Memorandum

U.S. Department
of Transportation

Federal Highway Administration

Subject: **ACTION:** Design Standards for Projects on the National Highway System (2004 Green Book)

Date: February 23, 2005

From: /s/ Original Signed by
Dwight A. Horne
Director of Program Administration

Reply to
Attn. of: HIPA-20

To: Directors of Field Services
Resource Center Managers
Division Administrators
Federal Lands Highway Division Engineers

AASHTO has recently issued the Fifth Edition of *A Policy on Geometric Design of Highways and Streets* (2004 Green Book). The previous edition, known as the 2001 Green Book, was adopted by the Federal Highway Administration on February 12, 2002. Our office memorandum dated February 15, 2002, described how the 2001 Green Book should be applied as the design standard for all projects on the National Highway System (NHS).

The major change in the 2004 Green Book is revision of the superelevation section. The superelevation revisions and other minor changes are described in Attachment 1. It has been determined that the 2004 Green Book is in substantial conformance with the criteria in the adopted 2001 Green Book. States are therefore allowed to use either the 2001 or 2004 Green Book as the design standard for projects on the NHS.

At a later date, one copy of the 2004 Green Book will be furnished to each field office. Additional copies may be ordered from AASHTO by telephone, fax, mail, or website, see http://www.aashto.org/aashto/home.nsf/FrontPage for ordering information. The AASHTO member price applies to FHWA.

Attachment

Attachment 1

Changes in 2004 Green Book (as compared with 2001 Green Book)

1. The superelevation section has been revised as follows:

   - The topics in the section have been reworded and rearranged
   - The superelevation tables have been reformatted. In the 2001 Green Book the superelevation tables were formatted with radius in the left column and design speed across the top, enabling the user with these two pieces of information to find the recommended superelevation value in the body of the table. In the 2004 Green Book the superelevation tables are formatted with superelevation in the left column and design speed across the top, enabling the user to enter from the top with design speed, proceed down a column in the body of the table to curve radius, and find a recommended superelevation value in the left column.
   - The length of superelevation runoff has been moved from the superelevation table to a separate table in the discussion of transition design controls.
   - For low speed rural design (≤ 45 mph) the 2004 Green Book incorporates different friction factors which in turn results in slightly different superelevation rates. For example, given a design speed of 25 mph, radius of curve 500 feet, and maximum superelevation rate of 8%, the superelevation rate found in the 2004 Green Book would be 5.0%, compared to 5.3% in the 2001 Green Book. For high speed design (≥ 50 mph), the superelevation rates in the 2004 Green Book are almost identical to those in the 2001 Green Book.
   - For low speed urban streets, use of superelevation is optional, as it was in the 2001 Green Book. Where superelevation is used, the 2004 Green Book presents the superelevation rates in a new table and revised graph. The change in superelevation rates is similar to those for rural facilities

2. The terminology for M, middle ordinate of a horizontal curve, has been changed to HSO, horizontal sightline offset, to avoid conflict with a surveying term using M. This is a straight substitution of terms, no other changes were made in the text.

3. The technical corrections noted in the first and second printings of the 2001 Green Book have been incorporated in the 2004 Green Book. Those using the 2001 Green Book can find these technical corrections posted at http://downloads.transportation.org/Errata-GDHS-4.pdf .