

UTC Project Information	
Project Title	MPC-406 – Risk- and Reliability-Based Approaches to Analyzing Road Geometric Design Criteria
University	University of Utah
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Funding Agencies	USDOT, Research and Innovative Technology Administration
Agency ID or Contract Number	DTRT12-G-UTC08
Project Cost	\$240,589
Start and End Dates	September 1, 2012 – June 30, 2015
Project Duration	33 Months
Brief Description of Research Project	The objective of this project is to define and critically assess alternative approaches for incorporating risk and reliability analysis into the process of establishing road geometric design criteria and making road design decisions. One or more of FHWA’s 13 controlling design criteria or key decisions regarding facility type (i.e., freeway or surface facility) and number of lanes will be used to evaluate selected alternative risk- and reliability-based approaches that are identified.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	Outcomes from this research achieved the initial proposed goals and produced new insights on the application of methods that account for uncertainty in roadway design. Also, results have been presented at the TRB annual meeting and are published in three TRR journal papers. Specific implementations of this outcomes are not known to the authors but are expected to further continued research in the three main areas addressed in this study.
Impacts/Benefits of Implementation (actual, not anticipated)	The proposed performance-based processes for establishing design criteria would allow designers to consider and balance the accommodation of driver and vehicle operating characteristics, safety, design, and construction costs in any given context. More specifically, the applications described for assessing probability of compliance of a design, the expected level of service given a number of lanes on a freeway segment, and the effect of ramp spacing and the presence of an auxiliary lane, will provide clear paths for utilization of these methods and improve reliability of performance estimates at design stages.
Web Links <ul style="list-style-type: none"> • Reports • Project Website 	<ul style="list-style-type: none"> • MPC Research Report