

UTC Project Information	
Project Title	MPC-461 – Analytical Modeling for Progressive Failure Assessment of Curved and Skewed Highway Bridges Subjected to Seismic Hazards
University	Colorado State University
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Funding Agencies	USDOT, Research and Innovative Technology Administration
Agency ID or Contract Number	DTRT12-G-UTC08, Modification No. 1
Project Cost	\$116,850
Start and End Dates	April 1, 2014 - July 31, 2017
Project Duration	3 Year
Brief Description of Research Project	Curved and/or skewed bridges are very common on highways across the country. These bridges are more vulnerable to seismic than typical straight ones. The current specifications do not provide enough coverage for the curved and skewed bridges on progressive failure risk. Under the joint impact from post-seismic traffic and partial damage of some members from seismic, the progressive failure risk will increase depending on the intensity of seismic and traffic at the time. It is thus important to evaluate the progressive failure risk of vulnerable curved and skewed bridges immediately after the seismic occurrence. However, such a simulation tool which can enable progressive analysis of curved and skewed bridges subjected to traffic and seismic is not available. This study will develop an analytical framework of modeling progressive failure risk of typical curved and skewed bridges subjected to seismic and traffic.
Describe Implementation of Research Outcomes (or why not implemented)	This study has potential to be applied by practitioners in future bridge seismic analysis, especially on skewed and curved bridges.
Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	This study will help providing more accurate and efficient approach to study complex bridge seismic performance analytically, with appropriate consideration of the combined effect from seismic and traffic impacts.
Web Links	https://www.ugpti.org/resources/reports/details.php?id=959
<ul style="list-style-type: none"> • Reports • Project Website 	