



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, VIRGINIA 23219 2000

Gregory A. Whirley  
Commissioner

September 11, 2012

## MEMORANDUM

To: District Location & Design Engineers  
District Project Development Engineers  
District Construction Engineers  
District Project Management Office

The Virginia Department of Transportation (VDOT) adopted the 2011 AASHTO publication "*A Policy on Geometric Design of Highways and Streets*" 6<sup>th</sup> Edition, also known as the "Green Book" on July 16, 2012. The 2011 AASHTO Green Book revisions to superelevation and curve widening have been added in the Transition Curves portion of the Road and Bridge Standards and are designated as TC-5.11. These standards are based on design vehicle/speed and utilize a SU-40 vehicle for velocities of 20 mph to 35mph and a WB-62 vehicle for velocities of 40 mph to 80 mph, as the baseline design vehicles for widening.

When working on a project with a different design vehicle and/or speed than the baseline used in the Transition Curve Standards, the designer should calculate the required widening and adjust the superelevation transition lengths using the equations and factors within chapter 3 of the 2011 AASHTO Green Book. The *Road & Bridge Standards* TC-5.11 Standard contains example calculations for transition lengths and widening on pages 803.19 through 803.22. An electronic design aid for these calculations is forthcoming.

If there are reasons for a project to deviate from the TC-5.11 Standards, it should be submitted to the District Location & Design Engineer for approval. He/she should grant a design waiver on a project by project basis with accompanying documentation and mitigation strategy. Generally increasing the lane width to 12' would alleviate the need for widening in most cases. A common mitigation strategy used to accommodate widening for larger design vehicles where increasing the lane width is not possible is to pave a portion of the graded shoulder with full depth pavement through curves to accommodate off-tracking. Careful consideration shall be given in the design of a roadway to insure the safety of the traveling public.

The TC-5.11 standard is required on all projects with an advertisement date of August 13, 2013 and later. It is recognized that implementation of the TC-5.11 Standards may impact project estimates and schedules. Use of the TC-5.01 transition curve standard beyond the August 13,

2013 project advertisement date requires approval on a project by project basis from the appropriate Assistant State Location & Design Engineer.

If you have any questions or comments regarding the use of the TC-5.11 Standards, please contact the State Geometric Engineer, Joseph Koscinski Jr., P.E., at (804) 225-3934.

Sincerely,

A handwritten signature in black ink, appearing to read "Mohammad Mirshahi". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Mohammad Mirshahi, P.E.  
Deputy Chief Engineer