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2018 Research Project Abstract

Project Title: Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses (Project K2)

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ABSTRACT: The Highway Capacity Manual (HCM) is one of the most widely used references in transportation engineering, both for planning and operational analyses. The 6th edition of the HCM (HCM6) offers a wide spectrum of analyses ranging from freeway segments to facility travel time reliability. Weaving segments are often critical components of freeway facilities, as they can act as bottlenecks. Any bias or errors within the HCM weave procedure can significantly impact facility-wide or reliability analyses, and in the process bring into question the validity of the entire facility analysis methodology.

The main objectives of this research project are to identify, document, and address the major deficiencies in the HCM6 weaving method for uncongested freeways through improved modeling of key procedures and their calibration. Principal tasks include literature review, and identification and documentation of weave segments analysis deficiencies cited in or reported by practitioners. The project team will adjust and modify the weaving analysis method using field data obtained from various sources (e.g. NGSIM, NCHRP 15-57, etc.). The project will generate updated HCM content including the FREEVAL computational engine, and present it to the TRB AHB40 Committee (Highway Capacity and Quality of Service Committee) for review and potential consideration for inclusion into a future release of the HCM.