Today’s Presentation

Background

I. State of Good Repair

II. TAM Plans

III. Performance Measures and Targets

IV. Reporting

V. Technical Assistance
MAP-21 Performance Management Framework

FTA

- Transit Asset Management
- National Public Transit Safety Plan
- Public Transportation Agency Safety Plan

FHWA

- Safety Performance
- Pavement and Bridge Condition
- System Performance & CMAQ
- Highway Safety Improvement Program
- Highway Asset Management Plan

Statewide and Metropolitan Planning
Linking Proposed Regulations

Public Transportation Agency Safety
- SMS Hazard Identification/Risk Assessment
- Establish Safety Targets
- Hazard, Control, and Monitoring Strategy
- Public Transportation Agency Safety Plan

Transit Asset Management
- Asset Inventory/Condition Assessment
- Establish SGR Targets
- Transit Asset Management Plan
- Prioritize Investments/Program of Projects
- Program Formula Funds
- Submit Annual Report

Transportation Planning
- MPO and State Performance Targets
- Integrate Performance-Based Plans
- Metropolitan and Statewide Long-Range Plans
- Adopt TIP/STIP
What is Transit Asset Management?

Transit Asset Management (TAM) is a business model that uses the condition of assets to guide the optimal prioritization of funding at transit properties in order to keep our transit networks in a State of Good Repair (SGR).
Anticipated Benefits of TAM

1. Improved transparency and accountability
2. Optimized capital investment and maintenance decisions
3. More data-driven maintenance decisions
4. Potential safety benefits
Where do we go from here?

- Final Rule Published (7/26/2016)
- Final Rule Effective (10/1/2016)
- Initial Target Date (1/2017)
- Initial TAM Plan Compliance Date (10/2018)
- TAM Reports Due Date (Annually with NTD report)
Define state of good repair

Require TAM Plans for all recipients and sub-recipients

Establish SGR performance measures

Report data to the NTD

Receive Technical assistance from FTA
Changes from NPRM to Final Rule

• 5310 Applicability – Subpart A
  ▪ Rule applies to “Public Transportation” providers

• Definitions – Subpart A
  ▪ Tier II Provider

• Asset Tracking – Subpart C
  ▪ Third party assets
  ▪ Equipment

• Performance Measures – Subpart D
  ▪ Allows more than one target per asset class
I. State of Good Repair
State of Good Repair

The condition in which a capital asset is able to operate at a **full level of performance**. This means the asset:

1. Is able to perform its designed function,
2. Does not pose a known unacceptable safety risk, and
3. Its **lifecycle investments** have been met or recovered.
General Provisions – Subpart A

• Purpose
  ▪ To help achieve and maintain a state of good repair for the nation’s public transportation systems

• Applicability
  ▪ All recipients or subrecipients of Federal financial assistance under 49 U.S.C. Chapter 53 that own, operate, or manage capital assets used in the provision of public transportation

• Definitions
Definition of ‘Public Transportation’

The term "public transportation" is defined at 49 U.S.C. 5302 and means regular, continuing shared-ride surface transportation services that are open to the general public or open to a segment of the general public defined by age, disability, or low income.
II. Transit Asset Management Plans
Applicability – Tier I or Tier II

Tier I

Operates Rail

OR

≥ 101 vehicles across all fixed route modes

OR

≥ 101 vehicles in one non-fixed route mode

Tier II

Sub-recipient of 5311 Funds

OR

American Indian Tribe

OR

≤ 100 vehicles across all fixed route modes

OR

≤ 100 vehicles in one non-fixed route mode
Responsibility for TAM Plan Development

• Each transit provider must designate an Accountable Executive

• Plan Coordination
  ▪ A Tier I provider must develop its own TAM Plan
  ▪ A Tier II provider may participate in a single Group Plan or opt out and develop its own TAM Plan
  ▪ A Group Plan participant must collaborate with the sponsor in the development of the plan

• Eligible activity under 5337, 5307 & 5311
Group Plans

• Group Plans compiled by a sponsor
  – Generally the State DOT or Designated/Direct Recipient
  – Sponsor is not the Accountable Executive for its Group TAM Plan participants
  – Small urban operators (5307 Recipients) are not required to be offered a group plan but CAN be based on mutual agreement between sponsor and operator.
## TAM Plan Elements

<table>
<thead>
<tr>
<th>Tier I only</th>
<th>All Providers (Tier I &amp; II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inventory of Capital Assets</td>
<td>2. Condition Assessment</td>
</tr>
<tr>
<td>3. Decision Support Tools</td>
<td>4. Investment Prioritization</td>
</tr>
<tr>
<td>5. TAM and SGR Policy</td>
<td>6. Implementation Strategy</td>
</tr>
<tr>
<td>7. List of Key Annual Activities</td>
<td>8. Identification of Resources</td>
</tr>
<tr>
<td>9. Evaluation Plan</td>
<td></td>
</tr>
</tbody>
</table>
I. Inventory of Capital Assets

- A listing of all capital assets (including non-FTA funded):
  1. Owned by the transit provider
  2. Third-party exclusive-use assets
  3. Equipment Assets:
     - all non-revenue service vehicles regardless of cost,
     - other owned assets over $50,000,
     - no third-party equipment assets.
  
  Level of detail is same as in Capital Program of Projects
## Examples of Asset Categories and Classes

<table>
<thead>
<tr>
<th>Category</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td>Service Vehicles</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
</tr>
<tr>
<td>Rolling Stock</td>
<td>Railcars</td>
</tr>
<tr>
<td></td>
<td>Buses</td>
</tr>
<tr>
<td></td>
<td>Other Passenger Vehicles</td>
</tr>
<tr>
<td></td>
<td>Ferries</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Fixed Guideway</td>
</tr>
<tr>
<td></td>
<td>Signal Systems</td>
</tr>
<tr>
<td></td>
<td>Structures</td>
</tr>
<tr>
<td></td>
<td>Power</td>
</tr>
<tr>
<td>Facilities</td>
<td>Maintenance Facilities</td>
</tr>
<tr>
<td></td>
<td>Passenger Facilities</td>
</tr>
<tr>
<td></td>
<td>Parking Facilities</td>
</tr>
<tr>
<td></td>
<td>Administrative Facilities</td>
</tr>
</tbody>
</table>
2. Condition Assessment

• A rating of the inventoried assets
  ▪ E.g., age; good/fair/poor; percentage of residual life

• Ratings should be sufficiently detailed to monitor performance and plan capital investment

• Condition assessments may be collected at the individual or asset class level

• Condition assessments may include vulnerabilities to natural/climate hazards

• Condition assessments are only required for assets with direct capital responsibility
## Assessing Condition by Asset Class

<table>
<thead>
<tr>
<th>Category</th>
<th>Asset Inventory</th>
<th>Assessing Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equipment</strong></td>
<td><strong>All</strong> non-revenue service vehicles and equipment &gt; $50K used in the provision of public transit, except 3rd-party equipment assets</td>
<td><strong>Only equipment with direct capital responsibility, no third party assets</strong></td>
</tr>
<tr>
<td><strong>Rolling Stock</strong></td>
<td><strong>All</strong> revenue vehicles used in the provision of public transit</td>
<td><strong>Only revenue vehicles with direct capital responsibility</strong></td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td><strong>All</strong> infrastructure used in the provision of public transit</td>
<td><strong>Only infrastructure with direct capital responsibility</strong></td>
</tr>
<tr>
<td><strong>Facilities</strong></td>
<td><strong>All</strong> facilities used in the provision of public transit (excluding bus shelters)</td>
<td><strong>Only facilities with direct capital responsibility (excluding bus shelters)</strong></td>
</tr>
</tbody>
</table>
TAM Plan Example

1. Inventory Capital Assets

2. Assess Condition

- **Age/ULB:**

<table>
<thead>
<tr>
<th>Bus</th>
<th>Bus 1</th>
<th>Bus 2</th>
<th>Bus 3</th>
<th>Bus 4</th>
<th>Bus 5</th>
<th>Bus 6</th>
<th>ULB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>17</td>
<td>15</td>
<td>15</td>
<td>7</td>
<td>7</td>
<td>2</td>
<td>14</td>
</tr>
</tbody>
</table>

- **3 of 6 buses are below the default useful life benchmark**
3. Decision Support Tools

- List analytical process(es) used to make investment prioritization
  - To estimate capital investment needs over time
  - To assist in prioritization
- The tool does not have to be specialized software
4. Investment Prioritization

• A ranked listing of proposed projects and programs ordered by year of planned implementation
• Prioritization locally determined based on policy and need
• Must adequately consider
  ▪ Identified unacceptable safety risks
  ▪ Accessibility requirements
• Fiscally constrained based on estimated funding levels
### TAM Plan Example

#### 3. Decision Support Tools

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
<th>Bus 1</th>
<th>Bus 2</th>
<th>Bus 3</th>
<th>Bus 4</th>
<th>Bus 5</th>
<th>Bus 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poses safety risk (0-5)</td>
<td>8</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Age (years)</td>
<td>.5</td>
<td>17</td>
<td>15</td>
<td>15</td>
<td>7</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Poor reliability (0-5)</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Poor appearance (0-5)</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>59.5</strong></td>
<td><strong>25.5</strong></td>
<td><strong>32.5</strong></td>
<td><strong>43.5</strong></td>
<td><strong>47.5</strong></td>
<td><strong>7</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### 4. Investment Prioritization

- Score ≥ 50 ............ Replace this year
- 30 ≤ Score < 50 ............ Replace in year 3
- Score < 30 ............ No immediate remedial action
5. TAM and SGR Policy

- Transit provider’s vision
- Executive-level direction to support the goals of the TAM program
- Documented commitment to achieving SGR
- Defined TAM objectives
- Defined and assigned roles and responsibilities

S  specific
M  measurable
A  attainable
R  relevant
T  temporally constrained
TAM Plan Example

5. TAM and SGR Policy

“We have 1 objective:

- To ensure all vehicles are no more than 6 months behind in deferred maintenance

Roles & Responsibilities:

- Chief of Maintenance – keeps asset condition inventory up to date
- Chief Financial Officer – provides cost estimates for …”

I, the accountable executive, am committed to achieving a state of good repair. Our agency’s goal is …
6. Implementation Strategy

• Operational level process for implementing TAM Plan

7. List of Key Annual Activities

• Description of actions needed to implement TAM Plan for each year of the plan’s horizon
  ▪ E.g., software development, coordination between maintenance and finance offices
6. Implementation Strategy

7. Key TAM Activities

1. Link asset inventory to decision support tool (Due: May)

2. Improve coordination between maintenance and finance staff (meet Quarterly)
8. Identification of Resources

• E.g., staff time, technology requirements, funding, etc.

9. Evaluation Plan

• How TAM activities will be monitored, evaluated, and updated to ensure the continuous improvement of TAM practices
8. Identify Resources

<table>
<thead>
<tr>
<th>Staff needs</th>
<th>Finance (FTE)</th>
<th>Planning (FTE)</th>
<th>Operations (FTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.25</td>
<td>.5</td>
<td>.25</td>
</tr>
<tr>
<td>Total</td>
<td>$25K</td>
<td>$15K</td>
<td>$20K</td>
</tr>
</tbody>
</table>

Total = $60K

9. Develop Evaluation Plan

Evaluation Plan
- Goals
- Timelines
- Milestones
- Tracking
- Challenge Mitigation
TAM Plan Timeframes

• Plans would be updated in their entirety at least every 4 years
  ▪ Coincide with relevant (Statewide) Transportation Improvement Program
  ▪ Cover at least 4 years
  ▪ Should be amended during the horizon period when there is a significant change

• Initial TAM Plans completed no later than 2 years after effective date (October 2018)
III. Performance Measures and Targets
Performance Measures

- **Equipment**
  - Percentage of vehicles that have met or exceeded their Useful Life Benchmark (ULB)

- **Rolling Stock**
  - Percentage of revenue vehicles within a particular asset class that have met or exceeded their ULB

- **Infrastructure**
  - Percentage of track segments with performance restrictions by class

- **Facilities**
  - Percentage of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) scale (1=Poor to 5=Excellent)
## Analyzing Assets

<table>
<thead>
<tr>
<th>Category</th>
<th>Assessing Condition</th>
<th>Performance Targets</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>▪ Age based</td>
<td>▪ Only non-revenue service vehicles</td>
<td>ULB</td>
</tr>
<tr>
<td>Rolling Stock</td>
<td>▪ Age based</td>
<td>▪ Only revenue vehicles by vehicle class/mode</td>
<td>ULB</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>▪ Only infrastructure with direct capital responsibility</td>
<td>▪ Only rail fixed guideway</td>
<td>Slow-zone</td>
</tr>
<tr>
<td>Facilities</td>
<td>▪ Only facilities with direct capital responsibility (not bus shelters)</td>
<td>▪ Maintenance, Administrative, Passenger, and Parking Facilities</td>
<td>TERM</td>
</tr>
</tbody>
</table>
Targets for Performance Measures

• Set targets annually for each asset class
• Supported by data
  ▪ Most recent condition data
  ▪ Reasonable financial projections
• Targets for Group Plans apply to the group as a whole
• Reported annually to National Transit Database (NTD)
Useful Life Benchmark (ULB)

• ULB ≠ Useful life for FTA grant programs
• **Useful Life Benchmark** is defined as the expected lifecycle of a capital asset for a particular Transit Provider’s operating environment, or the acceptable period of use in service for a particular Transit Provider’s operating environment.
• ULB takes into account a provider’s unique operating environment (i.e. geography, service frequency, etc.)
• There are default ULB values, but agencies are welcome to develop their own
# Sample Default ULBs

<table>
<thead>
<tr>
<th>Revenue Vehicle Type</th>
<th>Default Useful Life Benchmark</th>
<th>Useful Life in Grant Programs *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automated Guideway Vehicle (AG)</td>
<td>31</td>
<td>12</td>
</tr>
<tr>
<td>Bus (BU)</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Cutaway Bus (CU)</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Ferryboat (FB)</td>
<td>42</td>
<td>25</td>
</tr>
<tr>
<td>Heavy Rail Passenger Car (HR)</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td>Light Rail Vehicle (LR)</td>
<td>31</td>
<td>25</td>
</tr>
<tr>
<td>Commuter Rail Locomotive (RL)</td>
<td>39</td>
<td>30</td>
</tr>
<tr>
<td>Trolleybus (TB)</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Van (VN)</td>
<td>8</td>
<td>7</td>
</tr>
</tbody>
</table>

* *Always refer to guidance in Circular 5010.D to determine this value*
IV. Recordkeeping and Reporting Requirements
TAM Reporting to NTD

1. Data Reports
   - Projected performance targets for next fiscal year
   - System Condition and Performance Reports
     - ULBs for Rolling Stock & Equipment
     - Condition Assessments for Facilities
     - Slowzones for Infrastructure (rail fixed guideway)

2. Narrative Report
   - Change in condition
   - Progress toward targets

• Group Plan Sponsors submit consolidated reports on behalf of their participants
NTD Asset Inventory Modules and Information

The Asset Inventory Modules for the National Transit Database

- Asset Reporting Manual
- Asset Module Reporting Template (Excel)
- Asset Inventory Expansion Federal Register Notice
- Asset Inventory Expansion Overview Webinar
- Asset Inventory Expansion Webinar Presentation (PDF)
- Webinar Q&A Transcript - 12/15/15 (PDF)
- Webinar Q&A Transcript - 12/18/15 (PDF)

Updated: Wednesday, March 9, 2016


Asset Module Reporting Template
Reporting Requirements

Performance Measures and Targets

a) Calculate condition information

b) Set targets for next fiscal year

35% of 30-foot buses will exceed the 12-year ULB.

<table>
<thead>
<tr>
<th>Year</th>
<th>ULB</th>
<th>Bus 1</th>
<th>Bus 2</th>
<th>Bus 3</th>
<th>Bus 4</th>
<th>Bus 5</th>
<th>Bus 6</th>
<th>Bus 7</th>
<th>Exceed ULB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>12</td>
<td>17</td>
<td>15</td>
<td>15</td>
<td>7</td>
<td>7</td>
<td>2</td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td>Year 2</td>
<td>12</td>
<td>retired</td>
<td>16</td>
<td>16</td>
<td>8</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>33%</td>
</tr>
</tbody>
</table>
Recordkeeping Requirements

• Maintain records supporting TAM Plan
• Share with State and metropolitan planning organization (MPO) planning agencies
  § TAM Plan
  § Performance targets
  § Investment strategies
  § Annual condition assessments
Certification

- TAM Plans are Self-Certified by the Accountable Executive
- FTA will update Certifications and Assurances to reflect TAM Plan requirements
- FTA will review Plans and Progress during Triennial and State Management Reviews, as well as during MPO Certification Reviews
### TAM Timelines

<table>
<thead>
<tr>
<th>Activity</th>
<th>Initial Due Date</th>
<th>Ongoing Submittal Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Rule Effective Date</td>
<td>October 1, 2016</td>
<td>n/a</td>
</tr>
<tr>
<td>SGR Targets</td>
<td><em>Set by 1/1/17</em></td>
<td><em>Annually within 4 months of end of provider’s FY as part of NTD Report</em></td>
</tr>
<tr>
<td>TAM Plan</td>
<td>October 1, 2018</td>
<td>Every 4 years</td>
</tr>
<tr>
<td>Asset Inventory and Condition Reporting*</td>
<td><em>Within 4 months of end of provider’s FY 2018</em></td>
<td><em>As part of NTD Report</em></td>
</tr>
<tr>
<td>Narrative Report</td>
<td><em>Within 4 months of end of provider’s FY 2019</em></td>
<td><em>Annually within 4 months of end of provider’s FY</em></td>
</tr>
</tbody>
</table>

*Only 1/3 of facilities condition assessments are due in NTD report year 2018*
V. Technical Assistance
Technical Assistance from FTA

- TERM-Lite
- Transit Asset Management Guide
- TCRP Products
- TAM News & Noteworthy Practices

- Small Provider Guide and Template
- Asset Inventory Development & Integration Guide
- Training & Webinars
- Facility Condition & Rail Guideway Guidebooks

https://www.transit.dot.gov/TAM
Online Resources  www.transit.dot.gov/TAM

• TAM Compliance Checklists
  ▪ Tier Determination
  ▪ Sponsor/Participant
  ▪ Compliance

• Final Rule Factsheet

• FAQs

• Revamped Website
  ▪ Getting Started Page
  ▪ Resources by topic and type
Sixth TAM/SGR Roundtable

• Held July 13th 2016 in Minneapolis, MN
• Held in conjunction with TRB Asset Management Conference
• Cross-section of over 40 transit stakeholders
• Peer exchange of TAM activities and implementation
• Proceedings at www.blsmeetings.net/SGR/)
Final Rule Outreach

• Webinar series (9 total) - Complete
  ▪ 4 TAM Final rule, 2 for small systems
  ▪ 2 NTD Asset inventory
  ▪ 2 Performance Measure Guidebooks

• Conferences
  ▪ TRB TAM Conference (Minneapolis)
  ▪ Transit Midwest/State Programs Meeting (Kansas City)
  ▪ APTA Annual Meeting (Los Angeles)
  ▪ Tribal Transit Conference (Anaheim)
  ▪ TRB Rural and Intercity Bus Conference (Asheville)
Small Providers Guide

• Published May 2016
• Includes template for TAM plan
• Focused on small, bus-only operators
• Available online at TAM website

www.transit.dot.gov/TAM
Performance Measure Guidebooks

• Developed two guidebooks:
  ▪ Facility Condition Assessments
  ▪ Measuring Slow Zones on Infrastructure

• Includes methodologies for calculating the TAM Rule performance measures

• Available for notice and comment (9.26.16)
  ▪ (www.regulations.gov/docket?D=FTA-2016-0030)
TAMNews Newsletters

• Ongoing external communication highlighting TAM implementation

• Audience is GovDelivery list for TAM
  ▪ Can sign up for alerts on TAM webpage

• Five newsletters since 2014
  ▪ Fifth newsletter focused on final rule (posted July)
TAM Training Course Development

• National Transit Institute (NTI)
  - TAM 101 course to aligned with Final Rule (Fall 2016)
  - Small Systems TAM course (Fall 2016)

• Transportation Safety Institute (TSI)
  - Performance Measures Training course to teach guidebook methodologies (Fall 2016)

• In Development
  - TAM 201 Implementation Course (Fall 2017)
  - Executive level TAM Overview Briefing (TBD)
Next Steps

• Finalize TAM Performance Measure Guidebooks [Docket FTA-2016-0030]
  ▪ Comment period closes Sept, 26, 2016

• Training Course
  ▪ Development and Delivery

• If you have questions, where do you go?
  ▪ Website: www.transit.dot.gov/TAM
  ▪ Regional Staff
  ▪ Mshadoni Smith Mshadoni.Smith@dot.gov
Thank you for your participation!

Questions?