Fourth State of Good Repair Roundtable
Asset Management System Implementation and Integration

“MARTA’s AMP Evolution”

Presented by
David M. Springstead
Senior Director of Engineering & Development

Developed by
Susan Thomas
Asset Management/SGR Project Manager
&
Peter Bruno
Asset Management/SGR Business Analyst

United States Department of Transportation
Federal Transit Administration
Topics

- Vision & Evolution
- Organizational Structure
- AMP System Model: Components
- Lessons Learned / Takeaways
- Benefits
Implement a single MARTA-wide system for **condition-based asset replacement**, using a consistent set of prioritization criteria.

Establish a **systematic program** to prioritize and identify projects in the long-range Capital Improvement Plan.

Provide a **continual flow of information** for establishing the priority of **capital initiatives** properly aligned with MARTA’s Strategic Priorities.

**Deliver projects** using the most cost effective delivery method. **Deliverables** that assist the Authority to manage their investment over its **complete life cycle**.
AMP Timeline

  - Rail System Build – Out 38 Sta.
  - First MMIS System
  - Condition Assessment Sets up the 10 Year CIP

- **2006 – 2007 – 2008**
  - New EAM System, Maximus (FASuite, Asset Works, Trapeze)

  - System Wide Safety Assessment
  - Asset Management Phase 1, Condition Assessment, ABS
  - Project Delivery & Controls Re-engineering
  - Asset Mgmt Phase 2, CIP Module, Decision Tools (FTA funded)

**Current Effort**

*Renewing, Rebuilding, Reinvesting*
MARTA’s AMP Organization

SGR Asset Management Project Team Structure

- **EMT CEO, DGM, AGM**
- **Project Executive Sponsor AGM**
- **Steering Committee Directors**
- **Project Director**

**Production Team**
- **Task Specific Work Groups**
  - **Project Manager**
  - **Decision Tools**
    - **Project Delivery/Project Control**

**Governing Team**
- **Operations**
- **Risk Management**
- **Safety**
- **Quality Assurance**
- **Budget**
- **Technology**
- **Finance**
- **Procurement**
- **Police**
- **Maintenance**
Renewing, Rebuilding, Reinvesting

Transit State of Good Repair Continuum

This continuum helps agencies assess the state of ...

- Asset Data
- Asset Mgmt System
- Capital Program
- Decision Tools
- Project Delivery Program

Pro: Assessment of “big picture”
Con: Can not predict unexpected events

What do we need to do now to keep assets in good operating condition?

What is our inventory of projects? / Which projects have priority for next CIP

Capital Projects Database

What are our long term capital needs? What is the funding gap? What is the SGR backlog?

Decision Support Tools

Pro: Strong understanding of current needs
Con: Not focused on large, long-term events

5 Year CIP, Condition Assessments

What is the current condition of our assets?
What investments have the highest priority?

Maintenance Management Systems

Pro: “Real time “ info on conditions
Con: Very detailed, not suitable for assessing the “big picture”

Short-Term

Medium-Term

Long-Term

Tactical

Time Frame of Analysis

Strategic
MARTA’s **Systems Approach to AMP**

Executive decision making bolstered by **improved asset management intelligence**!

Requirements driven: Internal processes support the AMP Plan!
MARTA’s Fully Integrated AMP System Model

Enterprise Asset Management
- Operate & Maintain
- Evaluate & Replace

Non Asset Based Projects
- FA Suite Capital Planning Module
  - Scoping & Screening
  - Develop CIP Candidate

Project Development
- Decision Tool Project Selection

Project Adopted in Capital Budget

Asset Delivery
- Asset Life Cycle Cost Tracking

Project Delivery
- Initiation
- Closeout
- Construction & Implementation
- Planning
- Design
- Procurement
- PD/PC

Project Controls
Enterprise Asset Management - Asset Database

Priority Codes:
1. Life Safety Critical
2. Operation Critical
3. Operation Support
4. Operation Enhance
5. Operation Expansion
6. Failed
7. Decommissioned

Condition Codes:
5. Excellent
4. Good
3. Adequate
2. Marginal
1. Poor

Minimum Req’mts:
1. Equipment ID
2. Description
3. Asset Category
4. Equipment Type
5. EUL
6. Location
7. Life Cycle Status
8. Condition ID
9. Date in Service
10. Original Cost
11. Planned Retirement

- Daily management of asset data (PM, PdM & I)
- Trusted, readily accessible data
- Triggers procurement decisions
- Cornerstone of our Capital Improvement Plan
Capital Improvement Summary

(This report pulls Life Cycle Code 1 to 5. LV's columns note only relationship between equipment)

Parameters

- Asset Category: COM
- Equipment Type(s): [ALL]
- Location(s): [ALL]
- Equipment(s): [ALL] to [ALL]
- Life Cycle Status(s): 1, 2, 3, 4, 5
- Condition Code(s): 1, 2, 3, 4, 5
- EUL Code(s): [ALL]
- Original Cost Range: 0.00 to 1,036,000.00

<table>
<thead>
<tr>
<th>Equipment ID</th>
<th>Description</th>
<th>Asset Category</th>
<th>Asset Type</th>
<th>Equipment Type</th>
<th>Eui</th>
<th>Station Location</th>
<th>Stored Location</th>
<th>Life Cycle Status</th>
<th>Condition ID</th>
<th>Date In Service</th>
<th>Original $Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALARM</td>
<td>RSOC FIRE WARNING SYST.</td>
<td>COM</td>
<td>STATIONARY</td>
<td>ALARM</td>
<td>4</td>
<td>COM186</td>
<td>CC</td>
<td>2</td>
<td>3</td>
<td>07/01/1979</td>
<td>20,153</td>
</tr>
<tr>
<td>EYT-INT-TWR</td>
<td>EY EAST YARD TOWER INTRUSION ALAR</td>
<td>COM</td>
<td>STATIONARY</td>
<td>ALARM</td>
<td>10</td>
<td>COM186</td>
<td>EY</td>
<td>2</td>
<td>3</td>
<td>09/10/2005</td>
<td>7,623</td>
</tr>
<tr>
<td>5PT-INT-FARE</td>
<td>FIVE POINTS REDUCED FARE INT ALAR</td>
<td>COM</td>
<td>STATIONARY</td>
<td>ALARM</td>
<td>10</td>
<td>COM186</td>
<td>SPT</td>
<td>2</td>
<td>5</td>
<td>06/30/2008</td>
<td>4,044</td>
</tr>
<tr>
<td>PITC-INT-CAR</td>
<td>PARA TRANSIT GARAGE INTRUSION ALAR</td>
<td>COM</td>
<td>STATIONARY</td>
<td>ALARM</td>
<td>10</td>
<td>COM186</td>
<td>BR</td>
<td>2</td>
<td>3</td>
<td>04/01/1996</td>
<td>5,098</td>
</tr>
<tr>
<td>5PT-INT-REST</td>
<td>FIVE POINTS STATION RESTROOM INT ALAR</td>
<td>COM</td>
<td>STATIONARY</td>
<td>ALARM</td>
<td>10</td>
<td>COM186</td>
<td>SPT</td>
<td>2</td>
<td>3</td>
<td>05/26/1973</td>
<td>5,030</td>
</tr>
<tr>
<td>5PT-INT-CUST</td>
<td>FIVE POINTS CUSTOMER SERVICE RC</td>
<td>COM</td>
<td>STATIONARY</td>
<td>ALARM</td>
<td>10</td>
<td>COM186</td>
<td>SPT</td>
<td>2</td>
<td>5</td>
<td>06/30/2008</td>
<td>4,044</td>
</tr>
<tr>
<td>5PT-INT-MRBL</td>
<td>FIVE POINTS MARBLE ROOM INTRUS</td>
<td>COM</td>
<td>STATIONARY</td>
<td>ALARM</td>
<td>10</td>
<td>COM186</td>
<td>SPT</td>
<td>2</td>
<td>5</td>
<td>06/30/2008</td>
<td>4,044</td>
</tr>
</tbody>
</table>
Capital Decision Making Requirements

CIP Evaluation Categories:
1. Program Priority (Safety, Reg. Ops Crit.)
2. Asset Condition
3. Strategic Agency Alignment
4. Funding Availability
5. Funding Source
6. Operating Budget Impact
7. Business Case/ROI
8. Estimated Payback Period
9. Sustainability/Environmental
10. Regional Impact
11. Partnership Opportunities
12. Speed of Delivery
13. Deliverability (complexity/likelihood)
14. Risk Management

- Integrated asset management module: ties *FASuite asset data with non-asset based projects*
- Compile assets in *meaningful projects* for replacement
- Ensures agency is aware of assets ready for replacement - project identification

[Diagram of flowchart with decision and project management processes]
Project Decision Making

- Integrated project decision making: utilizes asset database and capital module output
- Groups candidate projects by agency-driven criteria
- Executive level “what-if” scenarios for portfolio optimization
- Presents financially constrained capital improvement plans ensuring informed decision making
Renewing, Rebuilding, Reinvesting

Budget constraints
Actual funding

Comparative ranking based on established criteria of the Agency.

Shows your optimal project portfolios for various budget increments.

Improving competitiveness of projects
Selecting the optimal project mix to maximize the collective benefit, while balancing other factors such as risk, budget or staffing constraints and political considerations.
Project Delivery & Control

- Capital projects delivery group equipped with proper **capacity/skills**
- Standardize capital project management **business processes** and **tools**
- Bolster project controls office to better monitor and report **project performance**.
Project Origination Document

Project Origination Checklist

- Project scope
- Funding sources
- Partnering opportunities
- Required disciplines
- Resources required
- Procurement strategy
- Service impacts
- Customer impact
- Regional impact

Planning Level
Full Project Lifecycle Cost Estimate
AMP System Model Data Flow

Stakeholders
Non-Asset Projects

- Decision Model
- Project Evaluations

FASuite Database
Replacement Modeling

Candidate Assets
Approval Workflow

FASuite Capital Planning Module

- Project Origination Document (POD)
- Checklist

Approved Candidates Project List (Assets)

Approved Projects

Expert Choice

- Time
- Equipment
- Overhead
- Material

Actual Cost
Project Status

Oracle eBusiness

Track Needs

Primavera (P6 v.8)

- High level schedule
- Cost Estimate

Approved Projects
Actual Cost
Approved Budget Changes

Project Updates

- Track Availability Constraints

Approved Projects

Track Allocation

- Track Availability Needs

Key
Blue lines show modules within FASuite
Green lines show modules external to FASuite
Dotted lines show manual processes
1. Most Agencies **can’t afford** to not have an effective fully integrated Asset Management Policy and Plan. It makes good business sense!

2. This effort may start as a project but it will become **your business process**...so select the right technology that will ensure a successful agency integration.

3. Understanding the integration plan: **buy-in, planning and execution**.

4. Know your assets: **Asset Break Down Structure** (ABS) is critical. Key to proper integration.

5. What level of **granularity** is recommended vs. required by the various stakeholders and end users?

6. Do I have the right **people, processes** and **procedures** to fully carry out my AMP integration?

7. **Culture Change** (**Authority**: maintenance, operations, engineering, materials, procurement, accounting, finance.... **Contractors & Vendors** have a learning curve just like you!)

8. Procedures must be comprehensive to **expose gaps** during system implementation even after extensive “to-be” work sessions. **Try to break or beat the system!**

9. All related disciplines (**even the non-traditional ones**) must participate in policy and procedure development with their needs fully communicated and understood.

10. Remember: **IT TAKES FIVE (5) YEARS TO BECOME AN OVERNIGHT SUCCESS!**
Results: Balanced Scorecard Rail OTP

- MARTA’s Offices of Maintenance of Way (MOW) and Rail Car Maintenance (RCM) track system assets through the EAM System.
- MARTA, a 33 year old system, is routinely achieving 98% Rail On-Time Performance.
- This high level of performance is attributed to many things, but at its base is a well maintained rail fleet, wayside systems and infrastructure.
Wouldn’t it be nice…

…one (1) asset file* accessible to all business units.

Reduced data redundancy
(multiple data systems, processes and exercises in data mining)

Reduced # of software systems
(maintenance and license fees, lack of consistency amongst users)

Reduced operating and capital costs
(cost effective management over entire life cycle)

It’s not all about Capital Costs!!!

New opportunities to invest
• Reduce backlog
• New construction

* One asset file may not be practical for your organization but if you have the opportunity it is worth considering.
Benefits

1. Better overall agency performance
2. Improved customer service/customer experience
3. Lower operating & capital costs
4. Improved system reliability
5. Less inventory (removal of obsolete parts, quicker identification of auction items)
6. Earlier identification of procurement needs & burden
7. Less project discovery work / more accurate procurement documents
8. Reduced data entry - burden (contractor's supply the agency with asset data)
9. Reduced data duplication (data storage and management)
10. Better backlog management (prioritized replacement/manage risk)
11. Improved compliance with local, state and federal requirements (audit response)
12. Better environmental management (system flags)
13. Better support of transit industry initiatives, particularly with peer agencies.
14. Better positioned regionally vs. other transportation providers
15. Positive agency image