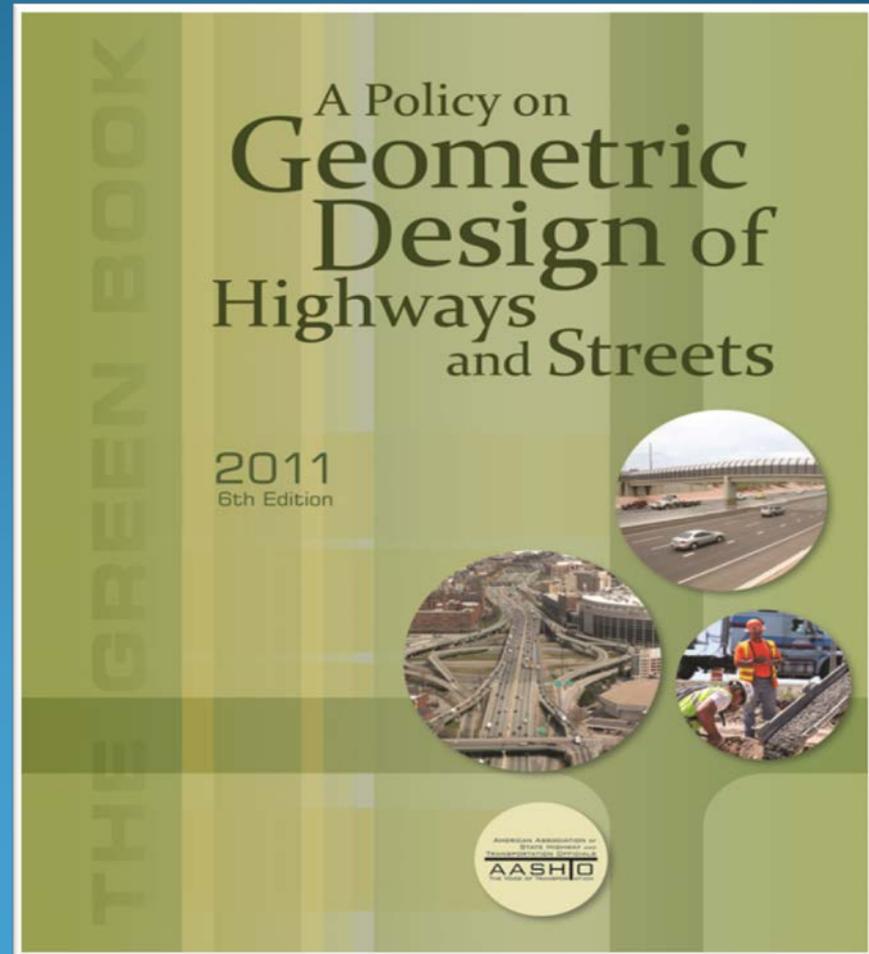


2013 ODOT Transportation Engineering Conference

AASHTO
Green Book
Update



What is the Green Book?

- AASHTO Policy
 - Provides recommended range of values for critical dimensions
 - Specific to New Construction and Reconstruction
 - **Based on National Practices and Scientific Research**
 - State-of-the Practice
- Foundation document for many DOT's and Local Agencies

What's New?- General

- Correction of inconsistencies between Green Book and Roadside Design Guide
- “improves safety” or “safe” replace by “reduces the frequency and severity of crashes”
- “where possible” replaced by “where practical”
- Updated Photos
- Chapters 5-8 organized for consistency



Chapter 1- Highway Functions

- Highlights the flexibility to select design criteria:
 - Consistent with project context
 - Needs and value of the community
 - Consideration of economic limitations
- Multi-Modal Accommodation/Service

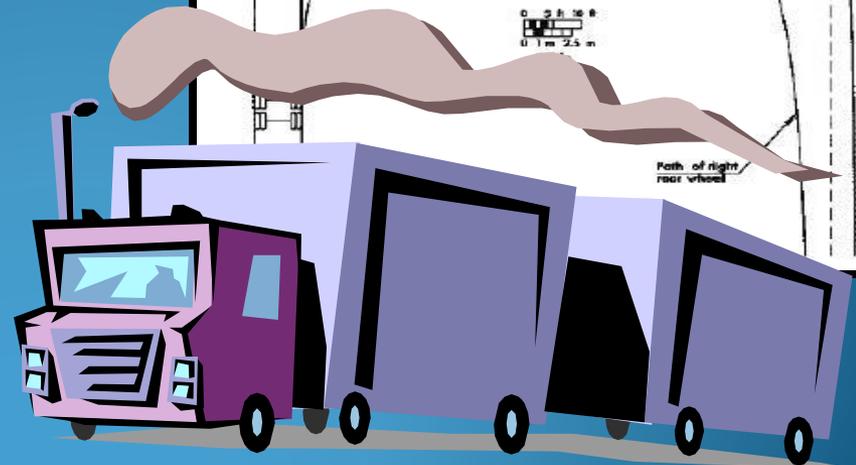
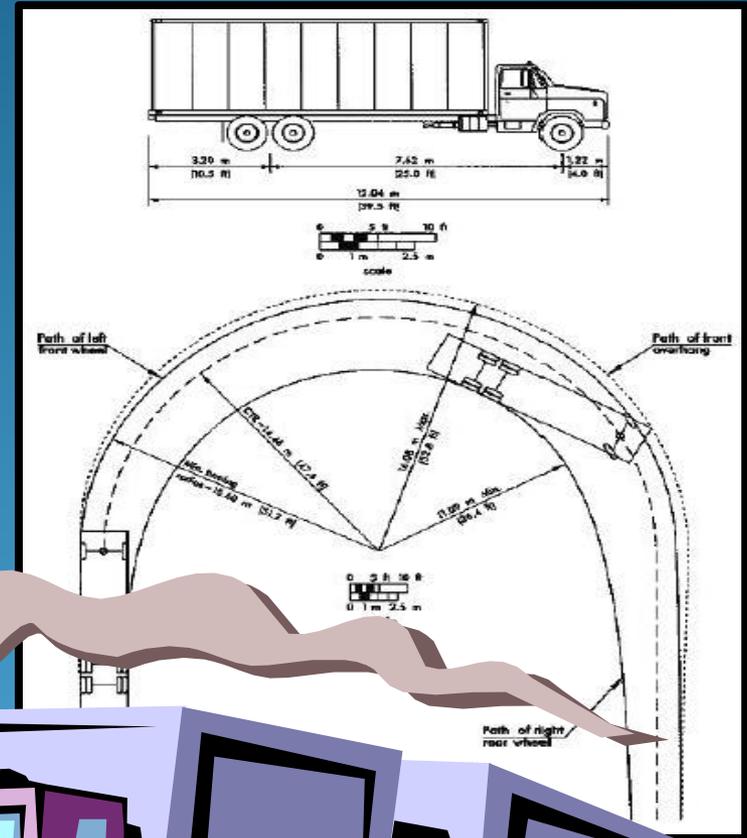
“Emphasis is placed on the joint use of transportation corridors by pedestrians, cyclists and public transit vehicles. Designers should recognize the implications of this sharing of the transportation corridors and are encouraged to consider not only vehicular movement, but also movement of people, distribution of goods, and provision of essential services. A more comprehensive transportation program is hereby emphasized.”

Chapter 1- (Cont.)

- Rural: “Minor arterials therefore constitute routes that should provide for relatively high travel speeds and minimum interference to through movement **consistent with the context of the project area and considering the range or variety of users**” [pg. 1-9]
- Urban: “For facilities within the subclass of other principal arterials in urban areas, mobility is often balanced against the need to provide direct access **as well as the need to accommodate pedestrians, bicyclists, and transit users**” [pg. 1-11]

Chapter 2: Design Controls & Criteria

- New design vehicles to reflect changes in the national truck fleet
 - Added SU-40 Single Unit Truck with 3 axels
 - Removed WB-50 and WB-65
 - Added WB-92 Rocky Mountain Double



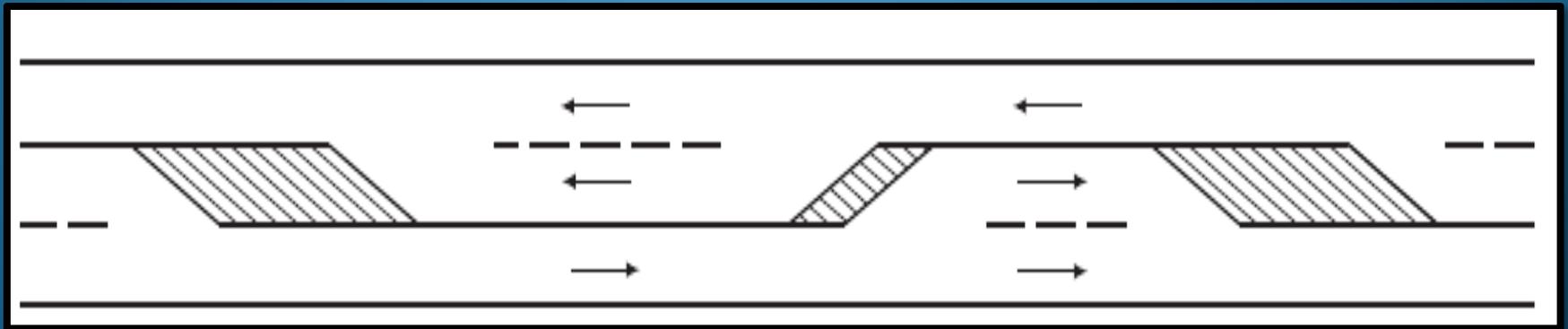
Chapter 2 (Cont.)

- Guidance on the selection of Design Speed
- Level of Service
- Pedestrian Speeds
- Safety

Functional Class	2004 Green Book Urban & Suburban LOS	2011 Green Book Urban & Suburban LOS
Freeway	C	C or D
Arterial	C	C or D
Collector	D	D
Local	D	D

Chapter 3: Elements of Design

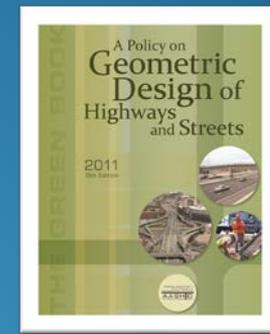
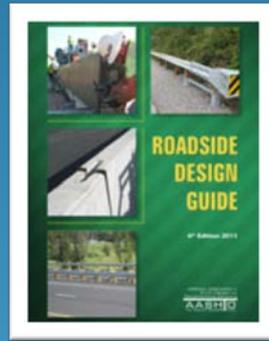
- Stopping sight distance tables clarified
- Passing sight distance for two-lane highways
- Lane drop taper for passing lanes
- Design controls for crest vertical curves
- 2+1 Roadways



Chapter 4: Cross-Section Elements

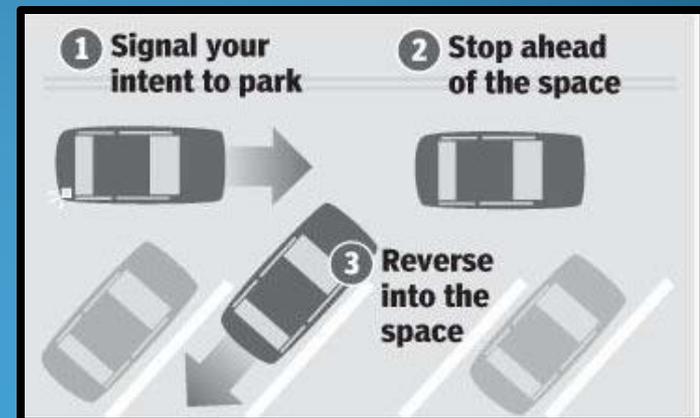
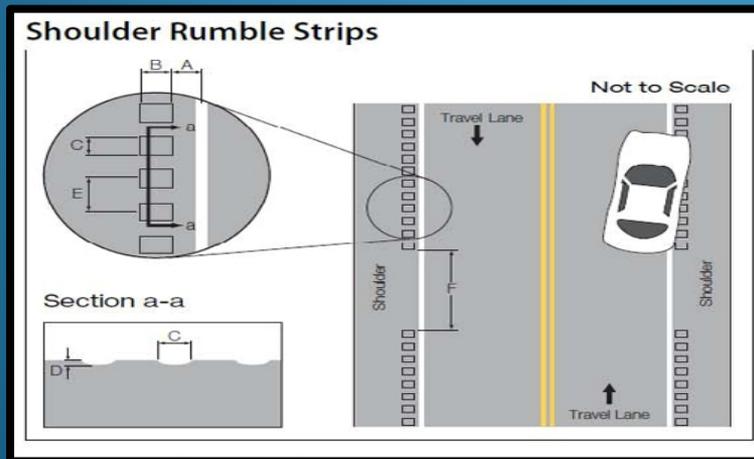
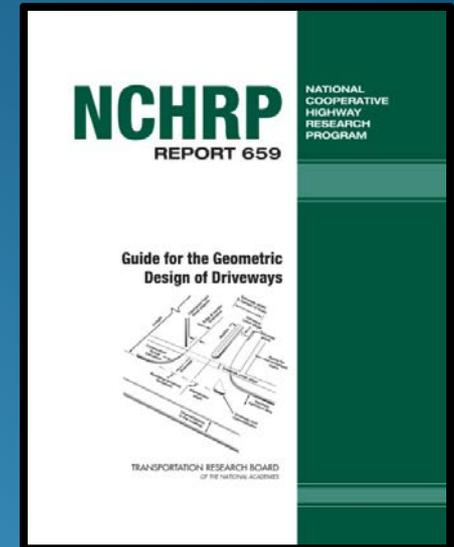
- Clear zone and lateral offset discussion provided in a more consistent format with the Roadside Design Guide

- Clear Zone
- Traveled Way
- Lateral Offset
- Sidewalks and Curb Ramps



Chapter 4 (Cont.)

- Driveway Profiles - References NCHRP Report 659 *Guide for Geometric Design of Driveways*
- On-Street Parking: added discussion of back-in, head-out diagonal parking
- Rumble Strips



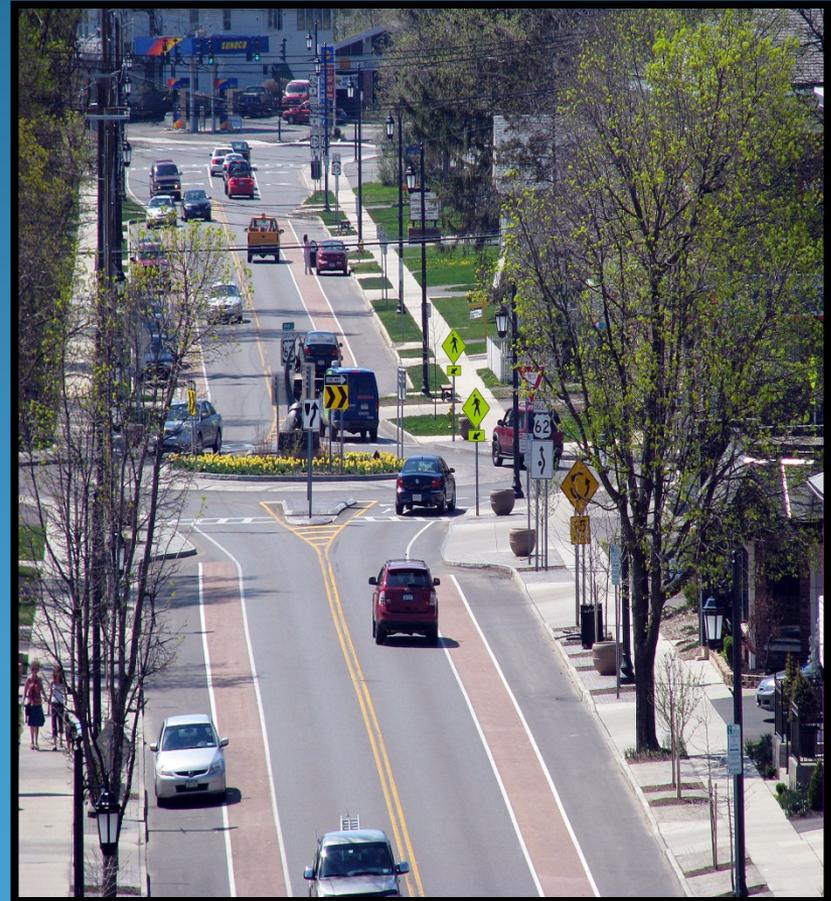
Chapter 5: Local Roads & Streets

- Clear zone and lateral offset discussion to be consistent with Roadside Design Guide
- Added discussion of Level of Service in Rural and Urban areas
- Chapter reorganized to generally follow other functional chapters



Chapter 6: Collector Roads & Streets

- Chapter reformatted for consistency with other functional Chapters
- Added discussion about selection of LOS for collectors
- Added roadside design discussion to clarify clear zone and lateral offset



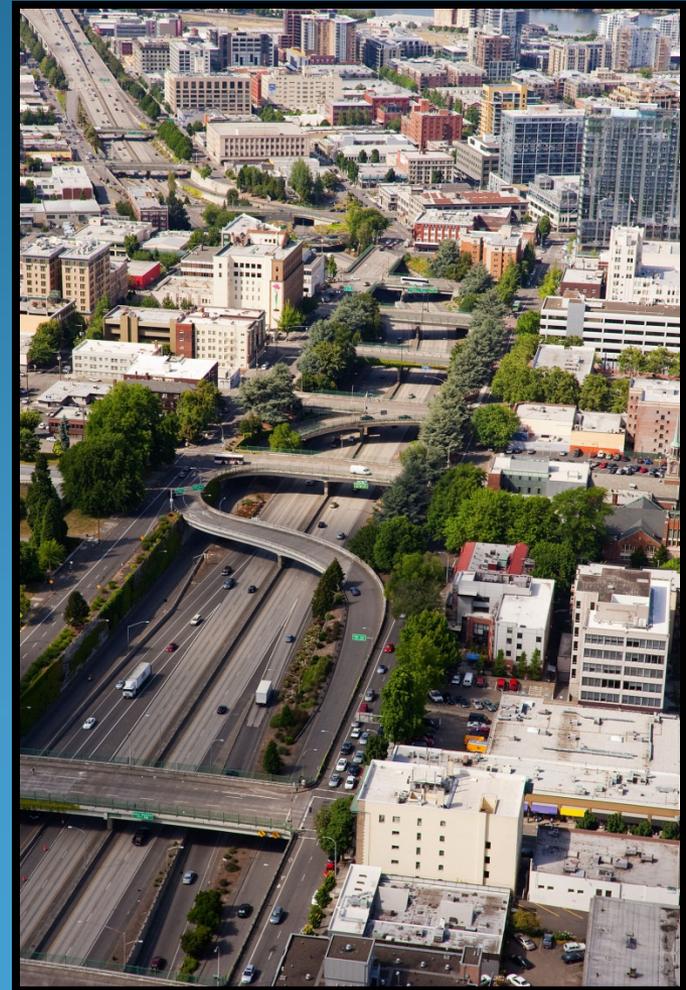
Chapter 7: Arterials

- Characteristics of urban arterials
- Level-of-Service for urban arterials
- Design speed and lane width
- Medians:
 - Benefits for pedestrians
 - Off-set left turn lanes
- Supporting Research on lane width:



Chapter 8: Freeways

- Superelevation considerations
 - Snow/ice
 - Viaducts
 - Consistency
- Consistency with Roadside Design Guide
- Shoulder Width



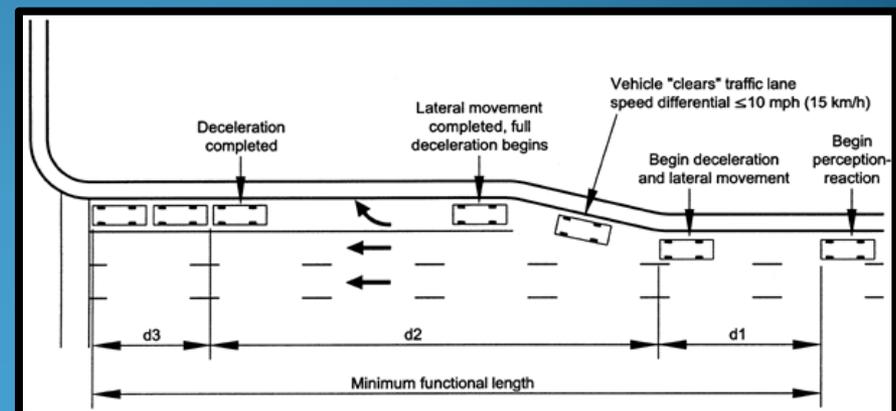
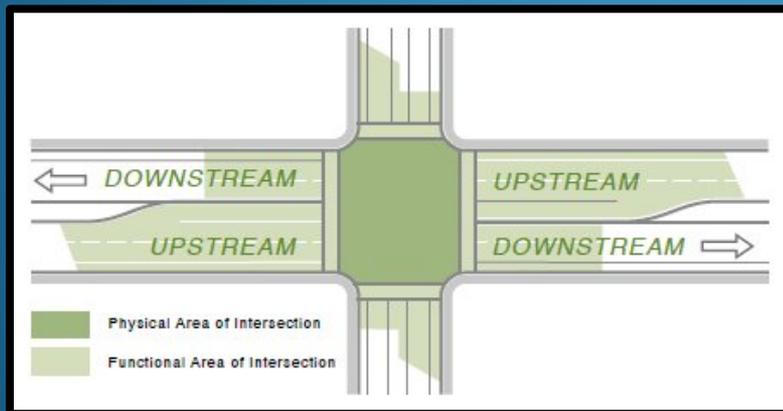
Chapter 9: Intersections

- Roundabouts
- Displaced Left-Turns (Continuous Flow Intersections)
- Indirect Turns and U-Turns



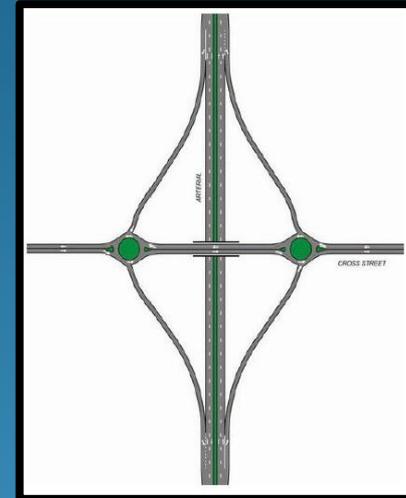
Chapter 9: Intersections (Cont.)

- Functional area
- Auxiliary lanes
- Deceleration length
- Double and triple left turns



Chapter 10: Grade Separations and Interchanges

- Two-lane loop ramps
- Ramp metering
- Double roundabout interchanges
- Ramp shoulder flexibility



Approval through Rulemaking

- 2011 Not yet formally adopted
- Rulemaking to be completed in 2013 ?
- Individual States encouraged to work with FHWA Division office
- ODOT asked & received FHWA concurrence to use 2011 Green Book as part of HDM Update.

