CalACT Expo
Transit Asset Management (TAM)
Plan Workshop
49 CFR 625
April 24, 2017
TRANSIT ASSET MANAGEMENT

www.transit.dot.gov/TAM
Today’s Presentation Agenda

• Transit Asset Management Context and Background

• Final Rule Provisions
  ✓ Reduced burden for small providers
  ✓ Performance Management

• Technical Assistance
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
FTA Backlog Estimates Since 2010

State of Good Repair Backlog Estimates

Years
- 2010: $78.0 billion
- 2013: $85.9 billion
- 2015: $89.8 billion

Billions of Nominal Dollars
Impact of Preservation Investment on 2032 Transit SGR Backlog in All Areas

- **Current Annual Capital Investment** ($9.8 B)
- **SGR Annual Capital Investment** ($17.0 B)
- **Maintain Current Backlog** ($11.4 B)

**2032 State of Good Repair Backlog (Billions of 2012 Dollars)**

- **$7.2 Billion Gap**

**Annual Expenditures for Preservation (Billions of 2012 Dollars)**
TAM and State of Good Repair

• The purpose of the National TAM System is to keep our Nation’s assets in a State of Good Repair (SGR)

• Consequences of not being in a SGR include:
  • Safety risks
  • Decreased system reliability
  • Higher maintenance costs, and
  • Lower system performance
MAP-21 Performance Management Framework

<table>
<thead>
<tr>
<th>FTA</th>
<th>FHWA</th>
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<tbody>
<tr>
<td>- Transit Asset Management</td>
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<tr>
<td>- National Public Transit Safety Plan</td>
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<td>- Public Transportation Agency Safety Plan</td>
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<td>- Safety Performance</td>
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<td>- Pavement and Bridge Condition</td>
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<td>- System Performance &amp; CMAQ</td>
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<tr>
<td>- Highway Safety Improvement Program</td>
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<tr>
<td>- Highway Asset Management Plan</td>
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</tbody>
</table>

- 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 Process Did We Take to Get Here?

- MAP-21 Passed (7/2012)
- Informal Outreach (2012-2013)
- ANPRM Open for Comment (10/2013)
- NPRM Open for Comment (9/2015)
- FAST Act (12/2015)
- Final Rule Issued (7/26/16)
Key Features of the TAM rule

• TAM Final Rule provides a foundation for addressing SGR backlog
  – Simple, Scalable, Structured, and Standard
• Focuses on measuring and monitoring performance and condition
• Minimizes burden on smaller transit providers
Break for Questions
National TAM System
49 CFR 625 Provisions
National Transit Asset Management System

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
Transit Asset Management Final Rule

A. General Provisions
B. National Transit Asset Management System
C. Transit Asset Management Plans
D. Performance Management
E. Recordkeeping and Reporting Requirements
General Provisions

• 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.
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.
Two-Tier Approach

Tier I

- Operates Rail
  - OR
  - \( \geq 101 \) vehicles across all fixed route modes
    - OR
    - \( \geq 101 \) vehicles in one non-fixed route mode

Tier II

- Sub-recipient of 5311 Funds
  - OR
  - American Indian Tribe
    - OR
    - \( \leq 100 \) vehicles across all fixed route modes
      - OR
      - \( \leq 100 \) vehicles in one non-fixed route mode
# TAM Plan Elements

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1.</td>
<td>Inventory of Capital Assets</td>
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<tr>
<td>2.</td>
<td>Condition Assessment</td>
</tr>
<tr>
<td>3.</td>
<td>Decision Support Tools</td>
</tr>
<tr>
<td>4.</td>
<td>Investment Prioritization</td>
</tr>
<tr>
<td>5.</td>
<td>TAM and SGR Policy</td>
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<tr>
<td>6.</td>
<td>Implementation Strategy</td>
</tr>
<tr>
<td>7.</td>
<td>List of Key Annual Activities</td>
</tr>
<tr>
<td>8.</td>
<td>Identification of Resources</td>
</tr>
<tr>
<td>9.</td>
<td>Evaluation Plan</td>
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</table>

**All Providers**

- Tier I & II

**Tier I only**

- Tier I

* FTA estimates under 20% of transit providers would do a Tier I plan
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
  ▪ An eligible Tier II provider may participate in a single Group Plan or opt out and develop its own TAM Plan

• Eligible for funding under sections 5337, 5307 & 5311
Funds for Development of TAM Plans

• TAM Plan Development Costs Are Eligible for Funding:
  - State of Good Repair Formula Program
  - Urbanized Area Formula Program
  - Rural Formula Program

• Software Costs for a TAM Plan Are Generally an Eligible Capital Cost

• Asset Inventory and Condition Assessment Costs Are Generally Eligible Maintenance Costs
Specific efforts to reduce burden on small providers
Small Provider Considerations

• Two tier approach reduces requirements for smaller providers

• Small rural providers are automatically included in a Group Plan
  ▪ further reduces the burden since Sponsors do administrative and reporting tasks
  ▪ Small provider still have right to opt-out of group plan
Section 5310 Small Providers (Elderly & Disabled)

• Many 5310 subrecipients will not be subject to the rule for not meeting definition of “Public Transportation” at 49 U.S.C. 5302
  - i.e. a membership-based service, is not public transportation

• Exempts 60% the total number of section 5310 subrecipients subject to TAM
Group TAM Plans

• Group Plans must be compiled by a Sponsor
  – Generally the State DOT or Direct Recipient
  – Sponsor is not the ‘Accountable Executive’ for its Group TAM Plan participants

• Small urban operators (Section 5307 recipients) must request participation in a Group plan

• Sponsor reports on behalf of group participants
Where are we now and where do we go from here?

- **Final Rule Published** (7/26/2016)
- **Final Rule Effective** (Oct 2016)
- **Initial Target Set by Date** (Jan 2017)
- **Initial TAM Plan Compliance Date** (Oct 2018)
- **TAM Performance Metrics** Due Annually with NTD report

**MPOs incorporate Transit targets** (July 2017)
TRANSIT ASSET MANAGEMENT

www.transit.dot.gov/TAM
Transit Asset Management Plans
# 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></td>
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<tr>
<td>2. Condition Assessment</td>
<td></td>
</tr>
<tr>
<td>3. Decision Support Tools</td>
<td></td>
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<tr>
<td>4. Investment Prioritization</td>
<td></td>
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<td>5. TAM and SGR Policy</td>
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<td>6. Implementation Strategy</td>
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<td>7. List of Key Annual Activities</td>
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<td>8. Identification of Resources</td>
<td></td>
</tr>
<tr>
<td>9. Evaluation Plan</td>
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</tr>
</tbody>
</table>

* FTA estimates under 20% of transit providers would do a Tier I plan
Relationship to Existing Requirements

• Many elements can be developed from existing FTA requirements for FTA-funded assets
  ▪ Asset ID and location
  ▪ Existing maintenance strategies

• TAM Plan must cover all assets, regardless of funding source

• TAM Plan must include a forward-looking investment prioritization
1. Inventory of Capital Assets

• A listing of all capital assets:
  ▪ Owned by the transit provider
    ▪ Equipment: Non service vehicles & equipment > $50,000
  ▪ Include third-party exclusive-use non-equipment
  ▪ Level of detail is same as in Capital Program of Projects

• May use existing inventories already collected
  ▪ E.g., existing rolling stock and equipment reports

• Include assets acquired without FTA funds
Differences in TAM Plan and NTD Inventory

<table>
<thead>
<tr>
<th>Assets</th>
<th>TAM Plan Inventory</th>
<th>NTD Inventory</th>
<th>TAM Plan Condition Assessment</th>
<th>SGR Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue Vehicles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owned</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Direct capital responsibility</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>3rd party owned (direct capital responsibility)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>3rd party owned (NO direct capital responsibility)</td>
<td>yes</td>
<td>yes*</td>
<td>no</td>
<td>no</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
What is direct capital responsibility?

• If you own it outright or jointly
• You have financial responsibility for replacing, overhauling or major repairs in your budget.

It is NOT

• IF you use but do not fund
• IF you only do cleaning or minor repairs
• For *infrastructure assets* like track,
  - IF you have a budget line item but no oversight or maintenance responsibility for that project
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
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
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
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
TAM Plan Timeframes

• Plans are 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)
Performance Management
Performance Measures

- **Equipment**: Percentage of non-revenue service 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)
Performance Measure Targets

• Targets forecast performance for the next fiscal year
• Targets set 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)
## Analyzing Assets

<table>
<thead>
<tr>
<th>Category</th>
<th>Assessing Condition</th>
<th>Performance Targets</th>
<th>Scale</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 fixed rail guideway, track, signals, and systems</td>
<td>Slow zone</td>
</tr>
<tr>
<td>Facilities</td>
<td>Only facilities with direct capital responsibility (not bus shelters)</td>
<td>Maintenance and Administrative and Passenger Stations and Parking Facilities</td>
<td>TERM</td>
</tr>
</tbody>
</table>
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
Default ULBs

Default Useful Life Benchmark (ULB) Cheat Sheet

Source: 2017 Asset Inventory Module Reporting Manual, Page 53

Transit Agencies will report the age of all vehicles to the National Transit Database. FTA will track the performance of revenue vehicles (Rolling Stock) and service vehicles (Equipment), by asset class, by calculating the percentage of vehicles that have met or exceeded the useful life benchmark (ULB).

FTA has set a default ULB as the expected service years for each vehicle class in the table below. ULB is the average age-based equivalent of a 2.5 rating on the FTA Transit Economic Requirements Model (TERM) scale. Transit agencies can adjust their Useful Life Benchmarks with approval from FTA.

<table>
<thead>
<tr>
<th>Revenue Vehicle Type</th>
<th>Default ULB (in years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB  Articulated bus</td>
<td>14</td>
</tr>
<tr>
<td>AG  Automated guideway vehicle</td>
<td>31</td>
</tr>
<tr>
<td>AO  Automobile</td>
<td>8</td>
</tr>
<tr>
<td>BR  Over-the-road bus</td>
<td>14</td>
</tr>
<tr>
<td>BU  Bus</td>
<td>14</td>
</tr>
<tr>
<td>CC  Cable car</td>
<td>112</td>
</tr>
<tr>
<td>CU  Cutaway bus</td>
<td>10</td>
</tr>
<tr>
<td>DB  Double decked bus</td>
<td>14</td>
</tr>
<tr>
<td>FB  Ferryboat</td>
<td>42</td>
</tr>
<tr>
<td>HR  Heavy rail passenger car</td>
<td>31</td>
</tr>
<tr>
<td>IP  Inclined plane vehicle</td>
<td>56</td>
</tr>
<tr>
<td>LR  Light rail vehicle</td>
<td>31</td>
</tr>
<tr>
<td>MB  Minibus</td>
<td>10</td>
</tr>
<tr>
<td>MO  Monorail vehicle</td>
<td>31</td>
</tr>
<tr>
<td>MV  Minivan</td>
<td>8</td>
</tr>
</tbody>
</table>

Recordkeeping Requirements

• Maintain records supporting current 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 has updated 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
Final Rule Implementation
Two types of Deliverables

Process
1. Compliant TAM Plan
   - Group
   - Individual Tier I
   - Individual Tier II
2. Recordkeeping & Coordination with Planning
3. Certification

Reports
1. Data Report
   - Performance Targets
   - Performance Status
2. Narrative report
Data Reporting Requirements

- Optional in RY 2017, Mandatory in RY 2018
- Projected performance targets for next fiscal year
- Asset inventory and condition assessments
  - ULBs for Rolling Stock & Equipment (service vehicles)
  - Age is calculated automatically from year of manufacture
  - Condition assessments for facilities
  - Slow zones for infrastructure (rail fixed guideway only)
- Submit to NTD
  
  www.transit.dot.gov/ntd/ntd-asset-inventory-modules-and-information
Narrative Report Requirements

- Mandatory beginning in RY 2019 – year after TAM Plan is in place
- Also submitted to NTD
- Change in condition since last report
- Progress toward targets
- A chance to provide context for numerical results
# TAM Deliverables Timeline

<table>
<thead>
<tr>
<th>If your fiscal year ends:</th>
<th>June 30</th>
<th>Sept 30</th>
<th>Dec 31</th>
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<tbody>
<tr>
<td>Share initial targets with planning partners</td>
<td></td>
<td>July 2017</td>
<td></td>
</tr>
<tr>
<td>Report FY17 Asset Inventory Module (AIM) data to NTD</td>
<td>Oct 2017</td>
<td>Jan 2018</td>
<td>Apr 2018</td>
</tr>
<tr>
<td>Submit targets for FY18 to NTD (optional)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Complete compliant TAM Plan (1st required)</td>
<td></td>
<td></td>
<td>Oct 2018</td>
</tr>
<tr>
<td>Share TAM Plan with planning partners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report FY18 AIM data to NTD (1st required)</td>
<td>Oct 2018</td>
<td>Jan 2019</td>
<td>Apr 2019</td>
</tr>
<tr>
<td>Submit targets for FY19 to NTD (1st required)</td>
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<tr>
<td>Report FY19 AIM data to NTD</td>
<td>Oct 2019</td>
<td>Jan 2020</td>
<td>Apr 2020</td>
</tr>
<tr>
<td>Submit targets for FY20 to NTD</td>
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<tr>
<td>Submit narrative report to NTD (1st required)</td>
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<td></td>
</tr>
<tr>
<td>Report FY20 AIM data to NTD</td>
<td>Oct 2020</td>
<td>Jan 2021</td>
<td>Apr 2021</td>
</tr>
<tr>
<td>Submit targets for FY21 to NTD</td>
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<tr>
<td>Submit narrative report to NTD</td>
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</tr>
<tr>
<td>Complete Updated TAM Plan</td>
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<td></td>
<td>Oct 2022</td>
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<tr>
<td>Share TAM Plan with planning partners</td>
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Break for Questions
Technical Assistance
Available Technical Assistance

- TERM-Lite
- Transit Asset Management Guide
  Updated 2016
- Roundtable Reports & Presentations
  since 2008
- TAM News since 2015
- TAM Plan Guide and Template
  For Small Providers
- FAQs
- Webinar Series
- Checklists & Cheat sheets

www.transit.dot.gov/TAM
New TAM Training Courses

• Transportation Safety Institute (TSI)
  ▪ Online Performance Measures Training course to teach guidebook methodologies (piloted Jan. 2017)

• National Transit Institute (NTI)
  ▪ TAM 101 update (pilot March/April 2017)
  ▪ Implementing TAM for Tier II and Group Plan Sponsors course (available now)

• In Development
  ▪ TAM 201 Implementation Course (Fall 2018)
  ▪ Executive level TAM Overview Briefing (TBD)
Additional Technical Assistance

- Seventh TAM Roundtable
  - Peer-exchange with hands-on tour and training options
  - 100 transit agencies invited

- TAM Performance Measure Guidebooks Final
  - Describes standardized methodology for calculation and reporting of performance metrics to NTD
    - Infrastructure performance restriction
    - Facility condition assessment
Online Resources

• TAM Compliance Checklists
• Factsheets
  ▪ Final Rule
  ▪ Performance Measures
• FAQs
• Website focused on Implementation
  ▪ TAM Plan
  ▪ Peer Library
  ▪ Resources by topic and type
Tier II and Group Plan Sponsors Guide and Template

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

www.transit.dot.gov/TAM
# TAM Maturity Matrix Agency Self-Assessment

## Enterprise-Level Questions

Note: You must provide a response for each question, unless it is automatically populated. Select your response from the drop-down menus.

### 1. Policy
- For more information about the role of asset management policy, review Section 3.1.1 of the Asset Management Guide.
- 1.1 An agency-wide asset management policy is in place to support the establishment of asset management vision and goals and implementation of an asset management strategy.
- 1.2 The agency-wide asset management policy is reviewed and adopted by the executive team or senior management. The asset management policy is regularly evaluated, evolved, and communicated.
- 1.3 The asset management policy is clearly linked to / explicitly supported by the agency’s overall strategy and planning and to key business processes.

### 2. Strategy
- For more detail on the role of asset management strategy, see Section 3.1.2 of the Asset Management Guide.
- 2.1 An asset management strategy is in place and provides sufficient information, direction, and accountabilities to support the implementation of the asset management policy.
- 2.2 The asset management strategy is in place and outlines asset-specific outcomes and provides high-level direction and expectations for asset management by asset class and functional managers.
- 2.3 The asset management strategy is clearly linked to / explicitly supported by the organization’s business processes.
- 2.4 Agency-wide asset management strategy and goals are reviewed and adopted by the executive team or senior management.

### 3. Business Plan
- For more on the role of Asset Management Planning, see Sections 3.1.3 and 5.4 of the Asset Management Guide.
- 3.1 Detailed asset management activities, roles and responsibilities, resources, and timelines are clearly outlined...
Thank you for your participation!

Questions?