Research Problem Statement

ODOT Research Section
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I. TITLE

17-019 Best Practices for Installation of Rectangular Rapid Flash Beacons (RRFB) with and without Median

II. PROBLEM

Previous research (HRT-04-100) has identified the value of a pedestrian refuge island in improving the safety of uncontrolled pedestrian crossings, particularly on higher speed, higher volume roadways with multiple lanes. NCHRP 562 has guidance on placement of activated warning systems such as RRFB's for pedestrians in these same situations.

Practitioners require guidance as to the value and efficacy of pedestrian refuge islands versus RRFBs, and on the conditions where each will be more effective. It is also desirable to identify situations where there is significant benefit to installing both treatments.

This issue is of particular concern on three lane roadways: one lane in each direction with a two-way left turn lane. Beacons are typically installed on median islands, but the beacons may be seen by oncoming traffic even if installed on the opposite side of the roadway. Installing medians can lead to access management issues in urban and suburban areas and/or lead to conflicts with over-dimensional freight.

III. PROPOSED RESEARCH, DEVELOPMENT, OR TECHNICAL TRANSFER ACTIVITY

1) Review policies and procedures from other agencies in Oregon.
2) Identify RRFB's in Oregon and comparable states on three lane roadways with and without median islands. Determine the historic safety performance at these locations and compare that performance to roadway characteristics such as Traffic Volume, Pedestrian Volume, Truck Percentage, Turning Volumes, and Driveway Density.
3) Determine the yielding behavior of motorists at these locations and examine the relationship between this performance and the design elements of the installation. Particular attention should be paid to left turning vehicles.
4) Examine pedestrian behavior in using push buttons and cross walks with and without median refuge islands

IV. POTENTIAL BENEFITS

The research will identify the circumstances when it is best practice to provide a median island with an RRFB on three lane roadway cross-sections. If we can identify situations where an island is not needed it will simplify and reduce the cost of installing RRFB's. This will allow ODOT and other agencies to install more of these pedestrian safety devices. Conversely, this may provide the documentation that will help justify installing median islands where they are required for pedestrian safety.

V. IMPLEMENTATION

The results of this will update ODOT's guidance on uncontrolled crossings in the Traffic Manual. The results of the research will be used by traffic operation and safety professionals in selecting the appropriate treatments for enhancing these cross walks.

VI. LIST OF REFERENCES *(optional)*

[List the references you identified when you searched for completed and current research.]

NCHRP 562
HRT-04-100
Shyam Sharma, Region 3 Traffic Manager
Gary Obery, Traffic-Roadway Section
Kevin Haas, Traffic-Roadway Section
Mark Joerger, ODOT Research

VII. CONTACT INFORMATION

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