

A Study of the Performance of Passing Climbing Lanes Along Colombo – Rathnapura – Wellawaya – Batticaloa Road

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Abstract

With the increasing population and the development in the tourism sector, increasing volumes and a higher percentage of heavy vehicles and recreational vehicles in the traffic stream from Colombo Capital to central hills has created many traffic-related problems recently. Specially all the essential supplying services including fuel, food, export goods are transported using major highways. Traffic operations along steep upgrades grades on two-lane highways in mountainous terrains in central mountains are extremely important considering safety and level of service (LOS). Applying Climbing lane concept on two-lane highways is a good recommendation to reduced prevailing extreme conditions.

“A climbing lane is, in effect, a passing lane added on an upgrade to allow traffic to pass heavy vehicles whose speeds are reduced” (HCM,2010). However, applying Passing Climbing Lanes (PCL) are not a common practice in Sri Lanka, most of the steep upgrades on the major trans mountain highways do not have climbing lanes that cause traffic congestion at major highways. Due to the increasing vehicular traffic along the route, there exists an ongoing construction of Passing climbing lane on Colombo- Ratnapura-Wellawaya- Batticaloa (CRWB) road near to Ratnapura. This study evaluates the Impact of Passing –Climbing lane on traffic flow on the particular section at CRWB road considering both safety and LOS using the existing available data from RDA and Police Station at Ratnapura. The collected data at a particular location before the construction of PCL and after is expected to show the importance of having PCLs at essential places along CRWB. Further, the impact of selected PCL has been analyzed for various traffic volume by a simulation model which developed for this study. In this research, it also investigates the operational experience of traffic flow at the upper end of the climbing lane through a driver interview. PCL is a low cost improvement method rather than replacing extra lane or providing bypass lane, hence study discusses the economic advantages also in this concept.

Keywords: Climbing lane, highways, traffic congestion

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