

Clear Zone Conflicts in AASHTO Publications

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Clear Zone is addressed in several different AASHTO publications

- Roadside Design Guide
- Green Book
- Guidelines for Geometric Design of Very Low-Volume Local Roads
- A Guide to Achieving Flexibility in Highway Design

Background

- The AASHTO Technical Committee on Roadside Safety proposed an NCHRP 20-7 project to identify conflicts in these documents

Examples - Definition

- There are different terms that relate to the clear zone
 - Clear zone
 - Clear recovery area
 - Horizontal clearance
- There are slight differences in the definitions for these between the Green Book and Roadside Design Guide

Horizontal Clearance

- While there has been some attempts to distinguish between horizontal clearance and clear zone. Every section on horizontal clearance in the Green Book discusses clear zone



Examples – Operational

- With the current language there continues to be confusion in the interpretation of the operational offset.



- NCHRP project 20-7 (171), Identification of Conflicts Related to Clear Zones within AASHTO Publications, was completed by Tim Neuman (CH2M Hill) in December 2004.
- This report contained 15 recommendations

3 Main Recommendations

- AASHTO should clearly designate the Roadside Design Guide as the definitive publication for roadside issues
- One single definition for the term clear zone should be adopted
- The GB should clarify the differences between “Horizontal clearance”, “operational offset” and “clear zone”

Clear Zone Definition

Clear Zone — The unobstructed, traversable area provided beyond the edge of the through traveled way for the recovery of errant vehicles. The clear zone includes shoulders, bike lanes, or auxiliary lanes, except those auxiliary lanes that function like through lanes.



Clear Zone Definition

2 NCHRP projects are on-going to provide guidance on clear zone

17-11 – Determination of Safe / Cost Effective Roadside Slopes and Associated Clear Distances

16-04 – Design guidelines for Safe and Aesthetic Roadside Treatments in Urban Areas

Lateral Offset

Propose to use the term “Lateral Offset” rather than horizontal clearance and Operational offset

Also propose to change the Headings in the Green Book entitled “Horizontal Clearance” to “Roadside Design”

Rural Environments

- In rural environments, where speeds are higher and there are fewer restraints, a clear zone appropriate for the traffic volumes, design speed and facility type should be provided in accordance with the AASHTO Roadside Design Guide



Urban Environments

- In an urban environment, right of way is often extremely limited and in many cases it is not practical to establish a clear zone using the guidance in the Roadside Design Guide.

Urban Environments

- These urban environments are characterized by sidewalks beginning at the face of the curb, enclosed drainage, numerous fixed objects (signs, utility poles, luminaire supports, fire hydrants, sidewalk furniture, etc...), and frequent traffic stops.

These environments typically have lower operating speeds and, in many instances on-street parking is provided.



Lateral Offset

- In urban environments a lateral offset to vertical obstructions (signs, utility poles, luminaire supports, fire hydrants, etc., including breakaway devices) is needed to accommodate motorists operating on the highway.



Lateral Offset

- Where curb is used, the lateral offset is measured from the face of curb. A minimum of 0.5m [1.5 ft] should be provided from the face of curb with 1 m [3 ft] at intersections to accommodate turning trucks and improve sight distance.



Rural Vs. Urban

Is there anything in between?



Transition Areas

- On curbed facilities located in transition areas between rural and urban settings there may be opportunity to provide greater lateral offset in the location of fixed objects.
- These facilities are generally characterized by higher operating speeds and have sidewalks separated from the curb by a grass strip.



Transition Areas

- Although establishing a clear zone commensurate with the suggested values in the RDG may not be practical due to right-of-way constraints, consideration should be given to establishing a reduced clear zone, or incorporating as many clear zone concepts as practical such as removing hazards or making them crashworthy.



Next Steps

- Technical Committee on Geometric Design will be working on a revision to the Green Book
- Technical Committee on Roadside Safety will be working on revision to Roadside Design Guide
- Other guides will be addressed as needed.