Using Decision Support Tools for Transit Asset Management

February 3, 2022

David Juba, Susquehanna Regional Transportation Authority
Darin Stavish, Pierce Transit
Presentation Materials and Zoom Functionality

www.transit.dot.gov/TAM

Select "TAM Events" in the sidebar and navigate to "Webinar Materials"
TAM Updates

• First required TAM Plan update is due October 1, 2022
• 2022 FTA Transit Asset Management (TAM) Virtual Roundtable

Save the date - July 19, 2022
FTA will host the thirteenth TAM Roundtable as an online event on Tuesday, July 19.
APTA TAM Resources

APTA TAM Resource Page

• APTA Recommended Practices
  – Using Performance Targets to Drive a Transit Asset Management Program
    » Describes a strategy for setting short-, mid- and long-term condition measures and how to use performance targets to drive an agency's TAM program.
  – Using Asset Criticality to Make More Informed Decisions in a Transit Agency
    » Introduces key concepts in asset criticality, provides worked examples for determining asset criticality using three different methods, and presents a framework for preparing for and performing a criticality assessment.

• TAM Plan examples
NTI Training Course

Enhancing Your Transit Asset Management Program with Lifecycle Management

**Monday, February 14, 2022—Thursday, February 17, 2022**
1:00pm – 3:30pm ET

**Monday, March 14, 2022—Thursday, March 17, 2022**
1:00pm – 3:30pm ET

Sign up today!

Speakers

David Juba  
Planning Manager  
Susquehanna Regional Transportation Authority (SRTA)

Darin Stavish  
Principal Planner  
Pierce Transit
Engaging the Utility of Decision Support Tools

Presented by:
David Juba, Planning Manager
Susquehanna Regional Transportation Authority (SRTA)
SRTA Overview

- Recent merger of two systems – Central Pennsylvania Transportation Authority (York, PA) and Capital Area Transit (Harrisburg, PA).
- Fixed Route/Commuter Bus - 59 routes across 4 counties.
- Demand Response - Operate services across 11 counties in South Central PA.
- Approximately 442 rolling stock, 37 non-revenue vehicles, and 12 facilities maintained across large geographic area.
- CPTA had a Tier 1 Plan based on >= 101 vehicles in non-fixed mode.
Introduction to Transit Asset Management

- PTASP and TAM requirements viewed as opportunity to improve performance-based planning.
- We had a framework of individual procedures and SOPs, but not any cohesive plan or lead.
- TAM Plan Framework:
  - Create a compliant, functional, and “living” program.
  - Connect TAM to mission objectives.
    - Safety, Service, and Stewardship.
  - Recognize/improve on weaknesses in the current process.
    - Lack of internal champion.
    - Inconsistency in practice internally and among peers.
    - Lack of Decision Support Tools.
  - Coordinate, Implement, and Monitor.
The Capital Planning Tool (CPT)

• Primary decision support tool of SRTA’s TAM Plan.
• Based on TransAM, an open-source asset management platform.
• Designed to support PA Bureau of Public Transportation (BPT) and transit agencies.
• The CPT improved or expanded the agencies capabilities in the following categories:
  • Weaknesses Resolution.
  • Transparency and Reduction of Silos.
  • Capital Planning Process.
  • Data, Analytics, and Reporting.
Resolved Weaknesses & Removal of Silos

- Resolved Weaknesses
  - TAM Champion became CPT Manager.
  - Significantly improved comparability of assets and record keeping.
  - Provided a one-stop-shop for agencies across the state and made best practice discussion possible.

- Transparency and Silos
  - Everyone in agency with a role in this process has access and permissions in CPT.
  - CPT Manager retained responsibility to update and edit.
  - Improved regular capital meetings due to everyone starting on a similar understanding.
Capital Planning Process

• Significant improvement to capital planning process.
  • Provided a means of tracking annual project needs, lifecycles, funding sources and availability, shadow vehicle planning, etc.
  • Assets were tracked as part of unconstrained plan funding request and carried through the capital process for the State.
  • Assets replaced or disposed in the system could still be identified in the system along with their capital information.
Data and Reporting

- Access to quick visualizations, charts, and reports.
- Advanced query and filtering capabilities.
- Ability to update and modify vehicle records.
- Historic record and cookie crumb trail.
- Annual auditing by external partners.
CPT Impact on TAM

- Improved incorporation of the EUL vs. ULB windows.
- More holistic vision of capital planning beyond rolling stock.
- Increased specificity of asset groupings and fleet configuration needs across the system.
- Helped identify fleet group cost comparability and “red-flags” for future builds.
- Expanded our condition assessment from age, to age and mileage, to age and mileage “plus” using detailed physical condition assessments.
- Promoted understanding of agency needs in upgrading maintenance software.
- Improved transition of CPTA and CAT to SRTA through data comparability.
TAM 2022 Update Considerations

• Updating SOPs
  • Needs to remain clear as processes change or migrate along with updates to CPT functionality.
  • Incorporate differences between CAT and CPTA.

• Investment Prioritization
  • While the CPT provides better tracking, it is still limited in capabilities to tie prioritization or importance to different capital needs. This process is still done manually.
Thank you!

Contact Information:
David Juba, SRTA Planning Manager
Email: djuba@rabbittransit.org
Phone: 717-849-0722
Poll 1
A Bit of Information on Pierce Transit

292 Square Miles of Service Area

13 Cities, Towns, JBLM, and Unincorporated Areas

70% of Pierce County’s population served
Public-Facing Facilities

- 12 Transit Centers, Stations and Park & Rides
- 2,171 Bus Stops
- 553 Bus Stops with Shelters
Our Three Largest Capital Objectives

1. MOBI
   Lakewood Base Renovation

2. STREAM
   All-New Bus Rapid Transit

3. ELECTRIC
   Powered, Zero Emissions Buses
MOBI
Maintenance & Operations Base Improvements

$185M
MOBI Projects Cost Estimate
Annual Project Selection Process

Board/ET: Strategic Goals

- Capital Request draft to PMO
- Resource meeting
- Presentation to POG (2022)
- Scoring/Prioritization
- Pre-Budget Portfolio
- Budgeting Process
- Project/ Cap. Purchase Portfolio
- Transit Development Plan

Legend:
- PMO Facilitated Activities
- Related Process
- Long Range Plans

- PMO Facilitated Activities
- Related Process
- Long Range Plans
# 2021-2026 Business Case

<table>
<thead>
<tr>
<th>Project Number:</th>
<th>571</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Title:</td>
<td>South Hill Mall TC Renewal</td>
</tr>
<tr>
<td>Proposer:</td>
<td>Monica Adams</td>
</tr>
<tr>
<td>Sponsor:</td>
<td>Frank Castro</td>
</tr>
<tr>
<td>Project Manager:</td>
<td>Monica Adams</td>
</tr>
<tr>
<td>Desired Starting Year:</td>
<td>2021</td>
</tr>
<tr>
<td>Has the request been proposed before? If so, what year and title?</td>
<td>Yes, 2020 same name</td>
</tr>
<tr>
<td>Board Approved Project Budget:</td>
<td>$960,000</td>
</tr>
</tbody>
</table>

**Type of Request:** Replacement/State of Good Repair (SOGR)

**Description:**

**Life Expectancy:** 15 years

**Strategic Goal:**

Customer Focused - Provide transportation services that meet our current and potential customers' needs.

**Applies Because:**

- customers will benefit from better lighting, improved pedestrian pathways and a smoother ride at the transit center. Operators will benefit from restroom enhancements. And our utility bill will decrease based on more energy efficient lighting.

**Problem/Opportunity and Anticipated Results:**

Please describe the project in 500 words or less, what opportunity will it provide?

- The concrete bus way is significantly cracked. The shelter and restroom building roofs need repair and painting. The restrooms need updating and the lighting needs upgrading. Pedestrian pathway and ADA upgrades are also needed.

---

## Estimate of Project Costs

<table>
<thead>
<tr>
<th>Deliverable(s)</th>
<th>Capital Costs incl. tax (dependent on location)</th>
<th>Capital Contingency (incl. 5% annual inflation)</th>
<th>Capital Costs with Tax and Contingency</th>
<th>Operating Costs incl. tax (dependent on location)</th>
<th>Operating Contingency</th>
<th>Operating Costs with Tax and Contingency</th>
<th>Total Project Amount</th>
<th>Requested Funding Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus way repairs, restroom and lighting upgrades, shelter and building paint, glass replacement</td>
<td>$872,500</td>
<td>$87,250</td>
<td>$960,000</td>
<td>$</td>
<td>$</td>
<td>$960,000</td>
<td>$960,000</td>
<td>2021</td>
</tr>
</tbody>
</table>

**Total Project Cost Estimate:** $960,000

**Cost Assumptions:** based on Stemper's cost estimate

---

## Must Do | Should Do | Could Do | Won't Do

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget: $6,209,100</td>
<td>Budget: $2,902,462</td>
<td>Budget: $7,242,836</td>
<td>Budget: $8,37,303</td>
</tr>
<tr>
<td>Score: 775</td>
<td>Score: 461</td>
<td>Score: 389</td>
<td>Score: 78</td>
</tr>
<tr>
<td>Rank: 1</td>
<td>Rank: 3</td>
<td>Rank: 10</td>
<td>Rank: 12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network Infrastructure Replacement 2021</th>
<th>South Hill Mall TC Renewal - additional scope</th>
<th>Vanpool Replacement 2021</th>
<th>IT Area Remodel Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget: $760,000</td>
<td>(not all funds in TC budget)</td>
<td>Budget: $814,118</td>
<td>Budget: $102,920</td>
</tr>
<tr>
<td>Score: 598</td>
<td>(not all funds in TC budget)</td>
<td>Score: 381</td>
<td>Score: 47</td>
</tr>
<tr>
<td>Rank: 5</td>
<td>(not all funds in TC budget)</td>
<td>Rank: 4</td>
<td>Rank: 13</td>
</tr>
</tbody>
</table>

| Call Center Software Replacement | | | |
|----------------------------------| | | |
| Budget: $55,000                  | | | |
| Score: 319                       | | | |
| Rank: 6                          | | | |
1. Executive Summary

1.1. Property Information and General Physical Condition

The property information is summarized in the table below. More detailed descriptions may be found in the various sections of the report and in the Appendices.

<table>
<thead>
<tr>
<th>Property Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Address</td>
<td>601 Puyallup Avenue, Tacoma, Washington 98421</td>
</tr>
<tr>
<td>Primary Mode Served at Facility</td>
<td>Fixed Route Bus</td>
</tr>
<tr>
<td>Passenger or Parking Facility Type</td>
<td>Parking Structure</td>
</tr>
<tr>
<td>Site Developed</td>
<td>1997</td>
</tr>
<tr>
<td>Renovated</td>
<td>2016</td>
</tr>
<tr>
<td>Current Occupants</td>
<td>Pierce Transit</td>
</tr>
<tr>
<td>Greyhound Bus Lines</td>
<td></td>
</tr>
<tr>
<td>Percent Utilization</td>
<td>100%</td>
</tr>
<tr>
<td>Management Point of Contact</td>
<td>Duane Waken</td>
</tr>
<tr>
<td>Number of Buildings</td>
<td>Two structures - assessed as one site</td>
</tr>
</tbody>
</table>

1.2. Poor and Marginal Condition Assets

<table>
<thead>
<tr>
<th>Immediate Repairs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Description</td>
</tr>
<tr>
<td>Throughout</td>
<td>Elevators: East Elevator #2 is Out of Order</td>
</tr>
<tr>
<td>East Garage</td>
<td>Water Heater, Electric</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
</tbody>
</table>

1.3. Facility Condition Rating

One of the major goals of the FTA is to calculate the Facility Condition as defined by the Federal Transportation Administration (FTA). The Facility Condition is determined by using the Condition Assessment Calculation as provided in the FTA Transit Facility Performance Measure Reporting Guidebook (FTA Guidance), published in April 2017. A facility is deemed to be in good repair if it has a condition rating of 3, 4, or 5 on the FTA Transit Economic Requirement Model (TERM) Condition Rating scale. Additional information on the calculation methodology is provided in Section 2 of this report.

The table below shows the calculation of the Facility Condition Rating for this facility by using the FTA Weighted Average Condition of the Primary Levels. For the purposes of this report the condition of the site surrounding this building is included in a separate site report prepared by BY.

Generally, the Facility appears to have been constructed within industry standards in force at the time of construction. Based on the FTA TERM Condition Rating Scale, the Facility is in Adequate overall condition. Appendix D of this report contains the full calculations that are summarized in the below table.

<table>
<thead>
<tr>
<th>Tacoma Dome Station East and West Garage</th>
<th>Building Area = 733,100 SF</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FTA Primary Level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replacement Cost</td>
<td>TERM Scale Condition Rating</td>
</tr>
<tr>
<td>Substructure</td>
<td>$20.54 $15,059,285</td>
<td>4.00</td>
</tr>
<tr>
<td>Shell</td>
<td>$74.54 $54,663,496</td>
<td>3.91</td>
</tr>
<tr>
<td>Interiors</td>
<td>$0.19 $137,592</td>
<td>3.22</td>
</tr>
<tr>
<td>Conveyance</td>
<td>$1.16 $847,351</td>
<td>2.39</td>
</tr>
<tr>
<td>Plumbing</td>
<td>$0.00 $965,659</td>
<td>3.00</td>
</tr>
<tr>
<td>HVAC</td>
<td>$0.30 $217,230</td>
<td>3.06</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>$0.07 $48,658</td>
<td>2.82</td>
</tr>
<tr>
<td>Electrical</td>
<td>$5.48 $4,016,771</td>
<td>3.15</td>
</tr>
<tr>
<td>Equipment</td>
<td>$0.00 $706</td>
<td>3.00</td>
</tr>
<tr>
<td>Site</td>
<td>$1.66 $1,215,483</td>
<td>3.36</td>
</tr>
<tr>
<td></td>
<td>Total $103.92 $77,152,237</td>
<td>Subtotal</td>
</tr>
</tbody>
</table>

The FTA Primary Level Replacement Costs are calculated by totaling the Secondary Level Costs for each Primary Level. The Secondary Level TERM Scale Condition Ratings and cost calculations are included in Appendix D.

1.4. Follow-Up Recommendations

No additional study is required.
In Development

1. **Capital Improvement Plan**
   - Goal to have in place by Summer 2022

2. **Enterprise Asset Management System**
   - Goal to have in place by Fall 2022
Utilizing FTA Resources

TERM Lite

• Updating Vehicles, Systems, and Facilities Inventories
• Model Outputs - Planning Scenarios and Funding Requirements
• Using Prioritization Criteria Settings and Weights
• Identifying Current SGR Backlogs

TERM Lite Challenges

• Customizable Asset Inventory Publisher Matrix
• Standardized Reports Formatting/Orientation
• Age of Software Program (v2.3): 2015
Utilizing FTA Resources (cont.)

TAMTEMPLATE

- Adding Updated PMs & Targets: 2022-2025
- Aligning Capital Asset Inventory Tables with NTD
- Developing or Refining TAM Vision, Goals, and Objectives
- Documenting SGR Policy and Continuous Improvement Approach

TAMTEMPLATE Suggestions

- Include a mock transit agency’s output report
- Option to align capital inventories with TERM Lite too
- Provide a “Save and Review Draft” option (i.e., progress to date)
Thank You for Your Time

Any Questions?

Email
dstavish@piercetransit.org

Office
253.983.3329
Poll 2
Q&A