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Sent: Tuesday, May 24, 2005 8:45 AM

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Cc: Wyatt, Jeffrey A.; Norris, Steven H.; Perkins, L. S. 'Sam'

Subject: 2004 AASHTO "Green Book"

Good Morning:

Several questions have been raised concerning the use of the new design values published in the latest edition of Green Book. This e-mail will provide direction on the use of the new design values in the 2004 Green Book.

FHWA, by memorandum on February 23, 2005, allowed the use of either the 2001 or 2004 Green Book as the design standard for projects on the NHS. Our current design standards match the 2001 Green Book and therefore, we meet the Federal roadway design requirements. Both the Standards/ Special Design and Policy & Procedures Sections are currently developing a revision to the design standards that will adopt the 2004 Green Book as VDOT's design standard with the exception to the side friction factors (f) for Urban and Rural High-Speed roadways (Exhibit 3-15, Page 147, 2004 Green Book). NCHRP Report 505 noted that the values in the 2001 Green Book for Urban and Rural High-Speed roadways, although more conservative than 2004 values, provided very small margins of safety for trucks, especially at the lower speeds. Two Texas DOT research studies cited concerns, by observation, with the capability of large trucks (WB-40 and larger) negotiating curves without rolling-over. Two Canadian research studies, using the 2001 AASHTO side friction design values, confirmed earlier research findings that truck roll-over is likely to occur before skidding or driver discomfort is reached. Because of these concerns, we will delay implementation of the Urban and Rural High-Speed design values until further notice. By delaying the implementation of the Urban and Rural High-Speed design values, our office will be able to conduct additional research into this matter.

The revision to both the GS standards in the Road Design Manual and the TC-5.01 standards Road and Bridge Standards, is tentatively scheduled to be issued on July 1, 2005. This revision and the new design values will be applicable for all projects scheduled for Public Hearing after December 31, 2005. In the interim, the Policy and Procedures Section offers the following recommendation to Roadway Designers.

- For all projects with Urban Low-Speed Conditions, we encourage all Designers to utilize the design values published in the 2004 Green Book. We strongly urge Designers with projects in Phase II or earlier in the Concurrent Engineering Process to utilize the 2004 Green Book design values for Urban Low-Speed Conditions. For

superelevation and crown run-off for Urban Low-Speed, use the instructions and formula for high speed conditions in the Standard TC-5.01 (Page 802.22, Rev. 7/03).

- For all projects with Urban and Rural High-Speed Conditions, Roadway Designers must meet current design standards for these design conditions until notified otherwise.

Roadway Designers are encouraged and should always strive to develop designs that exceed the published minimum values.

I hope this provides you with the necessary guidance in developing and completing roadway alignments. In addition to the pending revisions noted above, we will also be deleting all desirable values as appropriate from the Road Design Manual to parallel the published values in the Green Book. District L&D Engineers, please share this information with your design staff. Please contact me if you have any questions concerning the applicable geometric design values.

Thanks you,
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