

ABSTRACT

Typically, pavement deteriorates at an ever-increasing rate: at first very few distresses are present and the pavement stays in relatively good condition, but as it ages more distresses develop with each distress making it easier for subsequent distresses to develop. For instance, once a substantial crack occurs it is then easier for water to infiltrate the surfacing layer and penetrate and weaken the subgrade. This study aimed at determining the defects occurring on Raila Odinga Way, the pioneer concrete pavement in Kenya, which was then used to analyze the performance of concrete pavement. Raila Odinga Way, a jointed plain concrete pavement, was designed as a 220mm thick overlay, to cater for 10 million Equivalent Standard Axles over a 20-year period. To accomplish the set objectives, a pavement condition survey was done together with a traffic volume assessment. A visual survey on the entire length of the road showed the different defects including various types of cracks, joint spalling, and faulting of slabs. It was supplemented by a secondary pavement condition survey done by the Materials Testing and Research Division which revealed defects such as rutting that could not have been perceived by the naked eye. The secondary survey was also useful in rating the riding quality of the carriageway. The traffic volume assessment on the other hand, was used to determine the class of traffic being carried by the road. From the investigations it was found that the roadway was quite deteriorated and was carrying more traffic than had been anticipated at the inception stage. Whilst the pavement is still performing relatively well, it was recommended that elaborate research be conducted to ascertain the pavement's remnant design life and recommend appropriate maintenance and or rehabilitation measures.