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Standard Guide for Pavement Management Implementation¹

This standard is issued under the fixed designation E1889; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide covers basic procedures to follow in implementing an effective pavement management process. Pavement management includes activities and decisions related to providing and maintaining pavements, many of which must be made with supporting information that should be generated from a pavement management system (PMS). Implementation is considered complete when pavement management is a routine part of the management process, and the agency utilizes the pavement management process to make relevant decisions, including funding decisions.

1.2 The guide is intended for use by agencies that manage pavements, including those on airfields, highways, parking lots, roads, and streets.

1.3 Pavement management, as discussed in this guide, is exercised at network and project level as described in Guide E1166, and the AASHTO Guidelines for Pavement Management Systems.

1.4 No reference is made to the time needed to complete the implementation. The amount of time will depend on the size of the pavement network and the resources available to support implementation.

1.5 This guide is not a standard method or practice, that is, it is not intended to provide exact steps that must be followed by every agency implementing a pavement management process. It is expected that each agency will use the material in this guide to develop an implementation plan to meet the needs and constraints unique to the agency.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the*

Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 *ASTM Standards:*²

E867 Terminology Relating to Vehicle-Pavement Systems

E1166 Guide for Network Level Pavement Management

2.2 *AASHTO Standard:*³

Guidelines for Pavement Management Systems

3. Terminology

3.1 *Definitions*—Terminology used in this guide conforms to the terminology included in Terminology E867.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *champion*—an advocate, or small group of advocates, in an agency that recognizes the need for a pavement management system and works to get it adopted and implemented.

4. Significance and Use

4.1 This guide provides potential and current pavement management users with an outline of the process and steps to follow when implementing and operating pavement management systems.

4.2 This guide may be used by the following:

4.2.1 Individuals within agencies interested in finding information about pavement management to determine if they want to pursue implementation;

4.2.2 Pavement engineers, maintenance supervisors, or other persons trying to get agency management personnel to commit to implementing a pavement management system within their agency;

4.2.3 Personnel in an agency in which the decision to implement a pavement management system has been made but where the pavement management processes, pavement management decision support software, or data collection procedures, or both, have not been selected;

¹ This guide is under the jurisdiction of ASTM Committee E17 on Vehicle - Pavement Systems and is the direct responsibility of Subcommittee E17.42 on Pavement Management and Data Needs.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, <http://www.transportation.org>.

4.2.4 Personnel in an agency that is developing a database and beginning use of a newly adopted pavement management system; and

4.2.5 Personnel in an agency that have a pavement management system in place and are trying to make the pavement management process a routine part of the agency decision making.

5. Procedure

5.1 *Pavement Management Implementation*—Although this section appears sequentially, an agency may start at any point based on the status of pavement management implementation in that agency. Some of the steps may be completed concurrently and other steps may or may not be needed by individual agencies. It may be necessary at times to back up and repeat previously completed steps.

5.2 *Deciding That Pavement Management is Needed in the Agency*—Sections 5.2 – 5.2.5 provide information to guide the champion through a process of deciding to pursue implementation of a pavement management system in the agency.

5.2.1 *First Knowledge*—The champion recognizes a need to change or enhance the manner in which decisions are made about pavements in the agency.

5.2.2 *Information Gathering*—The champion develops the knowledge necessary to envision how pavement management would benefit the agency and the forms of pavement management that would be appropriate for the agency. The champion should gather information about pavement management that will help in formulating the agency's objectives and purposes. The information would include items such as the determination of what information is desired, how the process would be used, what answers it could provide, how much it would cost to implement, the benefits it would provide, and what changes would be required in the existing agency. This includes the development of a set of well-defined preliminary goals.

5.2.3 *Decision to Pursue*—The champion decides to actively pursue adoption of pavement management in the organization based on the benefits and costs associated with pavement management implementation. The champion must be able to compare advantages and disadvantages of potential pavement management processes with current procedures based on information developed in 5.2.2. The preliminary goals of the pavement management system should be clearly outlined at this time.

5.2.4 *Develop Alliances*—Pavement management usually crosses several traditional divisions of authority within an agency. Members of each agency division that must interact with the pavement management process may be able to prevent, or retard, adoption. An alliance of key individuals in each affected division should be developed, and they should formulate an initial set of goals.

5.2.5 *Getting Pavement Management on the Agenda*—In most agencies, innovations which affect the management efforts of several divisions, such as pavement management, must be approved by at least the agency director and often by elected officials. Pavement management must become a part of the agenda, formal or informal, from which the decision makers work.

5.3 *Obtaining an Agency Decision*—Sections 5.3 – 5.3.5 provide information to guide the champion through a process to lead the agency to a decision to adopt a pavement management system. The pavement management champion must convince the agency management that formalized pavement management is appropriate for the agency. The method of decision making within the agency will have an impact on how the pavement management champion organizes the information, gets the topic on the agenda (formal or informal), and develops support for the pavement management decision, but it has little impact on the information needed. The champion must guide the agency through the same general steps that the champion went through in deciding to pursue adopting pavement management.

5.3.1 *Agency Persuasion*—The champion must convince agency management that adopting a pavement management system is to their advantage. Knowledge of the principles of pavement management, problems with the current process, and advantages of pavement management systems are needed to complete this.

5.3.2 *Agency Decision*—The agency decision makers decide they want to adopt pavement management. Documented information on the benefits and costs associated with pavement management are needed at this time. Results from other agencies can be used to demonstrate the results of adopting pavement management. The decision to adopt can be conditional based on using a trial implementation, and the final implementation decision can be made when satisfactory results have been obtained from the trial implementation.

5.3.3 *Form a Steering Committee*—A steering committee should be formed of upper-level management personnel and possibly include elected or appointed commission officials. All divisions affected by or involved in the implementation of a pavement management system should be represented on this committee. This committee should provide the support needed to facilitate the changes created by the pavement management system crossing traditional lines of authority. They should prepare goals for the implementation group. These goals should be based on the purpose of the proposed system as previously outlined in 5.2.1 – 5.2.5.

5.3.4 *Gain Commitment for Resources*—Real commitment has been achieved in most agencies when resources have been committed. The steering committee should ensure that adequate resources to support pavement management implementation, including funding, have been allocated.

5.3.5 *Form an Implementation Group*—The implementation group will convert the goals prepared by the steering committee into a work plan which details the tasks and resources required to implement the pavement management system. This group will be responsible for the day-to-day implementation efforts. In small agencies the implementation group may be a single person, hopefully the pavement management champion. In larger agencies, a separate pavement management work group may be formed.

5.4 *Selecting and Testing Pavement Management Processes*—Sections 5.4 – 5.4.6 provide information to guide the agency through the process to select appropriate procedures for the pavement management system.