

# **Engineering our Highways for Elderly Mobility**

**April 27, 2006**

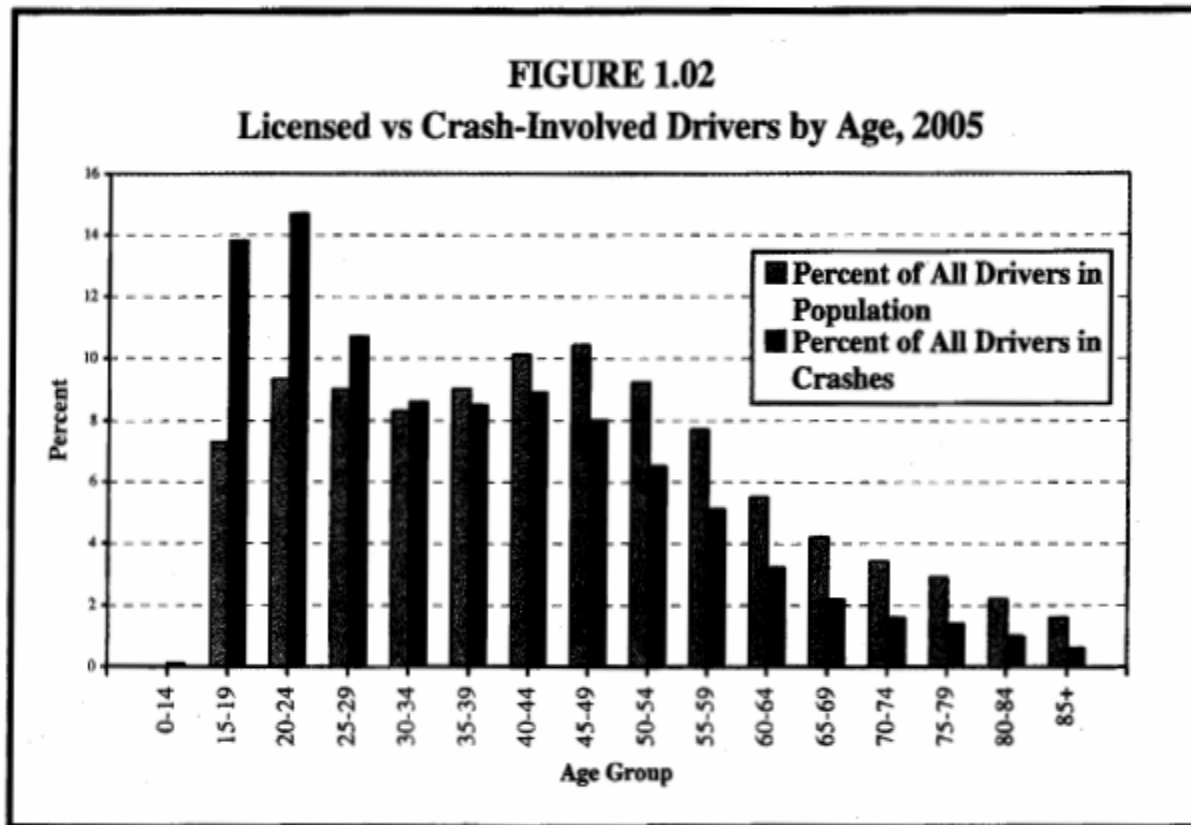
**Tom Sorel**

Division Administrator

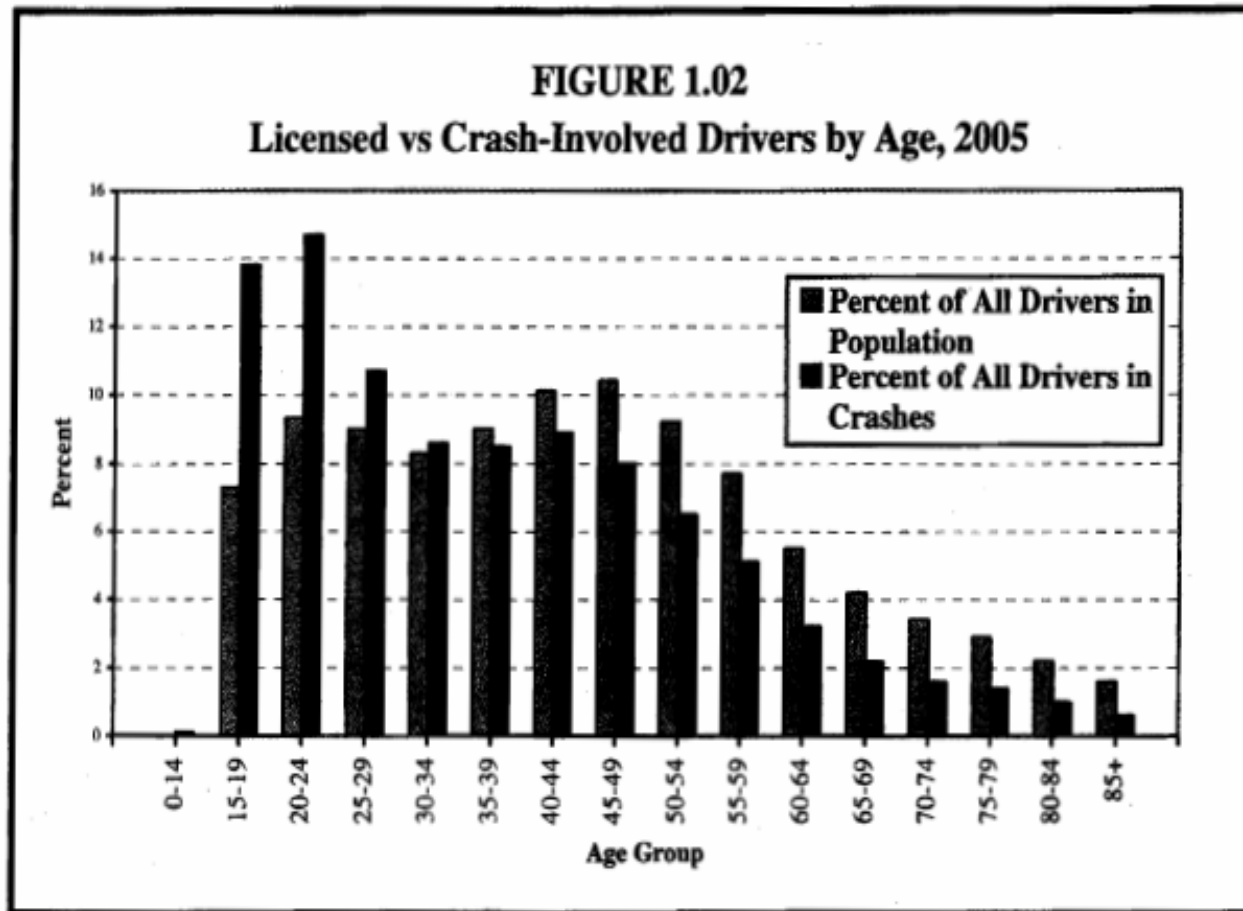
Federal Highway Administration

St. Paul, Minnesota

# Who's an Older Driver? How many are out there ?

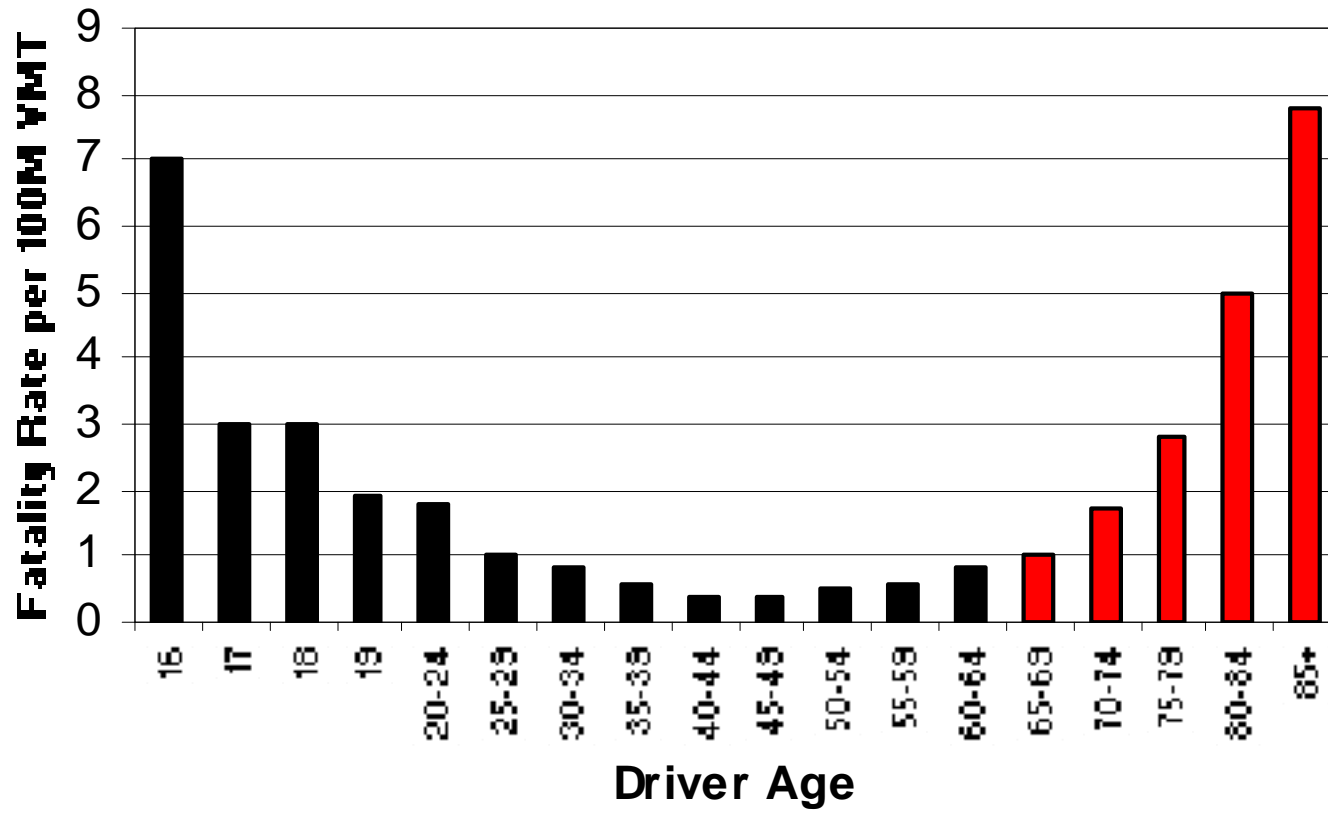


# Actual crash history of Older Drivers is modest:

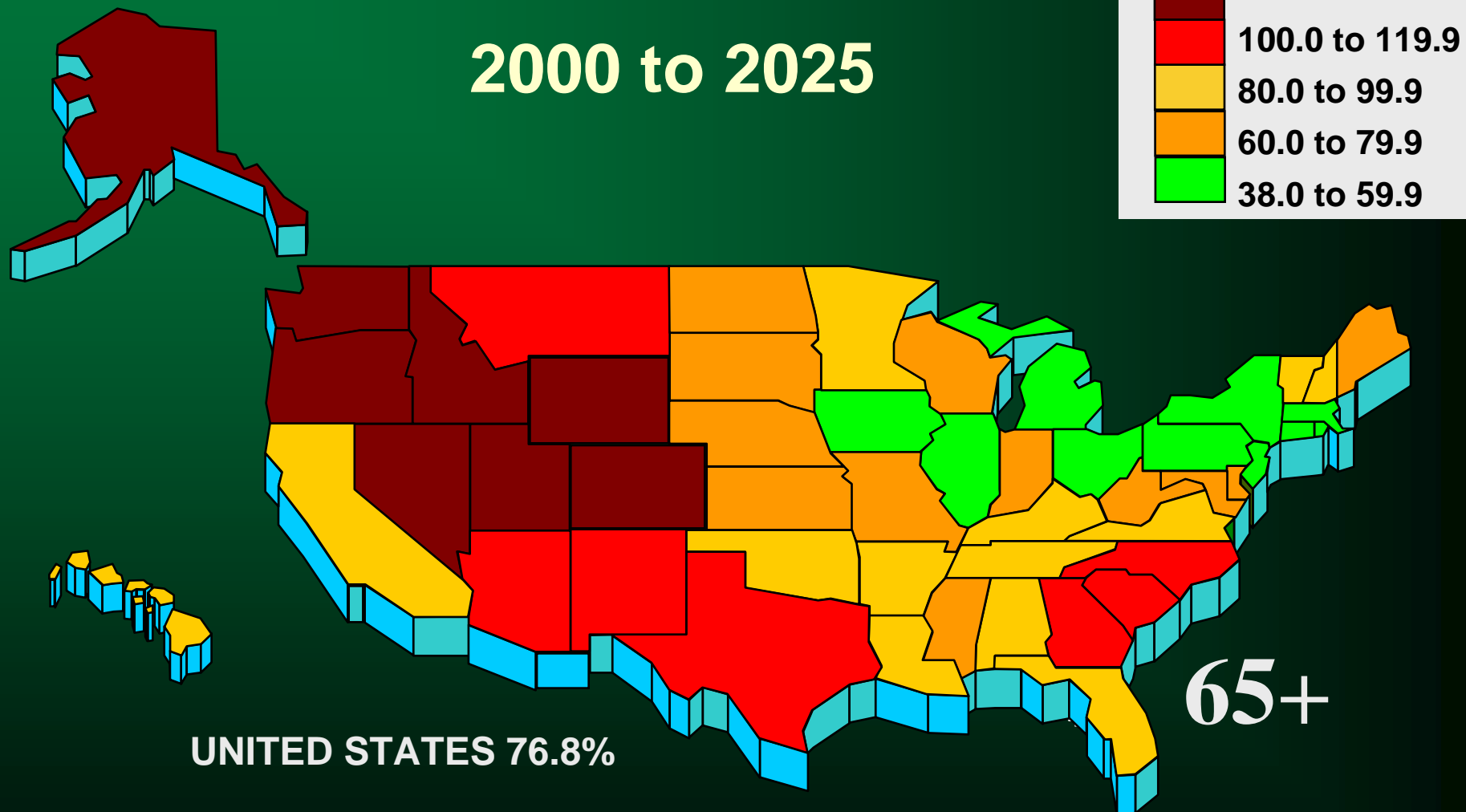


# Older drivers need our institutional help:

Driver Fatality Rates, 1996 (NHTSA)



# Percentage Increase in Elderly Population: 2000 to 2025



Source: HIGHWAY DESIGN HANDBOOK FOR OLDER DRIVERS AND PEDESTRIANS

## Percent of State Population 65 or older:

1. Florida	18%
2. Pennsylvania	16%
3. West Virginia	15%
4. Iowa	15%
5. North Dakota	15%

2000 census

## Fatalities in crashes with at least one driver 65 or older:

1. Florida	564
2. California	503
3. Texas	485
4. New York	276
5. Pennsylvania	271
6. Georgia	270
7. North Carolina	266
8. Ohio	213
9. Michigan	206
10. Illinois	197

# Aged Diminished Capabilities

## Vision

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- Acuity
- Contrast Sensitivity
- Visual Field / Visual Attention
- Motion Sensitivity
- Sensitivity to Glare
- Dark Adaptation

# Aged Diminished Capabilities

## Cognitive

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- Selective Attention
- Divided Attention
- Perception – Reaction Time
- Working Memory

# Aged Diminished Capabilities

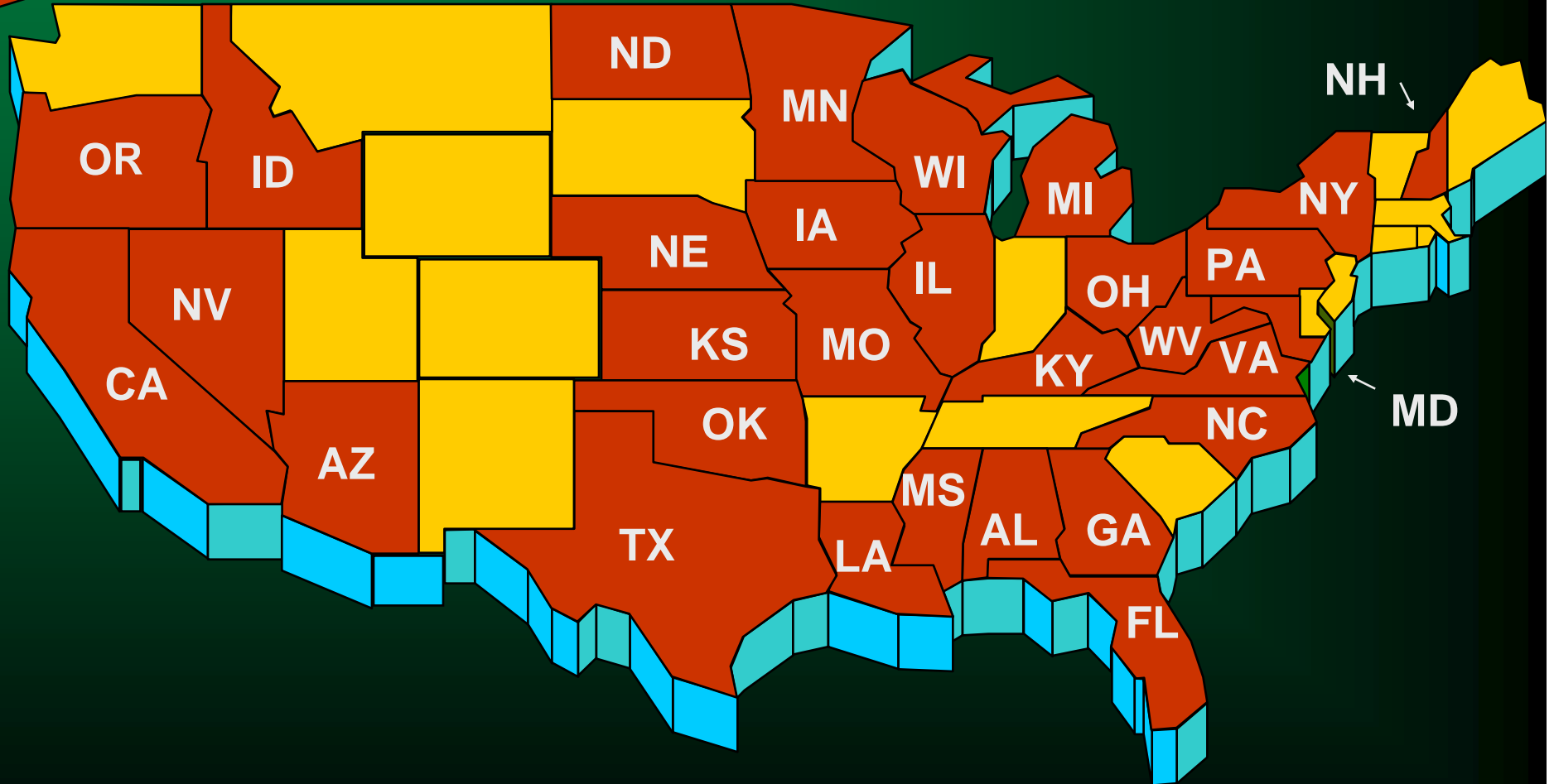
**Physical:** Upper body strength, range of motion

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Scanning traffic,  
turning movement  
becomes  
more difficult



This presentation will showcase best practices from the following states:



Make the  
Turning Motion  
Easier

# Aged Diminished Capabilities

## Selective Attention

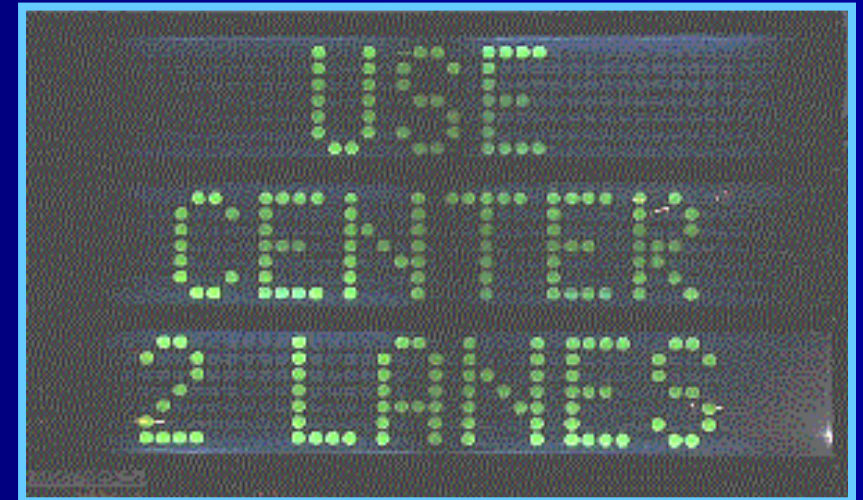
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ability to filter information  
& continuously focus  
on the most critical  
information



# Aged Diminished Capabilities Working Memory

ability to store, manipulate,  
and retrieve information for  
later use



# Intersections:

## Compared to drivers age 40-49:

- drivers age 65-69 are **2.3 times** more at risk for multiple-vehicle crashes at intersections

drivers age 85+ are **10.62 times** more at risk

# Aged Diminished Capabilities Decreased Motion Sensitivity

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ability to judge gaps  
for turning, crossing,  
and merge maneuvers



Anything you do to simplify the  
operation of an intersection,  
*particularly the demands*  
*on left turn traffic,*  
is an elderly mobility countermeasure.

# Add LT Phasing

## Detroit & Grand Rapids



13 intersections where  
left-turn phasing and LT lane  
was added:



**Total Crash Reduction  
Head-On Left Turn  
by Age**

**25-64      66%**

**65+      73%**

# Flashing Yellow Arrow for permissive left turn



**Oregon DOT policy: all new permissive signals**

# Questions?

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# Licensing Challenges for the Older Driver

-Initial licensing provisions  
vary nationwide

-Renewal procedures  
not as varied

## Common Renewal Procedures:

- Driving record check
- Appear in person
- Pass a vision test

## Significant Differences:

- Length of time between renewals
- Special Provisions for older drivers in 25 States

## In Minnesota:

- 4 yr. renewal cycle
- No special provisions for older drivers that are safety related
- Medical Advisory Board

## Opportunities:

- Accelerated renewal procedures
- Uniform reporting requirements for medical professionals
- Identifying high-risk drivers through crash records

# Opportunities:

- Enhanced testing
- Coordinated law enforcement
- Training for licensing professionals
- Education and support programs for family and friends

# Questions?

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