UFTI and *McTrans* Collaborate on Interchange Project

The Highway Capacity Manual (HCM) is capable of producing performance measures in transportation facilities exhibiting characteristics of either uninterrupted (Volume 2) or interrupted (Volume 3) flow. However, until now, the HCM generally precludes any sort of interaction between these two types of facilities. This distinction of methodologies, in addition to the use of different performance measures to evaluate them – density and delay, respectively – does not allow for consideration of spillback from one type of facility to another. This is not a practical or realistic approach to the decision-making processes involved in facility design or maintenance. Moreover, further guidance involving conditions in which oversaturation or spillback occur are murky at best. The use of microscopic simulation tools that utilize stochastic principles are typically suggested, as no deterministic model currently exists to address such cases.

The Federal Highway Administration (FHWA) has issued a task work order to begin to address these shortcomings. The University of Florida Transportation Institute (UFTI), in collaboration with the McTrans Center, have begun the process of "bridging the gap" between these historically mutually exclusive methodologies. In most cases, the critical "links" are merge and diverge ramps located at interchange terminals. Spillback from an off-ramp into a freeway can be quantified using procedures outlined in HCM's Chapter 31 (Supplement to Signalized Intersections) – the effects of excessive spillback, however, are now of particular interest. The procedures under development will be able to assess the response that oversaturated surface street facilities elicit on grade-separated freeway facilities, and vice versa.

Newly-modified equations and expanded reference tables to address these scenarios are in the early development stages, and field data collection at regularly oversaturated interchange facilities to validate these adjustments is underway. The collaboration between UFTI and McTrans allows for regular communication regarding decisions on potential upcoming changes, which will facilitate a fluid transition from research findings to software integration.

Webinar Series Schedule

December 1	HCM 2010 and *HCS 2010* Overview
December 2, 3 & 4	HCM Chapters 16, 17, 18 & 22 and *HCS 2010* Signalized Intersections (Multiple-Period Analysis, Phase Duration) Urban Streets (Flow Profile, Access Points) and Interchanges
December 5	HCM Chapters 19, 20 & 21 and *HCS 2010* Unsignalized Intersections (TWSC, AWSC, Roundabouts)
December 9 & 10	HCM Chapters 10, 11, 12 & 13 and *HCS 2010* Freeway Segments (Basic, Weaving, Merge & Diverge, Facilities)
December 11	HCM Chapters 14 & 15 and *HCS 2010* Highway Segments (Multilane Highways, Two-Lane Highways)

HCS 2010 Release 6.65 Available

An interim update to modify the Streets module was released this month. Segment Travel Time was added to the Segment Results Report as a more specific performance measure in anticipation of its use for alternative intersection analyses next year. Maintenance adjustments included providing access to change and clearance intervals for more coordinated scenarios, in addition to correcting issues with some data fields within certain infrequently used combinations. The Approach Width field for Work Zone adjustments was updated for a more appropriate range. A new File Save feature was implemented in Quick Streets to facilitate better file management when using this tool. A new Users Guide was produced, along with improved and expanded tool tips within the module itself.

HCS 2010 TWSC Ready to Test

Mc*Trans* has completed the development of a new computational engine for the Two-Way Stop Control (TWSC) module in a modern, object-oriented, software architecture to systematically implement the procedures described in the HCM 2010. It includes the expanded HCM 2010 procedures for three major street thru lanes, U-turns, and upstream signals using proportion time blocked.

While we design and develop the new user interface for this computational engine, we would like your real-world data sets that include any of these features to test the calculations and provide you with results for your analysis as well. Initially, we are accepting the first twenty five data sets from *HCS 2010* users as TWSC (.xhu) files with notes on the additional data (three major thru lanes, U-turn lanes and volumes, and/or proportion time blocked from Streets) not accommodated in the current version. Just send your file(s) to the Mc*Trans* e-mail address (mctrans@ce.ufl.edu) with "TWSC Test" in the subject line.

We see this as a win-win proposition to help us confirm our implementation while providing users with results that were previously unavailable. We appreciate your help in getting this important module ready for release.