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Effect of Pavement Condition on Multilane Highway Free Flow Speed

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Abstract: Multilane highways are highways with two or more lanes in each direction that are either undivided or divided by medians or two-way left turn lanes. Free flow speed (FFS) was adjusted to a non-ideal road condition in the Highway Capacity Manual (HCM) from the early 1990s.¹ The HCM methodology for multilane highway level of service (LOS) analysis depends mainly on the FFS estimation. The main factors affecting FFS can be classified into five groups: driver, road, vehicle, environment, and traffic operations and control.³ The HCM assumes ideal pavement condition in estimating the FFS; however, this is not always the case, especially in developing countries. The main objectives of this paper are to investigate the effect of pavement condition on FFS and to develop models for estimation of FFS on suburban and rural multilane highways in Jordan.