Illinois Downstate: Transit Asset Management Requirements 2020

Rural Transit Assistance Center
Annual Conference March 3-4, 2020

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Expect More. Experience Better.
Overview

• Introductions
• Annual Process Overview
• 2020 Capital Needs Survey Update
• Update on FTA Rules
• Investment Prioritization
2020 Schedule Overview
(same as last year!)
2020 Schedule Overview

- **Mar**
  - IDOT and RTAC discuss any updates necessary to Capital Needs Assessment (CNA)
  - RTAC makes required modifications to Capital Needs Surveys and grantee instructions

- **Apr**
  - RTAC distributes pre-populated Capital Needs Surveys and instructions
  - Grantees gather required data and update survey to reflect new year

- **May**
  - Grantees respond to follow-up requests from RTAC
  - RTAC reviews survey data and requests any clarifications from grantees

- **Jun**
  - Near-final survey data is run through CNA model
  - RTAC provides first draft to grantees for review and requests *performance targets input*

- **Jul**
  - Grantees provide feedback on reports and performance targets
  - Surveys and model are adjusted to generate final reports for RTAC to distribute
  - IDOT collates CNA data for NTD reporting of SGR Performance (AIM done by grantees)
Annual Schedule – Grantee Actions

Update Inventory & Facility Inspections

NTD Reporting: October

Report Performance Targets to MPO
Prepare NTD Reporting

Data Input into CNA Survey

Report Performance Targets to MPO

Today: March 3

Survey Deadline: May 1

Target Deadline: July 1
Performance targets must be reported to MPOs and NTD annually

- Current year performance data is sent to Tier II agencies in June for input on three measures
  - Revenue vehicles at or beyond useful life benchmark (ULB)
  - Non-revenue vehicles at or beyond ULB
  - Facilities below a 3.0 condition
- Grantees provide input on programmed replacements or renovations for next fiscal year
- Final targets for next year are calculated and sent to IDOT (aggregate) and grantees (individually listed) in July
- Grantees are responsible for reporting targets to MPOs in July if applicable
- IDOT is responsible for reporting aggregate group targets and narrative report to NTD in October
Remember to Use Your Checklist!

**Downstate Illinois Grantee Transit Asset Management (TAM) Annual Checklist**

**Grantee Name:**
This checklist includes all steps and information that must be provided to the Rural Transit Assistance Center (RTAC) on an annual basis. This information is the basis of the annual Capital Needs Assessment (CNA), supports National Transit Database (NTD) reporting, and the updates of the IDOT Group TAM Plan for Tier II Operators.

**General Information**
- The Accountable Executive is identified and informed of their role in approving the Group TAM Plan. Name and position of Accountable Executive:

**Asset Inventory**
- All existing Revenue Vehicles are reported in the CNA survey form for the current year.
- All existing Non-Revenue Vehicles are reported in the CNA survey form for the current year.
- All planned purchases of Expansion Vehicles are reported in the CNA survey form for upcoming years.
- All existing facilities that support public transportation services are reported in the CNA Facility Needs form for the current year.
- All planned facility replacements or facility expansions are reported in the CNA Facility Replacement Expansion form for upcoming years.
- All existing Facility Equipment assets valued above $3,500 are reported in the CNA survey form for the current year.
- All planned purchases of new equipment are reported in the CNA Facility Equipment Needs form for upcoming years.
- All existing ITS assets valued above $3,500 are reported in the CNA survey form for the current year.
- All planned purchases of new ITS assets are reported in the CNA ITS Needs form for upcoming years.

**Performance Measures**
- Performance baseline reports from the CNA are reviewed and validated.
- Plans for replacement of Revenue Vehicles and Non-Revenue Vehicles by the end of the next fiscal year are provided at RTAC.
- Plans for replacement or renovation of Facilities by the end of the next fiscal year are provided at RTAC.
- Performance targets are reviewed and approved for use in IDOT statewide target setting.
- (If applicable) Grantee performance targets are provided to MP0.

**Condition Assessment Information**
- Physical condition inspection results are included in the CNA Facility Needs survey forms for all facilities that were inspected to date.
- 1/4 of facilities are inspected annually or all facilities inspected by 2023.
- All physical condition inspection forms or other documentation of inspections are sent to RTAC for the previous year.
- Useful Life benchmarks (ULB) are included for all Revenue and Non-Revenue Vehicles in the CNA survey forms.

**For additional information, contact the Rural Transit Assistance Center (RTAC) at (630) 298-2141 or MT-Kroph@ilinois.edu**
2020 Capital Needs Survey Changes
2020 Survey Changes: Grantee tab

- Field added to input the name of the Accountable Executive on the Grantee tab
2020 Survey Changes: Revenue Vehicles tab

- On the Revenue vehicles tab, “Other” was removed as a choice for vehicle type
2020 Survey Changes: Revenue Vehicles tab

• On the Revenue vehicles tab, two new fields were added to help with NTD reporting – leave blank if not applicable to your vehicles

• Autonomous Vehicle Fleets
  • Transit agencies indicate whether fleet vehicles are autonomous. An autonomous vehicle is one “capable of performing all driving functions without human input under certain conditions.”
2020 Survey Changes: Revenue Vehicles tab

• Type of Last Renewal (if Date Rebuilt is reported):
  • **Mid-Life** Vehicle Overhaul is the systematic replacement or upgrade of vehicle systems with a useful life less than the useful life of the entire vehicle in a programmed manner. Overhaul is performed as a planned or concentrated preventive maintenance activity and is intended to enable the vehicle to perform to the end of the original useful life.
  • **Life-Extending** Rebuild is a capital activity associated with rolling stock that occurs at or near the end of a unit of rolling stock’s useful life. This results in an extended useful life for the unit consistent with the extent of the rebuild.
  • If an agency rebuilds a portion of a vehicle fleet that it reports to the NTD, it must divide the fleet and report the rebuilt vehicles separately. Agencies can only group vehicles into a fleet on the Annual Report if the vehicles are identical. Agencies should not update the original funding source in the event of a rebuild.
2020 Survey Changes: Non-Revenue Vehicles tab

- Vehicle Types for non-revenue vehicles are aligned with FTA categories for Equipment:
  - Automobiles
  - Trucks and other Rubber Tire vehicles
  - Steel Wheel Vehicles
2020 Survey Changes: Non-Revenue Vehicle Definitions

• **Automobiles:** Passenger cars, up to and including station wagons in size. Excludes minivans and anything larger.

• **Trucks and other Rubber Tire vehicles:** A self-propelled, motor vehicle designed primarily for the transportation of property or special purpose equipment, typically a service vehicle. It may consist of a chassis and body; a chassis, cab and body; or it may be of integral construction so that the body and chassis form a single unit. This vehicle category also includes pickup trucks, vans, SUVs, and minivans.

• **Steel Wheel vehicles:** In rail systems, vehicles with the specially designed cast or forged steel, essentially cylindrical element that rolls on the rail, carries the weight, and provides guidance for rail vehicles. Steel wheel vehicles exclude vehicles that are equipped for both road (rubber tires) and rail.
2020 Survey Changes: Non-Revenue ULBs

• Default useful lives are set to FTA guidance for service vehicle types
• Over-write them if they do not apply to your agency

Source: FTA, National Transit Database 2019 Policy Manual
2020 Survey Changes: Facilities tabs

• Report administrative and maintenance facilities in inventory only if you have some *direct capital responsibility*.

• Do not report administrative or maintenance facilities if there is 0% transit responsibility.

• Only need to maintain a count of other maintenance facilities for NTD reporting, not detailed inventory.
Mileage Validation

• Please check that the date of the Life-to-Date (LTD) Mileage reading for vehicles falls after the Date Built

• Annual average mileage for a vehicle type cannot be calculated correctly if mileage reading is before date built
2020 Survey Changes: Decommissioned Assets

- A new tab has been added to account for decommissioned assets which are valued at $5,000 or more
  - Fields include Identifying Number, Year Purchased, Year Disposed/Sold, Disposal Location, Buyer and Sale Price (if applicable)
Update on FTA Rules
National Transit Database guidance

• An agency is required to report an asset to the NTD in the fiscal year that the agency begins using the asset for public transportation service. Agencies should not report assets that are being assembled, assets under construction, or assets that are in testing at the end of the fiscal year.

• Existing NTD reporters must designate their group plan sponsor, if reporting as a Tier II agency. The agency will be prompted to declare and confirm their group plan sponsor every four years, following the TAM reporting cycle. Any new reporters that are required to report to the NTD per TAM legislation, must be added by their designated group plan sponsor.
Facilities reporting

• Inventory reporting:
  • Passenger Facilities
    • All passenger stations and facilities including Stations on ROW, bus terminals, and transfer stations
    • Bus stops should NOT be inventoried
  • Admin/Maintenance Facilities
    • Count of all maintenance facilities used to support revenue service (form A-10)
    • Detailed inventory of all facilities for which the agency has capital responsibility (A-15)

• Condition assessment & targets:
  • Passenger Facilities
    • All passenger stations/facilities for which the agency has capital responsibility (on 1 to 5 scale)
  • Admin/Maintenance Facilities
    • All admin or maintenance facilities for which the agency has capital responsibility (on 1 to 5 scale)
Direct Capital Responsibility Definition

• An agency has direct capital responsibility for an asset if any of the following are true:
  • The agency owns the asset,
  • The agency jointly owns the asset with another entity, or
  • The agency is responsible for replacing, overhauling, refurbishing, or conducting major repairs on an asset, or the cost of those activities is itemized as a capital line item in the agency’s budget.

Performing minimal preventive maintenance work on an asset, like cleaning, does not in itself indicate direct capital responsibility for the asset. An agency must have direct capital responsibility or management or oversight responsibilities for the line item project.
Facility Condition Assessments

- Facilities condition assessments must be updated every four years at minimum.
- In Report Year 2019, agencies must report at least 50 percent of their facilities condition assessments, continuing to report a minimum of 25 percent annually until all condition assessments have been reported in Report Year 2021.
- For Group TAM Plans, the 25 percent annual minimum applies to the group as a whole and not to individual participants.
  - IDOT must have 75% of all condition assessments documented this year
- If an agency's requirement for the number of assessed facilities is between two whole numbers, the agency must round up. For example, if an agency has three facilities, 50 percent would be 1.5 facilities, so the agency must report condition assessments for two of the three facilities.

New Fields for Rail Vehicles

• Reporting year 2019 required rail fleets to report total vehicles with
  • Event Data Recorders
  • Emergency Lighting System
  • Emergency Signage
  • Emergency Low-Location Path Marking

• Only applicable to St. Clair County
Investment Prioritization
Capital Needs Assessment Investment Prioritization and Methodology

• The CNA model must prioritize investments to decide which investment needs should be addressed first when funding is constrained

• Prioritization is performed for each individual asset and is based on the following factors:
  1. Asset Condition
  2. Service Reliability Impact
  3. Safety and Security Impact
  4. Reduced O&M Costs

Grantees participated in prioritization webinar July 2018 to support development of the Group TAM Plan, where this process is documented.
What is Investment Prioritization?

**Preliminary Screening**

1) Checks required lifecycle events and
2) Determines which assets are NOT in a state of good repair

**Prioritization**

1) Asset Condition (65%)
2) Service Reliability (20%)
3) Safety & Security (10%)
4) O&M Costs (5%)

**Programmatic Funding**

- Commitments to ongoing projects
- Restricted finding

**Funded Needs**

**Unfunded Needs**
Investment Prioritization Cycle

Prioritization is repeated for each year over the next 10 years

- Individual assets scored each year based on asset condition, service reliability, safety/security, ridership and O&M cost impacts
- Highest prioritization score assets funded first
- Assets not funded go into backlog, condition decays further

<table>
<thead>
<tr>
<th>Current Conditions</th>
<th>Capital Needs Assessment</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Inventory</td>
<td>Assess SGR Needs</td>
<td>Forecast</td>
</tr>
<tr>
<td>• Documents current conditions</td>
<td>• What needs to be done?</td>
<td>• Priorities</td>
</tr>
<tr>
<td></td>
<td>Score/Rank Investments</td>
<td>• Backlog</td>
</tr>
<tr>
<td></td>
<td>• What has priority?</td>
<td>• Expenditure</td>
</tr>
<tr>
<td></td>
<td>Reinvest Subject to Funding</td>
<td>Repeat for next year</td>
</tr>
<tr>
<td></td>
<td>• What can we afford?</td>
<td></td>
</tr>
</tbody>
</table>

Input: Iterate from year 0 to year 10...

Output: Iterate from year 1 to year 10...
Multi-Criteria Decision Analysis

- Each criterion is scored on a 1 to 5 scale (5 being the highest)
- Scores are weighted, summed, and converted to a 100 point scale

**Multi-Criteria Decision Analysis (MCDA) Based Approach**

**Asset Condition**
- Score: Declining condition yields higher priority score

**Service Reliability**
- Score: Reduced risk of service failures/disruptions

**Safety & Security**
- Score: Reduced risk of injuries, fatalities, and/or property damage

**O&M Costs**
- Score: Impact on reducing Operating & Maintenance costs

**Weighted Average Total Investment Score:**
- (Converted to 100 Point Scale; High Score = High Priority)

- Asset Condition: 65%
- Service Reliability: 20%
- Safety & Security: 10%
- O&M Costs: 5%
Condition Scores

- Asset conditions are estimated using model decay curves
  - Driven by asset or component age and useful life or mileage for vehicles
  - Rated on a 1 to 5 scale (5 being the highest)
- Condition scoring reverses the FTA condition rating
  - This is to convert it so lower condition assets will get a higher priority
Safety & Security, Service Reliability and O&M Cost Scores

- Scores are set by asset type and vary based on asset type’s impact on each criterion
- For example:
  - All revenue vehicles score high for all criteria
  - Support facilities and equipment vary based on service impacts

<table>
<thead>
<tr>
<th>Asset Description</th>
<th>Safety and Security</th>
<th>Service Reliability</th>
<th>OM Cost Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trackwork</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Administrative Buildings</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Bus Maintenance Buildings</td>
<td>4</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Office Computers</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Software</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Office Furniture</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Maintenance Equipment</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fuel Island</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Wayside Train Control</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Bus Shelters</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Station Building</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Ferry Boat</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Heavy Rail Passenger Car</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Motorbus</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Automobile</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Heavy-Duty Van</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Non-Revenue Vehicle</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>
## Example Prioritization

<table>
<thead>
<tr>
<th>Asset</th>
<th>In-Service</th>
<th>Useful Life</th>
<th>Condition Rating</th>
<th>Condition Score</th>
<th>Safety Score</th>
<th>Reliability Score</th>
<th>Cost Impact Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutaway</td>
<td>2011</td>
<td>12</td>
<td>2.3</td>
<td>2.7</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Maintenance Facility</td>
<td>1983</td>
<td>50</td>
<td>2.5</td>
<td>2.5</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>40' Diesel Bus</td>
<td>2008</td>
<td>12</td>
<td>1.9</td>
<td>4.1</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Van</td>
<td>2010</td>
<td>10</td>
<td>2.0</td>
<td>3.0</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Non-Revenue Car</td>
<td>2013</td>
<td>10</td>
<td>2.4</td>
<td>3.6</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

*Individual assets shown*
# Example Prioritization (continued)

<table>
<thead>
<tr>
<th>Asset</th>
<th>Condition Score (65%)</th>
<th>Safety Score (10%)</th>
<th>Reliability Score (20%)</th>
<th>Cost Impact Score (5%)</th>
<th>Weighted Score (1-5)</th>
<th>Priority Score (0-100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutaway</td>
<td>2.7</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3.51</td>
<td>70</td>
</tr>
<tr>
<td>Maintenance Facility</td>
<td>2.5</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2.43</td>
<td>49</td>
</tr>
<tr>
<td>40’ Diesel Bus</td>
<td>4.1</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4.42</td>
<td>88</td>
</tr>
<tr>
<td>Van</td>
<td>3.0</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3.15</td>
<td>63</td>
</tr>
<tr>
<td>Non-Revenue Car</td>
<td>3.6</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3.34</td>
<td>67</td>
</tr>
</tbody>
</table>
Summary of Prioritization

• Each year in a model run, the CNA model projects which assets are due for replacement
  • Based on age or mileage, for vehicles
  • Based on age and agency plans for other asset types

• Each asset is assigned a priority score
  • Each is assigned a 1 to 5 for each of the prioritization criterion
  • Then a 0 (lowest) to 100 (highest) score is calculated based on the above score and overall weighting

• Assets are grouped by asset type and agency to establish a singular, aggregated score for comparison to grant requests
  • The scores within these groups are weighted by asset cost
IDOT Process for Utilizing Prioritization

- The complete list of assets and asset groupings is ranked by the 0 to 100 score for current year: FY20
- IDOT will compare funding requests to ranked groupings of assets by agency
  - Starting at 100, then working down the list towards 0 until funding is exhausted
- Assets not funded for replacement are considered again in the subsequent analysis year
### Sample Prioritization Scoring Output

<table>
<thead>
<tr>
<th>Agency</th>
<th>Investment Type</th>
<th>Asset Class</th>
<th>Class Type</th>
<th>Current Year Cost</th>
<th>Current Priority Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloomington-Normal</td>
<td>Both</td>
<td>5. Systems</td>
<td>Facility surveillance Cameras</td>
<td>$50,000.00</td>
<td>16.40</td>
</tr>
<tr>
<td>Public Transit System</td>
<td>Replacement</td>
<td>2. Facilities</td>
<td>Building Structure</td>
<td>$423,428.99</td>
<td>35.85</td>
</tr>
<tr>
<td>Bloomington-Normal</td>
<td>Replacement</td>
<td>1. Vehicles</td>
<td>Car</td>
<td>$214,310.67</td>
<td>77.82</td>
</tr>
<tr>
<td>Public Transit System</td>
<td>Replacement</td>
<td>2. Facilities</td>
<td>Equipment</td>
<td>$39,299.06</td>
<td>62.85</td>
</tr>
<tr>
<td>Bloomington-Normal</td>
<td>Replacement</td>
<td>1. Vehicles</td>
<td>Large Bus (&gt;35 pass)</td>
<td>$6,050,704.61</td>
<td>69.24</td>
</tr>
<tr>
<td>Public Transit System</td>
<td>Replacement</td>
<td>1. Vehicles</td>
<td>Medium Bus (25-35 pass)</td>
<td>$3,700,430.92</td>
<td>76.95</td>
</tr>
<tr>
<td>Bloomington-Normal</td>
<td>Replacement</td>
<td>1. Vehicles</td>
<td>Medium-Duty (14-pass)</td>
<td>$630,073.37</td>
<td>78.38</td>
</tr>
</tbody>
</table>
Closing
Need More Information?

• The Cheat Sheet provides definitions and guidance
• The Checklist provides a detailed “to do” list
• The Group TAM Plan & flier explain how we got here and where we are going
Questions?

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