Auburn Partners with Tensar to Develop Performance-based Resilience Evaluation Program for Transportation Infrastructure

Auburn University Civil and Environmental Engineering professors to create performance-based resilience decision tools for transportation infrastructure.

ATLANTA, GEORGIA, USA, January 26, 2023 /EINPresswire.com/ -- Auburn University Partners with Tensar International to Develop Performance-based Resilience Evaluation Program (PREP) for Transportation Infrastructure

Tensar, a division of CMC, the leading provider of soil stabilization and earth reinforcement solutions, has agreed to fund research by Auburn University Civil and Environmental Engineering professors Dr. Jeffrey LaMondia and Dr. Benjamin Bowers to create performance-based resilience decision making tools for transportation infrastructure. The initiative will begin with a 2023 study of public and private transportation professionals to assess current and planned practices for the measurement of resilient road performance.

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> *Paul Schmitz, Market Manager for Public Roads at Tensar International*

"Although resilience-based decision making has also started to take precedence, there is limited guidance, much less straight forward, implementable performance-based resilience decision making tools for transportation infrastructure. Our Performance-based Resilience Evaluation Program (PREP) is designed with this challenge in mind, allowing for performance-based decisions that fit specific asset types, settings, levels of hazard risk, and risk tolerance of any agency, owner, or decision maker," said Auburn professor

Dr. Benjamin Bowers Ph.D.

“The goal is to create a flexible model that is data driven, performance based, adaptable, and scalable process for measuring, or ‘scoring’, transportation system resilience and calculating benefit-cost ratios for improvements,” added Auburn professor Dr. Jeffrey LaMondia, Ph.D. “The information we collect in the survey phase of the program will feed and help test our formula for determining the impact of engineering design and material decisions on the ability of pavements to withstand and rapidly recover from severe environmental impacts.”

Deliverables from the survey phase of the Auburn’s PREP project include a guidebook that practitioners can use to implement PREP to evaluate pavement resilience and potential pavement technology improvements. This guidebook will specifically:

- outline appropriate pavement resilience performance measures;
- set target values for these performance measures;
- define critical hazard events that are most likely to impact pavement resilience;
- identify potential pavement technology improvements that could be used to progress pavement resilience;
- summarize large-scale data collection procedures to quantify performance measure impact functions for different hazards;
- document existing datasets that can be used to develop performance measure impact functions.

Bowers, LaMondia and members of Tensar’s leadership team first connected as charter members of the Resilient Roads Roundtable – an ongoing series of peer-to-peer sessions with transportation industry leaders dedicated to enhancing the resiliency of roadway infrastructure. The group is working together to influence infrastructure decision-makers by sharing knowledge about projects, products, processes and performance measurement approaches which lead to superior return on investment when building more resilient, longer-lasting roads. Increased funding for road resiliency projects coming by the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Formula Program along with ongoing Roundtable discussions about the need and gap in performance measurement led to the launch of this Auburn – Tensar collaboration.

“As a charter member of the Resilient Roadways Roundtable, we felt it was key to create foundational tools to measure resilience,” said Paul Schmitz, Market Manager for Public Roads at Tensar International. “Tensar has some excellent adaptation technologies, and this study will help us create the very needed performance-based resilience decision making tools for transportation infrastructure.”

About Tensar
Tensar, a division of CMC, which is a leading provider of construction reinforcement solutions, capable of the meeting the most rigorous demands of the markets we serve. Tensar is a global

provider of engineered civil construction solutions, helping engineers, contractors and owners use geogrid and geopiers to achieve more cost-effective, reliable solutions for pavement construction, soil stabilization, earth reinforcement, ground improvement and other site development challenges. With manufacturing facilities in the U.S., U.K., China and Russia, Tensar can meet customers' needs wherever they are.

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