NTSB Recommendations to Reduce Speeding-Related Crashes

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About the NTSB

- Independent federal agency
- Investigates every US civil aviation accident and significant accidents in other modes
  - Highway, marine, rail, pipeline
- Carries out special studies about transportation safety
Reducing Speeding-Related Crashes Involving Passenger Vehicles

- Adopted on July 25, 2017
- 19 safety recommendations to US DOT, NHTSA, FHWA, GHSA, IACP, NSA, and 50 states
Why the NTSB Did This Study

• Speeding is one of most common crash factors
• 10,111 speeding-related fatalities in 2016
• Most speeding vehicles in fatal crashes are passenger vehicles
US Speeding-Related Fatalities, 2007-2016

Traffic Fatalities

Calendar Year

2007: 13,140 (32%) Not Speeding-Related, 11,767 (31%) Speeding-Related
2008: 10,664 (32%) Not Speeding-Related, 10,508 (32%) Speeding-Related
2009: 10,001 (31%) Not Speeding-Related, 10,329 (31%) Speeding-Related
2010: 9,696 (30%) Not Speeding-Related, 9,283 (27%) Speeding-Related
2011: 9,723 (27%) Not Speeding-Related, 10,111 (27%) Speeding-Related

Source: FARS
Safety Issues Identified in NTSB Study

- Speed limits
- Data-driven speed enforcement
- Automated speed enforcement (ASE)
- Intelligent speed adaptation (ISA)
- National leadership
Speed Limits

• Speed limit changes typically require an engineering study, including speed survey
• Predominant factor used when changing posted speed limits is the 85th percentile speed
  • No strong evidence that it equates to lowest crash involvement rate
  • Can result in unintended consequences, including higher operating speeds
Maximum Speed Limits by State, 2012

Source: GHSA
Maximum Speed Limits by State, 2014

Source: IIHS
Maximum Speed Limits by State, 2016

Source: IIHS
Expert systems can systematically incorporate other factors (such as crash statistics) when setting speed limits.

- Example: FHWA’s USLIMITS2 software

Safe system approach to setting speed limits in urban areas is an improvement over conventional approaches.
Speed Limits: Recommendations

- FHWA: Revise MUTCD
  - Require factors that are currently only optional for setting speed limits (such as crash statistics)
  - Require expert system for validation
  - Remove guidance that speed limits be within 5 mph of 85th percentile
  - Incorporate safe system approach for urban roads
Data-Driven Speed Enforcement

• State and local law enforcement agencies increasingly using data-driven approaches for speed enforcement
  • Example: High-Visibility Enforcement (HVE) programs such as Data-Driven Approaches to Crime and Traffic Safety (DDACTS)
  • Lack of consistent reporting of speeding-related crashes hinders the effectiveness of these programs
Speeding-Related Crash Data Guidance

- Model Minimum Uniform Crash Criteria (MMUCC) Guideline contains voluntary guidance for state crash data
- Developed by NHTSA and GHSA
- Attributes of “Speeding-Related” element
  - Exceeded Speed Limit
  - Too Fast for Conditions
  - Racing
  - Unknown (Unknown if Speeding)
  - No (Not Speeding)
Vehicles in Fatal Crashes by Speeding-Related Category, 2014 -2016

- Exceeded Speed Limit: 10,791 (7.4%)
- Too Fast for Conditions: 11,861 (8.1%)
- Unknown If Speeding: 6,726 (4.6%)
- Not Speeding: 112,577 (76.8%)

- 26,589 Passenger Vehicles Considered Speeding-Related
  - 1,554 Vehicles Reported Travel Speed >10 mph Above Posted Speed Limit
  - 2,567 Vehicles Reported Travel Speed >10 mph Above Posted Speed Limit

Source: FARS, 2014-2016
Percent of Speeding Vehicles in Fatal Crashes Coded as Exceeding Speed Limit, 2014-2016

Source: FARS, 2014-2016
Data-Driven Speed Enforcement: Recommendations

• NHTSA
  • Identify performance measures and establish a consistent method for evaluating speeding-related HVE programs
  • Identify best practices for communicating the effectiveness of these programs

• NHTSA, GHSA, IACP, NSA
  • Develop and implement a program to increase the adoption of speeding-related MMUCC data elements and improve consistency of crash reporting
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Growth of Automated Speed Enforcement (ASE) Programs in the United States

1986: First 2 ASE Programs

April 2018: 142 Active ASE Programs in 15 States + DC

Source: IIHS
ASE Effectiveness

• ASE is an effective countermeasure to reduce speeding-related crashes and injuries
  • 2010 systematic review found serious/fatal injury crashes reduced by 11 to 44%
  • NHTSA gives ASE highest effectiveness rating in *Countermeasures That Work*
• The lack of enabling legislation, and state-level restrictions, have led to underuse of ASE

Source: Washington, DC, Department of Transportation
ASE Recommendations to States

- To 7 states prohibiting ASE
  - Amend current laws to authorize state and local agencies to use ASE
- To 28 states without ASE laws
  - Authorize state and local agencies to use ASE
- To 15 states with ASE restrictions
  - Amend current laws to remove operational and location restrictions on ASE, except where necessary to align with best practices
ASE Best Practices

- *Speed Enforcement Camera Systems Operational Guidelines*
- Not updated since published in 2008
- 63% of ASE program administrators unaware of guidelines
- In several areas, existing ASE programs have low alignment with guidelines
- Recommended that NHTSA and FHWA update and promote ASE guidelines
Point-to-Point ASE

• Time-synchronized cameras measure average vehicle speed between two points
  • Used in Europe, Australia, New Zealand
  • As effective as fixed, single-point ASE
  • Encourages driving speed limit over longer distances
• Recommended that NHTSA and FHWA assess effectiveness of Point-to-Point enforcement in US and include in ASE guidelines
Intelligent Speed Adaptation (ISA)

- In-vehicle system determines speed limit via GPS and/or sign-detecting camera
  - Alerts driver or actively limits vehicle speed
  - Effective at reducing speeding
  - More widely available in Europe than US
- Recommended that NHTSA include ISA in New Car Assessment Program (NCAP)

Source: Ford Motor Company
National Leadership

- Few negative social consequences to speeding
- Drivers underappreciate risks
- Changing behavior requires coordinated effort
- No national leader for issue
  - NHTSA does not coordinate any national events
  - Incomplete and inconsistent participation by states
National Leadership: Recommendations

• NHTSA
  • Collaborate with other traffic safety stakeholders to develop and implement an ongoing program to increase public awareness of speeding, including an annual enforcement mobilization
  • Establish a program to incentivize state and local speed management activities

• US DOT
  • Complete the actions called for in the 2014 Speed Management Program Plan
Status of Safety Recommendations

• Initial responses have been received from many recipients
• Most initial responses have been acceptable
• Challenges
  • Only 7 states have responded to ASE recommendations
  • NHTSA waiting for operational Point-to-Point ASE program
  • NHTSA will not include ISA in NCAP; will revisit as technology matures
  • NHTSA will explore speeding enforcement mobilizations, but does not have dedicated funding
• NTSB speeding safety study
  • Report
  • Presentations from board meeting
  • Status of safety recommendations
  • Press releases
• Other NTSB safety research
• NTSB safety advocacy