Barricade Lighting System

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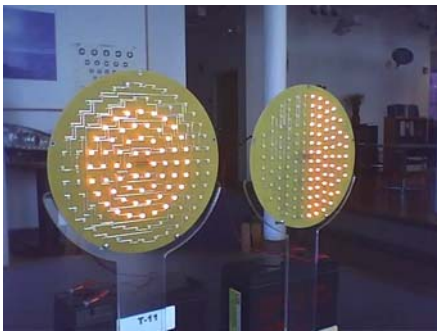
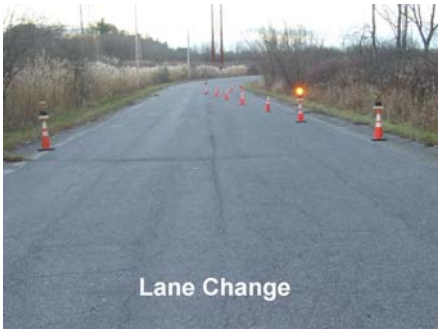
Presently in work zones, standard barricade warning lights are used to provide channelizing and warning functions. These yellow flashing lights are presently used without consideration of the specific work zone activities underway at any given time. Several novel concepts for a barricade lighting system (BLS) were developed and evaluated: flashing red lights for use when traffic is stopped or very slow within a work zone, flashing green lights when a work zone is inactive and traffic should proceed normally, expanding yellow lights when drivers should slow down and exercise enhanced caution, and sweeping yellow lights when lane closures require drivers to move to the right or left.

Signal function	Situation when used	Desired driver response
Flashing green light	Unoccupied work zone	Proceed normally
Flashing red light	Stopped or very slow traffic ahead	Stop immediately
"Sweeping" yellow light (left to right or right to left)	Lane closure	Change lanes as soon as possible
"Expanding" yellow light (center to periphery)	Occupied/active work zone	Slow down



Prototype BLS units were designed and fabricated. A survey of driver understanding of these BLS functions indicated that drivers would probably understand all of the functions but that the flashing red and green functions could result in conflicts with other roadway traffic control devices. A field evaluation of the expanding and sweeping BLS functions in mock-up work zones demonstrated that driver comprehension of the lights could be translated to a driving situation. Drivers changed lanes sooner (providing a 40% longer lane change margin) in response to the sweeping BLS function than to conventional flashing barricade lights, and subjective ratings of the clarity of the BLS functions were also positive.



Sponsors: RITA, USDOT
Completion Date: April 2011
In-Kind Support: LumenTech Innovations, NYSDOT, RPI
University: Rensselaer Polytechnic Institute