

ABSTRACT

Thika Superhighway was constructed with an aim of opening up the Kenyan capital city Nairobi to better business and social opportunities and with an aim of handling traffic to and from the central business district. Fast forward, the road seems to be handling much more vehicles than was initially anticipated, the traffic increasing from 60,000 vehicles to 150,000 vehicles per day. The desire to curb this congestion by increase of the existing road widths is expensive and the displacement of the already set up structures along the road reserve may be an added expense and a cumbersome endeavour. This has brought forth the idea of using Reversible Lanes to curb the congestion. Reversible lanes also known as Tidal Flow Lanes is a Traffic Management system that encompasses the distribution of more lanes to the heavier traffic direction during peak hours in order to reduce congestion. The concept was first initiated in 1928 by Ralph T Dorsey in Los Angeles and has proven quite helpful in certain areas such as The Golden Gate in San Francisco USA. The aim of this study was to understand the use of Tidal Flow Lanes and thus with the study of Thika Superhighway traffic, assess the possibility of using the Reversible Lane Operations to curb the traffic congestion in the areas. The main steps undertaken in this study was the review of relevant articles on Thika Road construction aims and current traffic conditions since inception, the use, control operation and justification of using Tidal Flow Lanes and there after undertaking traffic survey of Thika road. Two sets of traffic data were obtained by conducting the traffic survey on two consecutive days twice with the aid of four enumerators. The data collected on traffic volume based on the vehicle categories was then analysed in order to obtain the Level of Service of Thika Road during the morning and evening peak hours. From the analysis, there was a noted improvement in the level of service of both the morning inbound and evening outbound traffic to LOS C and LOS B respectively when an extra lane was added from the lighter traffic. As such, the use of Tidal Lanes to aid in easing the congestion while still ensuring minimal to no interruptions to the less heavy traffic is a viable solution and should be adopted as the traffic management measure for Thika Road. Proper research should be carried out to ensure smooth installation and operation of the reversible lane at all times.