UNIVERSITY TRANSPORTATION CENTER FOR RAILWAY SAFETY

Exhibit F - UTCRS

UTC Project Information	
Project Title	A Mechanistic Investigation of Concrete Tie Degradation in the Rail Seat
University	Texas A&M University (TAMU)
Principal Investigator	Zachary Grasley, Ph.D., Civil Engineering (PI)
PI Contact Information	503B CEOB College Station, TX 77843-3135 (979) 353-1324 zgrasley@civil.tamu.edu
Funding Source(s) and Amounts Provided (by each agency or organization)	Federal Funds (USDOT UTC Program): $75,000
Total Project Cost	$75,000
Agency ID or Contract Number	DTRT13-G-UTC59
Start and End Dates	May 2016 – December 2017
Brief Description of Research Project	Concrete rail ties often degrade prematurely at the rail seat. Such deterioration has been investigated by other researchers, but such studies have generally associated deterioration with a single environmental or mechanical source. In contrast, it is hypothesized here that rail seat degradation is due to a complex coupling of environmental and mechanical sources. Based on this unique perspective, the proposed research is aimed at developing an advanced poroelastic model and a novel, lab-scale model rail seat experiment in order to elucidate the role of enviro-mechanical coupling. Furthermore, based on the model predictions – validated by the experiments – new concrete mixture design and curing protocols that reduce the risk of damage to the rail seat will be crafted.

Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	Pending Project Completion.
Impacts/Benefits of Implementation (actual, not anticipated)	Pending Project Completion.
Web Links • Reports • Project website	http://www.utrgv.edu/railwaysafety/research/infrastructure/concrete-tie-degradation/index.htm