ROADWAY SAFETY INSTITUTE

Advancing roadway safety with user-centered solutions

UTC Project Information	
Project Title	Work Zone Mapping and Tag Deployment System
University	University of Minnesota
Principal Investigator	John Hourdos
PI Contact Information	hourdos@umn.edu 612-626-5492
Funding Source(s) and Amounts Provided (by each agency or organization)	Roadway Safety Institute (USDOT): $150,000 Roadway Safety Institute-Office of the Dean, College of Science & Engineering: $20,394 Roadway Safety Institute-Office of the Vice President for Research: $24,925
Total Project Cost	$195,319
Agency ID or Contract Number	UTC Grant Number: DTRT13-G-UTC35 CTS# 2017063
Start and End Dates	4/17/2017 – 5/31/2019
Brief Description of Research Project	*Final report abstract:* Roadway construction is an inevitable part of functional transportation infrastructure. However, work-zone incidents have increased over the years. This report is the third part of an interdisciplinary project to improve driver safety in work zones. The first component was a human factors study, performed by Craig et al. (2017), determining the most effective way to alert drivers to work zones without disrupting driver behavior. The second component, by Liao (2019), sought to determine whether Bluetooth low-energy tags could be deployed in work zones to provide real-time updates to drivers' mobile phones through an app. The third component, the Statewide Work Zone Information System (SWIS), establishes a real-time database of active work zones from the first advanced warning sign being placed to the time the crews pack up. SWIS uses beacons attached to traffic control devices, called assets, that send messages to a central cloud repository. From there, messages are processed, categorized into Projects, Traffic Control Plans, and Work Zones. SWIS continuously updates based on asset messages it receives. Users can access SWIS through a web interface, to view active, past or future projects, plan a project, or update existing projects. SWIS provides an online, real-time portal for storing, monitoring, and inspecting work zone traffic-control operations.
Describe Implementation of Research Outcomes (or why not implemented)	*No data to report.*

Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	*No data to report.*
Web Links • Reports • Project website	http://www.roadwaysafety.umn.edu/research/search/projectdetail.html?id=2017063 http://www.roadwaysafety.umn.edu/publications/researchreports/reportdetail.html?id=2878