

**APPRAISAL OF MECHANISTIC-EMPIRICAL PAVEMENT
DESIGN GUIDE FOR HIGHWAYS BEING IMPLEMENTED IN
THE UNITED STATES AND COMPLEMENTARY NEEDS FOR
PAVEMENT ASSET MANAGEMENT**

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ABSTRACT

Highway infrastructure network assets are imperative for passenger mobility and freight transport. The pavement part of a highway constitutes about 80 percent of its total construction and lifetime maintenance costs. The objective of this paper is to review pavement design evolution and show the equal importance of pavement asset management to sustain long-lasting highways. The post-2000 mechanistic-empirical pavement design presents a major departure from serviceability-performance concepts used in the previous highway pavement design methods of the American Association of Highway and Transportation Officials (AASHTO). The current method relates distresses to pavement performance prediction. Examples of asphalt pavement thickness designs using the 1993 AASHTO method with mechanistic-empirical methods are presented and compared. It is shown that safety, efficiency, and security of in-service highways do not depend only on accurate pavement thickness design and quality construction. This paper shows the continuing need of life-long pavement asset management for preserving safe and efficient highways.