UTC Project Information	
Project Title	A Bayesian updating procedure for prediction of corrosion-induced cracking in pre-stressed concrete bridges using visual inspection data
University	NEXTRANS The Ohio State University
Principal Investigator	Abdollah Shafieezadeh, Assistant Professor, Civil, Environmental and Geodetic Engineering, The Ohio State University
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Funding Source(s) and Amounts Provided (by each agency or organization)	The Ohio State University, $40,420; under negotiation and conditional upon NEXTRANS funding and portfolio of projects to benefit from OSU support. The total cost-share across all OSU funded projects under NEXTRANS 2.1 and 2.2 (including the Showcase projects) will meet the 1:1 requirement in aggregate. NEXTRANS: $50,000
Total Project Cost	$90,000
Agency ID or Contract Number	DTRT12-G-UTC05
Start and End Dates	08/01/2015 - 12/31/2016
Brief Description of Research Project	Bridges are key components of transportation infrastructure systems that are exposed to various uncertain environmental stressors and loading conditions. The proper functionality of these structures is critical for local and regional economic prosperity along with the assurance of public safety. Aging and deterioration are primary concerns regarding the performance bridges degrading to deficient or obsolete states. According to a recent ASCE infrastructure report (ASCE 2013b), it is estimated that every day more than 200 million trips in 102 largest metropolitan regions in the US are taken across deficient bridges. As the demands on public funds increase, it is becoming even more critical to determine and implement optimal decisions aimed at maintaining and improving public infrastructure. Bridge deck deterioration forecasts provide the necessary inputs in support of such decisions. More accurate forecasts are expected to lead to more effective decision. The

	ability to use bridge inspection data to update the parameters of bridge deck deterioration models on an ongoing basis following each inspection season will lead to more accurate forecasts. The enhanced accuracy of predictions of future states of bridges will lead to more effective maintenance decisions that results in increased reliability of assets, enhanced ride comfort, and less interruptions and time delays for passing traffic. Moreover, the quantification of the value of such updates with respect to the state-of-the practice will allow researchers and state agencies to better allocate the research efforts and investments vis-à-vis the various aspects of deterioration modeling and parameter estimation efforts.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links • Reports • Project website	