Generic Work Plan for Developing a TAMP

U.S.Department of Transportation
Federal Highway Administration

March 2013

This document presents a generic work plan for developing a Transportation Asset Management Plan (TAMP). Using this document as a starting point, FHWA is working with the Louisiana, Minnesota, and New York DOTs to develop state-specific work plans. After these tailored work plans are complete, FHWA will make adjustments to this generic version.

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1.0 Introduction

Historically, asset management has been a critical, but under-represented element of the transportation planning process. Based on the simple, but powerful premise that agencies should consider the full life-cycle cost of their funding decisions and manage their assets accordingly, the field of asset management has grown and become prevalent in transportation agencies throughout the world. In the U.S., many State Departments of Transportation (DOTs) have made significant progress implementing asset management tools and techniques.

In July 2012, Moving Ahead for Progress in the 21st Century (MAP-21) codified asset management principles into law. This legislation establishes a performance-based highway program with the goal of improving how Federal transportation funds are allocated. In addition, MAP-21 requires each state DOT to develop a risk-based Transportation Asset Management Plan (TAMP) that contains the following elements:

1. A summary listing of the pavement and bridge assets on the National Highway System in the State, including a description of the condition of those assets;

2. Asset management objectives and measures;

3. Performance gap identification;

4. Lifecycle cost and risk management analysis;

5. A financial plan; and

6. Investment strategies.

Since the passage of MAP-21, many DOTs have begun to mobilize for the development of a TAMP. In many cases, they are wrestling with fundamental questions such as "what should the plan include?" and "how should we get started?" In support of these efforts, this document recommends a work plan for developing a TAMP. The work plan is designed to be flexible for any state DOT's situation and any level of asset management maturity. This flexibility is essential, because the asset management planning process will only be a success if the resulting TAMP influences and directs how the agency allocates funds.

The work plan consists of five steps organized to help agencies answer the following questions:

1. What is the purpose of the TAMP?

2. Who should be involved in developing the TAMP?

3. What should the TAMP look like?

4. What information is needed to develop the TAMP?

5. How do we move from a concept to a final plan?

Throughout this study, FHWA will be working with the Louisiana, Minnesota, and New York DOTs to implement tailored versions of this work plan. During these efforts, staff from the participating agencies will conduct the analysis and work through the asset management planning process, with support from a consultant team who will facilitate the process and assist in writing the TAMPs. The consultant team will then document lessons learned from these efforts, and use the results to develop templates that other States can use for their TAMPs.

2.0 Work Plan

2.1 WHAT IS THE PURPOSE OF THE TAMP?

The initial step in the TAMP development process is to develop a purpose statement. The purpose statement will define guiding principles for the TAMP. At a minimum it should answer the following questions:

1. **What are our objectives for developing a TAMP?**

   The answer to this question will depend on your agency's previous experiences with asset management and/or its current objectives for asset management. An obvious objective is to comply with the requirements of MAP-21. Looking beyond MAP-21 compliance, examples of other potential objectives include:

   - Reconfirm existing asset management strategies and provide a comprehensive view of the asset management process;

   - Define a new performance-based approach for allocating transportation funds and managing pavements and bridges;

   - Incorporate asset management into the long range planning process;

   - Monitoring an agency's long-term financial stability;

   - Improve the coordination between the maintenance program and the capital program; and

   - Enhance resource allocation decisions through the application of risk management techniques.

2. **Which assets should be included?**

   MAP-21 requires TAMPs to address pavements and bridges on the National Highway System (NHS). However, your agency may wish to broaden the scope to other assets (such as culverts, overhead sign structures, or retaining walls) or to other portions of the system (such as all state-owned highways). The decision to add assets should be based on a combination of factors including agency priorities, data availability, and asset management maturity. You may also wish to focus initially on the assets required by MAP-21 and to expand the scope of the TAMP in future update cycles.

   The initial decision regarding which assets to address in the TAMP will be revisited later in the development process based on an assessment of data resources and input from asset managers.

3. Who should champion and manage the effort?

There is no one correct approach to housing asset management efforts within an agency's organizational structure. There also is no one correct approach for housing the TAMP development effort. The asset management planning process will involve a variety of resources and staff from across your agency. Therefore, regardless of where responsibility for TAMP development resides, it is recommended that you identify two specific roles:

- A champion responsible for ensuring the appropriate resources of the agency are available for supporting this task. Ideally, the champion will be a senior leader who has been engaged in setting your agency's strategic direction.

- A project manager responsible for coordinating activities and day-to-day development of the TAMP.

4. What is our timeframe for plan development?

The answer to this question will depend on your agency's level of asset management maturity, the degree to which it has already developed the TAMP elements required by MAP-21, and the implementation schedule specified in MAP-21. The schedule should also reflect the timing of your agency's planning and programming cycles so that the results can be incorporated into these processes. Again, this initial timeframe will be confirmed later in the process after more detailed discussions regarding how the plan will be developed.

Each agency will have its own approach to answering these questions. Some may favor a series of informal conversations, while other may opt for a more formal meeting among a core group of managers. The asset management planning process will eventually require participation by a larger group of staff. However, it is recommended that this broader engagement begin after an initial purpose statement has been developed.

Figure 2.1 presents a sample agenda for a formal kickoff meeting, if the more formal meeting option is preferred. The outcome of this meeting would be a TAMP purpose statement that provides direction for the rest of the asset management planning effort. The purpose statement should provide direct answers to the four questions presented above.

Figure 2.1   Sample Kick-Off Meeting Agenda

> *TAMP Development*
> *Kick-Off Meeting*
>
> 1. *Review MAP-21 requirements*
>
>   o   *States are required to develop a risk-based asset management plan for the NHS to improve or preserve the condition of the assets and the performance of the system.*
>
>   o   *The TAMP must include the following elements*
>
>   ▪   *A summary listing of the pavement and bridge assets on the NHS in the State, including a description of the condition of those assets;*
>
>   ▪   *Asset management objectives and measures;*
>
>   ▪   *Performance gap identification;*
>
>   ▪   *Lifecycle cost and risk management analysis;*
>
>   ▪   *A financial plan; and*
>
>   ▪   *Investment strategies.*
>
>   o   *States are required develop and implement a TAMP by the second fiscal year beginning after the Secretary establishes the process for plan development*
>
> 2. *Discuss previous and ongoing work related to this effort*
>
> 3. *Discussion items*
>
>   o   *What are our objectives for developing a TAMP?*
>
>   o   *Which assets should be included?*
>
>   o   *Who should champion and manage the effort?*
>
>   o   *What is our timeframe for plan development?*
>
> 4. *Establish timeframe for an initial TAMP workshop, at which a broader set of agency staff will be engaged in the effort*

Sample TAMP Outline

After the purpose statement is complete, it is recommended that the TAMP project manager draft an initial outline for the TAMP. The outline should address the elements required by MAP-21 and any other issues and priorities identified in the purpose statement. Following is an example TAMP outline. It is provided for illustrative purposes to show the recommended level of detail that should be provided at this stage of the development process. The outline can be used to communicate the *content* of the TAMP document. The *process* for developing these materials will be discussed in subsequent steps.

Table 2.1   Sample Outline

Section	This Section will…
1. Asset Inventory and Conditions	• Summarize the inventory and condition of the transportation system.
2. Asset Management Objectives and Measures	• Define the objectives of the asset management program. • Define levels of service and measures. • Define short term and long term condition targets.
3. Performance Gap Assessment	• Define short-term and long-term asset management planning horizons. • Describe traffic growth and demand on the system. • Present an analysis of future funding versus condition scenarios. • Illustrate the performance gap between existing condition levels and future condition levels.
4. Lifecycle Cost Considerations	• Define "lifecycle costs" and explain why they are important. • Describe the methodology used to address them in the TAMP.
5. Risk Management Analysis	• Set the context for risk management . • Define key *programmatic* risks associated with implementation of the TAMP (e.g., cost escalations, budget cuts and environmental delays.) • Define *system* risks that could adversely affect the NHS (e.g., asset failure and external events such as floods, earthquakes, and hurricanes.) • Provide a map showing the NHS assets most at risk. • Include a risk register that provides the following for each programmatic risk – likelihood of occurrence, consequences of occurrence, and mitigation activities.
6. Financial Plan	• Summarize historic funding levels for asset management • Define the amount of funds expected to be available for asset management and describe where there funds will come from. • Define how these funds will be allocated in the short term. • Define how these funds will be allocated in long term, as part of the asset management long term planning horizon. • Determine current value of the assets and describe the implications of various funding levels in terms of asset valuation and financial sustainability.
7. Investment Strategies	• Describe key work strategies resulting from the above analyses, including typical unit costs and typical timing.
8. Asset Management Process Enhancements	• Identify priorities for asset management improvement.

The purpose of the initial outline is to provide structure for the more detailed discussions that will occur in Step 2 of the TAMP development process.

2.2 WHO SHOULD BE INVOLVED IN DEVELOPING THE TAMP?

After the purpose statement and initial outline are complete, it is time to engage with the various staff who will be involved in the TAMP development process. A common approach to sustaining a coordinated and collaborative effort such as that required to develop a TAMP, is to create a core team that will meet on a regular basis throughout the process. Potential participants for a TAMP core team include:

- **The TAMP project manager.** Responsible for overall coordination of the effort.

- **Asset technical leads.** Responsible for technical analysis. Ideally, one for each major asset addressed in the plan (bridge, pavement, drainage, etc.).

- **Planning lead.** Responsible for ensuring coordination between the TAMP and your agency's long range planning efforts.

- **Programming lead**. Responsible for ensuring coordination between the TAMP and your agency's programming process.

- **Finance lead.** Responsible for developing revenue projections and ensuring coordination between the TAMP and your agency's budget process.

- **Risk lead.** Responsible for the risk management elements of the TAMP and ensuring that they are consistent with any other risk efforts.

- **Data lead(s).** Responsible for ensuring that the data required for the development process (which will likely reside in a number of systems and databases throughout your agency) are made available.

- **Communications lead.** Responsible for communicating the process and results with agency staff outside of the core team and key external stakeholders.

- **External partners, as needed**. Examples include FHWA staff, toll road operators, and metropolitan planning organizations.

Taking Advantage of Previous Work

Prior to the first meeting of the core team, it is recommended that the members review the requirements of MAP-21, the TAMP purpose statement, and the initial TAMP outline. They should also review existing documents, data, tools and other information that might be valuable for developing the TAMP. This effort will enable your agency to leverage existing resources and increase the

speed of the development process by reducing duplicative work. Examples of potentially relevant resources include:

- **Planning, programming, and financial documents.** These include state or regional plans that define strategic directions and priorities; estimate future travel demand; define long range needs; establish performance targets; establish funding levels; or document financial assumptions and future revenue projections.

- **Asset-specific reports.** These include documents that present asset-level assessments and recommendations; define work strategies; describe life cycle cost analysis; or document parts of the asset management process. Examples include pavement or bridge management reports, design manuals, and inventory and condition summaries.

- **Risk management reports.** These include any documents or presentations related to previous or on-going risk efforts.

It is recommended that the following summary information be developed for each document:

- Name;

- Data;

- Schedule for next update (if planned);

- Brief description of the original purpose of the document; and

- Potential relevance for the TAMP.

The core team members should also conduct a quick assessment of available data, processes, and analytical tools that could support TAMP development. This assessment should address data sources related to asset inventory, asset condition, travel demand, and work activity costs; and document the following for each source:

- Name of the system or database;

- Office responsible for maintaining it;

- Coverage – which assets or work activities, and which portions of the network (e.g., entire NHS, state-owned roadways, etc);

- List of key data items and functionality;

- Date it was last updated;

- Potential limitations – for example, what is the overall confidence in these data?

An alternative to asking members of the core team to review existing resources is for the TAMP project manager to conduct the review. The review could be

performed through a set of interviews with members of the core team. The interviews should address the following:

- Existing and planned efforts related to the TAMP;

- The availability and potential relevance of existing documents (as described above); and

- The availability and potential relevance of existing data an tools (as described above).

The project manager could summarize the findings for the review and present them at the first core team meeting.

Engaging the Core Team

After the review is complete, it is recommended that the TAMP core team convene. Depending on your agency's familiarity with asset management, it may wish to sponsor the FHWA National Highway Institute (NHI) training course on asset management prior to the first meeting of the Core Team.

The objectives of the first core team meeting are to:

- Confirm the TAMP purpose statement;

- Identify revisions or clarifications to the initial outline;

- Identify key constraints or challenges; and

- Determine roles in the TAMP development process.

Figure 2.2 presents a sample agenda for this workshop.

Figure 2.2   Sample Workshop Agenda

TAMP Development
Core Team Workshop #1

1. *Review MAP-21 requirements*

2. *Review TAMP purpose statement*

3. *Present highlights from the review of existing resources*

4. *Refine the purpose statement*

   o *Based on what we've discussed so far, should we make any changes to the purpose statement?*

   o *Is it feasible to address all the assets listed in the purpose statement? Should other assets be added?*

   o *Is the original timeframe feasible?*

5. *Discuss the outline*

   o *Does the overall structure make sense?*

   o *Discuss an approach for developing each section.*

   o *How comprehensive should each section be based on the available information and schedule?*

   o *Which sections will be the easiest to develop?*

   o *Which will be the most difficult?*

6. *Discuss roles in the TAMP development process [see discussion below]*

7. *Discuss development schedule [see discussion below]*

Roles and Responsibilities

Based on the discussions at the TAMP core team workshop, it is recommended that the TAMP project manager develop a roles and responsibilities matrix. Table 2.2 presents an example. The functions listed across the top will vary depending on your agency's situation.

Table 2.2   Example Roles and Responsibilities Matrix

Agency Office	Name	Roles and Responsibilities						
		Project Manager	Pavement Analysis	Bridge Analysis	Risk Analysis	Financial Analysis	Target Setting	Etc.
Office A	Tom	lead			participant		lead	
Office B	Dick		lead				participant	
Office C	Harry			lead	lead		participant	
Office D	Jane					lead	participant	
Etc.								

Major Milestones

Working backwards from the target end date, it is recommended that the core team identify target dates for major milestones in the TAMP development process. Example milestones include:

- Final outline;

- An overall decision making framework is developed;

- Approaches for individual functional components are developed (e.g., bridge analysis, pavement analysis, financial analysis, etc.);

- All analysis related to the individual components is complete (e.g., graphs that show the relationship between future asset condition and funding levels, risk assessment results, revenue projections, etc.);

- Performance targets and funding allocations established;

- Written materials submitted for each section of the TAMP;

- Draft TAMP; and

- Final TAMP.

The core team should also discuss how frequently to get together. Will this be an active oversight group that meets regularly to review project progress? Or is this a group that will reconvene only once or twice around major milestones?

2.3   WHAT SHOULD THE TAMP LOOK LIKE?

The outcome of the workshop will be a series of decisions regarding how to proceed with TAMP development. It is recommended that the TAMP project manager update the purpose statement and outline based on the discussions at the workshop. The outline could also be augmented with templates showing how key information will be presented. The goal is to provide as much detail as possible regarding what will and will not be included in the TAMP.

Example Templates

Following are examples of what parts of a TAMP could look like. There is no single correct way to present information in a TAMP. These examples are presented for illustrative purposes only. In developing the templates, your agency should draw from lessons learned in previous planning efforts and review examples from other agencies, such as those provided in the FHWA's recent TAMP literature review.

Table 2.3 illustrates a basic table for summarizing inventory and condition information. You may wish to provide more information, for example by including multiple performance measures, by showing traffic volumes, or by showing historic condition levels.

Table 2.3   Example Inventory and Condition Summary

| Asset	Inventory		Condition	
	Units	Quantity	Performance Measure	Value
Pavements				
Interstate system				
Rest of the NHS				
Total				
Bridges				
Interstate system				
Rest of the NHS				
Total				

Table 2.4 illustrates how the results of a programmatic risk assessment could be presented. For each risk, the table presents a qualitative assessment of the likelihood that it will occur, a qualitative assessment of the consequences should it occur, and mitigation activities.

Table 2.4   Example Programmatic Risk Register

Risk	Relative Likelihood (high/med/low)	Relative Consequences (high/med/low)	Mitigation Activity	Office Responsible for Mitigation Activity

Figure 2.3 provides an example of how future condition versus funding scenarios could be presented. In this example, expected pavement condition is shown for two time periods (10 years and 20 years) for different funding levels.

Figure 2.3   Example Future Condition versus Funding Scenarios
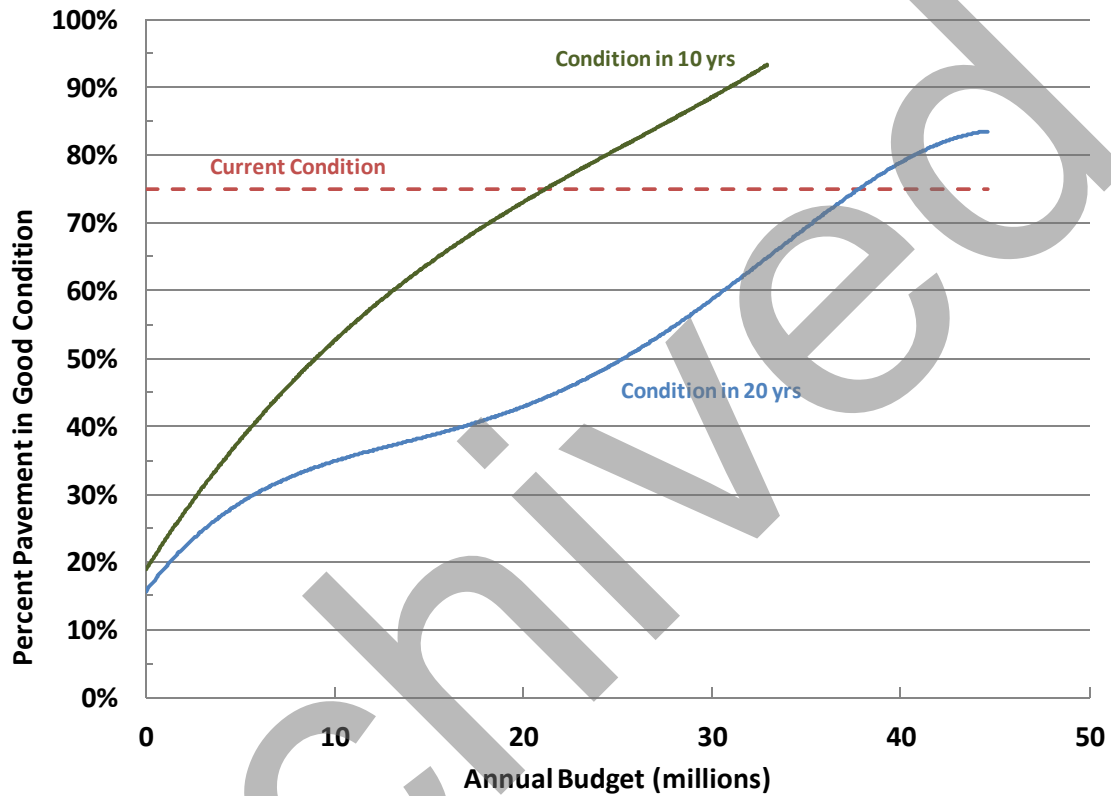
Source: Cambridge Systematics, Inc.

This type of graph could be included in the Performance Gap section of the TAMP and support the target setting process. For example, an agency could develop similar graphs for other program areas. It could then use these graphs to determine the implications of potential funding levels. Using revenue projections developed through the financial analysis, a set of fiscally constrained targets could be defined.

Table 2.5 provides an example of how the financial plan could be summarized. It presents historic and future funding levels by program area. This type of table could be augmented with a stacked bar chart that shows percent allocations between the program areas.

Table 2.5   Example Financial Plan Summary

Program Area	Historic Funding			Planned Future Funding			
	Year 1	Year 2	Etc.	Year 1	Year 2	Etc.	Long Term Annual Average
Pavement							
Bridge							
Etc.							

In determining what the TAMP should look like, the project manager should also clearly define its format. While transportation plans have historically been fixed documents updated on a regular schedule, agencies are encouraged to consider alternative delivery mechanisms for the TAMP, such as an interactive web document. A TAMP is intended to be both a communication tool and a means to support improved decision making. Both of these functions could be enhanced through the use of interactive visuals and map-based information. For example, an on-line TAMP could enable agency staff, decision makers, and the public to review existing conditions and explore the performance implications of potential funding scenarios.

2.4   WHAT INFORMATION WILL BE NEEDED TO DEVELOP THE TAMP?

To develop a TAMP your agency will need to bring together a wide range of data and information. Key data items include:

- Inventory data;

- Condition data (current and future);

- Travel demand data (current and future);

- Data on currently programmed projects;

- Data required to estimate the likelihood and consequences of external events for the system risk assessment;

- Historic funding levels;

- Projected funding levels; and

- Unit costs.

The end goal is not just to have all of these data in hand. The end goal is to bring these data together in a way that supports the asset management decision making process. Combining data with a process is cyclical in nature – the data will determine the constraints of the process, and the process will define the required data. An initial assessment of your agency's existing data was already performed as part of Step 2. Therefore before focusing further on the data, it is recommended that you develop a detailed approach for each section of the TAMP, explaining the process that will be used to conduct the analysis. The TAMP outline defined the "what" of the TAMP. In this step you will focus on the "how".

The "How" of TAMP Development

In developing a TAMP your agency will need to combine several related but often separate types of analysis - life cycle cost analysis, performance-based planning, risk assessment, financial planning, programming, etc. Further complicating things, approaches used to develop a TAMP will vary significantly between agencies. To provide structure to the asset management planning process, it is recommended that your agency develop an approach for each section of the TAMP defined in your outline. In some cases, the approach may be as straight forward as using materials previously developed by your agency. In other cases, you may need to start from scratch.

To facilitate this step of the process, Table 2.6 identifies several key issues that should be addressed when developing an approach for a TAMP. The topics are organized around the sample outline presented in Table 2.1. Working through these questions will provide your agency with clarity regarding how best to develop its TAMP and what data is required.

Table 2.6   Topics Related to TAMP Development

TAMP Section	Development Topics
1. Asset Inventory and Conditions	• What inventory information will be provided in the TAMP?
	• What is the quality data of our existing data? How can we address limitations in our existing data?
	• Will the TAMP include current traffic volumes? Future traffic projections?
	• Will the inventory summary reflect new assets being built as part of our capital expansion program?
	• How will we calculate the value for each of the condition measures (measures are defined in section 2)? Will the approach vary by system component (e.g., one approach for the state-owned NHS, and one for the rest of the system)?
	• Will the TAMP include historic condition information? If so, for how many years?

TAMP Section	Development Topics
2. Asset Management Objectives and Measures	• Do objectives for asset management already exist? If so, do they need to be reconfirmed? If not, what is required to develop them? • Have we defined levels of service? If so, do they need to be reconfirmed? If not, what is required to develop them? • Which performance measures should be used for the TAMP? • How will each measure be used? (For example, the performance gap analysis might focus on a single measure for each asset, while the condition section might provide more detailed measures.) • Do we already have targets for these measures? If so, are they realistic? • How will we incorporate public input such as the results of customer surveys into the TAMP? • What is the planning horizon for the TAMP? Will it have a short range component? A long range component?
3. Performance Gap Identification	• If performance targets do not exist, what approach should we use to develop them? • How will we incorporate expected revenues into the target setting process? • What information would we like to provide decision makers? • Who should be involved in the target setting process? • Are we confident in the future traffic projections needed to model future asset conditions? If not, how can we improve them in the short and/or long term? • Are we going to separate the analysis by functional class? For example are we going to develop separate targets for the Interstate system, and the rest of the NHS? • How will we address the relationship between routine maintenance and capital activities/funding? • How will address the relationship between asset management activities and system expansion activities/funding?
4. Lifecycle Cost Considerations	• How will we incorporate lifecycle costs into the TAMP? • Are they reflected in the management systems that we will use for the analysis? • How do we manage our assets from inception to disposal, including construction, maintenance, preservation, rehabilitation, improvement, reconstruction, etc.?

TAMP Section	Development Topics
5. Risk Management Analysis	• What types of programmatic risks will be addressed in the TAMP?
	• What is the best way to determine their likelihood and consequences and to identify risk mitigation strategies? (For example, by convening a risk assessment workshop with representatives from throughout the agency.)
	• What types of system risks should be considered? (For example, performance failure, weather events, etc.)
	• How should we assess system risks? How should the results be presented? (For example, in a statewide map identifying high/med/low risk corridors.)
	• How will we incorporate the results of the system risk assessment into the TAMP? (For example, will our investment strategies vary depending on the level of risk? Will the risk mitigation strategies be combined with or compete against our other asset management strategies?
6. Financial Plan	• Which portions of the transportation budget will be included in the financial plan?
	• How will the anticipated level of these funds be determined?
	• Will we allocate funds between asset management and other goal areas such as expansion, or will we focus solely on the allocation of asset management funds between assets?
	• What is the value of our assets today? How does it depreciate through the years included in the TAMP.
	• Should we consider potential new sources of revenue in the TAMP? If so, which ones?
7. Investment Strategies	• Will the TAMP include a list of specific projects? If so, which ones?
	• Other than specific projects, what types of investment strategy information will we provide? (Examples include: a description of key strategies, average unit costs, typical timing for when each strategy should be considered; and/or a description of how asset management projects are prioritized and programmed.)
	• Which of these items already exist? How should we develop the ones that don't?
	• How will we will incorporate the results of the risk assessment into our strategies?
	• How will we incorporate life cycle cost considerations into our strategies?

TAMP Section	Development Topics
8. Asset Management Process Enhancements	• Will we be conducting the Asset Management self assessment survey as part of the TAMP development process? • If so, who needs to take the survey? How will we facilitate the survey process? • If not, how will we identify our asset management improvement priorities? • What information will be provided in the TAMP? (Examples include a summary of the entire survey, a list of the survey items showing the biggest gaps, a list of priority actions categorized as short term and long term, a list of high priority assets to add to the TAMP, etc.)

Many of the TAMP sections defined above are related to one another. In addition, some of the issues will need to be addressed separately for each type of asset included in the TAMP. Therefore, once the TAMP leads have developed their approaches it is recommended that the TAMP core team reconvene to discuss the entire development process, and modify individual steps as necessary to ensure that they are consistent.

After the approach has been finalized, it is recommended that agencies incorporate the details of the development process into their TAMP outline. The resulting document will provide a roadmap for implementing the approach in the next step of the development process. It also will serve as a record of the development approach for future update cycles, improve the transparency of the asset management planning process for stakeholders not directly involved in it, and support certification of the TAMP by FHWA.

2.5 HOW DO WE MOVE FROM A CONCEPT TO A FINAL PLAN?

The final step in the development process is to implement the approaches defined earlier and to combine the results into a TAMP. Given the number of activities, the connections between the various sections, and the likely number of people involved in the process, it will be important for the TAMP project manager to ensure that all activities are coordinated and follow the development schedule (a Gantt chart may be a suitable vehicle for progress tracking purposes). In addition, the approaches and initial assumptions may need to be revised based on preliminary results to ensure the findings are useful and support the TAMP purpose statement.

It also will be useful for the TAMP core team to meet a couple times during this final step. For example, since the individual analysis components are complete (e.g., bridge analysis, pavement analysis, financial projections, etc.), the team could meet to discuss the combined results. Depending how the schedule is set

up, this process may need to be spread out over a series of meetings. The core team should also meet after a draft TAMP is complete, to discuss the combined results and identify modifications.

Because of the potential number of people involved in the TAMP development process, it is recommended that a single lead author be identified. The lead author will be responsible for compiling source materials from other key staff and compiling them into a TAMP that is consistent with the format defined earlier.

Figure 2.4 presents a stylized flow chart of the approach described above. In the figure, after an overall decision making process is developed, the functional leads conduct their analysis individually. The project manager then combines the results for integrated decision making. Based on these discussions, the technical leads develop written materials for their functions. Finally, the lead author combines these materials into the TAMP. Your agency's flow chart will vary depending on the details of the development approach defined in the previous step.

Figure 2.4   Example Implementation Flow Chart
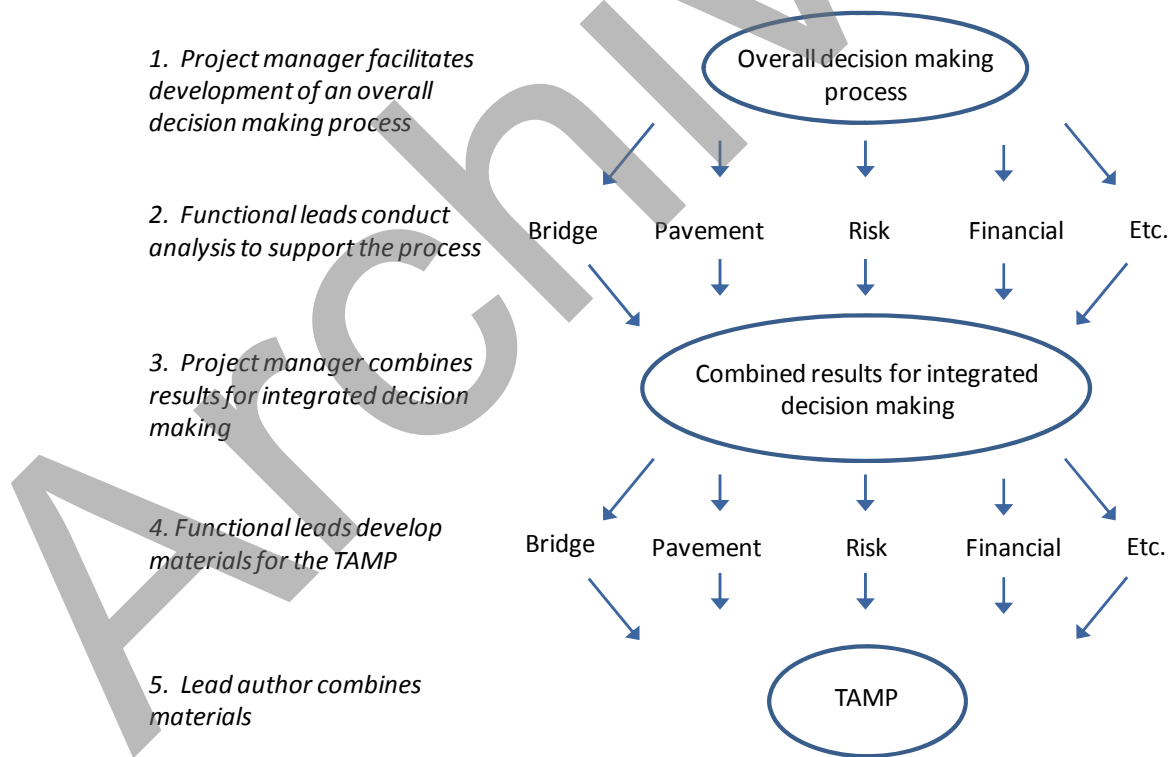
Source: Cambridge Systematics, Inc.

The final product may consist of a written report and/or web-based report. Regardless of the preferred format, the TAMP should include simple, summaries of key information along with more detailed technical discussions of the development process.

After a draft version is complete, it should be reviewed in terms of the two following questions:

• Does it satisfy the objectives defined in the purpose statement?

• Does it comply with the requirements of MAP-21?

The final step in the TAMP development process is to design an outreach strategy for it. The outreach strategy should include distribution of the TAMP, and presentation of it to key internal and external audiences. The intent of this outreach effort is to ensure that the TAMP becomes an integral part of the decision making process.

2.6 LOOKING TOWARDS IMPLEMENTATION

This Work Plan covers the tasks necessary to complete an initial TAMP. However, the asset management process does not conclude at this point. Once the TAMP is complete, agencies should monitor its implementation, incorporate its strategies into subsequent planning and programming efforts, and periodically update the document.

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