

<b>UTC Project Information</b>	
Project Title	MPC-586 – Mitigation of Differential Settlement at Highway Bridge Approaches
University	University of Utah
Principal Investigator	Steven F. Bartlett
PI Contact Information	Associate Professor University of Utah Phone: (435) 841-9837 Email: bartlett@civil.utah.edu ORCID: 0000-0003-2266-9672
Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT, Research and Innovative Technology Administration \$40,000  Utah Department of Transportation \$104,368
Total Project Cost	\$144,368
Agency ID or Contract Number	69A3551747108
Start and End Dates	January 12, 2019 to July 31, 2022
Brief Description of Research Project	Differential settlement in the transition zone between the bridge structure and the approach embankment often creates a "bump" which is a potential safety hazard and comfort issue for drivers. Studies conducted by DOTs around the country suggest that about 25 percent of the 600,000 bridges in the US are affected by bridge approach settlement or the "bump at the end of the bridge." The settlements can result in unsafe driving conditions, rider discomfort, structural deterioration of bridges and long-term maintenance costs. Identifying additional geotechnical or structural means to mitigate this issue, which might be employed in conjunction with preloading, is of benefit to many State DOTs. These benefits might be achieved by providing the project team with the advantages and detriments of supplemental options in terms of their efficacy, cost, schedule, and ease-of-construction. This research focuses on identifying innovative means to mitigate this issue during design and construction, whether through initial cost savings or by providing superior long-term performance, will provide value. This might be gained either through savings from initial capital investment or through life-cycle cost reductions, hence assisting in the preservation of key infrastructure.
Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here	Report to include recommendations to UDOT regarding methods, practices, and technologies holding the most promise for immediate implementation, and the technology selection procedure.  The technology selection procedure will be organized similarly to that of GEOTECHTOOLS ( <a href="http://www.geotechtools.org/">http://www.geotechtools.org/</a> ). The selection system will guide the user to a short list of unranked, candidate

	technologies. Guidance will be given for the completion of a comparable, quantifiable analysis of the short-listed technologies to aid the user in selection of the preferred alternative. The information provided for each technology will allow the user to complete preliminary design and subsequently compare the technologies.
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links <ul style="list-style-type: none"><li>• Reports</li><li>• Project Website</li></ul>	