Research Notes

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Addressing Oregon's Rise in Deaths and Serious Injuries for Senior Drivers and Pedestrians

Background

In Oregon, about 20% of traffic fatalities involved drivers aged 65 or older. The rate of fatality and serious injury of these older drivers in Oregon has been increasing annually, triggering the Special Rule for Older Drivers and Pedestrians (SRODP) in the "Fixing America's Surface Transportation (FAST)" Act. The rule requires Oregon to include strategies to address this issue in its State Strategic Highway Safety Plan (SHSP) update. The objective of this research was to help the Oregon DOT develop strategies to address older driver and pedestrian safety issues which may be included in the SHSP update.

Study Outline

To meet the research need, this study:

1. Identified areas where older drivers and pedestrians are over-represented in serious crashes using Oregon crash data;
2. Conducted a review of best practices from local and national sources; and
3. Mapped best practices and countermeasures to Oregon such that significant improvements to older driver and pedestrian safety might result both in the short and long-term

Researchers reviewed design manuals, guidance documents, and published literature with a focus on older driver/pedestrian safety along with state policies. Oregon crash data between 2013 and 2016 was examined to find significant factors that impact older driver/pedestrian fatal and serious injury crashes. The study identified a list of countermeasures and matched them to crash factors. Finally, the research team conducted a workshop to bring together stakeholders and experts with responsibilities for policy and design guidance that relate to older driver and pedestrian safety. The workshop presented results of the data analysis, best practices and countermeasures, and identified opportunities for improving policies and procedures at ODOT.

Recommendations for Older Drivers

- **Intersections**

Intersections accounted for 40% of older driver fatal and serious injury crashes. Countermeasures include more overhead lighted signage (low cost), more visible and durable pavement markings (low cost), arrow pavement markings in advance of exclusive turn lanes (low cost), prohibiting right-turn-on-red at skewed intersections (low cost), using back-plates and larger signal lenses for signal heads on roads with speeds of 40 mi/hour or greater (medium cost), addressing limited or

restricted sight distance for left-turns (high cost), and increased use of protected left-turn lanes and use of separate signal face (high cost).

- **Rural Principal Roadways**

Rural areas accounted for 52% of older driver fatal and serious injury crashes, with rural principal roadways accounting for 21% of total crashes. In addition to intersection improvements listed above, specific countermeasures include, larger and more reflective regulatory signs (low cost), more visible and durable pavement markings (low cost), edge lanes to guide motorists (low cost), treating raised medians with reflective markings (low cost), raised pavement markers (low cost), fixed illumination in rural areas (medium cost), use of wide medians and independent alignments to reduce glare from oncoming headlamps (high cost).

- **Licensing and Education**

Existing research shows that states with a valid and reliable system for assessing the competency of older drivers have seen decreases in older driver crash rates. Therefore, Oregon should consider more frequent testing for older drivers, including both driving and cognitive tests.

Recommendations for Older Pedestrians

- **Improved Visibility and Illumination**

Crash data analysis showed that 20% of the crashes occurred in the dark with no street lights, and an additional 8% and 5% occurred during dawn and dusk, respectively, where the ambient lighting is low. Countermeasures to improve pedestrian illumination and visibility include improved lighting at intersections and near crossing locations, rapid flashing beacons or other active warning devices such as "Pedestrian Crossing" warning signs with flashing LEDs.

- **Treatments for Left-Turns**

Drivers often focus on oncoming traffic looking for gaps and thereby miss the crossing pedestrians during permissive left-turns. Increasing the use of protected left-turns can improve older pedestrian safety. This countermeasure also improves older driver safety by reducing their cognitive load. Cities such as Portland and New York City have been using wedges and centerlines to as an effective countermeasure to decrease left-turning vehicle speeds and improve pedestrian safety. Implementing protected pedestrian phases and providing pedestrian lead time a crossings near older communities may also improve safety.

- **Shortened Crossing Distances**

The proportion of serious injury crashes when the pedestrians were in the roadway were greater for older pedestrian than for pedestrians between 25-64 years of age. Shortening the crossing distance for pedestrians will shorten their exposure time and increase safety. Specific countermeasures include pedestrian islands in the median to provide refuge (high cost), curb extensions on commercial streets and bus routes (high cost), and raised crosswalks and road diets near older communities (high cost).

Implementation

Recommendations have been formatted for inclusion in updates to ODOT's policy and design guidance documents. Funds from the Highway Safety Improvement Program are available to implement projects associated with the findings of this research.

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To read the full research report go to:
https://www.oregon.gov/odot/Programs/Pages/Research-Publications.aspx

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