

FTA

FEDERAL TRANSIT ADMINISTRATION

Public Transportation Safety and Asset Management in Performance-based Planning and Programming

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U.S. Department of Transportation
Federal Transit Administration

Introductions

- Dwayne Weeks, Office of Planning and Environment
- Mshadoni Smith, Office of Budget and Policy
- Morvarid Zolghadr, Office of Transit Safety and Oversight

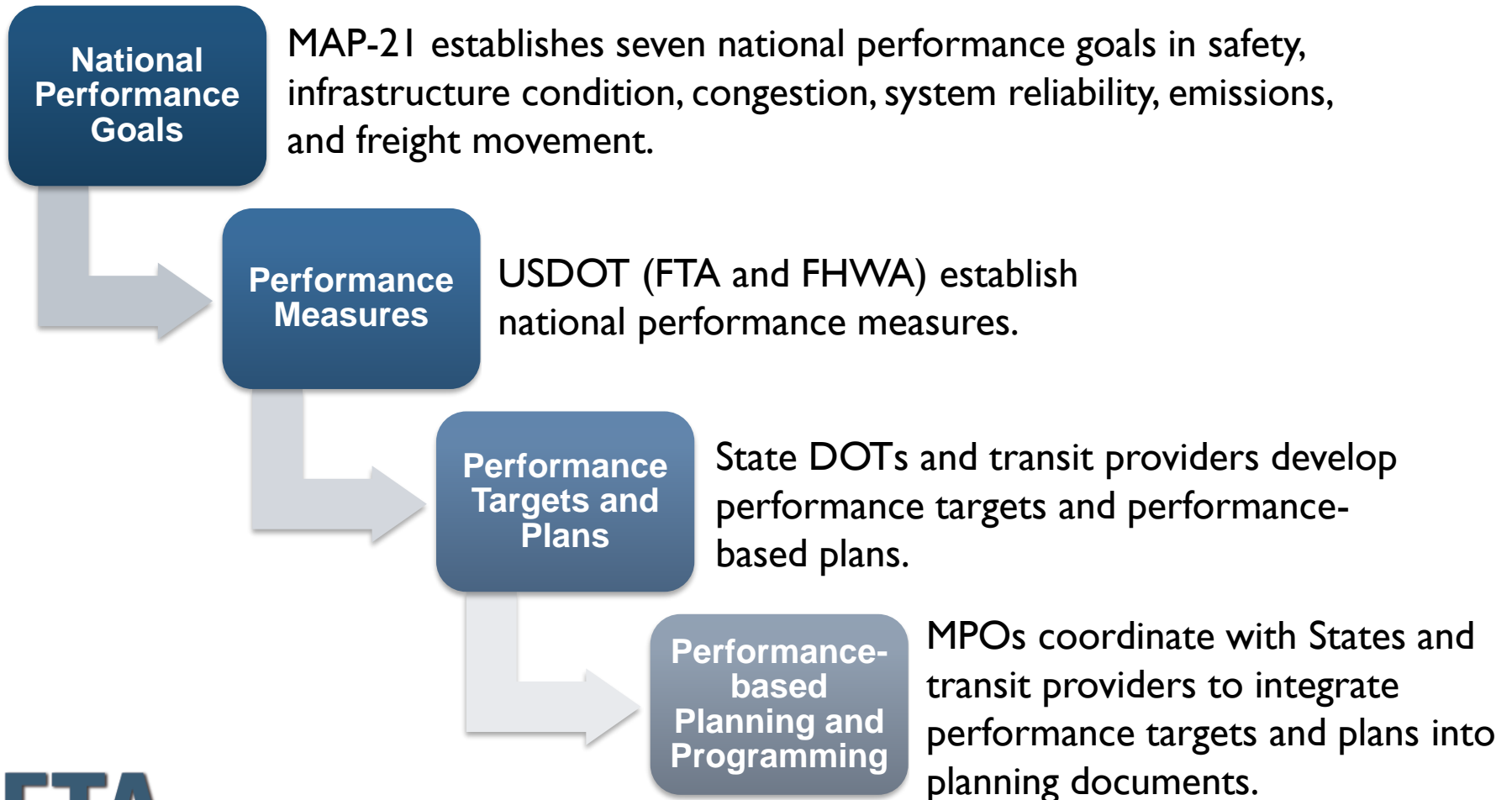
Overview

- Performance-based Planning and Programming (PBPP) requirements and framework
- Transit Asset Management in PBPP
- Safety Management in PBPP
- Example: Transit Asset and Safety Management in PBPP

Performance Management Requirements

- MAP-21 and the FAST Act require USDOT, States, Metropolitan Planning Organizations (MPOs) and public transportation providers to implement a performance management approach for Federally-supported highways and transit.
- Why?
 - Prioritize needs
 - Align resources to optimize system performance, collaboratively
 - Increase accountability and transparency

MAP-21 Performance Management Framework



Relevant Statutory Provisions, Rules and Guidance – FTA

Title 49 of the United States Code

§ 134
§ 135

**Statewide & Metro Planning,
Non-Metro Planning**

- Define Coordination for Target Selection, Planning and Programming

§ 5326

**Transit Asset
Management (TAM)
49 C.F.R. § 625**

- TAM Plan
- Definition of “state of good repair” (SGR)
- SGR Performance Measures and Targets
- NTD Reporting

§ 5329

**Public Transportation
Agency Safety Plan
(PTASP) 49 C.F.R. § 673**

- Agency Safety Plan
- Safety Performance Targets

§ 5329

**National Public
Transportation
Safety Plan**

- Safety Performance Measures

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).
- Consequences of not being in a SGR include:
 - Unacceptable safety risk
 - Decreased system reliability
 - Higher maintenance costs, and
 - Lower system performance

TAM Background

- TAM Final Rule provides a foundation for addressing the SGR backlog
- Focuses on measuring and monitoring performance and condition
- Minimizing burden on smaller transit providers
 - Two tier approach with fewer elements for small/rural
- High-level Requirements of Rule:
 - TAM Plan
 - Performance Measure Targets
 - Self-certification of compliance
 - Coordination with Planning

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
 - Condition Assessments
 - Inventory
2. Narrative report

TAM Plan Elements

1. Inventory of Capital Assets
2. Condition Assessment
3. Decision Support Tools
4. Investment Prioritization

All Providers
(Tier I & II)



5. TAM and SGR Policy
6. Implementation Strategy
7. List of Key Annual Activities
8. Identification of Resources
9. Evaluation Plan

Tier I only

Operates Rail

OR

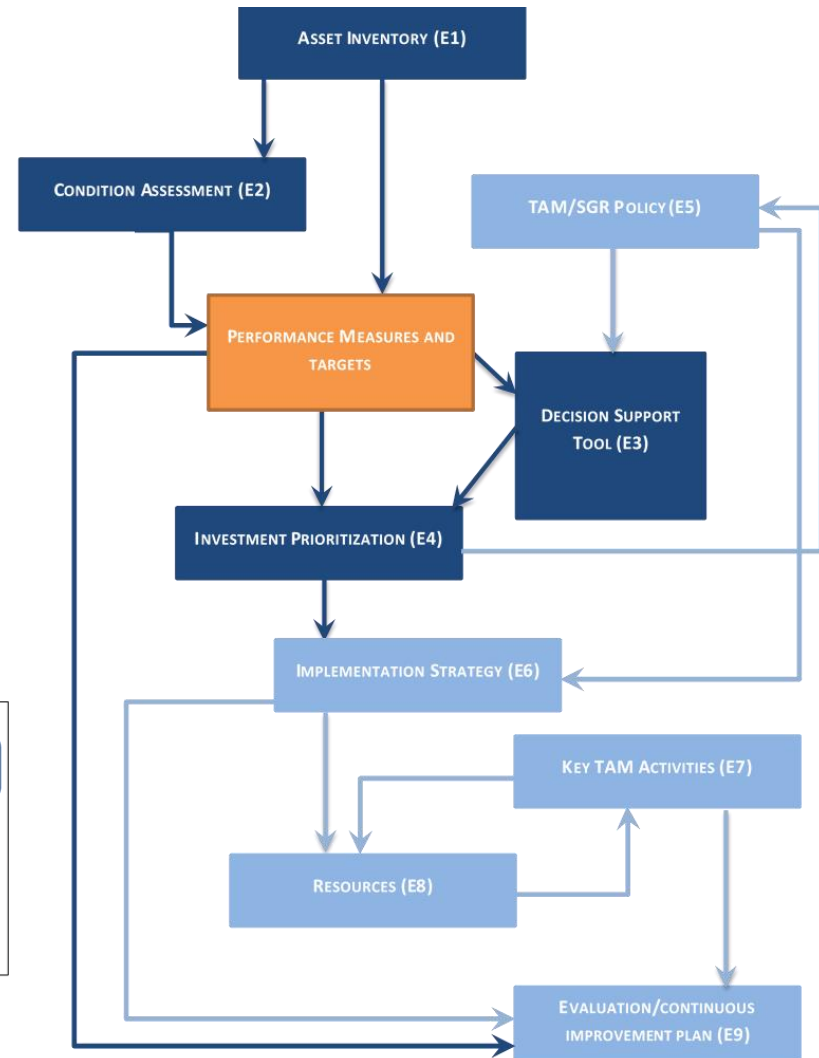
≥ 101 vehicles across all
~~fixed route~~ modes

OR

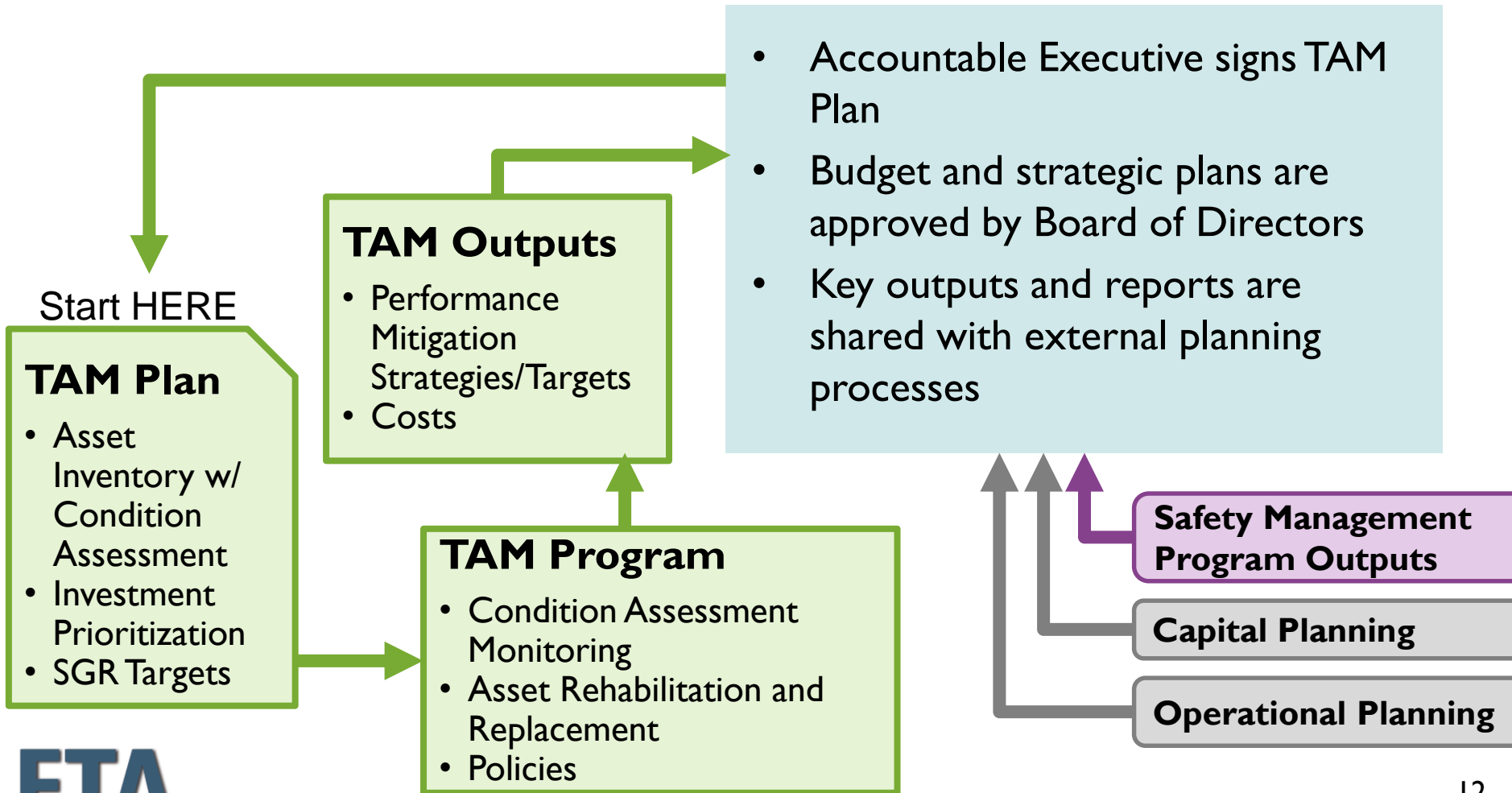
≥ 101 vehicles in one
non-fixed route mode

* FTA estimates that fewer than 20% of transit providers will do a Tier I Plan

TAM Plan Process



TAM in a Transit Agency's Planning and Programming



PTASP Background

- Congress required operators of public transportation systems that receive FTA funds to develop and implement a Public Transportation Agency Safety Plan (49 U.S.C. § 5329(d))
- Final Rule (49 C.F.R. Part 673) published on July 19, 2018
- Compliance date is July 20, 2020
- Transit agencies must implement a Safety Management System (SMS) by developing and documenting SMS processes in their Agency Safety Plan

What is Safety Management System (SMS)?

- Formal, top-down, organization-wide approach to managing safety risk and assuring the effectiveness of a transit agency's safety risk mitigation.
- Includes systematic procedures, practices, and policies for managing risks and hazards that help
 - Control risk better
 - Detect and correct safety problems earlier
 - Share and analyze safety data more effectively
 - Measure safety performance more carefully

PTASP Applicability and Requirements

| Applicability | Requirements |
|---|--|
| <p>Would Apply to:</p> <ul style="list-style-type: none"> Operators of transit systems that receive FTA funds (Section 5307) and all rail transit operators (regardless of funding source). | <p>The diagram illustrates the components of the Public Transportation Agency Safety Plan. A central box labeled 'Public Transportation Agency Safety Plan' is connected by lines to four other boxes: 'Safety Management System (SMS)', 'Safety Performance Targets', 'Rail Agencies Only: Emergency Preparedness Plan', and 'Employee Reporting Program'. Below the central box is a list of requirements for the plan.</p> <p>Public Transportation Agency Safety Plan</p> <ul style="list-style-type: none"> Approved by Accountable Executive and Board of Directors (and SSOA for rail transit agencies) Annual Review/Update Compliance with Public Transportation Safety Program/National Safety Plan Assignment of Chief Safety Officer <p>Safety Management System (SMS)</p> <p>Safety Performance Targets</p> <p>Rail Agencies Only: Emergency Preparedness Plan</p> <p>Employee Reporting Program</p> |
| <p>Would Not Apply to:</p> <ul style="list-style-type: none"> FTA recipients that do not operate transit systems. Commuter rail service regulated by FRA. Passenger ferry service regulated by USCG. Deferring applicability for operators that only receive Section 5310 and Section 5311 funds (both recipients and sub-recipients). | |

PTASP in a Transit Agency's Planning and Programming

- Budget and strategic plans are approved by Board of Directors
- Key outputs and reports are shared with external planning processes

Transit Asset Management Outputs

Capital Planning

Operational Planning

PTASP Outputs

- Safety Performance Targets
- Safety Risk Mitigations
- Costs

Safety Management System

- Identify safety hazards
- Evaluate risk mitigations
- Assign resources to address unacceptable safety risk

Accountable Executive signs Agency Safety Plan and the Board approves

Agency Safety Plan

- Establishes safety management program
- Establishes safety performance targets

Simplified Performance-based Planning and Programming (PBPP) Cycle



How did we do?

Where do we want to go?

How can we get there?

What will it take to get there?



Keys to Success

- Quality data
- Public involvement

Transit Asset and Safety Management in PBPP



States and public transit providers:

- Carry out these activities to manage transit assets and safety
- Develop inputs for and engage in broader PBPP efforts with MPOs and USDOT

Planning



Strategic Direction

- Set goals and objectives
- Develop performance measures

Strategic Analysis

- Identify insights and trends
- Set performance targets
- Coordinate performance targets “to the maximum extent practicable”
- Consider alternatives
- Develop investment priorities

TAM in Planning



Performance Measures

- USDOT set four TAM performance measures for the condition of capital assets.

Performance Targets

- SGR targets reported annually to NTD
 - Individual providers or group plan sponsors of multiple providers
 - For applicable asset classes in the four asset categories
 - Made available to MPO and State DOT
 - Submit with regular NTD report

Example of TAM Performance Targets

| Asset Category - Performance Measure | | Asset Class | FY 2019 Asset Conditions | FY 2020 Performance Targets |
|---|--|---------------------------------------|--------------------------|-----------------------------|
| Revenue Vehicles | | | | |
| Revenue Vehicles | | | | |
| Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB) | | Automobile | 55% | 45% |
| | | Bus | 15% | 13% |
| | | Cutaway Bus | 28% | 28% |
| Equipment | | | | |
| Age - % equipment or non-revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB) | | Non Revenue/Service Automobile | 67% | 67% |
| | | Trucks and other Rubber Tire Vehicles | 50% | 40% |
| | | Maintenance Equipment | 50% | 50% |
| | | Route and Scheduling Software | 100% | 100% |
| Facilities | | | | |
| Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale | | Administration | 0% | 9% |
| | | Maintenance | 6% | 12% |

Example of TAM Investment Priorities

| Project Year | Project Name | Asset/Asset Class | Cost | Priority |
|--------------|---|-------------------|----------------|----------|
| 2018 | Repower 3 gasoline hybrid electric buses to 100% Electric | RevenueVehicles | \$2,285,328.00 | High |
| 2018/2019 | Vehicle Surveillance System Replacement Proj 66 buses | RevenueVehicles | \$1,401,698.00 | High |
| 2018 | Bus Repl of 5 Gasoline hybrid with 5 2018 CNG buses | RevenueVehicles | \$603,000.00 | High |
| 2019 | 36 Hybrid Gasoline Electric HVAC rebuilds | RevenueVehicles | \$1,400,456.00 | High |
| 2019 | Transit Expantion Bus, Low Carbon Transit Program funding | RevenueVehicles | \$165,000.00 | High |
| 2019 | Bus Replacement, 2008 Gasoline hybrid, replaced with one Near Zero Emmission CNG bus arrives in late 2019 | RevenueVehicles | \$1,003,796.00 | High |
| 2019 | Cut-away Bus Transit Expantion, Route Line 70 | RevenueVehicles | \$163,275.00 | High |
| 2019 | Transit Expantion Bus, SB1 Funding | RevenueVehicles | \$165,000.00 | High |
| 2018/2019 | Bus Stop Improvement Project | Facilities | \$2,235,307.00 | High |
| 2019 | New Shop Truck, Vehicle Replacement | Equipment | \$140,000.00 | High |
| 2019 | Universal Fare System Equip, Vaults and other items | Facilities | \$2,028,122.00 | High |
| 2019 | Phase II of Vehicle and Bus Stop Infermation Survalance Systems | RevenueVehicles | \$2,540,000.00 | Medium |
| 2019 | Bus Radio Equipment Replacement | RevenueVehicles | \$732,000.00 | High |
| 2019 | Bus Operator Seat and Passanger Insert Kits 46 Buses | RevenueVehicles | \$206,478.00 | Medium |
| 2019 | Computer Server Room to house Transit Servers | Facilities | \$757,898.00 | High |

PTASP in Planning



Performance Measures

- USDOT sets performance measures for safety performance in the National Public Transportation Safety Plan.

Performance Targets

- Transit providers set safety performance targets for each measure.
- Targets are shared with the MPO and State DOT.



Transit Safety Performance Measures

Category

Criteria

FATALITIES

Total number of reportable fatalities and rate per total revenue miles by mode

INJURIES

Total number of reportable injuries and rate per total vehicle revenue miles by mode

**SAFETY
EVENTS**

Total number of reportable events and rate per total vehicle revenue miles by mode

**SYSTEM
RELIABILITY**

Mean distance between major mechanical failures by mode

Planning



- States receive safety performance targets from transit agencies to incorporate in to their STIPs.
- MPOs are required to set initial safety targets no more than 180 days after receipt of the transit safety plans from the providers, which include the providers' targets.
- If the transit safety plans are shared on July 20, 2020, the MPO's initial targets are required to be set by January 20, 2021.

Programming



- Develop plans that link investment priorities to performance targets.
- Integrate different performance-based plans.
- Develop a program of projects.
- Allocate resources.

TAM in Programming



- Transit providers and States develop TAM Plans with investment priorities to improve the SGR of capital assets.
- TAM Plans by October 1, 2018 (or later, if FTA approved an extension)
 - Individual providers or group sponsors of multiple providers
 - Sent to MPO and State DOT, and updated at least every four years

PTASP in Programming



- Transit Safety Plans completed and certified by July 20, 2020.
 - Individual providers (only 5307 recipients and sub-recipients) and rail transit agencies
 - Transit agencies review plans each year, for possible update
 - Includes safety performance targets

Programming



- States and MPOs develop Statewide Transportation Improvement Programs (STIPs) and Transportation Improvement Programs (TIPs) to achieve all performance targets.
- States and MPOs describe anticipated effects of STIPs and TIPs to make progress toward achieving performance targets in Long-Range Statewide Transportation Plans and Metropolitan Transportation Plans.

Programming



- The first descriptions of the anticipated effect of investments in the Transportation Improvement Program (TIP)
 - Triggered by the first TIP update or amendment after October 1, 2018 (TAM) or July 20, 2021 (PTASP)
- The second descriptions
 - Triggered by the next TIP update (not amendment)

Evaluation



- Implement plans and projects.
- Monitor activities.
- Evaluate performance.
- Report outcomes.

TAM in Evaluation



- Annual reports to the National Transit Database (NTD)
- Individual providers report based on fiscal year
 - Inventory & conditions of transit assets
 - Transit SGR targets Narrative report of annual changes (starting 2019)

PTASP in Evaluation



- Transit providers already submit reports to the National Transit Database (NTD)
 - Fatalities, Injuries and Safety Events (each fiscal year)
 - Total revenue miles by mode (each fiscal year)
 - Does not include “Mean distance between major mechanical failures”
 - Does not include targets

PTASP & TAM in Evaluation



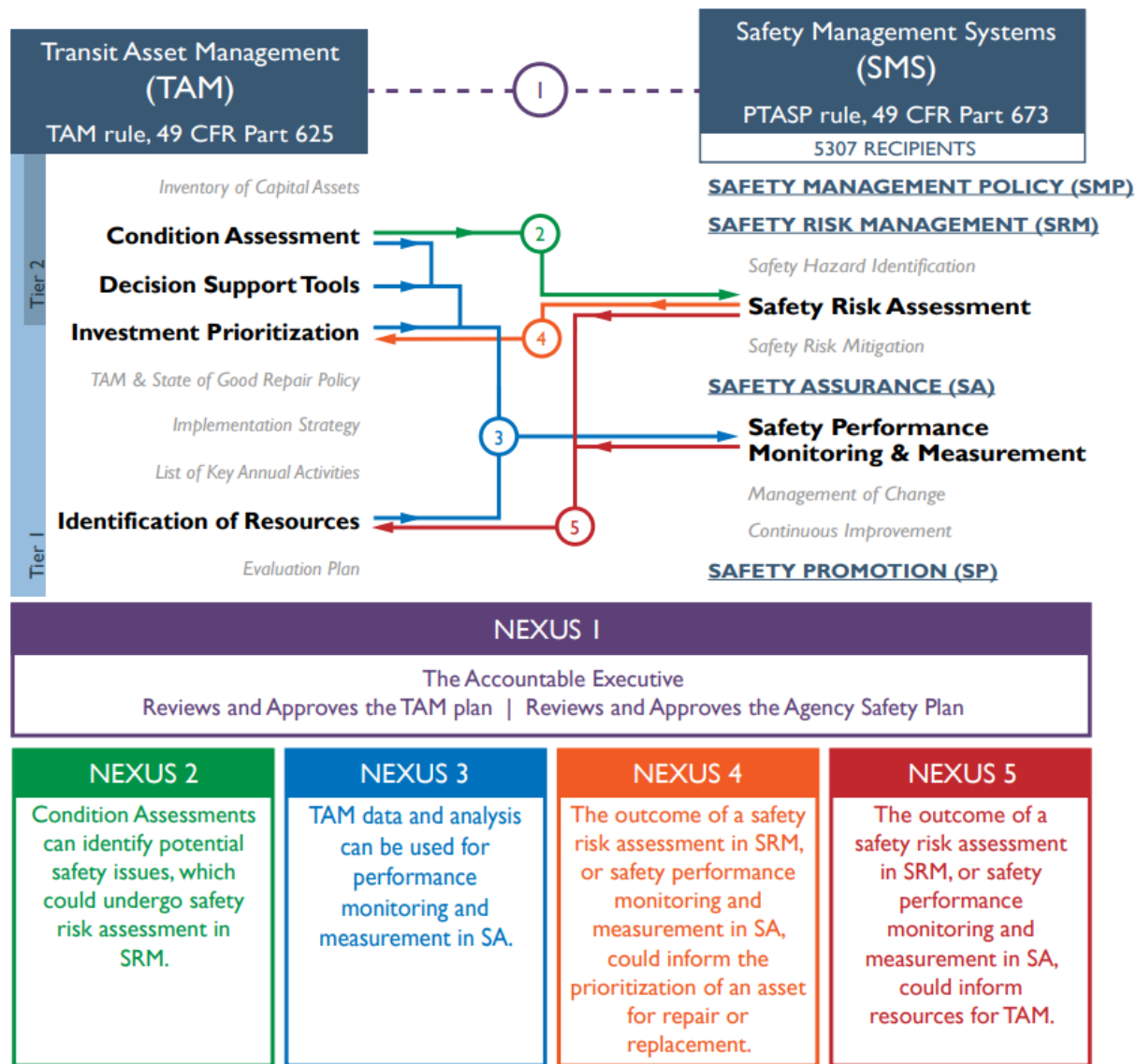
- The **first** MPO system performance report
 - Is a baseline of the existing conditions and targets
 - Triggered by the first long-range plan update or amendment after
 - First TAM Plan - October 1, 2018
 - First PTASP- July 20, 2021
 - Can include the MPO's initially-prepared targets, or updated targets
 - Based on the TAM and future-Safety measures in respective plans

PTASP & TAM in Evaluation



- The **second** MPO system performance report
 - Triggered by the next long-range plan update (not an amendment).
 - Describes how the latest (existing) conditions have changed since the baseline report, and how they compare to the targets identified in the **first** baseline report.
 - Also contains updated transit performance targets.

Nexus between TAM and PTASP



Example: Transit Asset and Safety Management in PBPP

- Through the annual target setting process for rolling stock, City Transit Agency finds that X model bus fleet has exceeded its ULB.
- Which initiates a Safety Risk Assessment through SMS process, City Transit Agency finds that there are a high number of pedestrian injuries along bus route Y due to high levels of pedestrian and vehicle traffic and fleet X also has an obsolete radio system.
- The agency proposes a safety mitigation of moving the bus stops and modifying bus operator training to reduce the safety risk, in addition to purchasing new rolling stock with newer radio system.
- City Transit Agency shares TAM and safety investment priorities and performance targets with State and MPO.
- The MPO leads a process to determine that the high safety risk bus route should be converted to a BRT operation, with new buses purchased for the BRT to replace the fleet over its ULB.

Resources

- www.transit.dot.gov/performance-based-planning
 - Frequently Asked Questions
 - Fact Sheet
- www.transit.dot.gov/regulations-and-guidance/safety/transit-safety-oversight-tso

Guidance on Transit Safety Plans

- Transit Safety Plan Template for Bus Transit
- www.transit.dot.gov/TAM