



Highway Safety Research at MRI

Douglas W. Harwood
Midwest Research Institute
Kansas City, MO



Midwest Research Institute





Midwest Research Institute

- Independent not-for-profit contract research organization
- Headquarters in Kansas City, MO
- Founded in 1944 by local business leaders
- Performs research under contract for government and industry



Midwest Research Institute

- Broad-based research organization:
 - performs research in chemistry, biology, human health, engineering, agriculture, and energy
 - Operates NREL in Golden, CO, for U.S. DOE
 - 1,600 staff members:
 - 400 in Kansas City headquarters
 - 1,100 at NREL in Colorado
 - 100 in Florida and Maryland



Highway and Transportation Research at MRI

- Active in highway and transportation research since the late 1960s
- Engineering Division
- Transportation Group (13 staff members):
 - 6 engineers
 - 3 statisticians
 - 1 analyst
 - 3 technicians



Highway and Transportation Research Areas

- Traffic safety
- Traffic operations
- Highway geometric design
- Truck safety and operations
- Pedestrian and bicycle safety
- Work zones
- Statistics and data analysis



Highway and Transportation Research Sponsors

- Federal Highway Administration
- National Cooperative Highway Research Program
- AASHTO
- State DOTs
- AAA Foundation for Traffic Safety

SafetyAnalyst

- FHWA software tools for safety management of specific highway sites
 - network screening
 - diagnosis
 - countermeasure selection
 - economic analysis
 - priority ranking
 - effectiveness evaluation

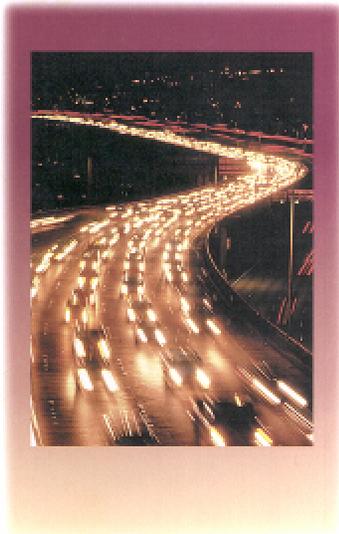
Highway Safety Manual

- Under development through NCHRP research
- Planned for publication by AASHTO in 2008
- Safety equivalent of the Highway Capacity Manual
- Key sections:
 - safety knowledge
 - prediction methodologies
 - safety management
 - effectiveness evaluation



AASHTO Strategic Highway Safety Plan

AASHTO Strategic Highway Safety Plan



A Comprehensive Plan to
Substantially Reduce
Vehicle-Related Fatalities and
Injuries on the Nation's Highways

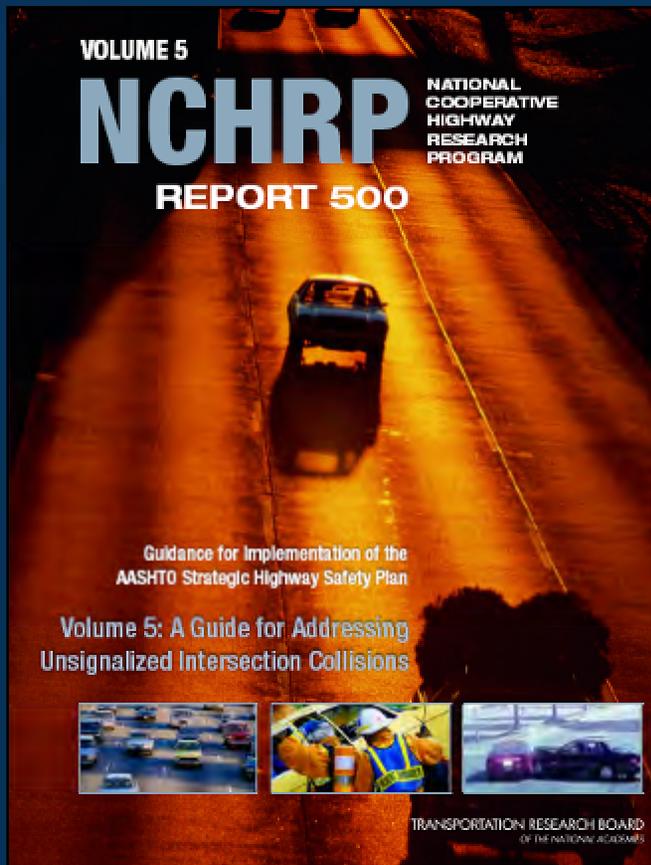
GOAL:

- Reduce fatality rate from 1.5 to 1.0 deaths per 100 MVMT and over 9,000 lives saved annually by 2008

SCOPE:

- 22 emphasis areas

NCHRP Report 500 Implementation Guides



- Printed guides – published by TRB
- Web site – safety.transportation.org/plan.aspx

NCHRP Report 500 Implementation Guides

ALREADY PUBLISHED

- Aggressive Driving
- Unlicensed Drivers/
Suspended and
Revoked Licenses
- Trees in Hazardous
Locations
- **Unsignalized
Intersections**
- Head-on Accidents
- Run-off-road
Accidents
- **Older Drivers**
- Safety Belts
- Heavy Trucks
- Pedestrians
- **Horizontal Curves**
- Utility Poles
- Signalized
Intersections



NCHRP Report 500 Implementation Guides

FORTHCOMING

- Emergency Medical Services
- Bicycles
- Motorcycles
- Younger Drivers
- Alcohol
- Speed Reduction – High-Speed Roads
- Speed Reduction – Low-Speed Roads
- Data and Analysis

Geometric Design and Safety Research

- Application guidelines for shoulder and centerline rumble strips
- Cross-section design for rural divided highways
- Lane widths on urban arterials
- Intersection turn lanes

Design Guides and Manuals

- Edited/updated the 2001 AASHTO *Green Book*
- Wrote AASHTO's *Guidelines for Geometric Design of Very-Low Volume Local Roads* (2001)
- Final revision and editing of AASHTO's *Guide for Planning, Design, and Operations of Pedestrian Facilities* (2004)

Passing Lanes



Passing Lanes

- Added passing lanes to the HCM 2000
- Developed design guidelines for MoDOT
- Conducted safety and traffic operational evaluation in project design for Montana DOT
- Assesses application of European 2+1 roads in the U.S.

Questions?