

IMPROVEMENT STRATEGY FOR EXISTING BITUMINOUS PAVEMENTS ON STATE HIGHWAYS IN THE STATE OF KARNATAKA, INDIA

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ABSTRACT

Government of Karnataka had initiated Karnataka State Highways Improvement Project II (KSHIP-II) with an objective to significantly improve the State's core road network to an acceptable level of service and to build upon the KSHIP-I achievement of improving 2,410 km length of roads. The typical pavement of the KSHIP-II existing roads is about 150mm. Widening of the existing roads from 3.5 to 5.5m had typically been carried out by placing WBM over the existing soft shoulders (i.e. poor subgrade) and topped with a thin bituminous wearing course. Poor condition of the existing pavement indicates that it cannot be strengthened and the base layers must necessarily be reconstructed

Case study has been taken up to review the proposed improvement options for the existing bituminous pavements considering the alignment issues, subgrade soil characteristics, design constraints, construction constraints, design validity and cost issues. The cost estimates for the case study links indicate that there is hardly any difference in the cost of construction of a new pavement when compared with the cost of widening and strengthening construction.

Based on the study, it is concluded that widening and strengthening with overlay design is not suitable for the proposed improvement works which involve alignment improvements. Further there is no advantage in such designs when technically superior new pavement designs can be implemented at comparable or lesser cost.

KEY WORDS: Upgradation, Design Strategy, Existing Pavements, Cost effective