Foreword

This publication, *Pavement Management Implementation*, contains papers presented at the symposium of the same name, held in Atlantic City, NJ on 26–27 June 1991. The symposium was sponsored by ASTM Committee E-17 on Pavement Management Technologies and its Subcommittee, E17.41 on Pavement Management. Frank B. Holt of Eckrose/Green Associates in Madison, WI and Wade L. Gramling of Pasco USA, Inc., in Mechanicsburg, PA, presided as symposium co-chairman and are editors of the resulting publication.
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Overview

During the past twenty years, there has been significant progress made in applying system management principles to the complex problems in maintaining infrastructure. Agencies responsible for the street and highway networks have been faced with decreasing buying power and increased needs. The maintenance of aging networks is complicated by increased weights and volumes of traffic accelerating deterioration, coupled with intense competition for limited budgets.

The development of pavement management methods has been widely recognized as one of the tools in the economic planning and maintaining of systems. Increased power of computers, available at reasonable costs, and the development and maturing of pavement management system technology will facilitate and accelerate the adoption of Pavement Management Systems by a wider community.

The purpose of this symposium on Pavement Management Implementation was to review and capitalize on progress to date, and provide focus and direction for pavement management in the 1990s. The requirement of the Federal Highway Administration for States to have a Pavement Management System in place by 1993 raised many questions as to the form and requirements of those systems. ASTM Committee E17, Pavement Management Technologies, with assistance from Committee D4, Road and Paving Materials (symposium co-sponsor), recognized the need to further the knowledge of the pavement community and assist those who were trying to assess, design, and implement Pavement Management Systems.

The Symposium focused on both the basic premises of pavement management, and the experience of pavement management users. The aims of the symposium were to offer the engineering community an overview of pavement management structures and organizations, provide an opportunity for users of pavement management to review the state of the art and discuss their experiences, successes, failures, future innovations, and offer new users assistance in designing and using their systems.

This volume contains 31 papers and is divided into two sections. The first section presents papers of an overview dealing with such topics as the history of pavement management, requirements of pavement management systems, the problems of implementing a system, and how to evaluate pavement management systems. The second section presents papers detailing the experience of users.

Overview Section

The Overview section includes the keynote address of Louis Papet, Chief Pavement Division of the Federal Highway Administration. Papet reviewed the FHWA requirements for pavement management, and offered an overview of the present state of implementation. Papers by Nostrand, Carmichael et al., Amirkhanian et al., and Hudson et al. deal with an overview of Pavement Management addressing issues such as: the history of pavement management in the FHWA, minimum requirements for a pavement management system,
the state of the art in pavement management, and standardization issues. Patterson offers a process to evaluate pavement management systems.

Additional papers deal with portions of pavement management systems that readers may want to include in their system, add to their existing systems, or use to evaluate the results of their systems. These include a discussion of data needs and priorities (Haas), pavement life (Baldi et al.), barriers that may affect implementation (Smith), engineering principles (Ullidtze et al.), and a look at timing and its effect on network performance (Mohseni et al.).

**Experience Section**

The Experience section presents 21 papers detailing the experience of users, and offers the reader examples of systems from across the United States, Canada, and Europe. In total, 17 different federal and state agencies, as well as one foreign country, are represented in this section.

Pavement Management systems for roads, streets, highways, and airports are discussed. Various types of systems and system approaches are presented, including maintenance planning, statewide highway programming systems, airport pavement management systems, and military facility pavement management.

Advances in the state of the art addressed through papers on pavement life and feedback systems to evaluate the pavement management system.

For those organizations looking for assistance in implementing a pavement management system, the symposium and this STP offer an overview of the implementation process, and will, with the existing literature, assist the user in designing, implementing, and modifying their system to meet their agency needs.

As 1993 draws near, the requirement of the Federal Highway Administration to implement a pavement management system will cause agencies to review their present systems, and the papers presented in this publication will be of valuable assistance in that process. For those agencies looking to establish a pavement management system, this volume can assist in developing a system that not only meets the agencies needs, but can help preclude some of the pitfalls that other agencies have had to overcome, thus resulting in a more flexible and usable system.

Work remains to be done in reaching a consensus for the various elements making up a pavement management system. New standards, specifications, and guidelines will continue to be developed as experience is gained.

Agreement on the types, accuracy, and definitions of pavement information needed for use in a Pavement Management System will lead to standardization and automation, and enhance the ability of users to more easily exchange information and knowledge.

Committee E-17 will continue its efforts to develop ASTM standards that address some of the issues presented in this volume. Standards dealing with network level pavement management, composite instrumentation, and priority of data needs for pavement management, are a few of the areas where standards are being formed to help users of pavement management systems.

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