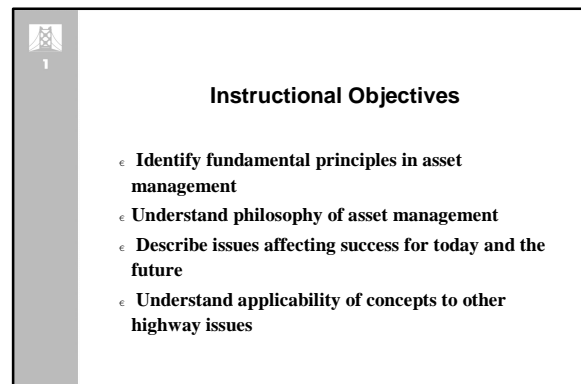


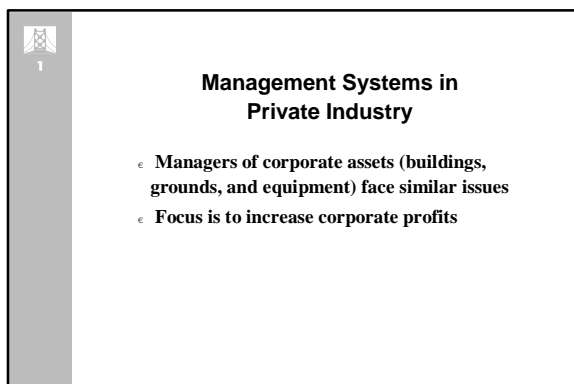
MODULE 1

**AN INTRODUCTION TO
ASSET MANAGEMENT SYSTEMS**



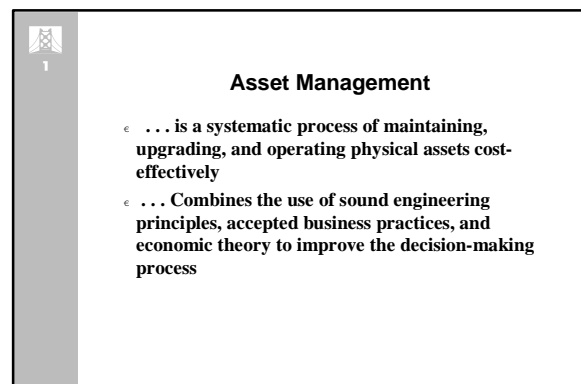
Instructional Objectives

- Identify fundamental principles in asset management
- Understand philosophy of asset management
- Describe issues affecting success for today and the future
- Understand applicability of concepts to other highway issues



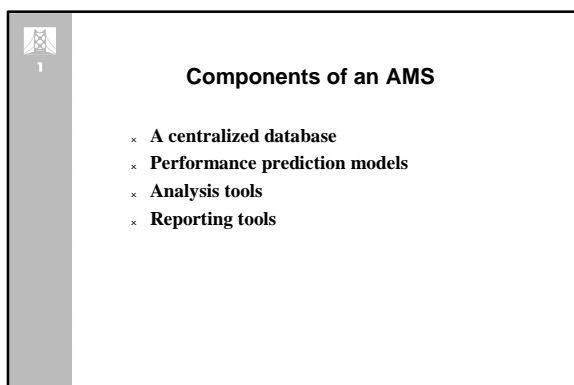
**Management Systems in
Private Industry**

- Managers of corporate assets (buildings, grounds, and equipment) face similar issues
- Focus is to increase corporate profits



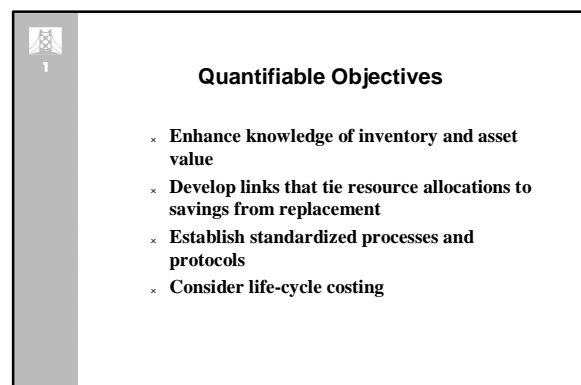
Asset Management

- . . . is a systematic process of maintaining, upgrading, and operating physical assets cost-effectively
- . . . Combines the use of sound engineering principles, accepted business practices, and economic theory to improve the decision-making process



Components of an AMS

- × A centralized database
- × Performance prediction models
- × Analysis tools
- × Reporting tools



Quantifiable Objectives

- × Enhance knowledge of inventory and asset value
- × Develop links that tie resource allocations to savings from replacement
- × Establish standardized processes and protocols
- × Consider life-cycle costing



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Objectives That Are Difficult To Quantify

- × Recognize data as a corporate asset
- × Create sense of ownership in assets by corporate managers and operators
- × Improve credibility in decision-making
- × Encourage processes where managers think globally, but act locally
- × Improve teamwork, communication, and training



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Benefits of AMS

- × Improve program quality
- × Improve information and access to information
- × Facilitate economic assessment of various tradeoffs
- × Improve documentation of decisions
- × Improve information on return on investment and value of investments
- × Reduce short-and long-term costs



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Attributes Required to Realize Benefits

- × Common performance measures and criteria
- × User-friendly environment
- × Customer focus
- × Accessibility within agency
- × Flexibility
- × Link to technical, management, and budgetary processes
- × Exchange of information



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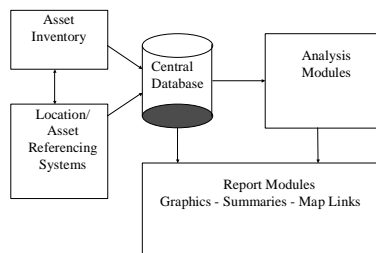
Consequences of Poor Management

- × **Silver River Bridge**
 - National Bridge Inventory
- × **Miami-Dade Water Sewer Department**
- × **Chicago Tunnel System**



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Framework for AMS



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Asset Inventory System

- × Identification of assets included
- × Inventory of basic characteristics
- × Assessment of asset conditions
- × Estimate of asset age



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Location/Asset Referencing System

- × Geographic location
- × Reference system
- × Identifiers for equipment



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Central Database

- × Contains inventory information
- × Facilitates exchange of information



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Analysis Modules

- × Forecast of Future Conditions
- × Impact Analysis of Various Scenarios



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Reporting Modules

- × Presentation of Inventory Information
- × Presentation of Analysis Results
- × **Formats:**
 - Graphics
 - Tables
 - Maps



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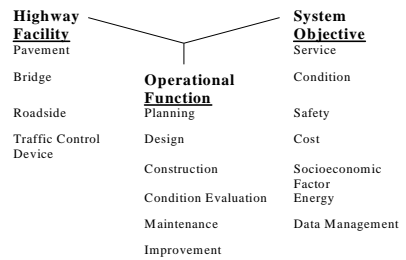
Concepts of AMS for Transportation Systems

- × Develop inventories
- × Use condition measures
- × Use performance measures
- × Need for an integrated database
- × Analyze techniques
- × Format for user-friendly outputs



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Three-Dimensional Matrix Structure





Issues In Asset Management

- × Adherence to worst-first policy
- × Outside influences
- × Large backlog of needs
- × Lack of cooperation and coordination between users



Hurdles to Asset Management

- × Technical
- × Institutional
- × Implementation



Systems Approach to Pavements

- × Identify key links between one or more strategies, where investment in one affects another
- × Define various strategies for improving the effectiveness of these interactions
- × Evaluate and implement the strategies to enhance the overall performance of the transportation system



Systems Approach (cont'd)

- × Define system elements and boundaries
- × Define agency goals and objectives
- × Develop system models
- × Outline analysis procedures
- × Develop output formats



Benefits

- × Improve decision-making process
- × Improve productivity
- × Improve client responsiveness



Agency Factors Contributing to Realization of Benefits

- × Understand philosophy
- × System recommendations must reflect benefits to agency
- × Strategy to match agency goal
- × Systems as a tool to complement agency experience and expertise



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Future Issues

- × Strategic investment analysis tools
- × Training
- × Shift in management approaches
- × Knowledge in multiple disciplines (engineering, business, economics)
- × Changes in technology



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What is PMS?

- × A decision support tool
- × Identifies sections needing treatment
- × Finds cost-effective treatments to apply at any given time to meet desired level of service
- × Within imposed constraints



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What is PMS?

- × Planning and programming
- × Analysis
- × Design
- × Construction
- × Maintenance
- × Research



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Need for PMS

- × Agencies traditionally focused on new construction
- × Maintenance & rehabilitation managed with less formal methods
- × Crisis management
- × Plan maintenance & rehabilitation
- × Structured and documented procedures for spending money



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Need for PMS

- × Transportation and world changes
- × Need to continually update information
- × Necessary to make informed decisions



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