an Idriss & Boulanger method to determine the liquefaction potential with respect to depth for each boring log. Using this procedure required additional earthquake information that was obtained through the use of USGS geo-hazard maps shown to the right. All the data was compiled and engineering judgment was used to create cross sectional representations of the area with the calculated susceptibility of liquefaction potential.



GMT 2017 Mar 1 22:27:40 Distance (R), magnitude (M), epsilon (ε₀,ε*) deaggregation for a site on rock with average v_s=786, m/s top 30 m, USGS COHT PSHA2008 UPDATE. Bins with < 0.05% contrib. omitted