After a long delay necessitated by required administrative activities, MCEER has finally started work on the first year’s research under the FHWA-sponsored project “Seismic Vulnerability of the National Highway System.” This 6-year, $10.8 million project was initiated by the Transportation Equity Act for the 21st Century, which was signed into law in July 1998. The overall objective of the project is to extend the work that is currently nearing completion on the design and retrofitting of standard highway construction in the U.S., and to conduct a series of special tasks related to highway bridge design, non-destructive evaluation, and transportation system performance.

Specific tasks included in this first year’s effort include:

- a review of the Seismic Risk Assessment (SRA) methodology and software prepared under the companion FHWA-sponsored Project 106, and its calibration and testing (Tasks B1-1 and B1-2);
- development of strawman manuals for the seismic design and retrofitting of long-span bridges (Task C1-1) and for the design and retrofit of bridges with earthquake protective systems (Task D3-1);
- research to quantify the effects of long-period ground motions and spatial variation on long-span bridges (Task C2-1);
- geotechnical studies on the design and performance of large pile groups, lateral foundation displacements due to liquefaction, and ground remediation for silty soils using stone columns (Tasks C2-2, E1-2, and E2-1);
- research on the behavior of steel truss bridge braced pier and substructure connections (Task C3-1);
- assessments and extensions for seismic isolation technologies including the development of “intelligent” isolation bearings (Tasks D1-1, D2-1, and D2-2);
- the review of potential technologies for the post-earthquake non-destructive assessment of retrofitted bridge components (Task F1-1); and
- the design and acquisition of hardware for the seismic instrumentation of the Cape Girardeau cable-stayed bridge (Tasks F2-1 and F2-2) (see article on page 4).

An independent advisory committee (the Highway Seismic Research Council) has been appointed to help guide the research being conducted under the project and to assist in the integration of these activities with and outreach to other Federal and state agencies, and practicing engineering groups, involved in earthquake mitigation activities. It is anticipated that the first meeting of this Council will be held in mid-November of this year.

Additional information on this project will be posted on MCEER’s web site.