ROADSIDE DESIGN GUIDE,
4th Edition 2011

AASHTO - Subcommittee on Design

June 11, 2012

Portland, Maine
Presentation Overview

• 2011 RDG Update Objectives
• Summary of Some Notable Chapter Changes
• TCRS Research Objectives
UPDATE STATISTICS

INCORPORATE LASTEST RESEARCH

RESOLVE CONFLICTS RELATED TO CLEAR ZONE [NCHRP 20-7 (TASK 171)] WITHIN AASHTO DOCUMENTS”

REFERENCE AASHTO-AGC-ARTBA, TASK FORCE 13 WEB SITE FOR STANDARDIZED HIGHWAY BARRIER HARDWARE
ESTABLISHED DEFINITION FOR USE ON BOTH PUBLICATIONS FOR:

- Clear zone
- Clear Recovery Area
- Horizontal Clearance
- Lateral Offset
ROADSIDE DESIGN GUIDE, 2011 UPDATE

- APPENDIX WITH STANDARD DRAWINGS REMOVED
- REFERENCE AASHTO-AGC-ARTBA TASK FORCE 13 REPORT, “A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE”
ROADSIDE DESIGN GUIDE, 2011

- REFERENCE FHWA – OFFICE OF SAFETY FOR ACCEPTANCE LETTERS
  - WEB SITE –
    http://safety.fhwa.dot.gov/roadway_dept/road_hardware/index.htm

- ADD REFERENCE FOR UPDATE CRASH TEST CRITERIA UNDER MASH & FHWA/AASHTO IMPLEMENTATION PLAN
SUMMARY OF CHAPTER CHANGES
CHAPTER 1 - Introduction

- Update Statistical Data

- Reference New Crash Test Procedures for Manual For Assessing Safety Hardware, 2009

- Reference to AASHTO/FHWA Joint Implementation Plan For Continued Use of NCHRP 350 Accepted Hardware
Development of Update Benefit/Cost Analysis Program (RSAP) Beta Program in Testing Mode – Anticipated Availability 2012

Reference New Crash Test Procedures for Manual For Assessing Safety Hardware, 2009

Added Section 2.3 In-Service Evaluation
Update Definition on Clear Zone – includes shoulders, bike lanes, and auxiliary lanes

Horizontal Curve Adjustment Factors (Table 3-1)

Expanded Examples for Clear Zone Evaluation
Broader Guidance for Protection of High Level Lighting Support (Section 4.5.2)

Expanded Discussion on Utility Pole Site Awareness (Section 4.8)

Expanded Tree Discussion on Treatment Approaches (Section 4.9)
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CHAPTER 5 – Roadside Barriers

- Reference to MASH Acceptance for Roadside Hardware

- Reference to Task Force 13 Web Site for Barrier Information

- New Table 5-4 for Listing of Roadside Barrier Hardware

- Strong Post W-Beam – Minimum Height of 26½ inches (replace at lower heights)
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CHAPTER 5 – Roadside Barriers

- Update and Added New Roadside 31 in. Tall Hardware Systems (MGS, Gregory Mini Spacers, Trinity T -31, Nu-Guard, etc)

- Added Reference to Zone of Intrusion

- Enhanced Guidance for Placement of Curbs with Barrier Hardware

- Revision to Length of Need for Design Speed Ranges, ADT Ranges, and Runout Lengths

- New Section for Guidance for Addressing Guardrail on Radius
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CHAPTER 6 – Median Barriers

- New Table 6.4.1 Listing of Crashworthy Median Barriers
- Update Summary of Median Barriers
- Introduces Zone of Intrusion
- Revision to Length of Need for Design Speed Ranges, ADT Ranges, and Runout Lengths
- New Section for Guidance for Addressing Guardrail on Radius
General Updates

Reference for Complete Listing of Bridge Railings to Task Force 13 Web Site

Reference to AASHTO – LRFD Bridge Design Specifications
Rewrote Chapter with References to Anchorages, Terminals, and Crash Cushions

Reference for Complete Listing of End Treatment Systems to Task Force 13 Web Site

Discussion on Energy-Absorbing vs. Non-Energy-Absorbing

Update of Terminals and Crash Cushions for Roadside and Median Applications
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CHAPTER 9 – Work Zones

- Application for Clear Zone Concept in Work Zones

- New Section 9.2.1.1 on Test Level Requirement for PCB’s and Replacement of Damages Systems

- Crashworthy Truck-Mounted Attenuators (TMA) and Trailer-Mounted Attenuators

- New Reference to Pavement Edge Drop-Offs
CHAPTER 10 – Urban

- Updated Chapter Based Upon NCHRP Report 612 (2008)
- New Definition for Minimum Lateral Offset
- Targeted Design Approach for High Risk Urban Corridors
- Recommended Lateral Offset to Obstructions (12 ft with minimum of 6 ft from face of curb)
Recognizes that Urban ROW are often extremely restricted, limiting the applicability of clear-zone practice – even in suburban to urban transitions.
Suggested Lateral Offsets for Placement of Mailboxes

Update on Mailbox Support and Attachments

Considerations in Formulating Model Mailbox Regulations
Low Volume Roadways – 400 ADT or less

Encourages clear zone application where practical

Defines strategies to be considered: signage, pavement markings, traversable slopes, breakaway hardware
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UPDATE OBJECTIVES

- ADD NEW CHAPTER FOR LOW VOLUME ROADS

- Guidance on clear zone, drainage placement, slope and ditch cross-sections, barriers (TL2), sign supports, utility poles placement, etc.
ONGOING RESEARCH NEEDS
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RESEARCH NEEDS

• Long-Term Data Collection System
• Re-evaluation of Length of Need
• Roadside Barrier Placement on Slopes (Cable Median Applications)
• Development of Clear Zone Recovery Guidelines
• W warranting Criteria for Roadside Barriers for Various Crash Test Levels

• Sign Post Impacts under MASH

• Work Zone Safety

• Motorcycle Crashworthy Considerations and Guidelines
AASHTO – TCRS RESEARCH INITIATIVES

AASHTO – TCRS JOINT MEETING WITH TRB COMMITTEE AFB20

Date: July 29 to August 2, 2012

Location: TRB Center at Irvine, California

Objective - Strategic Directions on Roadway Departure Crashes: Supporting a Decade of Action
CONTACT INFORMATION

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QUESTIONS