

The term “present serviceability” was adopted to represent the momentary ability of pavement to serve

traffic, and the performance of the pavement was represented by its serviceability history in conjunction

with its load application history. Serviceability was found to be influenced by longitudinal and transverse

profile as well as the extent of cracking and patching. The amount of weight that should be assigned to

each element in the determination of overall serviceability is a matter of subjective opinion.

In this study, an Adaptive Neural-Based Fuzzy Inference System (ANFIS) method is used in modeling

the International Roughness Index (IRI) of flexible pavements. Data from the LTPP IMS database, namely,

age, cumulative Equivalent Single Axle Loads (ESALs), and Structure Number (SN) were used in the modeling.

Results showed that the ANFIS model is successful for the estimation of IRI, and this model can be

easily applied in different regions. The model can be further developed by combining expert judgment

and newly measured data.