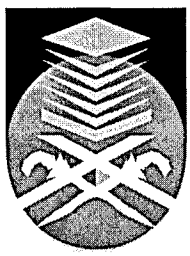
EXPLORATION OF SAFETY PERFORMANCE AND TRAFFIC BEHAVIOUR ON SELANGOR-KUALA LUMPUR URBAN EXPRESSWAY AT MERGING SECTION



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Merujuk kepada perkara diatas, bersama-sama ini diserakan dua (2) naskah Laporan Akhir Penyelidikan bertajuk "EXPLORATION OF SAFETY PERFORMANCE AND TRAFFIC BEHAVIOUR ON SELANGOR-KUALA LUMPUR URBAN EXPRESSWAY AT MERGING SECTION" oleh kumpulan Penyelidik berkenaan dari Fakulti Kejuruteraan Awam (FKA), Universiti Teknologi MARA (UiTM), Shah Alam, untuk makluman pihak Y.Bhg. Prof.

Sekian terima kasih.

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GERAN PENYELIDIKAN

Merujuk kepada perkara di atas, bersama-sama ini dimajukan salinan surat kelulusan menjalankan penyelidikan untuk pensyarah dari Universiti Teknologi MARA Cawangan Pulau Pinang;

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   Kos Projek : RM 20,000.00
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Diharapkan tuan dapat menghantarkan geran penyelidikan ke Universiti Teknologi MARA Cawangan Pulau Pinang.

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ABSTRACT

As defined in the Highway Capacity Manual (HCM 2000), an expressway is a divided highway with full control of access and with two or more lanes for each direction. The two directions of the expressway must be completely separated along its entire length. Accesses to expressways are only allowed at entrance ramp and expressways vehicles exit through off- ramp. From the view point of a highway and traffic engineer, there are two types of ramp. On ramp or entrance ramp, by which drivers can enter the expressway and off-ramp or exit ramp by which drivers can leave the expressway. This research explores the safety issues during the maneuverability during merging and diverging operation. During the process of merging, ramp vehicles need to adjust their speed and gaps in order to enter mainline safely. Expressway areas at entrance and exit ramps are characterized by concentrated turbulence to the traffic stream on the mainline due to intensive vehicular interaction. Therefore, these areas, which include ramp merge, diverge and weaving section are viewed as potential bottlenecks in expressway operations. Acceleration and deceleration lanes are designed as safety facilities allowing ramp vehicles to make a smooth merge without causing interference to expressway streams. A well designed acceleration lane should permit drivers to perform a safe merge as well as deceleration lane for smooth diverging process. The knowledge of operational performance at these critical areas is importance to various transportation applications including planning, design, operation and management. At present, there are no adequate procedures that can be used to consider the impacts of traffic conditions or geometric features on expressway traffic performance and safety based on Malaysian expressway conditions. Due to the lack of guidance in the current practice, this research attempts to describe an overview understanding and set up the basis of expressway operational performance and safety behaviors at these critical areas for practical consideration for Malaysian practice. A model have been developed for ramp merging process and systematic methodology to evaluate the safety operational performance had been proposed for Malaysian driving style.

Keywords: Expressway, Merging process, Safety issues and Microscopic analysis.