# ESTIMATING LIQUEFACTION POTENTIAL IN MID-AMERICA

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## ABSTRACT:

Liquefaction during a major earthquake originating from the New Madrid seismic zone is likely to cause severe damage to highway structures in Mid-America. Therefore the estimation of liquefaction potential is an important step in the design process for new construction and even more important for retrofit/remedial studies for existing construction because of the potential cost to improve liquefiable soils.

The cone penetration test (CPT) offers many advantages over the standard penetration test for use in a liquefaction potential analysis. Stark and Olson (1995) and Olson and Stark (1998) present a procedure to estimate the liquefaction potential of sandy soils using CPT results and soil index properties. Relationships were presented for clean sands, silty sands, and silty sands to sandy silts based on fines content (percent passing the U.S. standard sieve #200) and/or median grain diameter, $D_{50}$.

Currently, research is being conducted to clarify the use of these liquefaction potential relationships in Mid-America. These efforts are focused on: (1) the use of paleoliquefaction sites, and (2) on the applicability of the magnitude correction factor ($C_M$), the depth reduction factor ($r_d$), and the overburden correction factor ($C_q$) to Mid-America.