



NEVADA DEPARTMENT OF TRANSPORTATION RESEARCH DIVISION

FEASIBILITY OF IMPLEMENTING PEDESTRIAN HYBRID BEACON (PHB) SIGNALS FOR IMPROVING SAFETY AND MOBILITY IN NEVADA

Key · Points

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142-21-803

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Researcher:
Kimley-Horn and
Associates, Inc.

**Principal
Investigator:**
Molly O'Brien

NDOT Champion:
Jeffrey Bickett

PROBLEM

Several types of signalizations have been developed to improve safety at mid-block pedestrian crossings, such as Rectangular Rapid Flashing Beacons (RRFBs), Pedestrian Hybrid Beacons (PHBs), and mid-block traffic signals. These devices have differing physical characteristics, operational requirements, safety performance, installation costs, and maintenance requirements. In order to determine which device is most appropriate for a specific site, device selection criteria, along with signal timing guidance for corridors with mid-block pedestrian crossings, must be developed.

OBJECTIVE

The overall goal is to maximize pedestrian safety while avoiding unnecessary delays to motorized traffic. To this end, this research will investigate the feasibility and effectiveness in deploying and operating PHB signals for improving traffic safety and efficiency in Nevada's urban transportation systems. In particular, the strengths and weaknesses of the PHB signals compared to other treatments that have been widely used in Nevada (e.g., RRFBs,) will be studied, seeking to identify potential improvements by adopting the PHB signals upon the existing facilities.

METHODOLOGY

The research will analyze the safety and operational benefits of PHB signals under various scenarios and develop methods to guide the installation determinations and post-implementation operations. The development of the methods will be based on a review of state of current practices and experimental studies. The cases in Nevada will be considered specially, e.g., the research aims to provide justifications to determine the conditions that the agencies need to consider switching the PHB signals over the existing treatments such as RRFBs.

IMPLEMENTATION POTENTIAL

It is envisioned that the research will deliver practical guidelines, including warrants for the installation of a PHB signal, recommendations of PHB signal operations, and a manual for timing PHB signals. The research has a very high implementation potential, which can be immediately used by traffic safety and operations staff in Nevada as well as other jurisdictions. The implementation would require close collaboration with NDOT and local agencies.

Contact Information:

Nevada Department of Transportation – Research Annex 14-15
1263 South Stewart Street
Carson City, NV 89712
www.nevadadot.com