Pavement Management As A First Step in Asset Management

Katie Zimmerman, P.E.
Applied Pavement Technology, Inc. (APTech)
kzimmerman@pavementsolutions.com
Asset Management Functions

- Monitor transportation asset conditions
- Optimize the investment in these assets through cost-effective:
  - Management decisions,
  - Programming decisions, and
  - Resource allocation decisions
Getting Started in Asset Management

Consider:

- Assets that consume the greatest portion of the budget
- Assets that are relatively easy to inventory and monitor
- Assets with systems available to support asset management decisions
Asset Management Process

Policy Goals and Objectives -> Planning and Programming -> Program Delivery -> Systems Monitoring and Performance Results

Quality Information and Analysis

NHI Asset Management Training Course
Setting Goals and Objectives

- Setting a customer-focused goal (such as smoother roads)
- Establishing performance measures to monitor success (such as International Roughness Index)
- Setting a performance target based on pavement management projections (such as 70 percent of the network in good or very good condition within 5 years)
Setting Performance Targets

- **Cost to Maintain 75% in Good or Very Good Condition**
- **Cost to Maintain 70% in Good or Very Good Condition**

**Expected Agency Funding**
Asset Management Process

Policy Goals and Objectives

Planning and Programming

Program Delivery

Systems Monitoring and Performance Results

Quality Information and Analysis

NHI Asset Management Training Course
Planning and Programming Activities

- Long-range planning
- Project and treatment selection
- Trade-off analysis
Establishing Preservation Strategies

Average Pavement Condition over Time

- **Worst First**
- **Pavement Preservation**
Project and Treatment Selection

LEGEND

CAPM OL
PREVENT MAINT
REHAB

COLUSA

2005 2006 2007 2008 2009 2010 2011
Asset Management Process

Policy Goals and Objectives

Planning and Programming

Program Delivery

Systems Monitoring and Performance Results

Quality Information and Analysis

NHI Asset Management Training Course
Program Delivery

- Adherence to budgets
- Adherence to schedule
- Best use of resources
  - In-house forces
  - Borrowed forces
  - Contract forces
Asset Management Process

- Policy Goals and Objectives
- Planning and Programming
- Program Delivery
- Systems Monitoring and Performance Results

Quality Information and Analysis

NHI Asset Management Training Course
Condition Monitoring

Percent of Network in 'Very Good' and 'Good Condition'

Percent of Total Sections >70

Year

Various Yearly Budgets
Target of 93% > 70
Changes In Conditions Over Time

Percent in VG or Good Condition

Year 1 | Year 2 | Year 3 | Year 4 | Year 5

Changes in Conditions Over Time
Asset Management Process

- Policy Goals and Objectives
- Planning and Programming
- Program Delivery
- Systems Monitoring and Performance Results

NHI Asset Management Training Course
Quality Information and Analysis

- Inventory Information
- Condition Information
- Analysis Components
  - Performance predictions
  - Treatment rules
  - Optimization analysis
  - Trade-off considerations
Summary

Pavement management systems
- are an important component of asset management
- provide information to support the strategic, planning and programming, resource allocation, and monitoring functions
- use quality data and trade-off analyses