



TRANSPORTATION ASSET MANAGEMENT PLANS

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A Little History

- 1992: FHWA establishes an initiative to look at international efforts to develop asset management
- 1999: FHWA and AASHTO create Subcommittee
- 1992-2007: Focus on economic aspects and data collection methodologies
- 2007-2012: Focus shifts to identifying processes
- 2012: MAP-21 becomes law requiring development of TAMP
- 2014-Present: States begin developing TAMPs

What is Asset Management?

- From 23 USC 101(a)(2): “a strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on engineering and economic analysis based upon quality information, to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve and sustain a desired state of good repair over the lifecycle of the assets at minimum practicable cost.”

Infrastructure Condition

- Goal: Maintain the highway infrastructure asset system in a state of good repair.
 - Manage your network for the long term at the minimum practicable cost to:
 - improve or preserve asset condition and system performance.
 - manage risk.
 - Short-term performance measures and targets are key indicators.

Risk Based Asset Management Plan

- Plan Contents:
 - Pavement and bridge inventory and conditions on the NHS.
 - Objectives and measures.
 - Performance gap identification.
 - Lifecycle planning
 - Risk management analysis.
 - Financial plan.
 - Investment strategies.

Financial Plan Process

- Identify annual costs over a minimum period of 10 years;
- Include the estimated cost of expected future work to implement investment strategies contained in the asset management plan, by State fiscal year and work type;
- Estimate funding levels that are expected to be reasonably available, by fiscal year, to address the costs of future work types:

Financial Plan Process

- Identify anticipated funding sources; and
- Estimate value of the agency's NHS pavement and bridge assets and the needed investment on an annual basis to maintain the value of these assets.

Financial Plan Process

- Financial Plan Includes Past and Present Funding:
 - Summarize historical funding levels for pavement and bridge programs (Interstate, Non-interstate NHS)
 - Describe the amount of funds expected to be available for the bridge and pavement programs
 - Describe funding source(s)
 - Describe how these funds will be allocated over the 10-year plan horizon
 - Present funding levels in terms of financial sustainability of the highway system (available vs needs)
 - Document the process for developing the financial plan

Investment Strategies

- **A State DOT must establish a process for developing investment strategies, identifying how those strategies are influenced, at a minimum;**
 - Identify anticipated funding sources; and
 - Estimate value of the agency's NHS pavement and bridge assets and the needed investment on an annual basis to maintain the value of these assets.

Investment Strategies

- **TAMP investment strategies should collectively make or support progress toward:**
 - achieving and sustaining a desired state of good repair over the life cycle of the assets.
 - improving or preserving the condition of the assets and the performance of the system relating to physical assets.
 - achieving the State DOT targets for asset condition and performance of the NHS in accordance with 23 USC 150(d).
 - achieving the national goals identified in 23 USC 150(b).

Investment Strategies

- Investment Strategies
 - Performance gap analysis (existing vs target)
 - Life cycle considerations (PMS and BMS)
 - Risk assessment (Risk Register)
 - Financial analysis (Funding availability)
 - Scenario analysis (trade-off analysis)
- Document the process used to select investment strategies

Management Systems

- Minimum standards for States to use in developing and operating bridge management systems and pavement management systems.
- State DOTs to use bridge and pavement management systems to analyze asset conditions to develop and implement Risk-based Asset Management Plans.

Management System - Requirements

- (a) Collecting, processing, storing, and updating inventory and condition data for all NHS pavement and bridge assets.
- (b) Forecasting deterioration;
- (c) Determining the benefit-cost over the life cycle of assets to evaluate alternative actions (including no action decisions), for managing the condition of NHS pavement and bridge assets;
- (d) Identifying short- and long-term budget needs;
- (e) Determining the strategies for identifying potential NHS pavement and bridge projects that maximize overall program benefits within the financial constraints.; and
- (f) Recommending programs and implementation schedules to manage the condition of NHS pavement and bridge assets within policy and budget constraints.

Performance Measures - Pavements

- Interstate:
 - Percentage of pavements in GOOD Condition
 - Percentage of pavements in POOR Condition
- Non Interstate – NHS
 - Percentage of pavements in GOOD Condition
 - Percentage of pavements in POOR Condition
- Measured in 0.1 mile segments

Performance Measures - Bridge

- All NHS Bridges
 - Percentage of bridges in GOOD Condition
 - Percentage of bridges in POOR Condition

Measure in percent bridge deck area

Federal Requirements

- For the 'Initial TAMP' due April 2018, the following are not required:
 - *Inclusion of condition targets is not required, but is encouraged:*
 - *Either use any long term State targets that the DOT may have developed previously for use in its asset management analyses;*
 - *Or use temporary targets such as minimum condition requirements for NHS bridges and interstate pavements*
 - *Note that Targets are still due to FHWA by May 20, 2018.*
 - *Life Cycle Planning: Process is required but not analysis.*
 - *Risk Management Plan: Process is required but not analysis.*
 - *Financial Plan: Process is required but not analysis.*
- *All of these will be required in the 'Complete TAMP' due June 30, 2019.*

Federal Requirements

• **Consequences for Non-Compliance**

- If a State DOT has not developed and implemented a compliant asset management plan, the maximum Federal share on National Highway Performance Program (NHPP) projects and activities carried out by the State in that fiscal year shall be reduced to 65% for that fiscal year.
- If a State DOT has not developed and implemented an asset management plan consistent with requirements and has not established NHS pavements and bridges targets within 18 months of that rule's effective date, the FHWA will not approve any further projects using NHPP funds until the State has done so.
- The deadline may be extended if the FHWA determines the State has made a good-faith effort.

Data Quality Management Plan



Data Quality Management Plan

- Why Data Quality Management?
- Data Quality Management Plan Requirements
- Expectations and Schedule

Data Quality Management Plan (Why?)

- MAP-21/FAST Act Legislation:
- “...the data elements that are necessary to collect and maintain standardized data to carry out a performance-based approach”

Data Quality Management Plan Requirements

- Data collection equipment calibration and certification
- Certification process for persons performing manual data collection
- Data quality control measures to be conducted before data collection begins and periodically during the data collection program
- Data sampling, review and checking processes
- Error resolution procedures and data acceptance criteria

Data Quality Management Plan Expectations

- Addresses the quality of all data collected to report the pavement condition metrics
- Applies to manual and automated data acquisition methods
- States must submit for FHWA approval by **May 20, 2018**
- Must also submit any significant changes to the plan proposed following its initial submittal

Data Management Resources

- FHWA Practical Guide
 - Detailed guidance on pavement data quality
- NCHRP Synthesis 401
 - Data quality approaches
 - Review of the state of practice
- HPMS materials
 - Guidance on topics including data quality
 - HPMS continuous process improvement model

Important Dates

- Not later than **April 30, 2018**, the State DOT must submit to FHWA a State-approved **initial** TAMP.
- Not later than **June 30, 2019**, the State DOT must submit to FHWA a current State-approved (a “fully compliant”) TAMP that meets all the requirements of 23 USC 119 and 23 CFR Part 515.
- Not later than **August 31, 2019**, and not later than July 31 in each year thereafter, FHWA will notify the State DOT whether the State DOT has developed and implemented an asset management plan consistent with 23 U.S.C. 119 and 23 CFR Part 515.



Thank You!



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