



**DATE:** October 22, 2018

**Program Number(s)**

**TO:** District Engineers

**Key Number(s)**

**FROM:** Kevin Sablan  
Design/Traffic Services

**Program ID, County, Etc.**

**RE:** AASHTO, A Policy on Geometric Design of Highways and Streets (Green Book), 7<sup>th</sup> edition

The AASHTO Green Book, 7<sup>th</sup> edition has been released and ready for use. It is available on ITD's intranet home page "Applications" tab through the "AASHTO Standards" link (<http://itdintranetapps/apps/ihs/ihs.aspx>).

For any references to the Green Book in the ITD Roadway Design Manual (RDM), refer to guidance provided in the Green Book, 7<sup>th</sup> edition. The current edition of the RDM does not reference a specific edition of the Green Book. An update of the RDM is progressing; when completed it will simply reference the current edition of the Green Book.

Although the updated Green Book advocates flexible, performance based design the following applies on NHS projects:

- New construction & reconstruction projects: design exceptions may still be needed for criteria differing from the RDM guidance and the Green Book values as per 23 CFR 625.3.
- Resurfacing, rehabilitation, & restoration projects: roadway characteristics do not need to be modified unless necessary to address known highway performance safety deficiencies. Follow RDM 3R standards for any necessary modifications as per 23 CFR 625.3.

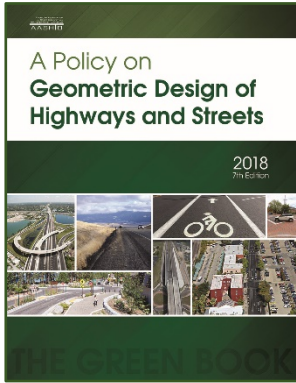
Changes in the 7<sup>th</sup> edition Green Book are attached.

cc: COO, DESA, FHWA (J. Perry), DES/DEPP Managers, GARVEE (A. Schroeder), LHTAC (L. Kral), ACHD (D. Bevins), District EM2s, District D/C Managers

# A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS

## 7<sup>TH</sup> EDITION

### SUMMARY OF KEY REVISIONS AND UPDATES



The 2018 seventh edition of *A Policy on Geometric Design of Highways and Streets* (The AASHTO "Green Book") includes a number of key revisions and updates from the sixth edition, published in 2011.

The Green Book provides guidance to highway engineers and designers who strive to make unique design solutions that meet the needs of highway and street users, while maintaining the integrity of the environment. The seventh edition, specifically, describes how geometric design elements affect multiple transportation modes and recognizes the relationship between geometric design features and traffic operations.

**The following table summarizes the key revisions and updates made to each chapter of the seventh edition.**

<b>CHAPTER 1: NEW FRAMEWORK FOR GEOMETRIC DESIGN</b>	<b>Chapter 1</b> is a new chapter that explains application of the Green Book to accomplish flexible, performance-based design. The chapter presents the traditional functional classifications for roadways (local roads and streets, collectors, arterials, and freeways), as well as a new set of context classifications (rural, rural town, suburban, urban, and urban core) to guide geometric design. The chapter also explains how the functional and context classifications can be used together in a flexible and performance-based manner in the design of new construction projects, reconstruction projects, and projects on existing roads.
<b>CHAPTER 2: DESIGN CONTROLS AND CRITERIA</b>	<b>Chapter 2</b> has been reorganized to emphasize transportation of people, rather than focusing primarily on moving vehicles. The chapter discusses multimodal level of service and puts greater emphasis on lower-speed, walkable, urban zones. The pedestrian walking speeds have been updated based on recent research.

**CHAPTER 3:  
ELEMENTS OF DESIGN**

The key changes to **Chapter 3** include the following:

- Added an 85 mph [140 km/h] design speed to the tables for stopping sight distance
- Explained how to compute superelevation and minimum radius for design speeds greater than 80 mph [130 km/h]
- Provided more flexibility in the distribution and rate of rotation of superelevation in superelevation transitions
- Added an equation to check for potential oversupply of superelevation through superelevation transitions

**CHAPTER 4:  
CROSS SECTION ELEMENTS**

The key changes to **Chapter 4** include the following:

- Expanded discussion of driveway width guidelines
- Expanded discussion of median geometry to reduce cross-median crashes
- Updated noise abatement discussion based on latest FHWA guidance

**CHAPTER 5:  
LOCAL ROADS AND STREETS**

**Chapter 5** now includes the following:

- Revised rural traveled way and shoulder widths to more right-sized values
- Added material presenting design speed ranges for specific contexts
- Added a new section on driveways in rural areas
- Revised discussions of lane widths for urban streets to better align with the guidance for urban arterials
- Reorganized discussion of recreational roads and special purpose roads into separate sections
- Updated minimum curve radii for unpaved roads based on U.S. Forest Service guidance

**CHAPTER 6:  
COLLECTOR ROADS AND STREETS**

**Chapter 6** now includes the following:

- Revised rural traveled way and shoulder widths to more right-sized values
- Added material presenting design speed ranges for specific contexts
- Added discussion of high-speed to low-speed transition zones
- Revised discussions of lane widths for urban streets to better align with the guidance for urban arterials

**CHAPTER 7:  
ARTERIAL ROADS AND STREETS**

The title of **Chapter 7** has been changed to Arterial Roads and Streets for consistency with Chapters 5 and 6. Key changes to Chapter 7 include the following:

- Added section on design for the rural town context
- Added section on speed management in design for urban areas
- Added discussion of high-speed to low-speed transition zones

**CHAPTER 8:  
FREEWAYS**

Key changes to **Chapter 8** include the following:

- Revised design speed guidance to encourage right-sized and context sensitive designs in urban and suburban settings
- Removed material targeting specific levels of service

**CHAPTER 9:  
INTERSECTIONS**

**Chapter 9** has been updated as follows:

- Added or revised drawings and text on channelized right-turn lanes, offset left-turn lanes, bypass lanes, and reduced-conflict intersections
- Removed seldom-used figures and tables on edge-of-traveled-way designs, median design layouts, and intersection sight distance
- Added table on characteristics of non-motorized users
- Added intersection sight distance discussion for roundabouts
- Revised criteria for turn-lane length

**CHAPTER 10:  
GRADE SEPARATIONS AND INTERCHANGES**

**Chapter 10** now includes the following:

- Added section on diverging diamond interchanges
- Added table on maximum ramp grade
- Expanded tables of acceleration and deceleration lane lengths to include 80 mph [130 km/h] design speeds