



**Project Information Form**

Project Title	Extending HYRISK to Predict Scour Risk as a Function of Soil Erodibility Characteristics
University	Georgia Institute of Technology
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Funding Source(s) and Amounts Provided (by each agency or organization)	GDOT - \$135,000
Total Project Cost	\$135,000
Agency ID or Contract Number	DTRT12GUTC12 NCTSPM 2013-028
Start and End Dates	To be determined after GDOT funding arrives. Total project length 18 months.
Brief Description of Research Project	<p>The majority of bridge failures in the U.S. are the result of bridge foundation scour. However, determining which bridges are most vulnerable to scour is challenging – particularly in Georgia where more than 5,000 bridges have unknown foundations. To help determine which bridges are most vulnerable to scour, FHWA developed a risk-assessment tool called HYRISK. HYRISK can be used to calculate the probability of bridge failures due to scour – including those with unknown foundations. Currently, HYRISK does not incorporate risk adjustment factors for soil factors associated with erodibility despite the fact that information about soils is clearly one of the most important factors influencing scour.</p> <p>This project develops a method to relate qualitative descriptions of soil properties based on visual and tactile assessments obtained from boring logs to categories of known soil erodibility for incorporation into HYRISK. The methodology will be validated with</p>



	<p>existing critical shear stress data from previous research conducted at the Georgia Institute of Technology. Given this broad classification of a soil into a small number of erodibility categories, we will develop a set of risk adjustment factors that account for soil erodibility properties for HYRISK. In turn, this will enable us to rank bridges that should be targeted for further scour evaluation; importantly, this ranking will be based on the probability of failure (including soil erodibility properties determined in this project) and expected economic losses.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>(Attach Any Photos)</p>	<p>Nothing to report at this time.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>Nothing to report at this time.</p>
<p>Web Links</p> <ul style="list-style-type: none"><li>• Reports</li><li>• Project website</li></ul>	<p>None.</p>