

Barricade Lighting System

Researchers at the LRC recently developed and evaluated scenarios that might be included in a barricade lighting system (BLS) to provide safety information to drivers approaching a work zone.

Presently, standard barricade warning lights used in work zones have channelizing (e.g., lane change) and warning (e.g., reduce speed) functions. Yellow flashing lights are utilized regardless of specific activities that may be taking place in the work zone. To explore possible signal scenarios for a BLS, four different ways to provide more information about the work zone to the driver were tested:



The LRC team created prototype BLS units, conducted a survey on the different functions, and performed a field evaluation. The survey indicated that drivers would likely understand all of the proposed functions.



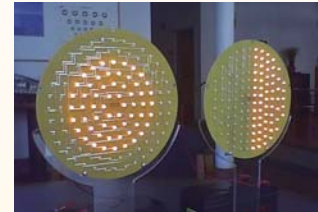
Expanding yellow light



Sweeping yellow light

- Flashing red lights are used when traffic is stopped or is moving very slowly in the work zone.
- Flashing green lights are used when the work zone is inactive, and traffic should proceed normally.
- Expanding yellow lights are used to slow drivers down and increase caution.

- Sweeping yellow lights indicate that lane closures require drivers to move to the left or right.



Expanding (left) and sweeping BLS units in mid-sequence.

However, there was some concern from regulatory authorities that the flashing red and green lights could result in conflicts with other traffic signals. LRC researchers then conducted a field evaluation of the expanding, sweeping, and standard yellow flashing barricade lights in mock work zones. The study revealed that drivers understood the expanding and sweeping signals in a realistic driving scenario. Furthermore, drivers changed lanes sooner in response to the sweeping BLS function than to conventional flashing barricade lights. The report includes discussion of the results and recommendations for future study.

Sponsor

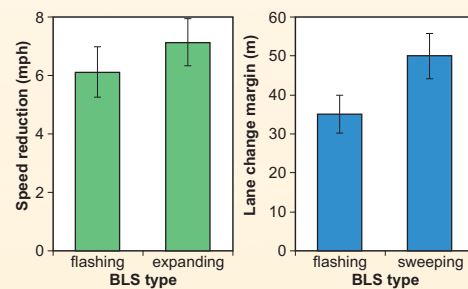
University Transportation Research Center

In-Kind Support

New York State Department of Transportation
LumenTech Innovations

Publication

The final report may be found at:
<http://www.utrc2.org/research/assets/199/UTRC-BLS-Report1.pdf>



Drivers reduced their speed more in response to the expanding BLS than to conventional flashing lights. When approaching lane change scenarios, drivers changed lanes earlier in response to the sweeping BLS than to flashing lights.