Bridge Asset Management

Level 1
- Asset Inventory
- Condition Assessments

Level 2
- Policy & Strategy
- LOS Objectives
- Business Plan

Level 3
- Condition Assessment/Inspection
- Performance Assessment
- Risk Analysis

Level 4
- Lifecycle Management Planning and Models
- Lifecycle Costs/Performance Information

Level 5
- Scenario Evaluation and Management

“I know what I have”

“I know where I want to be”

“I know where I am against my level of service (LOS) objectives”

“I can optimize across assets against a budget constraint.”

Asset Management Maturity Level
Corrosion
Heavy Deck Cracking
Slippage Along Construction Joint
Cracked Eyebbar
Bridge Asset Management Plans

- **System-wide Plans**
  - Applies to entire inventory
  - Global goals and performance measures
  - Budgetary distribution prioritized on goals

- **Individual Bridge Plans/Studies**
  - Specific bridge focus – all inclusive
  - Process provides defendable results
  - Provides basis for risk-based decisions
The (MnDOT) undertook the study to identify investments necessary to enable MnDOT and WisDOT to efficiently and effectively maintain a structurally sound crossing.
Reasons for the Study

- Significant deterioration developed in truss elements
- Actions required at increasing frequency
- Increased levels of road user delays
- Increasing projects leads to negative public perception
- Replacement will be expensive!
Blatnik Bridge Management Study

Goals

- A series of strategies to maintain the crossing
- Actions and investments to support strategies
- Quantify the effects of traffic interruptions
- Identify and quantify risk factors
- Evaluate each strategy by life cycle cost
- Tool for MnDOT in future decision making
- No recommendation on specific strategy
The Blatnik Bridge Management Study provided valuable and creditable information to take to (MnDOT) Leadership and helped support well founded-decisions on this critical structure.

- Kevin Western, MnDOT State Bridge Engineer
This AMP defines a work plan which will allow the useful life of the twin bridges on I-90 over Lake Coeur d’Alene at Blue Creek Bay to achieve the asset management plan goal of 100-year service life.
Blue Creek Bay Management Plan Goals

- Actions to achieve a 100 year service life
- Develop future preservation actions
- Identify future costs and time to actions
- Corrosion mitigation recommendations
- Develop specific immediate rehab actions
- Produce rehab and preservation plans & specs
The Blue Creek Bay Management Plan was a key step needed to implement the improvements and meet the planned performance of these bridges.

-Matt Farrar, Idaho State Bridge Engineer
Common Plan Components

☐ **Condition Assessment**
  - Use of existing data and documentation
  - Supplement with site visits and inspections
  - Identification of information gaps

☐ **Risk Assessment**
  - Financial – insufficient funding
  - Road user – delays due to maintenance or replace
  - Future functionality – necessary capacity/access
  - Vulnerabilities of associated with condition
Common Plan Components (Cont)

- **Preservation and Rehabilitation**
  - Identify future needs
  - Associated costs required for goals
  - Determine intervals for activities

- **Asset Management Plan**
  - Identify goals and expected performance
  - Mitigation of identified risks and information gaps
  - Life cycle evaluation of asset(s)
  - Projection of future budgetary needs
Some Good References on Risk

- NCHRP Project 12-82, Report 782, Proposed Guideline for Reliability-Based Bridge Inspection Practices
- NCHRP Project 20-07/Task 378, Assessing Risk for Bridge Management
AASHTO Guidelines for Bridge Specific Management Plans?
Bridge specific plans and studies can help make good creditable and defendable decisions for your larger bridge assets

Thank You

Barton Newton, P.E.
barton.newton@wsp.com

Keith Ramsey, P.E.
keith.ramsey@wsp.com

Michael C. Brown
michael.c.brown@wsp.com