Best Practices in Transportation Asset Management: U.S. Experience

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Lacy D. Love
Director of Asset Management
North Carolina Department of Transportation
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Purpose of Scan?

- Visit selected National Governmental Transportation Agencies that have implemented Asset Management Principals in their agencies.
- Learn from National leaders on how they implemented Asset Management.
- Share with other States and local road agencies the teams findings.
- Complete a written report on Scan’s findings.
Scan Team

- Four Representatives from FHWA
- Five State DOT Representatives from Michigan, North Carolina, Ohio, Vermont & Oregon
- Subject Matter Expert & Report Writer from Georgia Tech
- Tour Manager from Cambridge Systematics, Inc.
Agencies Interviewed

- 6 State transportation agencies – Florida, Michigan, Minnesota, Ohio, Oregon and Utah
- 1 city – Portland, OR
- 2 MPOs – SEMCOG in Detroit and Grand Valley Metropolitan Council in Grand Rapids, MI
- 2 counties – Hillsborough County, FL and Kent County, MI
- 1 tollway authority – Florida’s Turnpike Enterprise
- 2 statewide asset management associations – Michigan Transportation Asset Management Council and Pacific Northeast Asset Management User Group, OR
Why?
Reasons to Implement TAM

- Right thing to do & were ready
- Credibility w/ elected officials & stakeholders
- Already believed in “preservation first”
  - Needed tools to manage Preservation program
  - Needed a way to prioritize projects
- Decision Support System for Commission
  - Needed better way to allocate transportation resources both optimally and equitably.
  - Optimize Funding based on engineering & economics
- Align Funding with Strategic Goals & Strategic Goals w/ Performance Plans
Vision
Oregon DOT’s Vision

ODOT’s assets are managed strategically by utilizing integrated and systematic data collection, storage, analysis and reporting standards on a broad range of transportation system assets, optimizing funding and life cycle decisions for operations, maintenance and construction business functions.
In three to five year’s time UDOT’s Asset Management System will be:

- **Integrated**: where funding allocation decisions are broad based across various asset categories;

- **Automated**: so that funding allocation decisions are generated in a more systematic, repeatable and objective manner;

- **Expanded**: to include other network assets other than just pavements and bridges;

- **Accessible**: to all UDOT stakeholders through the internet or other communication media.
Ohio DOT: Linkage

ODOT asset management tied to:

- Budgets
- Executive evaluations
- Division goals
- Institutional goals
Scan Findings

All agencies had adopted a ‘preservation first’ strategy for their investment priorities and were moving from a “Worst First” to life cycle costing
Preservation First Strategies
Florida DOT

- Florida DOT management has made a strong commitment to system preservation and maintenance.
- They have been actively involved in establishing policies that target these types of investments:
  - 5.6 percent of the state highway system will be resurfaced each year.
  - When a bridge is declared deficient, it will be replaced within 9 years.
  - Maintenance is funded “off the top” at a level required to achieve a maintenance rating of 80 or above.

“Asset management has resulted in the legislature approving our preservation and maintenance budgets without change because we were able to justify the State’s needs.”
Scan Findings

Success linked to actions of asset management champion(s)
Characteristics of a TAM Champion
Utah DOT

- A communicator
- Respected
- A believer in process
- Willing to take chances
- Able to give credit to others
- Continually teaching others
There was no one organizational model for asset management.
Organizational Models for TAM
Oregon DOT

Figure 2.18 ODOT's Asset Management Decision Structure

- **ODOT Executive Staff**
- **Asset Management Executive Committee**
- **IT Executive Steering Committee**
- **IT Community of Interest Committees**

- **Hwy Staff and Business Line Teams**
- **Asset Management/OTMS Steering Committee**
- **IT Strategic Direction**

- **GIS Steering Committee**
- **Linear Asset Management/OTMS Tactical Steering Committee**
- **OTMS Executive and Steering Committee Combined**

- **Nonlinear Asset Management Tactical Steering Committee**
- **IT Project Approval**
- **Data Council**

- **IT Project Direction**
- **IT Strategic Direction**
Existence of an asset management process can be instrumental in securing additional funds from the legislature.
Making the Case for Additional Funds
Michigan DOT

Michigan Pavement Condition

Good Pavement (in Percent)

Year


Freeway (Actual)
Non-Freeway (Actual)
95% Goal (Freeway)
85% Goal (Non-Freeway)
Freeway (Projected)
Non-Freeway (Projected)
Use of performance measures to guide investment decisions throughout organization
Ohio DOT: Using Asset Management Performance Measures Will:

- Catalyze action
- Define goals
- Prioritize actions
- Align efforts
Using Performance Measures, continued
Ohio DOT

Pavement Conditions
Priority System Deficiencies
FY 1997 vs. FY 2005

Bridge Conditions
General Appraisal Deficiencies
FY 1997 vs. FY 2005
The use of in-house or contract forces does not change importance of performance measures
Scan Findings

Scenario analysis is one of the most effective methods of convincing decision makers of the need for transportation investments.
## Scenario Analysis
Kent County Road Commission, MI

### Investment Strategies
Percent of System Condition PCI > 70

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*With good tools comes good decision making*
“Growing pains” of asset management can enhance communication within an agency
An important starting point of implementation is an organizational self assessment
Use of a Self Assessment to Get Started
Utah DOT

- Utah DOT began its asset management efforts with the Self Assessment exercise in the AASHTO Asset Management Guide

- 48 employees reviewed a series of statements representing best practice and rated:
  - The degree to which they were consistent with current DOT practices
  - The degree to which improvement in that area was desired

- After a detailed analysis of the results, the DOT developed a comprehensive asset management implementation plan
Scan Findings

Data seen as an asset and data collection process seen as an important decision support function
Quality Information & Data: Michigan

- Maintain high-quality information that supports asset management and business process
- Collect and update data cost-effectively
- Data viewed as “corporate asset”
- Collect it once; store it once; use it over and over
- Information automated and accessible to all parties

GIS Framework Project

Global Positioning System (GPS)
New technologies have the potential to make data collection more cost-effective and efficient
Maintenance Quality Survey: Ohio DOT
In several cases, a customer orientation has been adopted
Mn/DOT’s investment decision-making process is driven by performance-based plans and programs.

Each of the agency’s policies has a set of measures and targets that allow Mn/DOT to monitor progress over time.

Public involvement played a role in establishing appropriate targets.

For example, Mn/DOT has conducted studies to determine what roadway conditions its customers find most desirable.
1. Strong commitment to system preservation and maintenance, and has been actively involved in establishing policies that target such investments.

2. Mission driven, that is, it is clear that the asset management ethic is incorporated into the mission statement, goals, and operating policies of the department.

3. Customer focused in that surveys are used to determine public expectations on road conditions and maintenance levels.
In Closing
Long term commitment:

- Process focus, beginning with strategic planning/goal setting
- Start simple – make a commitment to continuous improvement
- Quality data – “collect it once, use it many times”
Long term commitment to:

- IT support
- Build linkages between organization units internally
- Build partnerships/buy-in
Lessons from Ohio DOT

- Asset management should just be considered basic management
- Conditions should drive budgeting
- Evaluations should be tied to system condition achievements
- A complementary strategy is to enable savings and redirection
Lessons, cont’d

- Data systems will need help
- Gathering data may require its own major initiative
- Find customer requirement surrogates
- Use to set public agenda
Questions