

# STRIDE

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Southeastern Transportation Research,  
Innovation, Development and Education Center

## 2018 Research Project Abstract

**Project Title:** Development of Guidance for Scheduling of Freeway Work Zones to Minimize Congestion Impacts (Project P2)

**Principal Investigator:** Rod Turochy, Ph.D., PE, Civil Engineering, Auburn University  
Email: [rodturochy@auburn.edu](mailto:rodturochy@auburn.edu)

**Research Team:** Virginia Sisiopiku, Ph.D., Civil, Construction & Environmental Engineering, UAB; Ossama Ramadan, Ph.D., P.E., Civil, Construction & Environmental Engineering, UAB

**ABSTRACT:** Work zones are commonplace on highways as agencies work to maintain and preserve the existing highway system as well as expand to increase its capacity. These work zones can cause delay for travelers as well as create opportunities for additional crashes to occur. These mobility and safety penalties are most acute on rural freeways due to the volume of traffic and high speeds of free-flowing traffic. Knowledge of the potential for occurrence, or probability of queue formation, which happens when volume exceeds capacity at the lane closure site, can help transportation agencies improve their work zone scheduling practices. This research will build on a current STRIDE study, which uses traffic simulation modeling to estimate the probability of queuing for a limited set of work zone traffic and geometric conditions. In that study, recognition that research has called for capacity to be represented stochastically rather than deterministically, has led to an approach that estimates the chance of queue formation for a given set of conditions. By expanding the range of lane closure scenarios and traffic conditions beyond that in the current study, a more complete set of conditions can be included in a decision support tool for transportation agencies. The research proposed herein broadens the range of conditions adequately to support development of a decision support tool that will allow agencies to decide, based on a selected risk of queue formation and resulting delay under which traffic conditions (volumes and truck percentages) to allow a lane closure to occur.