

management systems, implementation schedule, data sources, and cost estimate. The FHWA will provide the FWS ongoing technical engineering support for the development, implementation, and maintenance of the management systems.

(c) The FWS shall develop and implement procedures for the development, establishment, implementation and operation of management systems. The procedures shall include:

(1) A process for ensuring the results of any of the management systems are considered in the development of FWS transportation plans and transportation improvement programs and in making project selection decisions under 23 U.S.C. 204;

(2) A process for the analyses and coordination of all management system outputs to systematically operate, maintain, and upgrade existing transportation assets cost-effectively;

(3) A description of each management system;

(4) A process to operate and maintain the management systems and their associated databases; and

(5) A process for data collection, processing, analysis and updating for each management system.

(d) All management systems will use databases with a geographical reference system that can be used to geolocate all database information.

(e) Existing data sources may be used by the FWS to the maximum extent possible to meet the management system requirements.

(f) The FWS shall develop an appropriate means to evaluate the effectiveness of the management systems in enhancing transportation decision-making and improving the overall efficiency of the affected federally owned transportation systems and facilities. This evaluation is to be conducted periodically, preferably as part of the comprehensive conservation planning process.

(g) The management systems shall be operated so investment decisions based on management system outputs can be accomplished at the regional level.

§ 972.206 Funds for establishment, development, and implementation of the systems.

The FLHP Refuge Roads program funds may be used for development, establishment, and implementation of the management systems. These funds are to be administered in accordance with the procedures and requirements applicable to the funds.

§ 972.208 Federal lands Pavement Management System (PMS).

In addition to the requirements provided in § 972.204, the PMS must meet the following requirements:

(a) The FWS shall, at a minimum, have PMS coverage of all paved refuge roads and other associated facilities, as appropriate, funded under the FLHP.

(b) The PMS may be based on the concepts described in the AASHTO's "Pavement Management Guide."²

(c) The PMS may be utilized at various levels of technical complexity depending on the nature of the pavement network. These different levels may depend on mileages, functional classes, volumes, loadings, usage, surface type, or other criteria the FWS deems appropriate.

(d) The PMS shall be designed to fit the FWS goals, policies, criteria, and needs using the following components, at a minimum, as a basic framework for a PMS:

(1) A database and an ongoing program for the collection and maintenance of the inventory, inspection, cost, and supplemental data needed to support the PMS. The minimum PMS database shall include:

(i) An inventory of the physical pavement features including the number of lanes, length, width, surface type, functional classification, and shoulder information;

(ii) A history of project dates and types of construction, reconstruction, rehabilitation, and preventive maintenance. If some of the inventory or historic data are difficult to establish, it may be collected when preservation or reconstruction work is performed;

(iii) A condition survey that includes ride, distress, rutting, and surface friction (as appropriate);

(iv) Traffic information including volumes and vehicle classification (as appropriate); and

(v) Data for estimating the costs of actions.

(2) A system for applying network level analytical procedures that are capable of analyzing data for all FWS managed transportation facilities in the inventory or any subset. The minimum analyses shall include:

(i) A pavement condition analysis that includes ride, distress, rutting, and surface friction (as appropriate);

(ii) A pavement performance analysis that includes present and predicted

performance and an estimate of the remaining service life (performance and remaining service life to be developed with time); and

(iii) An investment analysis that:

(A) Identifies alternative strategies to improve pavement conditions;

(B) Estimates costs of any pavement improvement strategy;

(C) Determines maintenance, repair, and rehabilitation strategies for pavements using life-cycle cost analysis or a comparable procedure;

(D) Provides short and long term budget forecasting; and

(E) Recommends optimal allocation of limited funds by developing a prioritized list of candidate projects over a predefined planning horizon (both short and long term).

(e) For any FWS managed transportation facilities in the inventory or subset thereof, PMS reporting requirements shall include, but are not limited to, percentage of roads in good, fair, and poor condition.

§ 972.210 Federal Lands Bridge Management System (BMS).

In addition to the requirements provided in § 972.204, the BMS must meet the following requirements:

(a) The FWS shall have a BMS for bridges which are under the FWS jurisdiction, funded under the FLHP, and required to be inventoried and inspected under 23 CFR part 650, subpart C, National Bridge Inspection Standards (NBIS).

(b) The BMS shall be designed to fit the FWS goals, policies, criteria, and needs using the following components, as a minimum, as a basic framework for a BMS:

(1) A database and an ongoing program for the collection and maintenance of the inventory, inspection, cost, and supplemental data needed to support the BMS. The minimum BMS database shall include:

(i) The inventory data required by the NBIS (23 CFR 650.311(a));

(ii) Data characterizing the severity and extent of deterioration of bridge elements;

(iii) Data for estimating the cost of improvement actions;

(iv) Traffic information including volumes and vehicle classification (as appropriate); and

(v) A history of conditions and actions taken on each bridge, excluding minor or incidental maintenance.

(2) Analytical procedures that are capable of analyzing data for all bridges in the inventory or any subset. These procedures include, as appropriate, such factors as bridge condition, recommended repairs/replacement and

² "Pavement Management Guide," AASHTO, 2001, is available for inspection as prescribed at 49 CFR part 7. It may be purchased online at <http://www.transportation.org/publications/bookstore.nsf> or mail addressed to the American Association of State Highway and Transportation Officials (AASHTO), Publication Order Dept., P.O. Box 96716, Washington, DC 20090-6716.