TCRS Strategic Plan

• Vision - Lead roadside policy development, support safety innovations, and be an information resource to promote a decline in roadway departure related deaths and incapacitating injuries.

• Mission
  • Develop and maintain the Roadside Design Guide (RDG)
  • Develop and Maintain the Manual for Assessing Safety Hardware (MASH)
  • Monitor effectiveness of implementation guidance and testing standards & modify as needed
TCRS Coordination Efforts

- FHWA, Task Force 13 & TRB Committees
  - Identify research and testing needs
  - Interpretation and implementation of MASH
- Research through NCHRP & Pooled Fund efforts
  - Consideration of Roadside Features in the Highway Safety Manual (Project 17-54)
    - Identify lane departure CMFs
    - Comparison of IHSDM and Roadside Safety Analysis Program
- NTSB – recommendations resulting from crash investigations
Roadside Design Guide

- Latest errata released in July 2015
- Focuses on design and placement guidance for safety features:
  - Barriers and bridge railings
  - Sign and luminaire supports
  - Median and roadside slopes
  - Work zone devices
Roadside Design Guide Update

- NCHRP Project 20-7(383)
  - Project kickoff at tomorrow’s TCRS meeting
  - Literature review – research completed since 2011
  - Identify guidance voids
  - Review source documents
    - Does guidance still reflect state of the practice?
  - Recommend further enhancements
Changes Planned for 5th Edition

- Chapter Reorganization
  - More logical flow
  - Minimize repetition between chapters
- New focus areas
  - Keeping vehicles on the road
  - Edge of road strategies
- Provide more sample problems
- Incorporate recent research results
Chapter Reorganization

• Ch. 1 – Intro. to Roadside Safety (1, 2, 3)
• Ch. 2 – Roadway Strategies (new)
• Ch. 3 – Forgiving Roadside (3, 4)
• Ch. 4 – Urban Safety (10)
• Ch. 5 – Low Volume Roads (12)
• Ch. 6 – Highway Appurtenances (4)
• Ch. 7 – Barrier Guidelines (5, 6)
Chapter Reorganization

- Ch. 8 – Flexible Barriers (6)
- Ch. 9 – Semi Rigid Barriers (5, 9)
- Ch. 10 – Rigid Barriers (5, 6,)
- Ch. 11 – Bridge Railings & Transitions (7)
- Ch. 12 – End Terminals (8)
- Ch. 13 – Work Zones (9)
- Ch. 14 – Mailboxes (11)
Pending or Completed Research (Design)

- Median cross-section design (Report 794)
- Safety treatments for roadside ditches (Project 16-05)
- Updated clear zone guidance (Project 17-11(2))
- Guidelines for slope traversability (Project 17-55)
- Selection of appropriate countermeasures for opposite direction crashes (Project 17-66)
- Guidelines for shielding bridge piers (Project 12-90)
- Practices for Preventing Roadway Departure Crashes (Synthesis 20-05/48-01)
- Practices of Rumble Strips and Rumble Stripes (Synthesis 490)
Pending or Completed Research (Barriers)

- Median cable barrier guidance (Report 711)
- Selection of bridge rail test levels (Project 22-12(3))
- Barrier designs near bridge ends w/restricted ROWs (Project 15-53)
- Roadside barriers placed on MSE walls (Project 22-20(2))
- Selection & placement of TL-2 through TL-5 median barriers (Project 22-31)
- Barrier performance on superelevated curves (Project 22-29A)
- Restoration of longitudinal barriers, Phase 2 (Project 22-28)
- Practices for High-Tension Cable Barrier (Synthesis 493)
Pending or Completed Research (Data)

• Long-term roadside crash data collection program (Project 17-43)
  • Supplements program developed under NCHRP 17-22
• Work Zone Crash Characteristics and Countermeasure Guidance (Project 17-61)
• Motorcycle crashes with traffic barriers (Project 22-26)
Long-term Considerations

• Adopt a risk-based approach
  • Designer selects acceptable level of risk (could be a policy decision)
  • Designer predicts number of encroachments
  • Guidance changes based on inputs
• Provide more discussion on what to do when the “textbook” solution cannot be achieved
• Impact of connected and autonomous vehicles
• NCHRP Project 15-65 (2017)
  • Develop comprehensive objective criteria to reduce lane departure crashes and prepare a major update to the RDG
Critical Research Needs to Support RDG and MASH Updates

Recently funded:

- Practical approach for addressing fixed objects within the clear zone (Project 17-82)
- Methods to evaluate side impacts with roadside safety features
- Collaborative approach for conducting multi-state in-service evaluations of roadside safety features
Critical Research Needs to Support RDG and MASH Updates

Current Needs:

• Roadside encroachment data for all vehicle types across a range of traffic volumes (incl. higher-speed facilities)
• Identifying thresholds for updating MASH vehicle types and impact conditions with information collected from in-service performance evaluations
• Verification of calculated occupant impact conditions using instrumented dummies
Critical Research Needs to Support RDG and MASH Updates

Current Needs:

• Development of a standardized portable concrete barrier with reduced deflection
• Evaluation of zone of intrusion and attachments to barriers
• Development of pedestrian barrier for use in urban areas
QUESTIONS?