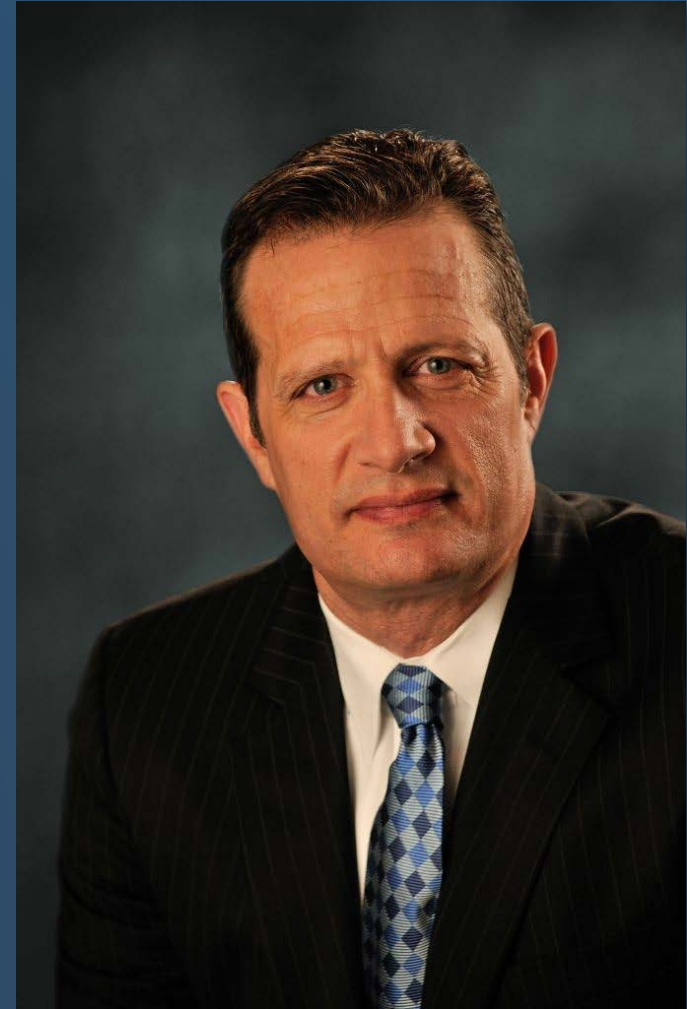


An aerial photograph of a city skyline, likely San Francisco, with a blue color overlay. The text "2019 Transit Asset Management Roundtable" is centered over the image. A green horizontal line is positioned below the word "Management".

2019 Transit Asset Management Roundtable

Taulby Roach

President and CEO
Bi-State Development





BI·STATE DEVELOPMENT

Gateway to growth. On both sides of the river.™

Overview

- Established in 1949 through an interstate compact between Missouri & Illinois
- Can cross local, county and state boundaries to plan, construct, maintain, own and operate facilities and infrastructure
- Authorized to issue revenue bonds, collect fees and receive federal, state and private funds

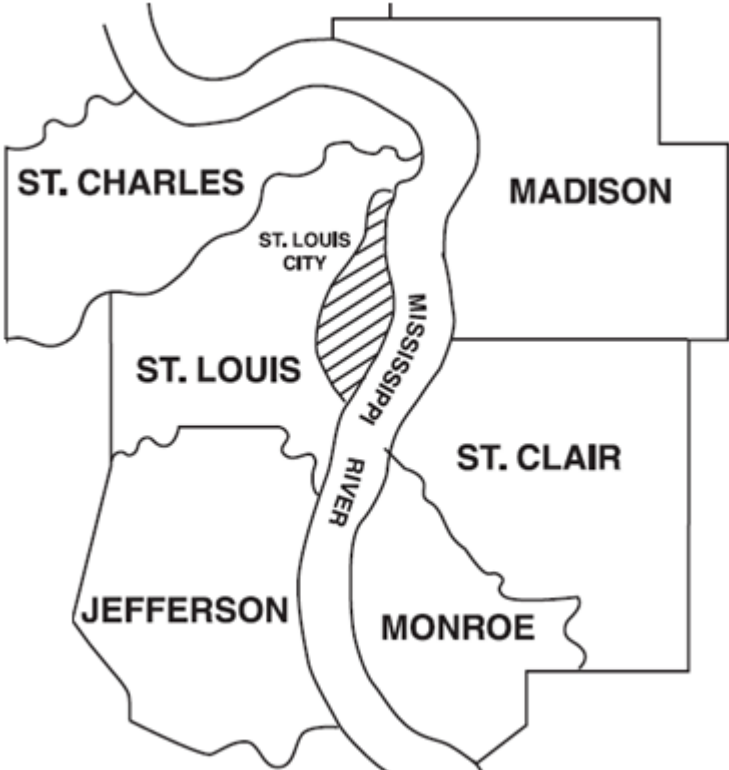
Bi-State Development



Business Enterprises



Seven Counties



Metro Transit



MetroBus

84 Fixed Routes

Fleet of more than 400 vehicles



MetroLink

38 MetroLink Stations

46 miles of rail in Missouri and Illinois



Metro Call-A-Ride

Provide ADA-accessible, paratransit service

Fleet of 122 wheelchair lift-equipped vans



Metro

Metro Transit

One of the first U.S. transit agencies to build buses with wheelchair lifts

Agency rebrands as Metro, introducing new logo and colors



1963

1977

1993

2003

BSD acquires 15 private transit firms to establish regional transit system



MetroLink light rail system opens



Jessica Mefford-Miller

Executive Director

Metro Transit



- Components were changed as needed
- Dwell time on mid-life repairs in excess of 100 days
- Low expectations of reliability of assets
- 2000 – New software system shifts the conversation



Metro

Control Operating Costs and Increase Fleet Reliability

- Manage life cycle costs
- Maximize asset life cycle
- Stabilize procurement cycle/maintenance costs

TAM: The Beginning

**A NEW APPROACH
TO TRANSIT ASSET
MANAGEMENT**



Metro

RCM Program

- Manufacturer Recommended Maintenance Intervals
- Manufacturer Recommended Component Replacement Intervals
- Data mining of component failures driven by operating profiles

**RELIABILITY
CENTERED
MAINTENANCE
PROGRAM**



Metro

Impactful Results



Vehicle Reliability

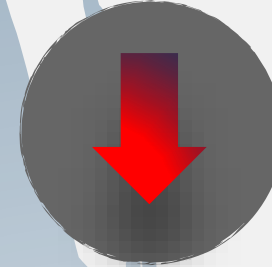
Increased by 50% in first year; continues to increase annually



On-Time Performance



Accident Rates and Workers Compensation



Maintenance Costs Per Mile

Annual miles operated did not decrease as age of bus increased



Customer Complaints



Metro

Impactful Results



Metro

Impactful Results

- Quickly identified that Metro could go beyond the National Transit Database – Useful Life Benchmark
- Internal condition ratings assessments became based on:

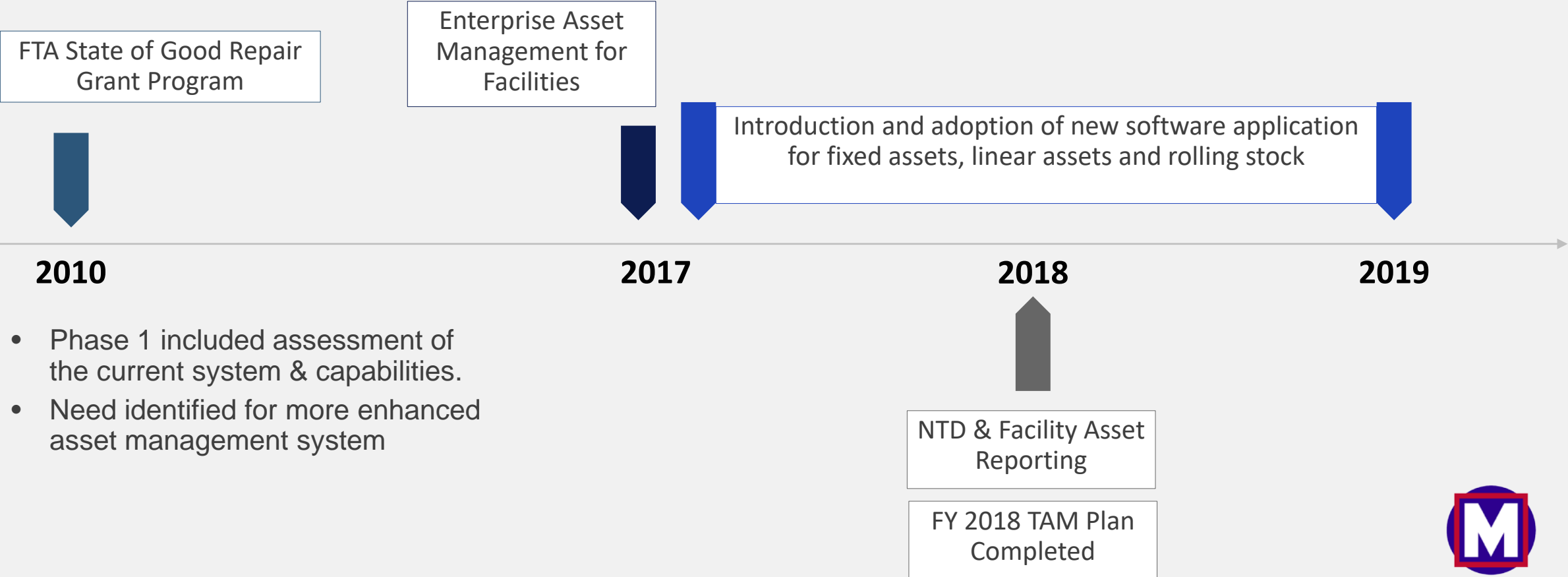
Cost of Maintenance | Mileage | Performance of asset (MDBF)

Age | LTD cost per mile | Safety systems performance



Metro

Looking Ahead



- Began in 2010 with FTA State of Good Repair program; new EAM program in 2017
- Maximize asset life cycle
- Inventories completed for more than 60 facilities and more than 96 miles of track infrastructure

TAM: New Applications

FROM ROLLING STOCK
TO FACILITIES



Metro

- Applying TAM principles to SMS
- Shared focus on safety and support of State of Good Repair
- Enhanced incident management allows for direct reporting of assets with safety concerns or failures

TAM: New Applications

SAFETY MANAGEMENT SYSTEMS



Metro

TAM: Challenges



**Internal
Adoption**



Technology



**Integration of
New Processes**



Metro

Internal Adoption

- Introduction of a new, holistic system for asset management
- How to integrate disparate departments and team with no previous connection to operations or maintenance

Grants | Accounting | Safety | Human Resources | Information Technology



Operations | Maintenance



Metro

Technology



Metro

- Requires education and adaptability
- Manage lifecycle loop in a new system
- Mobile connectivity
- New data organization that allows reporting by:

Department | Management Hierarchy | Cost Centers | Funding Sources

Asset Groups | Conditions | NTD Reporting Requirements

Integration

- Unification of common naming for assets – make it intuitive
- Unification of forms and documents – get rid of the old spreadsheets
- Keep everyone in mind: from CEO to frontline staff
- Tie KPI's to employee evaluations
- Develop systematic QA/QC program – and enforce it



Metro

- Barcodes and RFIDs
- Improve efficiency with expanded mobile device usage
- Track warranties more effectively
- Develop a rolling refurbishment plan for all facilities



Metro

Summary: Our Approach



Metro

- Change is good, but hard – and requires investment
- Need agency-wide commitment
- Establish a vision, that starts from leadership

Metro Transit – TAM Policy Statement

Metro is committed to implementing a strategic process for acquiring, operating, maintaining, upgrading, and replacing its transit assets to directly support the organization's mission of providing safe and reliable public transportation services to the St. Louis Metropolitan Region.

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2019 Transit Asset Management Roundtable