INFRASTRUCTURE RESILIENCE: FROM CONCEPT TO PERFORMANCE TO DECISIONS

S. McNeil, Y. Liu & A.S. Ramirez-Villamizar
University of Delaware, USA

ABSTRACT
Resilience is defined by the American Society of State Highway and Transportation Officials as the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events. Considerable attention has also been paid to measuring resilience but connecting measures of resilience to decisions has received little attention. Using the concept of resilience also raises many questions. What does resilience mean for life cycle cost? Is resilience just another level of service, or performance measure? How does resilience recognize the number of users affected by a disruption? Is resilience an appropriate metric for an objective function or is resilience part of multi-attribute decision making? How does resilience relate to sustainability? Is resilience the complement of vulnerability? Drawing on case studies that apply pavement performance as a measure of resilience, the results show that different measures and indicators are applicable for different types of decisions.