Thinking Differently

Asset Management as a Catalyst For Change at the Iowa DOT

John R Selmer
Director, Performance And Technology Division

Iowa Department of Transportation
What is Transportation Asset Management?

• We all do it now—some better than others

• AASHTO definition: “Transportation Asset Management is a strategic and systematic process of operating, maintaining, upgrading and expanding physical assets effectively throughout their lifecycle. It focuses on business and engineering practices for resource allocation and utilization, with the objective of better decision making based on quality information and well-defined objectives.”

  AASHTO Subcommittee on Asset Management

  Simply said—it is investing at the right time, with the right strategy, maximizing benefit using both engineering and business practices.
A Generic Asset Management System

**System Components**

- Goals and Policies
- Asset Inventory
- Condition Assessment And Performance Modeling
- Alternative Evaluation And Program Optimization
- Short and Long Range Plans (Project Selection)
- Program Implementation
- Performance Monitoring
- Budget/Allocations

**Key Questions**

- What is our mission? What are the goals and policies?
- What is included in our inventory of assets?
- What is the value of our assets? What are their functions? What services do they provide?
- What was the past condition and performance of our assets? What is the current and predicted future condition and performance of our assets?
- How can we preserve, maintain, or improve our assets to ensure the maximum useful life and provide acceptable service to the public?
- What resources are available? What is the budget level? What is the projected level of future funding?
- What investment options may be identified within and among asset component classes? What are their associated costs and benefits?
- Which option, or combination of options, is “optimal?”
- What is the consequences of not maintaining our assets? How can we communicate the impact of the condition and performance of our assets on the system and end user?
- How do we monitor the impact of our decisions? How do we adjust our decision-making framework when indicated?
- How can we best manage our assets in order to least inconvenience the motoring public when we repair or replace these facilities?

(Asset Management Primer, FHWA, 1999, p. 19)
Iowa’s History

Genesis
- In the mid to late 90’s, Iowa was in a leadership position
- Iowa DOT Director Darrel Rensink, National Leader on Asset Management, 1996
- Use of pavement management system for preservation strategies
- System-level view
- LRS investment

Into the dark ages
- Leadership change about 12 years ago deemphasized initial efforts
- Focus on constructing four lane corridors
- Discontinued use of thin maintenance treatments
- Worst First Prevailed
Iowa DOT Asset Management History

- dTIMS - PMIS
- Pavement preservation
- SHRP distress identification
- The Dark Ages
- LRS project begins
- Maintenance Quality Assurance program
- Thin surface treatments
- IPMP

Announcement of new Division
Proposal for organizational change
Trombino era begins
TAM webinars
Director announces TAM initiative
Sign inventory
Gap Analysis
Re-emergence of Asset Management
NHI Course
Appointment of Champion
TAM self-assessment (2nd attempt)

DOT Headcount

Evolving DOT Mission

• Historical focus on building the system
  – Out of the mud (1900s-1950s)
  – Building the Interstate (1950s-1990s)
  – Corridors and capacity (1990s-present)

• Shift from building to operations and stewardship
  – Are we resourced to be successful in future?
  – Change is hard. How do we do it?
Initial Steps

• NHI Training
• Conferences, committees
• Champion identified and committees created
  – Executive support
  – Steering committee
  – Technical committee
  – Working group
• Self-assessment

Directive: “Build a world-class asset management system”

Okay... now what?
Appeared on our Doorstep

- Trojan rabbit
We’ve got Flowcharts
# Gap Analysis

260+ criteria to evaluate in six key areas

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<td>Initial</td>
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<td>Low-value emphasis on processes</td>
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<td>Advanced results, ready to move forward</td>
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<td>Always do this</td>
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<td>Always do this</td>
<td>High-value emphasis on processes</td>
<td>High-formal processes</td>
<td>Excellent results, ready to move forward</td>
<td>Best practice</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Always do this</td>
<td>High-value emphasis on processes</td>
<td>High-formal processes</td>
<td>Excellent results, ready to move forward</td>
<td>Best practice</td>
</tr>
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**Maturity scale**

- **Level 1: Initial**
  -occasionally do this
  -Low-value emphasis on processes
- **Level 2: Developing**
  -typically do this
  -Medium-value emphasis on processes
- **Level 3: Structured**
  -always do this
  -High-value emphasis on processes
- **Level 4: Proficient**
  -always do this
  -High-value emphasis on processes
- **Level 5: Best practice**
  -always do this
  -High-value emphasis on processes

**Processors**

- Initial: Low
- Developing: Average
- Structured: High
- Proficient: Very High
- Best practice: Excellent

**Frequency**

- Initial: Rarely
- Developing: Occasionally
- Structured: Typically
- Proficient: Always
- Best practice: Always

**Subelement Emphasis**

- Initial: Low
- Developing: Medium
- Structured: High
- Proficient: Very High
- Best practice: Excellent

**Process Formality**

- Initial: Low
- Developing: Medium
- Structured: High
- Proficient: Very High
- Best practice: Excellent

**Data & Technology**

- Initial: Low
- Developing: Medium
- Structured: High
- Proficient: Very High
- Best practice: Excellent

**Outputs & Results**

- Initial: Minimal
- Developing: Moderate
- Structured: Advanced
- Proficient: Proficient
- Best practice: Excellent
Some Initial Findings

- Initial State - Adhoc
- Lack of Clarity or shared vision on what is Asset Management
- Implementation Manual not the cookbook we were looking for to guide us
- The need for further management guidance on how to integrate asset management into the organization
- Gap Analysis difficult to do without these questions answered

What was starting as an exciting challenge was beginning to feel like the opening of Pandora’s Box.
Fill in the Blank

• ___________ Management
  – Asset?
  – Performance?
  – Risk?
  – Resource?
  – Ad infinitum...

• Do these all exist on an equal footing, and are they inter-dependent?
How do we do Asset Management?

- What is an asset?
- What is the scope?
  - Big?
  - Small?
  - Limited?
  - Comprehensive?
- What are other states doing? Is there a successful example?
- How does our history, culture, capabilities, desired future state, and funding mechanisms influence the implementation and development of Asset management plan?

**Important message:** Just because something isn’t an “asset” DOES NOT mean it won’t be managed!
Understand What You’re Asking For

• To fully support TAM implementation, many issues may have to be addressed
  – Does the existing organizational structure support?
  – Who is “responsible” for asset management?
  – Do we have the core competencies required?

• Ultimately, Asset Management touches nearly all business processes in the organization
Other Key Components

• Analytics
  – How can we start turning data into knowledge?
• Communication
  – How do we listen and be heard?
• Continuous Improvement
  – Where do we need to focus to move forward?
• Supportive Organizational Structure
  – How can we live up to expectations?
Bigger than Assets

• Strategic planning
  – What are our goals?

• Performance management
  – Managing non-assets

• Risk management
  – Where do we need to focus?

• Business Intelligence
  – How can we more effectively turn piles of data into actionable information?
Related Key Functions

Strategic Communication

Strategic Planning

Asset Management

Performance Management

* With thanks to GDOT for the kernel of this concept
Form Follows Function

Performance and Technology Division

Organizational Improvement
- Performance Management
- Asset Management
- Strategic Planning
- Process Improvement

Strategic Communication
- Web
- Public Information
- Social Media
- Field Communications

Research and Development
- GIS and Business Intelligence
- Agency Research
- Innovation