FHWA OLDER ROAD USER PROGRAM & ROADWAY DESIGN GUIDELINES



SAFE MOBILITY AT ANY AGE POLICY FORUM SERIES

FORUM 3

April 29, 2004

Crash Rates: Per Capita



Crash and Fatality Rates: Mileage Adjusted



Source: Massie and Campbell (1993)

Changes in the Population

Changing
Demographics

Actual and Projected Growth of the Older Population -(Special Committee on Aging, 1987)



Change in "Design Driver"

History of FHWA Older Road User Activities

- 1988: TRB 218, Transportation in an Aging Society
- 1989: FHWA High Priority Area: Safety and Mobility for an Aging Population



History of FHWA Older Road User Activities (continued)

- 1997: Older Driver Highway Design Handbook
- 1998: Older Driver Highway Design Handbook: Recommendations and Guidelines
- 1999: Older Driver Workshops



History of FHWA Older Road User Activities (continued)

- 2000 & 2003: Revised Manual on Uniform Traffic Control Devices
- 2001: Revised AASHTO Green Book
- 2001: Revised Highway Design Handbook for Older Drivers and Pedestrians



History of FHWA Older Road User Activities (continued)

- 2003: Guidance for Implementation of the AASHTO Strategic Highway Safety Plan
- 2003: Demonstration projects to evaluate the effectiveness of older road user guidelines
- 2004: Travel Better, Travel Longer Pocket Guide



Highway Design Handbook for Older Drivers and Pedestrians

Highway Design Handbook

For Older Drivers And Pedestrians Guidelines and Recommendations

To Accommodate Older Drivers and Pedestrians

Publication No. FHWA-RD-01-103 Publication No. FHWA-RD-01-051

http://safety.fhwa.dot.gov



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Older Driver Design Workshop

- 1 full day presentation
- Describes age related changes
- Reviews Handbook
- Uses case studies
- Presented in over 40 states



- Reductions in Acuity
- Reductions in Contrast Sensitivity
- Increased Sensitivity to Glare
- Yellowing of Lens
- Restrictions in Area of Visual Attention

Countermeasures to Accommodate Visual Changes

- Bigger & Brighter Traffic Signs; Larger Legends; More Contrast
- Brighter Pavement Markings & Delineation of Curbs/Medians
- Overhead Placement of Signs & Signals
- Increased Use of Highway Lighting

Divided Attention

Processing Speed (Perception-Reaction Time)

Working Memory

Countermeasures to Accommodate Mental Changes

- Redundant Signing
- Protected Operations
- Increase PRT in Design & Operations
- Positive Offset of Left-Turn Lanes

- Reduced Limb (arm, shoulder, leg, knee, foot) Strength, Flexibility & Range of Motion
- Reduced Head/Neck and Upper Torso Flexibility & Range of Motion

Eliminate Skewed Junctions

- Increase Perception-Reaction Time in Intersection Sight Distance Calculations
- Enlarge Curb Radii at Intersections
- Use Parallel Entrance Ramp Geometry
- Assume Slower Walking Speed for Pedestrian Signal Control





http://mutcd.fhwa.dot.gov



Changes to the National Standards Legibility Distance

• Historically:

1 inch = 50 feet

• 2003 MUTCD:

1 inch = 40 feet

• Optimum:

1 inch = 30 feet



Larger Street Name Signs



Post-mounted sign





Turning Path Pavement Markings





Signal Phasing Protected Left Turn



Demonstration Projects

--cost share agreements --3-year time frame --identify specific road segments --implement appropriate guidelines --evaluate the effectiveness -- determine the costs and benefits



Demonstration Projects Washington State DOT will address pedestrian safety





Demonstration Projects

Arizona DOT will address safety in general relating to signs, signals, pavement markings



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Demonstration Projects

Massachusetts Governor's Highway Safety Bureau will address work zone safety







- Infrastructure changes have been identified and promoted by FHWA
- FHWA is working with partners to improve safety and mobility of older road users and all road users
- Accommodating needs and capabilities of older drivers can help all drivers



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THANK YOU!!!

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