

# Safe Transportation for an Aging Population

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The United States Department of Transportation (U.S. DOT) estimates that the 65 and over population will grow by over 50 percent between now and 2020. Almost all of these people have been driving for most of their lives and may not be familiar with transit, paths, trails or other local transportation services. Over the past 20 years, fatalities among male drivers age 70 and over increased by 44 percent, and for female drivers 70 and over fatalities increased 75 percent. Washington State has one of the most rapidly growing elderly populations in the country. By 2020, over 1 million people in Washington will be 65 or older – almost twice the number of people in that age group today. The elderly in Washington represent 12 percent of the population, yet they make up 17 percent of the pedestrian casualties.

## Giving Up the Car Keys

Even in urban areas where there are typically more transportation options like bus service, sidewalks, paths, trails, and on-call transportation services many elderly people do not live within walking distance of the bus lines. The sidewalks often do not connect, and there is a fear of crime. With all these obstacles, it is easy to understand why many older people choose to continue driving even when age-related disabilities compromise their skills. As we age, our vision and hearing change. For example, to see the same distance, older people require 3 to 10 times more illumination than younger people. Our walking speeds and information processing speeds also slow down as we get older. However, roads, sidewalks, traffic signals and signs do not change as we do. In fact, as most transportation infrastructure ages, conditions become more dangerous for the elderly (e.g., faded signs and striping).

## Most common threats...

Research shows that seniors are in the most danger:

1. In intersections.
2. Backing up a vehicle or walking in the path of a backing vehicle.
3. In winter months/visibility.



## Danger at Intersections

National accident data shows that intersections are where the most fatal crashes involving older drivers and pedestrians occur. In Washington State, over 60 percent of the fatalities and over 40 percent of the injuries occur at intersections. This trend is attributed to the speed-distance judgments that must be made quickly at intersections.

When a vehicle is turning at an intersection, both the driver and the pedestrian are required to make judgments. In recent research, U.S. DOT identified major hazards for pedestrians at intersections including:

- Left turning vehicles.
- Stepping off the curb.
- Vehicles leaving the intersection.
- Vehicles screening the pedestrian.
- Reliance on the "WALK" signal.
- Inadequate "WALK" time.

It is critical that older pedestrians are given adequate time to cross roadways. Currently, most traffic signals (WALK/DON'T WALK) are set using an assumption that the average walking speed is 4 feet per second. However, numerous studies show that a walking speed of 2.5 feet per second is actually more realistic for the majority of older pedestrians.



## Intersection Improvements...

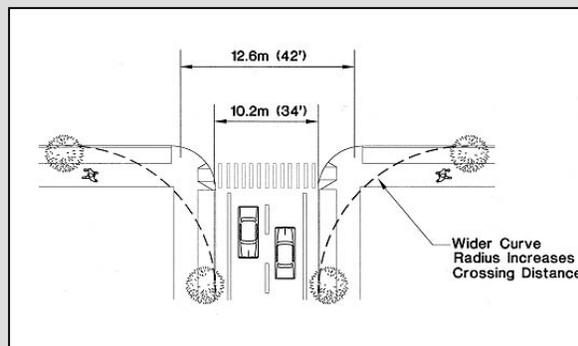
### Crossing Signals

- Extend street crossing time to an assumed walking speed of 2.5 ft/sec (0.85 m/sec).
- Provide a leading pedestrian interval of at least 3 seconds at signalized intersections with crosswalks.
- Provide countdown signal heads in areas with a large number of seniors.
- Provide placards at intersections that explain the meaning of pedestrian crossing signals.
- Place pedestrian crossing signals on medians.
- Provide accessible (audible) signals



### Intersections

- Provide median refuge islands.
- Delineate curbs and medians.
- Restrict right-turn-on-red by cars.
- Tighten curb radii.



## Backing Vehicles

Accidents involving backing vehicles occur in driveways, parking lots and in the roadway.

Older pedestrians may be at higher risk because they are focused on watching their step rather than watching the vehicles around them and may not be aware of backing vehicles.

### Design Improvements for Backing Vehicles...

#### Driveways and Parking Areas

- Increase visibility of the pedestrian; separate and/or differentiate the pedestrian area from the roadway or driveway.
- Choose vegetation that does not screen the pedestrian.
- Provide pedestrian level illumination.



#### Public Awareness

- Provide information to your community about the increased risk of backing vehicles.

## Walking in the Winter

During the winter months, there are typically more hours of darkness. People tend to wear darker, heavier clothing in the winter. These factors make it more difficult to see pedestrians. Combine these factors with the failing eyesight of either the older driver or pedestrian, and accident rates rise rapidly. In Washington State, most fatal accidents occur in December and January.

### Improving Visibility...

#### Lighting and Signage

- Install additional pedestrian level lighting and new florescent yellow-green signage.
- Add advanced warning signs, overhead warning signs, flashing beacons, and/or in-pavement lighting.



#### Public Awareness

- Provide information to your community about the added risks during winter months and the importance of bright clothing.

## Planning for the Elderly

In addition to making traffic safety improvements that are most needed now, planning for the expected increase in the elderly population is critical.

Longer term plans should include, at a minimum, projects that increase transportation options for the elderly like:

- transit improvements,
- security enhancements,
- sidewalk connections, and
- paths and trails.

Paths and trails may become particularly important to the elderly due to the increased availability of and interest in motorized and non-motorized scooters, mopeds, and other mobility devices.

## Resources

*Guidelines and Recommendations for Accommodating Older Drivers and Pedestrians*  
<http://www.tfhr.gov/humanfac/01105/cover.htm>

*Improvements in Symbol Sign Design to Aid Older Drivers*  
<http://www.fhwa.dot.gov/tfhr/safety/pubs/95129/95129.html>

*Traffic Operations Control for Older Drivers and Pedestrians*  
<http://www.fhwa.dot.gov/tfhr/safety/pubs/95169/95169.html>

*Safe Mobility for Older People*  
[http://ntl.bts.gov/DOCS/Safe\\_Ntbk/index.htm](http://ntl.bts.gov/DOCS/Safe_Ntbk/index.htm)

*Traffic Safety Facts: Older Population*  
<http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2002/2002oldfacts.pdf>

*Making Streets Safer for Seniors on Foot*  
<http://www.hsrb.unc.edu/pdf/pedbike/strsaf.pdf>

For additional information and resources contact Paula Reeves, WSDOT's Bicycle and Pedestrian Program 360-705-7258 or [Reevesp@WSDOT.WA.GOV](mailto:Reevesp@WSDOT.WA.GOV)