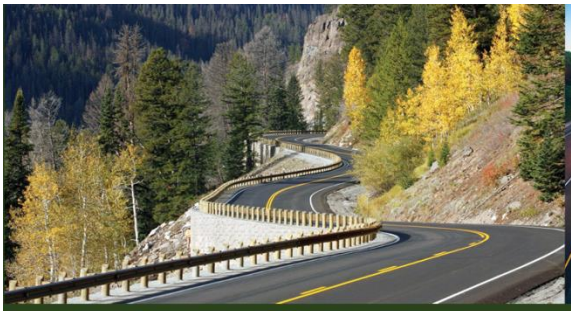

Pavement Design, Construction, and Management
A Digital Handbook

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AASHTO

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PREFACE

This document provides guidance for all aspects of pavement design to the engineering practitioner. Current AASHTO literature focuses on specific pavement-related subjects, such as mechanistic-empirical (M-E) pavement design and pavement management. The Pavement Handbook attempts to fill the gaps in understanding for previously unaddressed subjects related to pavements, while still providing an overview of published subjects. In short, the Handbook is meant to be a 'one-stop shop' for pavement engineering.

The fundamentals of pavement design are discussed in the second through fifth chapters. The reader is informed about various pavement types and their corresponding material components. Following is an in-depth discourse on the structural pavement design analysis for each pavement type, with particular attention paid to M-E techniques. The impact of surface properties on friction, ride, and safety are thoroughly explained.

The sixth chapter discusses pavement type selection strategies, whether the pavement is being newly constructed from the ground up or undergoing some type of restoration. Life-cycle costs are considered for selection optimization.

Methods of construction for various pavement types are covered in the seventh chapter, including detailed guidance for both materials and construction specifications. Special emphasis is placed on quality management and its essential role for successful project completion.

The testing and evaluation of existing pavements are the subjects of the eighth and ninth chapters. Visual distress surveys, nondestructive testing, and sampling and testing comprise the data acquisition techniques outlined for making educated assessments of pavement condition.

The tenth and eleventh chapters detail treatments for existing pavements ranging from non-structural pavement preservation to structural

rehabilitation. Performance expectations for each treatment are summarized.

Managing pavements at all hierarchical levels is the focus of the twelfth chapter. Transitioning from distress data types and their collection protocol to database analysis methods, the outline is given for design life optimization.

The thirteenth chapter ends the Handbook with thoughtful discussion of the pavement caretaker’s role in selecting and re-using materials for environmentally sustainable design.