



U.S. Department of Transportation
Federal Highway Administration
Office of Infrastructure

Transportation Asset Management Plan (TAMP) Development Processes

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Asset Management

Asset management means a strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on both 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 life cycle of the assets at minimum practicable cost. (23 CFR 515.5)

Transportation Asset Management Plan (TAMP)

- A document that describes how a State DOT will carry out asset management. (See *asset management plan* definition 23 CFR 515.1)
- This includes how the State DOT will make risk-based decisions:
 - A long-term assessment of the National Highway System (NHS)
 - Public roads included in the plan at the option of the State DOT, as it relates to managing its physical assets
 - Investment strategies to address the condition and system performance gaps.

State DOT must have the following TAMP processes (23 CFR 515.7)

- Process to complete a performance gap analysis and to identify strategies to close gaps
- Process to complete life cycle planning
- Process to complete a risk analysis and develop a risk management plan
- Process to develop a financial plan covering at least a 10-year period
- Process to develop investment strategies
- Process for obtaining necessary data from NHS owners other than the State DOT
- Process for ensuring the TAMP is developed with the best available data and that the State DOT uses bridge and pavement management systems meeting the requirements in 23 CFR 515.17 to analyze NHS bridge and pavement conditions



Risk-based Asset Management Plan Contents (23 CFR 515.9, except where noted)

- Pavement and bridge inventory and conditions on the NHS¹
- Objectives, measures, and targets
- Performance gap identification
- Lifecycle planning
- Risk management analysis
- Financial plan
- Investment strategies
- Use of best available data

¹ A TAMP must include a summary listing of all NHS pavement and bridge assets. State DOTs are also encouraged to include all other NHS infrastructure assets within the right-of-way corridor and assets on other public roads.



Process for Performance Gap Analysis (23 CFR 515.7(a))

Minimum required elements: Physical Condition of Assets

The TAMP must describe a methodology, with regard to the physical condition of the assets, for:

- Identifying gaps affecting the State DOT targets for the condition of NHS pavements and bridges as established pursuant to 23 U.S.C.150(d).
- Identifying deficiencies hindering progress toward achieving and sustaining the desired state of good repair (as defined by the State DOT).
- Developing alternative strategies that will close or address the identified gaps.



Process for Performance Gap Analysis (continued)

Minimum required elements:

NHS Effectiveness Performance: The TAMP must describe a methodology for analyzing gaps in the performance of the NHS that affect NHS bridges and pavements regardless of their physical condition, that will:

- Identify gaps in the effectiveness of the NHS in providing safe and efficient movement of people and goods. (23 CFR 515.7(a)(2)).
- Identify strategies to close or address the identified gaps affecting the physical assets. (23 CFR 515.7(a)(3)).



Process for Lifecycle Planning (23 CFR 515.7(b))

Minimum required elements:

1. State DOT targets for asset condition for each asset class or asset subgroup;
2. Identification of deterioration models for each asset class or asset subgroup, provided that identification of deterioration models for assets other than NHS pavements and bridges is optional;



Process for Lifecycle Planning (continued)

Minimum required elements:

3. Potential work types across the whole life of each asset class or asset sub-group with their relative unit cost;
4. A strategy for managing each asset class or asset sub-group by minimizing its life-cycle costs, while achieving the State DOT targets for asset condition for NHS pavements and bridges under 23 U.S.C. 150(d); and
5. Consider extreme weather and resilience as part of Lifecycle Planning.



Process for Developing a Risk Management Plan (23 CFR 515.7(c))

Minimum required elements:

1. The estimated cost of expected future work to implement investment strategies contained in the asset management plan, by State fiscal year and work type;
2. The estimated funding levels that are expected to be reasonably available, by fiscal year, to address the costs of future work types. State DOTs may estimate the amount of available future funding using historical values where the future funding amount is uncertain;



Process for Developing a Risk Management Plan (continued)

Minimum required elements:

3. Identification of anticipated funding sources; and
4. An estimate of the 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.
5. Consider extreme weather and resilience as part of risk management analyses?



Process for Developing a Financial Plan (23 CFR 515.7(d))

Minimum required elements:

1. Covers at least a 10-year period.
2. Includes the estimated cost to implement the investment strategies by State fiscal year and work type.
3. Includes the estimated funding levels that are expected to be reasonably available, by fiscal year, to address the costs of implementing the investment strategies, by work type.



Process for Developing a Financial Plan (continued)

Minimum required elements:

4. Identifies anticipated sources of available funding.
5. Includes a summary asset valuation for the State's NHS pavement and bridges, including the investment needed on an annual basis to maintain the asset value.



Process for Developing Investment Strategies (23 CFR 515.7(e) and 515.9(f))

Minimum required elements:

1. Producing investment strategies that 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 NHS relating to physical assets,
 - Achieving the State DOT targets for asset condition and performance of the NHS in accordance with 23 U.S.C. 150(d), and
 - Achieving the national goals identified in 23 U.S.C. 150(b).



Process for Developing Investment Strategies (continued)

The TAMP must describe a methodology for:

2. Identifying and describing how the investment strategies are influenced by:
 - Anticipated available funding to implement strategies and estimated cost of future work types associated with investment strategies being considered, based on the TAMP financial plan.
 - Results of the TAMP risk, management, life cycle planning, and performance gap analyses.



Process for Obtaining Data from Other NHS Owners (23 CFR 515.7(f))

Minimum required elements:

The TAMP must describe a methodology for obtaining necessary data from other NHS owners in a collaborative and coordinated effort.

Process for Process for Ensuring Use of Best Available Data and Use of Bridge and Pavement Management Systems (23 CFR 515.7(g))

Minimum required elements:

- Ensuring that the State DOT uses the best available data for development of the TAMP.
- Ensuring that the TAMP is developed using bridge and pavement management systems that meet the requirements of 23 CFR 515.17. If, at the time of the first certification, the State DOT does not have bridge and pavement management systems that fully comply with 23 CFR 515.17 standards, the State DOT process identifies additional means it will use to provide analyses or other information needed to meet all of the requirements in 23 CFR 515.17. The TAMP must describe a methodology for obtaining necessary data from other NHS owners in a collaborative and coordinated effort.

Process for Process for Ensuring Use of Best Available Data and Use of Bridge and Pavement Management Systems (continued)

Minimum required elements:

- Ensuring the process for using information from the State DOT's Statewide Transportation Improvement Program (STIP) in the development of the State DOT's TAMP is consistent with TAMP process and data requirements. This means that the STIP may be used to provide background information, but cannot be used as a substitute for carrying out the required analyses, or be used to override the results of the required independent analyses of relevant data when developing 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



Bipartisan Infrastructure Law (BIL) Compliant TAMP

- Effective October 1, 2021, Section 11105 of the BIL amended 23 U.S.C.. 119(e)(4) to require State DOTs to consider extreme weather and resilience as part of the life-cycle planning and risk management analyses within a State asset management plan (TAMP).
- BIL-compliant processes and updated TAMPs on or before December 31, 2022. The FHWA expects such documents will:
 - Clearly explain the processes used to develop the extreme weather and resilience portions of the risk management and life-cycle planning sections of the TAMP,
 - Include discussions of extreme weather and resilience in the risk management and life-cycle planning sections of the TAMP, and
 - Discuss how their investment strategies are influenced by the results of their risk management and life-cycle planning analyses, as provided in 23 CFR 515.7(e)

Resources on FHWA Asset Management web site:
<https://www.fhwa.dot.gov/asset/>

Guidance on Developing TAMP Financial Plans (November 2017)

Guidance on Incorporating Risk Management into Transportation Asset Management Plans (November 2017)

Guidance on Using a Life Cycle Planning Process to Support Asset Management (November 2017)

Demonstrating the Application of Life Cycle Planning on a Pavement Network (Arizona DOT Pilot Project, August 2021)

Questions? Contact Information

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