

## **Effectiveness of Traffic Forecasting on Pavement Designs in Sri Lankan Roads**

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Since the pavement design plays an important role in any improvement or rehabilitation, it is a responsibility of the road design Engineer to ensure that he has come up with an effective design, so that it will last for the design life. This effectiveness or the optimization is very important as otherwise it could lead to financial implications. If it is under design, it will not last till the end of design life, thereby incurring huge sum of money for the early rehabilitation and maintenance. And if it is over designed, that would also be undesirable fact, as the cost over run on this could have been utilized to improve another few kilometers of road.

The method adopted for the design of selected flexible pavements was the TRL, Road Note 31. The two main parameters considered in the design of the pavements under Road Note 31 are CNSA (i.e. Traffic Class) and the sub-grade strength (i.e. CBR% class).

In this research study, flexible pavement designs of recently rehabilitated or improved set of roads were analyzed to check the effectiveness of the traffic forecasting on pavement design. As the sub-grade strength of the pavements is a fixed parameter in all the cases, the only possible variable is the Traffic Class relevant to predicted CNSA.

It was found in the study that the actual traffic growth rates of different modes of traffic which travels along the selected roads is different to the predicted rates at the time of design. It has also been shown and statistically proved that the ESA values actually applied on these pavements by large trucks / heavy goods vehicles are significantly high, compared to the ESA values recorded at the design stage. Authors have proposed a methodology to evaluate the effectiveness of traffic forecasting on pavement designs. And improvements to the present practice of pavement designs carried out by RDA and its presentation.

## Session 2A

### **Key Words:**

TRL – Transport Research Laboratory

CNSA – Cumulative Number of Standard Axles

CBR – California Bearing Ratio

ESA – Equivalent Standard Axles

RDA – Road Development Authority