

# Spring 2016 State DOT TAM Survey

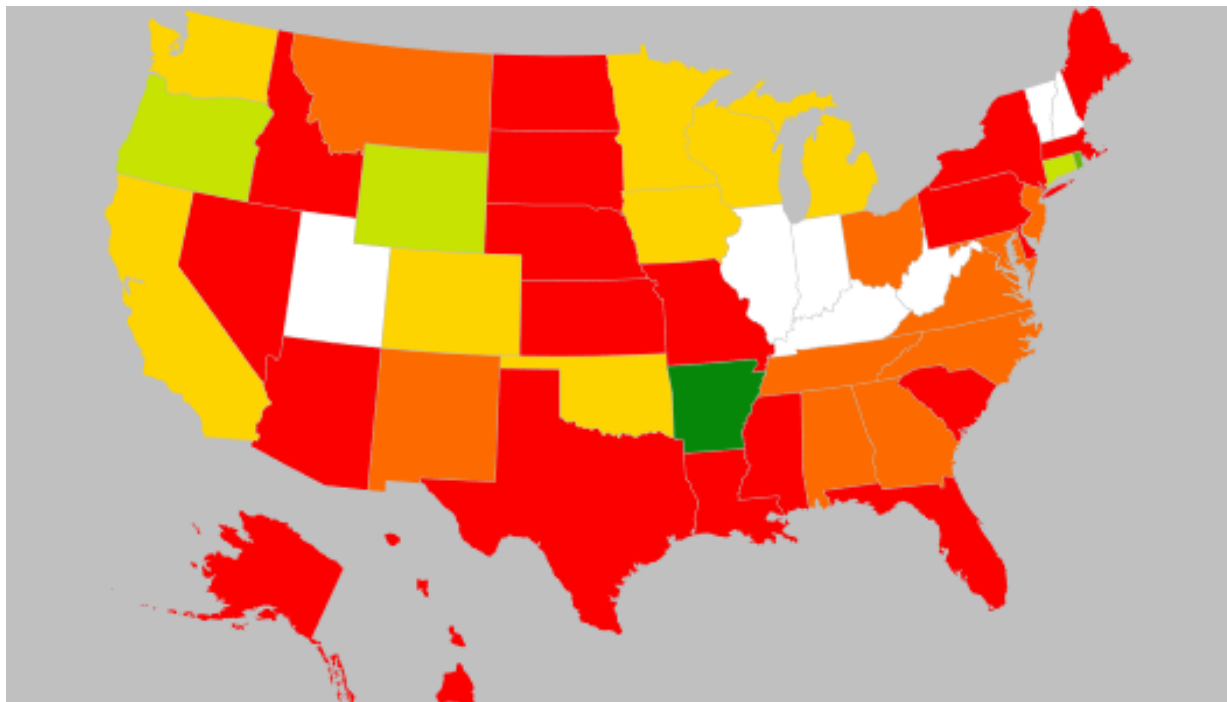
In April, 2016, a web-based survey was distributed to State DOT contacts who had participated in recent TRB and AASHTO TAM events. A total of 230 people were contacted, and 88 responses were received. The following report summarizes the responses.

This report was prepared for the use of Transportation Pooled Fund TPF-5(335) and the planning committees for the 2016 and 2018 TRB Transportation Asset Management conferences. This report was prepared by Matt Haubrich of the Iowa DOT.

## States Represented

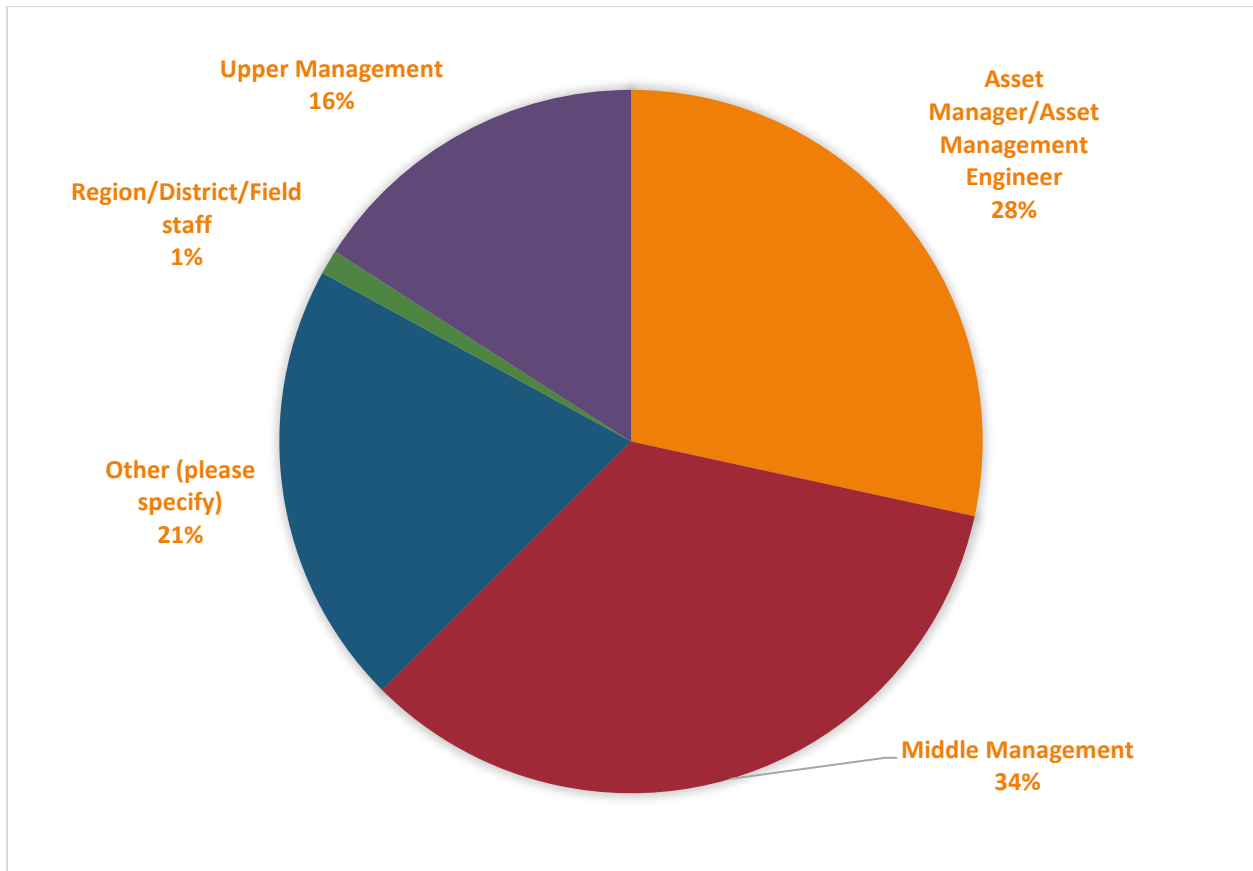
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A total of 44 state agencies saw at least one person respond. Arkansas had the most respondents with six. States shown in red on the map had only one response, becoming greener as the number of responses increases. The seven states shown in white did not respond to the 2016 survey.



## Position

Respondents were asked to indicate, in broad categories, their position in the agency. This information was requested in order to help us better understand the types of issues faced at various levels of the agency.

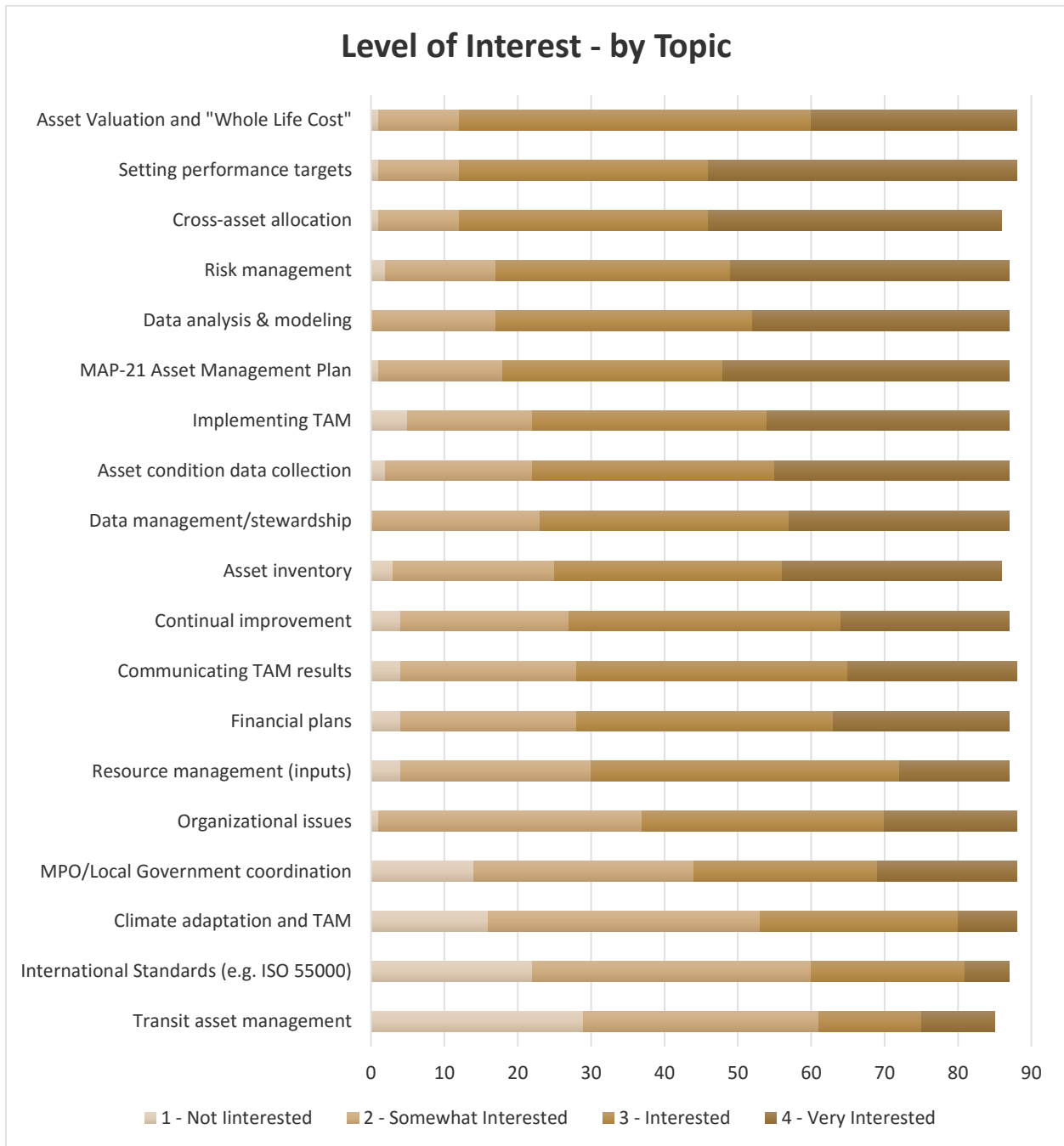


“Other” responses included:

- Asset Management Program Manager
- Asset Management Integration
- Assist the Asset Management Engineer
- Assistant Asset Management Engineer
- Bridge Planner
- Engineer
- GIS and Mapping Admin
- HQ staff working on asset mgmt.
- Management Analyst providing support to upper management
- Pavement Systems Evaluation Engineer
- Performance Measures Champion
- Planner
- Project Manager
- Public Transportation Programs Administrator
- Research
- Research and Implementation Engineer
- Systems Planner
- Transit Asset Management Planner

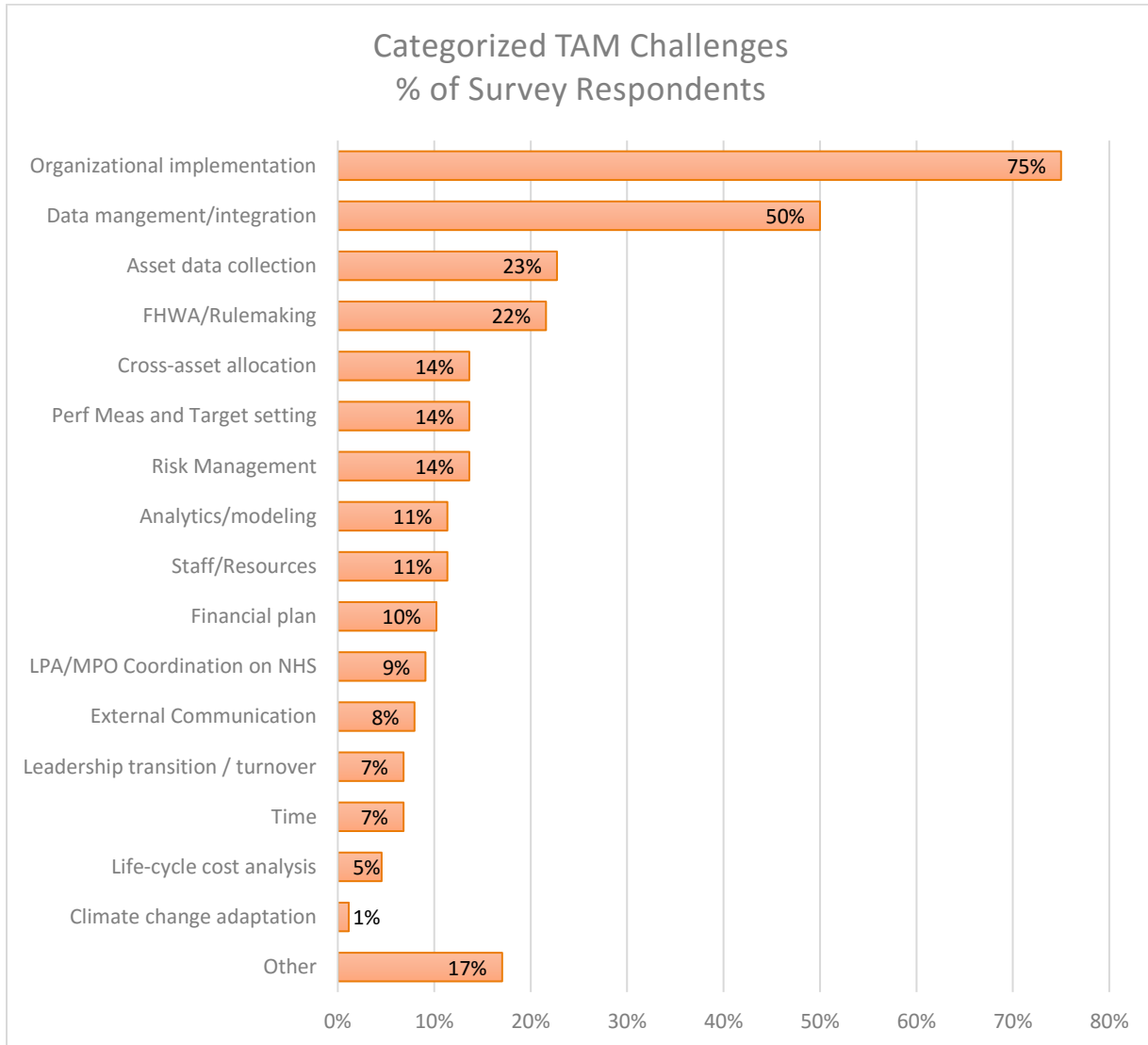
## Interest Categories

Respondents were given a list of 19 topics which were assembled from prior surveys and discussions with experts in the field. For each topic, people were asked to indicate their level of interest in that topic from (1 = Not Interested to 4 = Very Interested). The results are shown in the chart below.



## Biggest Challenges

Respondents were asked to indicate the three biggest challenges they feel they are facing in effectively implementing TAM in their agency. All but four respondents offered at least one idea, and a total of 242 challenges were mentioned. These responses were categorized into the following themes:



Responses might fit into more than one of these themes, therefore the percentages are expressed as a percent of all respondents, rather than as a percent of responses.

### Organizational Implementation

The most common challenge, mentioned by three quarters of respondents, dealt with organizational issues related to implementation. Typical responses included:

- Organizational resource capabilities and culture
- Coordination of work that is a part of TAM that is traditionally done through other units/plans
- Agency understanding of importance and timeline
- Accountability of all responsible parties for implementing the TAMP

## Data Management / Integration

The next most common theme dealt with data management or data integration. Typical responses were:

- Data governance
- Data Management and centralization. Removing data silos so and integrating data into a central repository so cross asset allocation can occur.
- Legacy data systems
- Consistency in data

## Asset Data Collection

Asset Data Collection was mentioned by nearly a quarter of respondents, as typified by these responses:

- Collecting the right level of detail for assets
- Incomplete inventory
- lack of asset condition data for non-pavement and non-bridge highway assets

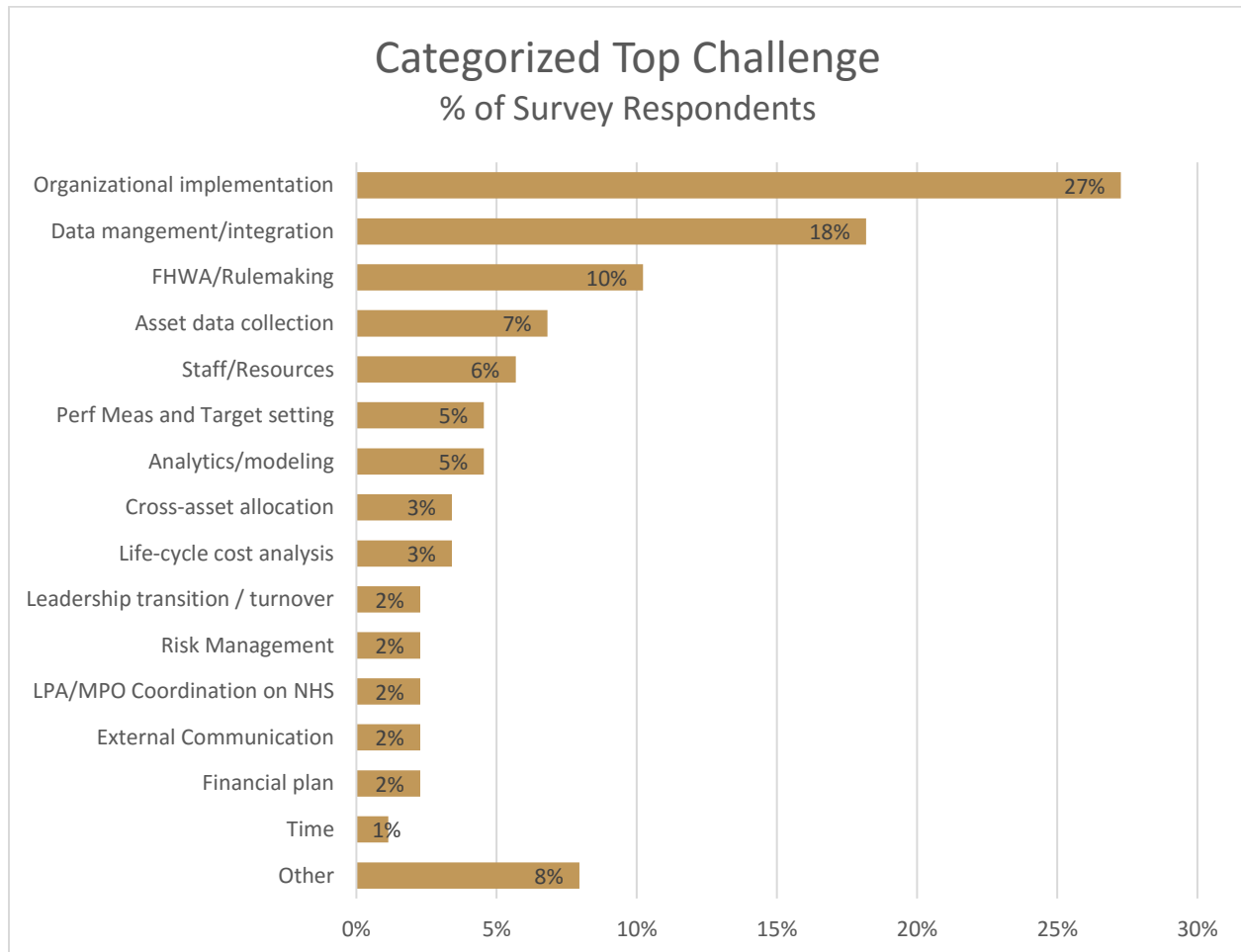
## FHWA Rulemaking

Overall 22% of respondents indicated that the federal rulemaking process was creating a challenge:

- Uncertainty of how TAMP will be graded for certification by FHWA
- Unrealistic (one size fits all) Federal requirements
- Delays in Federal Rule Making for Performance Measurement and Asset Management

## Top Implementation Issue

After listing the three challenges in the previous question, respondents were asked to pick one as their “most pressing” issue. A total of 85 respondents offered an issue. These responses were categorized, as in the previous question, with results summarized as follows.



The top implementation issue mentioned by 27% of respondents is organizational implementation. Specific comments illustrating this theme include:

- Commitment from Executive Level Management to TAM because without their support TAMP development is an exercise.
- Organizational buy-in and support from upper management is the most pressing challenge that we face. If these are not dealt with, that the TAMP effort will not achieve the desired level of success. Business practices will not be modified to improve how our agency handles asset management.
- Though I couched it within the issue of communication, the top issue is establishing clarity regarding TAM and how it integrates with the work of the department.
- Willingness of Field Engineers to use limited funds for preventative maintenance because we do not have any dedicated funding for preventative maintenance. Most of the state funds are used to match the federal funds we receive.

## Appendix A: Survey Instrument

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### TAM Needs Tracking Survey

#### Survey of Transportation Agency needs in the area of Transportation Asset Management

As part of the Pooled Fund supporting Transportation Asset Management conferences, we would like to collect input regarding your state's needs and wants for TAM resources and events. We want to know more about the issues that you are facing so we can help guide the development of research and information to meet those needs.

This survey is comprised of just a few brief questions and should take less than 10 minutes to complete. You are not likely to need any reference materials or data to complete this survey. Although those of us compiling the response will know your identity, we won't publish anything with your name attached to it (or anything that might identify you).

1. Your Name (optional)

\* 2. Your Agency

3. What is your position in your agency?

- Upper Management
- Middle Management
- Asset Manager/Asset Management Engineer
- Region/District/Field staff
- Other (please specify)

Other (please specify)

4. Here are a few topic areas that might be of interest. Please indicate your level of interest in each of the following topics.

	1 - Not interested	2 - Somewhat Interested	3 - Interested	4 - Very Interested
Setting performance targets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MAP-21 Asset Management Plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cross-asset allocation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asset condition data collection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asset inventory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data management/stewardship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data analysis & modeling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organizational issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asset Valuation and "Whole Life Cost"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climate adaptation and TAM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicating TAM results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implementing TAM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Continual improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resource management (inputs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transit asset management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Risk management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MPO/Local Government coordination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
International Standards (e.g. ISO 55000)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)



5. What are the three biggest challenges that your agency is dealing with in the implementation of transportation asset management?

*The more specific the answer you can provide the better. Everyone would like more time/money/staff resources, but what are some specific issues related to implementation that have been significant barriers for your agency?*

1

2

3

6. Of the three issues you listed in question 5, which one is the MOST pressing to you and why?

7. What is your role in your agency's transportation asset management initiatives?

**Thanks for your input!**

Here are some links to TAM resources and events:

- AASHTO TAM Portal: <http://www.tam-portal.com/>
- TAM Conference Pooled Fund: <http://www.pooledfund.org/Details/Study/584>
- 2016 TAM Conference: <http://www.trb.org/Conferences/AssetMgt2016.aspx>

## Appendix B: Open-ended Responses

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### Q3: What is your position in your agency (Other)

- Asset Management Coordination
- Asset Management Program Manager
- Asset Mgmt Integration
- Assist the Asset Management Engineer
- Assistant Asset Management Engineer
- Bridge Planner
- Engineer
- Engineer
- GIS and Mapping Admin
- HQ staff working on asset mgmt.
- Maintenance
- Management Analyst providing support to upper management
- Pavement Systems Evaluation Engineer
- Performance Measures Champion
- Planner
- Project Manager
- Public Transportation Programs Administrator
- Research
- Research and Implementation Engineer
- Statewide Planning Manager
- Systems Planner
- Transit Asset Management Planner

### Q4: Other Topic Areas

- Change Management role in implementation
- Coordinating with non-state asset owners
- Cross program allocation; if construction program can't maintain conditions, what is the cost to the maintenance operation?
- Data Integration
- Other assets of interest: grant monies managed by DOTs, and other non-hardware-type assets
- Programmatic Life Cycle Cost Analysis
- Project Prioritization, TAM Software Systems
- State of Good Repair: 10-Year Implementation Plan

### Q5: What are the three biggest challenges that your agency is dealing with in the implementation of transportation asset management?

- A central-common data application
- A desire to start small, but with some type of placement for the value for developing asset management beyond the minimum Federal requirement and in an efficient and phased approach.
- Ability to communicate (clearly) the purpose of TAM and how it integrates with other aspects of the department.
- Accessing Data
- Accountability of all responsible parties for implementing the TAMP.
- accurate data
- Accurately forecasting life cycle cost
- Acquiring Data
- Administration Change, New Executive Management, communicating TAMP consequences
- Adoption and support of consistent asset management policy across the organization
- Adoption of asset management Philosophy at Executive Level
- Agency understanding of importance and timeline
- Agreeing on the asset priorities for data collection
- An unsteady (unrealistic estimate of) an ever decreasing revenue stream
- Analysis tools to more quickly evaluate competing goals and funding scenarios
- Approval of final rule making, to determine metrics and requirements for a compliant TAMP
- Assessing climate change impact on assets.
- Asset Inventory
- Asset Inventory, condition and life cycle evaluations
- Availability and distribution of data.

- Breaking down the silo between units, convincing to share information
- Bringing the silos together
- Budget cuts, downsizing of staff, TAMP overhead (people, documentation, data, etc)
- Budget requirements to maintain Assets in state of good repair to meet requirements
- Business intelligence to help drive to best decisions regarding assets and other business information (congestion, safety, planned projects, etc.)
- Business Owner buy-in
- Buy in
- Buy in of TAM as a business process throughout the Department and externally too
- Buy-in across the Department and guidance from upper management. The Maintenance Division is the lead for developing the TAMP and it is a challenge to get other functional areas engaged in the process.
- Capturing As-built construction data
- centralized asset inventory with condition assessments for Transit
- CFR flexibility for smaller states - one size does not fit all
- Closing gaps identified in the TAMP
- Collaboration/information sharing with asset owners.
- Collecting and Centralizing Adequate Data on Assets
- Collecting and processing additional data with limited staff and budget
- Collecting the right level of detail for assets.
- Commitment from Executive Level Management to TAM
- Communicating needs across the various offices
- communicating needs to our legislature
- Communicating TAM
- Communicating to the public
- Communication and implementation strategies
- Communication with upper management & public
- Communication within the department
- Confidence and familiarity with data.
- Consistency in data
- Consistent approach across administrations
- Consistent data collection schedules, definitions and uniform LRS segmentation between the DOT's and our local partners.
- Coordinating with non-state asset owners of NHS segments
- Coordination of Asset Programs and Asset Data Sharing of Projects to maximize resources
- Coordination of multiple inventories and databases.
- Coordination of work that is a part of TAM that is traditionally done through other units/plans.
- Coordination with budget / finance staff in implementing asset management budgets for a 4 year program of projects
- Coordination with inter-agency divisions and the role each division plays in the TAMP.
- Coordination with planning partners
- Creating meaningful performance targets that encompass all the needs within each asset class
- Cross asset allocation
- Cross Asset Analysis: Our goal is to determine how best to balance our investments between key assets for a given budget level
- cross asset prioritization -- how to establish priorities with limited project funding
- Cross-asset allocation methods that equally balance the needs of each asset class
- Cross-asset optimization
- Cross-asset trade offs
- Cultural
- Data
- data collection
- Data Collection and Governance
- Data Governance
- Data governance
- Data Governance & Data Integration
- Data Integration
- Data Integration: It's important to reduce stovepipes. Would like to see more efforts such as Utah's data system.
- data management
- Data management
- Data management
- Data Management and centralization. Removing data silos so and integrating data into a central repository so cross asset allocation can occur.
- Data quality

- Data that is useable to make decisions and that is available to others in the agency
- data to support prioritization of projects
- Defining risk as it relates to the TAMP requirements
- Delays in Federal Rule Making for Performance Measurement and Asset Management
- Delays of the final federal regulation
- Department wide commitment to TAM ideals and philosophy
- Developing a 10 year financial plan. This is a challenge due to the difficulty in forecasting what revenues will be each year.
- Developing a risk register. Risk is an area that Tennessee DOT does not have extensive experience with and we are challenged by trying to prioritize and mitigate risks.
- Developing Statewide Asset Inventory
- developing the 10-year financial plan
- Difficult to get historical data of project costs and scope.
- Educating new asset managers on the financial analysis that supports performance forecasts, particularly when asset managers get promoted and move on every 2-3 years
- Effort involved to have TAMP "certified" by FHWA
- Element based bridge analysis; difficulties about deterioration rates.
- Encouraging all levels/jurisdictions of transportation to fully utilize existing data and implementing Asset management
- Enterprise Data integration
- Even with emphasis on preservation of system there are not enough funds so best way to allocate across preservation assets such as bridges, pavement, culverts, etc
- Excessive Federal requirements for the documentation of inconsequential asset elements
- Executive turnover, how to convince new executive staff of the benefits that Asset Management has to offer
- FHWA taking a long time to finish final rulemaking, and hopefully this does not coincide with the end of the fiscal year. While we have a draft document, we cannot finalize parts of it until we know what all the requirements are.
- Finalization of MAP-21 Regulatory Requirements
- Financial plan
- Financial Plans - coordinating with non-state asset owners
- Financial restraints
- Finding correct balance for Committees
- Focusing on the most important variables in risk management
- from my bridge perspective -- bridge performance modeling
- From my bridge perspective -- communicating bridge conditions and future condition projections in comparison to other asset conditions like pavements
- Funding of software and hardware purchases for asset inventory capture, analysis and data distribution.
- Funding sources
- Gap analysis
- Getting the Pavement Management Section limits reflected in our Construction Projects
- Governmental conflicts; concern the documentation could be used for purposes other than intended (Governor's initiative)
- Have the technology resources available to collect, process and use the data to make data drive decisions
- Having a focused course of action/direction from the top down and the bottom up.
- Having all of the asset information (inventory and condition) available in one enterprise system.
- How to continue progress without knowing what FHWA's final ruling will be
- How to use Tams in Scenario Planning
- Identifying new roles and responsibilities within the organization, reorganization, changing position descriptions with live people in some of these positions, obtaining buy-in from personnel and union.
- Implementation of a geospatial solutions that integrate with legacy oracle technology and lack of GIS skilled resources across the agency
- Implementing new technology in data collection and management to save money/ For example ,

can ITS, CAV and/or smart phones be utilized to collect data effectively.

- Inability to rapidly implement new technology
- Incomplete inventory
- Increased monetary resources to set fiscally constrained performance targets to improve the condition of our assets.
- Information (data) management and utilization
- Integrating risk management into asset management process
- Integration of multiple systems i.e. PMS, BMS, etc. for cross asset planning
- Integration with GIS Resources
- Internal doubters that this is going to save \$ - more projects
- Inventory of Roads under construction during Summer Data Collection
- Knowledge of Field Engineers on when to apply preventative maintenance.
- Lack of an effective asset management system to track asset work activities and update condition and inventory data
- lack of asset condition data for non-pavement and non-bridge highway assets
- lack of clear agency direction or plan on how we are going to implement a TAMP
- Lack of consistent, updated and reliable statewide asset inventory and condition data
- lack of detailed inventory for non-pavement and non-bridge highway assets
- Lack of guidance from Federal government on performance target reporting
- Lack of information - whether it is for decision making, condition, prioritizing, etc.
- Lack of performance targets
- Legacy data systems
- life cycle cost analysis
- Limited federal guidance on scope and structure of the data and structure of the project.
- Limited resources for all assets and lack of commonly accepted approach for cross asset allocations
- Linear referencing (getting everyone on same LRS)
- linking condition assessment to performance measures
- Local NHS target setting and coordination strategy
- Managing the system with limited resources while communicating the issues to the public
- Maturity level - what to advance next?
- modeling
- Money
- More time is needed to implement such significant changes
- Moving from capital program to more of a maintenance program
- Moving toward quantitative risk assessment
- MPO coordination
- Need of Buy in of other State Employees
- No federal final rule
- No final rules published yet
- No primary technical support for cross-asset or class specific management.
- Not a lot of direction available from consultant; we already have basic inventory so what are next steps; consultant was challenged in identifying since at the time most other states were just beginning in the effort
- Not highly prioritized
- Organizational Business Process Change
- Organizational buy-in
- Organizational Gaps in Data Sharing
- Organizational resource capabilities and culture
- Organizational structure - asset management is embedded in several departments, a cohesive strategy is difficult
- Organizational structure (Positions dedicated to TAM) & Knowledge Transfer
- out of date performance metrics
- Overall agency buy-in
- Pavement life is not meeting expectations so it's hard to carry out our asset plan for pavement.
- Performance metrics, planned vs actually delivered for the investment, along with root cause for the variance
- Personal
- Politics
- Preparing TAMP within short timeframe that draft TAMP NPRM required - one year
- Process workflows - lack of communication throughout the process as it crosses organizational barriers

- Procurement issues
- Professional/Technical Guidance
- Proofing or checking existing models to determine predictive accuracy, and the acceptable level of error in various models.
- Quantity and condition of individual assets beyond pavement and bridge
- Quickly developing new asset class models that provide production level results.
- Reliable techniques to control reflective cracking
- Repeatable and Accurate Automated Crack and Rut Depth Measurement
- Resource constraints
- Resource Management
- Resources - short staff, short budget
- Resources to implement recommendations
- Risk and resiliency
- risk assessment
- Risk based, especially different levels, i.e. agency level and what needs to be in the TAMP
- Risk component for bridges
- Risk Management
- Risk management definition and plans
- Risk management
- Scaling the cost of data collection, storage, and modeling to fit with the value of the asset managed.
- scenario planning (ie what if analysis, on funding; ie more funding results in these outcomes, less funding results in other outcomes)
- Seeing TAM as something more than bridge and pavement, instead as a mindset for all the agency
- Setting targets and goals
- Setting Targets/Goals (Realistic)
- Short Term Goals vs. Asset Management
- Shrinking knowledge base - - key personnel retired (72 yrs walked out, only 2 ee)
- Significant System Needs: requires discipline to maintain a data driven approach to managing increasing infrastructure needs.
- Small missing sections due to rounding or other issues with equations, etc. for FHWA
- Small Private Non-Profits may be overwhelmed with responsibilities and workload
- Software Procurement Process
- Solid priorities
- splitting expenses between nhs/non-nhs assets
- Staff Resources
- Staff Resources in each asset class in both Engineering, Maintenance and Construction to better manage work to assets and updates to inventory systems.
- Staffing Levels to Implement SGR Projects
- Staffing shortages
- Staffing to facilitate the transition to Asset Management and Performance Management
- Support throughout the agency
- Sustaining TAM
- System performance and a better understanding as those rules come out and we understand the impact to how we evaluate our system
- TAM Buy-in
- TAM Staffing
- TAMP assumptions
- TAMP implementation speed
- target setting
- Target setting and documenting gaps; fiscally constrained vs. aspirational
- Targets based upon customer needs not budgets
- Targets for non- pavement and bridge assets
- The desire to implement asset management principles without the investment in learning/understanding the principles and taking the time to think how they might apply in a cross-asset or class-specific manner.
- The lack of clear direction for our Agency's asset management as a whole.
- The time it will take to develop a plan and educate internal as well as external stake holders of the implications and meaning.
- The time it will take to get everyone educated enough to begin discussions about the development of a plan.
- The time it will take to hire a consultant, educate them on our needs with all the pertinent information so that they can help us develop a GAP analysis.
- Time; a lot of this stuff just takes a lot of time, from field surveys to technology developments.
- Timely Final Guidance
- Tools

- Tracking completed (or not completed) projects back to the initial asset management driver for doing the project
- Training
- Training and tools to implement the requirements
- Training/Education
- Tying the money in
- Uncertainty of how TAMP will be graded for certification by FHWA.
- Uncertainty of MAP 21 Asset Management Plan and Pavement and Bridge Measures final rules.
- Uncertainty of shifts in the decision making process as a result of performance based investment strategies.
- unclear decision-making and absence of a decision-making structure
- Unrealistic (one size fits all) Federal requirements
- unwillingness to consider a wider array of assets and long-term management of them
- Upper Management Support
- use/evaluation of data collected
- Waiting on the final rules - without the rules we are just waiting and not moving forward
- Who's in charge of certain assets - location, reporting, etc...
- Willingness of Field Engineers to use limited funds for preventative maintenance.

### Q6: Of the three issues you listed in question 5, which one is the MOST pressing to you and why?

- [A desire to start small, but with some type of placement for the value for developing asset management beyond the minimum Federal requirement and in an efficient and phased approach]. Frames the TAM Strategy.
- [Budget cuts, downsizing of staff, TAMP overhead (people, documentation, data, etc)] because it most directly affects my day to day job
- [Business intelligence]. Hopefully with the information decision makers will have insights that were not there before.
- [Collaboration/information sharing with asset owners] -we have had a TAM plan since 2013 and we would like to get final rules before updating the plan.
- [Collecting and processing additional data with limited staff and budget]
- [Communicating to the public]
- [Coordination with inter-agency divisions and the role each division plays in the TAMP.]. TAMP is a group effort. There has to be an understanding of all. (on same page)
- [Cross asset prioritization -- how to establish priorities with limited project funding] and 3 [From my bridge perspective -- communicating bridge conditions and future condition projections in comparison to other asset conditions like pavements] -- which actually go hand in hand. In the process of allocating funding between assets, some managers support more funding for pavements since they can readily see the need versus bridge projects that are less visible or do not directly impact the traveling public like a bridge painting project. This is a concern as we may miss the opportunity to do a relatively inexpensive preservation project and face a larger need in future years.
- [Delays in Federal Rule Making for Performance Measurement and Asset Management]. The absence of details on the performance measures and asset management requirements are limiting the extent of work that can be done pending the final rules. This is leaving a lot of work to be done in a short period following the release of the final rules.
- [Department wide commitment to TAM ideals and philosophy] because it is the first step toward a successful TAM plan. Without that we are destined to fail
- [Encouraging all levels/jurisdictions of transportation to fully utilize existing data and implementing Asset management]. In times of scarce resources it is even more important to spend money in the most effective way possible on roads that are most heavily used. The right fix and the right time in the right place.

- [Having a focused course of action/direction from the top down and the bottom up.]. You get a sense of spinning your wheels. It is frustrating on so many levels and it slows down productivity.
- [Lack of an effective asset management system to track asset work activities and update condition and inventory data] asset management system. Without an effective asset management system, asset data will soon be obsolete if inventory and condition data could not be updated timely when repaired and replaced.
- [Lack of clear agency direction or plan on how we are going to implement a TAMP] is the most pressing because several people are working on elements of TAM but we don't know whether or not it fits in with the agency's overall plan as it has yet to be developed and the general direction is still being debated and discussed.
- [modeling]
- [Organizational resource capabilities and culture] - looking to change and improve
- [Quickly developing new asset class models that provide production level results.], as more and more asset information is made available, the expectation from stakeholders is that models can quickly be developed for new asset classes.
- [Setting targets and goals] - because choosing unreasonable targets/goals may make the TAM unworkable or of little use.
- [Short Term Goals vs. Asset Management]: Short term performance, e.g. surface (i.e. apparent) road condition can make longevity take a back seat.
- [Shrinking knowledge base - - key personnel retired (72 yrs walked out, only 2 ee)] - result is large gaps during recruitment phase; requires more ramp up time, education, lacks the institutional knowledge
- [Targets based upon customer needs not budgets]. Pavements and bridges are estimated to be in steep decline, but funding goes other places
- [The time it will take to hire a consultant, educate them on our needs with all the pertinent information so that they can help us develop a GAP analysis]. We haven't started the process to acquire a consultant as of yet.
- [Tracking completed (or not completed) projects back to the initial asset management driver for doing the project] is the trickiest right now - we have approved project lists for the next 4 years but are struggling with tracking the status of these projects (hq and region coordination is required)
- [Unclear decision-making and absence of a decision-making structure]: without decisions, we just keep talking and talking; we don't get to implementation and a better functioning transp. system
- Asset Valuation/Life Cycle Costing is most relevant to the new FHWA rules. Risk management applied in a systematic way to TAMPs would be valuable. General implementation of TAM in state agencies would be valuable to benchmark ourselves.
- Balance for Committee - Program governance needs to represent the whole business, but be nimble enough to produce results
- Centralized asset inventory for transit asset management. First step in the process of developing a Transit Asset Management Plan
- Closing identified gaps.
- Collecting the right level of detail for assets because it leads to rework or lost opportunities.
- Commitment from Executive Level Management to TAM because without their support TAMP development is an exercise.
- Communicating needs across the various offices because what may be important for one office may fall through the cracks with another office and then the programs are difficult to deliver.
- Consistency of data. Within our dept. we have multiple divisions charged with asset mgmt. and related data collection. There is very minimal consistency in data being collected or associated values. This in conjunction with multiple software applications will create outcomes that produce varied insights and benefits.
- Coordinating with non-state asset owners of NHS segments - collecting asset data and financial information from 21 counties, 25 plus municipalities and 2 independent toll



authorities, developing investment strategies in coordination with all these entities and the 3 MPOs in the state.

- Coordination of Asset Programs and Asset Data Sharing to break down the silos and be more transparent with our asset data especially when it comes to projects planned that could better maximize resources for several assets.
- Cross-asset optimization. Refining budget allocation and project selection and prioritization processes.
- Currently 1 [Uncertainty of MAP 21 Asset Management Plan and Pavement and Bridge Measures final rules].
- Data - it's an asset and it is required by all other assets in order to fully integrate asset management philosophy.
- data collection because it's scattered throughout the agency.
- Data Governance and Data Integration
- Data integration
- Data integration in interfacing with existing asset management systems and databases in a very complex and challenging area at our Department.
- data management, mainly due to the fact that it involves a decentralized organization where the work is done in the field and the data is central
- Developing a risk component for bridges will be institutional change for NDOR. Currently bridge work is programmed in conjunction with roadway improvement.
- Developing inventory is probably one thing we can manage, and coincides with need to upgrade our guardrail end treatments. we are trying to achieve some synergy in field data collection.
- Documenting target setting and gaps, because it is hard to put in easy terms that the public can understand all of the nuances that go into trade off analysis to generate the investment plan
- Executive turnover, We have two new executives without any national/FHWA experience.
- Finalization of MAP-21 Regulatory Requirements
- Financial plan because it is constantly a moving target. FAST act has helped with some stability,

but difficult to predict condition and investments out more than 5 years.

- Forecasting life cycle cost. If we are to obtain complete agency buy-in, we need to quickly and accurately predict our life cycle costs. To do this, we need to comprehensively review and summarize past information, which is not in a format that is not task friendly.
- Funding! The first two issues are institutional challenges. Some of the challenges related to the first two are also funding related. However, it is the lack of funding the impedes basic data collection and analysis.
- Integrating Geospatial solutions agency wide is the most pressing. If the inventory and condition of all of our assets is not in place we have little opportunity to conduct Whole life cost or risk management.
- Item 1 [Moving from capital program to more of a maintenance program] requires item 2 [communicating needs to our legislature] as well. We have a very "active" legislature and getting their support is key to implementation.
- Lack of Data Governance results in data being collected/created for singular reason rather than viewed as an "asset" for the entire organization.
- Lack of state resources. Too many roads and too few dollars.
- life cycle cost - this is something that we are not currently doing at the network level and are not exactly sure how to go about it at that level.
- Limited resources
- Need for the final rules - everything is on hold until we receive the final rules
- Organizational buy-in and support from upper management is the most pressing challenge that we face. If these are not dealt with, that the TAMP effort will not achieve the desired level of success. Business practices will not be modified to improve how our agency handles asset management.
- Organizational buy-in. We are in the middle of our first draft of the TAMP, so getting the organization to understand the concepts is easier than getting the organization to use the principles.

- Organizational Gaps in Data Sharing because it is very likely that our agency might have the data we need to implement asset management, but it is poorly accessible or strictly institutional
- Our legacy data system is a mainframe system which requires the IT division to retrieve and disseminate information from queries.
- Politics can trump any performance metric, any technical finding.
- Process workflows
- Procurement: bids were challenged by competing contractors thus holding our contract in limbo for couple years.
- Professional/Technical Guidance
- Repeatable and Accurate Automated Crack and Rut Depth Distress Measurement. Windshield network surveys are subjective; while existing crack quantification software over-estimate or under-estimate distress severity and extent. Accuracy becomes even more critical at the project level where a performance warranty is involved.
- Revenue. Most states do not have anywhere near enough funding to maintain their existing infrastructure, yet the Federal response to this pending disaster is to require additional reporting and pretend the reports will solve the problem.
- Setting Targets/Goals (Realistic) Understanding what to get without setting too high unrealistic goals.
- Silo of information, because data collection and data sharing is the foundation of asset management and how it is going to work.
- Small missing sections due to rounding or other issues with equations, etc. for FHWA because our state is getting kickbacks from MAP-21 of sections that do not exist or are not completed.
- Support throughout the agency is most pressing. This directly affects the understanding of importance and timeline for the units within the agency that contributes to the plan.
- TAM staffing - with appropriate staffing TAM momentum can be maintained which will help with staff buy-in and upper management support.
- The approval of the final rules will allow us to determine what is required to meet the national metrics for the NHS. We are stuck in a holding pattern until we have a clear understanding of what will be required, what it will cost (equipment/technical support) and how long it will take to gather data if it is very different from our current performance metrics.
- The creation of meaningful performance targets may be our most pressing issue. Setting goals too high could be unattainable and reflect poorly on the department. Setting them too low may not best serve the needs of transportation system and could cause FHWA to question our decisions.
- The first item above [FHWA taking a long time to finish final rulemaking, and hopefully this does not coincide with the end of the fiscal year. While we have a draft document, we cannot finalize parts of it until we know what all the requirements are.] - how do you know what to finalize when you don't know what all the final requirements are?
- The lack of clear direction for our Agency's asset management as a whole. Several parts of our Asset Management journey have been implemented quite well, however the synthesis between these parts and direction to do so is unclear. It seems like those at the senior level are waiting for direction about capabilities from asset classes, while the asset classes are waiting for policy/funding direction from the senior level.
- The most pressing issue is adoption of asset management philosophy at the Executive Level. If there is no commitment at this level, there is no dedication of resources or the creation of a culture for improved asset management at all levels of the organization.
- Though I couched it within the issue of communication, the top issue is establishing clarity regarding TAM and how it integrates with the work of the department.
- Training and education is essential to ensuring that planning and programming are grounded in asset management fundamentals.
- Unclear the time line. Can't push urgency with no final rule.

- understanding system performance rulemaking implications
- We are so early in the formal process that we have not yet encountered significant barriers.
- We feel that all three are pressing and strongly interrelated issues [(1) Data Integration: It's important to reduce stovepipes. Would like to see more efforts such as Utah's data system.; (2) Cross Asset Analysis: Our goal is to determine how best to balance our investments between key assets for a given budget level; (3) Risk Management].
- Who's in charge of certain assets - location, reporting, etc...
- Willingness of Field Engineers to use limited funds for preventative maintenance because we do not have any dedicated funding for preventative maintenance. Most of the state funds are used to match the federal funds we receive.

### Q7: What is your role in your agency's transportation asset management initiatives?

- As a state DOT we are mandated to follow the asset management requirements set forth in MAP-21 and the FAST Act.
- As the Administrator of the Data inventory and integration Division, my team is responsible for the collection of traffic, Weigh In Motion, pavement condition data, and Lane Mile Asset Inventories; deployment and support of GIS for the agency; maintenance of the Trunkline Linier Referencing System; drafting portions of the Transportation Asset Management Plan; HPMS reporting to FHWA, NFC/NHS/ACUB coordination; Data Management and Stewardship for Asset data stored in the SDE and Project data stored in Oracle databases that support the Capitol Program.
- Asset Management Engineer
- Asset Management Unit in Public Transportation focused on Coordinating Asset Management efforts for Public Transportation Assets within the Department
- Asset Manager and acting Bridge Asset Management Section Chief in the Asset Management Division
- Asset Manager,
- Assist Chief Engineer in developing Statewide Plan
- Assist in planning and implementation
- Asst. Commissioner in charge of Asset Management in NJDOT.
- Caramel, you misspelled roll. OR Drone.
- Data Management
- Data Subject matter expert
- Determining asset financial needs, managing asset program, developing asset technical and management policy and technical solutions.
- Develop/maintain TAM plan; document policies and processes that support TAM; maintain relations with and asset owners with process documentation; facilitate TAM steering committee meetings.
- Developing the TAMP
- Development and Implementation
- development, coordination, and implementation - a little of everything
- Director of Asset Management
- Division Administrator for Planning under which Asset Management resides
- Extreme weather, climate adaptation, sustainable performance metrics
- Facilitate and coordinate asset management initiatives.
- GIS – Data Integration
- Have department leadership role for state highway system asset management.
- Head of the Asset Management & Planning Division
- I am Administrator of the Area that supports Asset Management Initiatives and coordinates the effort between State, Counties, cities and townships. Also serving as professional staff to the state's Asset Management Council
- I am MnDOT's Asset Management Project Manager. I am responsible for implementing the AgileAssets software product we just bought, as well as numerous asset management initiatives underway. We have a project team

consisting of: Asset Management Engineer, Asset Management Business Process Liaison, Research Analyst, Application coordinator, and two Asset Inspector/Construction Liaisons.

- I am on the TAMP core team.
- I am one of many at WYDOT who are actively involved in writing our TAMP. I also supervise WYDOT's (vacant) Asset Management Coordinator position.
- I am responsible for AM implementation
- I am responsible for the Division of Highway and Bridge Maintenance. Asset management is what we do and our Division is where the first phases of asset management were implemented.
- I am tasked with assisting in the development of the TAMP and its implementation at Hawaii DOT.
- I am the agency's Asset Management Engineer.
- I am the Asset Management Integration Manager.
- I am the primary author of our asset management plan.
- I am the State Maintenance Engineer. The Asset Management Section of my Division is the lead in the agency for developing and maintaining the asset management plan.
- I do research and give advice (technical assistance).
- I have the input on bridges in our ten year plan
- I input Construction History, run projections for budget and legislative purposes, analyze pavement conditions, put together candidates lists for our districts, etc.
- I serve as Director over a team standing up a new tool related to portfolio and project management and contract management. Asset management is an input into project selection. I am working with other agency-business leaders on solving the many challenges in this inter related web.
- I was part of the original team that put together a scope and RFP for our State TAMP; and I continue to be proactive in the asset management structure.
- I was previously the "Asset Management Coordinator" for the department, with much of that work following me into my new position. I

currently help in the decision making processes for asset management.

- I work in the highway maintenance part of managing highway assets.
- I work in the Maintenance Management section. I will be gathering a lot of field data from the operations side of the department.
- I'm responsible for assisting the asset management engineer in developing an asset management program that encompasses all of the department's investment classes.
- in general, planning: preparing at least a framework for TAM within our broad "Practical Solutions" full life-cycle approach to managing transportation.
- integration of assets
- Involved in the evaluation and validation of new pavement evaluation technologies.
- Lead
- Lead for the rest area/roadside facilities asset mgt program.
- Lead, Executive
- Leadership role with the TAM committee.
- Leading the development and implementation of the Asset Management Plan
- Leading the implementation
- Making sure that folks are aware of the different spatial tools out there that can aid in locating and analyzing assets.
- Making the connection between vTams and long-range planning.
- Manage a part of the assets
- Manage preparation of TAMP.
- Manager over the asset management group
- Managing/coordinating its integration across agency.
- Member of the Asset Management Coordination Team
- Mostly as an (outside the loop) advisor
- My Office is responsible for the TAMP development as well as integration into broader Highway Investment Plan.
- one of the executives that helps to guide the work program for this initiative
- our section is the office of performance management so we are taking the lead
- Overall Coordination

- Oversee TAMP development and implementing plan
- Pavement management
- Pavement Management Engineer.
- Performance and Asset Management Branch Manager. I lead CDOTs asset and performance management initiatives.
- Performance Management Engineer + TAMP Lead + Asset Management focal
- Primary data and analysis support for pavement management. New member of our Asset Management Implementation team.
- Region Engineer for ALDOT. On Executive Team that is developing ALDOT's TAMP.
- Research and Education
- Roadway asset management
- stakeholder
- Steering team chair - multi divisional
- Supervisor of the Asset Management Group responsible for developing and coordinating the TAMP.
- Support for the pavement asset and the risk portion.
- TAM Implementation
- TAMP Lead
- TAMP Lead & Maintenance Management System Admin
- The group answering this questionnaire includes Executive level members responsible for advancing NYSDOT's asset management program.
- To report bridge conditions, develop performance models and identify bridge project needs.
- Transit Asset Management. Part of an Department wide Asset Management Team.
- Transportation Planning Specialist- Lead worker