

#### Managing Transportation Assets

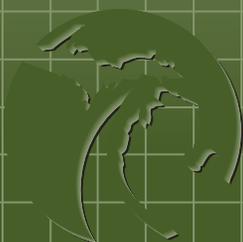
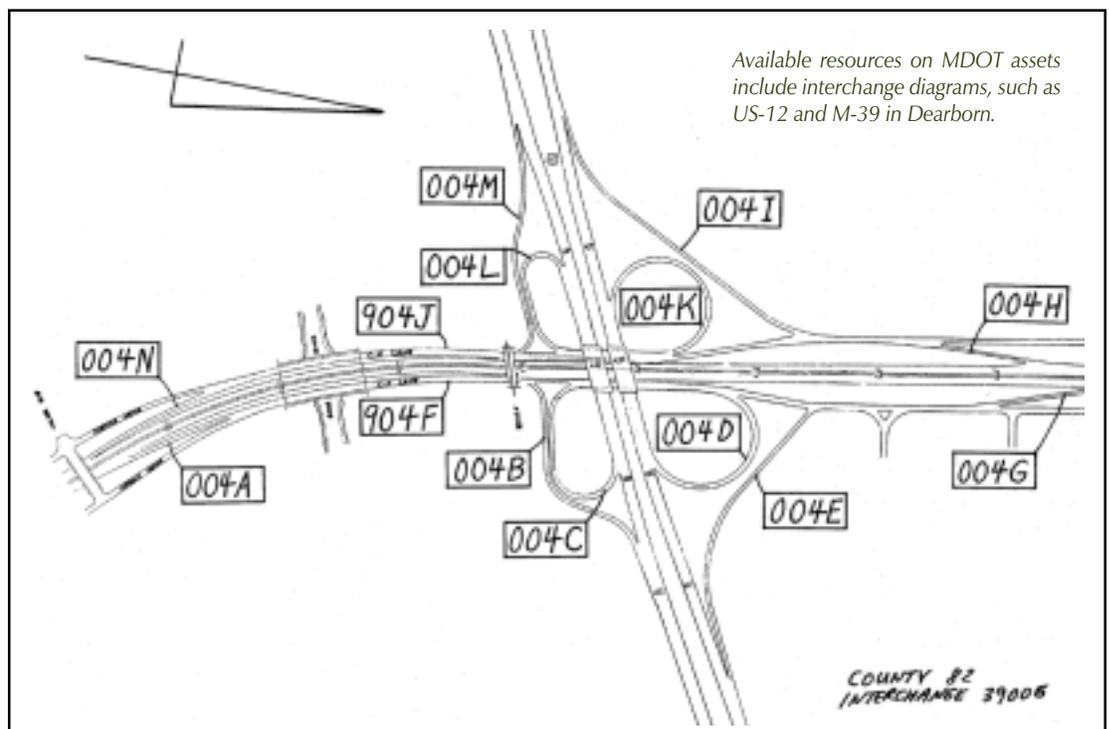
Asset management is an emerging concept in the transportation industry. It provides a solid foundation to allow transportation professionals to monitor the transportation system. Further, it helps professionals plan to best optimize the preservation, upgrading and timely replacement of assets through cost-effective management, programming and resource allocation decisions.<sup>8</sup>

While asset management may be new to the transportation industry, it has long been used by utility companies as a means of managing their networks. It involves collecting physical plant inventory and managing current conditions based on operational and tactical goals. It is a continuous, iterative process enabling managers to evaluate various scenarios, determine trade-offs between different actions, and select the best method for achieving specified goals and objectives.

#### Elements of Asset Management

The major elements of an asset management system are:

- Establishing goals and objectives through development of a strategic plan
- Collecting data to measure progress toward achieving the established goals and objectives
- Using management systems to control the various processes
- Developing appropriate performance measures
- Identifying standards and benchmarks
- Developing alternative analyses procedures
- Making decisions based on these results and developing an appropriate program
- Implementing the program
- Monitoring and reporting results of actions taken



*The Overall Process*

This chart summarizes MDOT’s activities supporting the asset management process. A page in this booklet is devoted to each topic and explains how, using this approach, MDOT is accomplishing its basic mission more efficiently and effectively in an era of reduced staff and higher public expectations.

Michigan Department of Transportation  
**TRANSPORTATION ASSET MANAGEMENT PROCESS**  
 and Related Supporting Activities

**STRATEGIC PLAN**

- Michigan Transportation Policy Plan
- MDOT Business Plan
- State Long-Range Plan

**DATA COLLECTION**

- Architecture Project
- Bridge Condition
- Framework
- Global Positioning
- Highway Performance Monitoring System
- Sufficiency/Distress
- Traffic

**MANAGEMENT SYSTEMS**

- Transportation Management Systems
  - Bridge
  - Congestion
  - Intermodal
  - Maintenance
  - Pavement
  - Public Transportation
  - Safety

**PERFORMANCE MEASURES & STANDARDS**

- Quality Reengineering
- Transportation Management Systems

**ALTERNATIVES ANALYSES**

- Life Cycle Cost Analysis
- Pontis
- Prioritization Process
- Road Quality Forecasting Systems
- Travel Demand Forecasting Model

**DECISION-MAKING & PROGRAM DEVELOPMENT**

- Architecture Program
- Develop Transportation Programs
- Five-Year Road & Bridge Program
- Program/Project Management Systems

**IMPLEMENT PLAN**

- TRANSPORT
- Field Manager

**MONITORING & REPORTING**

- Highway Performance Monitoring System
- Internet/Intranet
- Michigan Transportation Facts & Figures
- National Bridge Inventory
- Newsletters
- Sufficiency

**INTERNAL OPERATIONS**

- Quality Control
- Highway Operations: Goals & Strategies
- Transportation Service Centers

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