

# Maryland Transit Administration's Strategy: Applying Multimodal Methods to Transportation Infrastructure Maintenance

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## OBJECTIVE & TOPICS

### **OBJECTIVE:**

Contribute to the Asset Management Discussion with lessons learned from Early work at MD Transit and from the Highway perspective

### **TOPICS**

- MD DOT-MD Transit: Implementation Lessons learned
- The Highway Perspective
- Closing Thoughts

# Maryland Department of Transportation



Buses 698  
Routes 47  
Weekday Boardings 231,797



Cars 53  
Stations 33  
Length(miles) 29  
Boardings 26,341



Routes 18  
Boardings 15,772



Cars 100  
Stations 14  
Length 15.5  
Boardings 44,970  
Escalators/Elev. 81/33



Cars(S/bi/G) 60/63/12  
Diesel Locomotives 32  
Elec. Locomotives 10  
Boardings 32,600  
Escalators/Elev. 81/33



Vans 303  
Sedans 124  
Boardings 4,038

203miles 42 stations



## Asset Management: The Early Years

- 1990s(Mid) Issued RFP for Asset Management System
- 1990s(late) Rolled out by mode(Citrix)
  - MTA – BUS Maintenance Shops(Problem, Cause, Remedy), Supply rooms, Light Rail Vehicles - 2002
  - SHA – District Maintenance 2001
  - MPA – Crane Maintenance 2003
  - MAA – Vehicle Maintenance, facility Maintenance 2003
  - MVA – Facility equipment 2003
  - MdTA – Roadway/Tunnel infrastructure 2001
  - MDOT – IT Equipment 2000
- 2003 Moved to central sever farm, Linked to Financial Management System for purchase requests & receiving

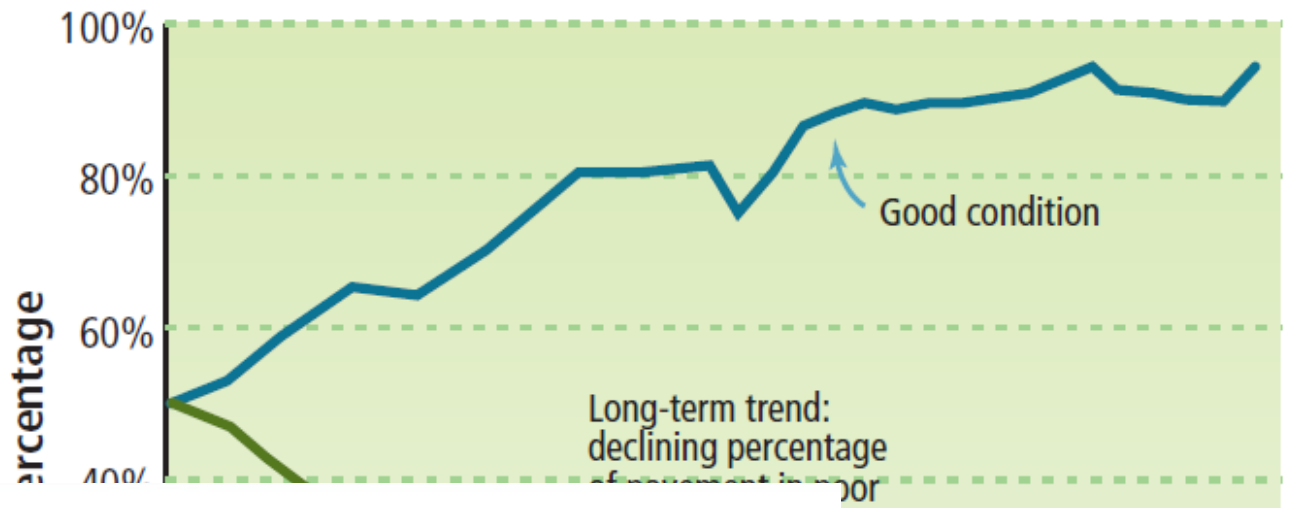
## Good Practices/Lessons Learned

- Analyzed the business processes (mapped, refined, verified, or eliminated)
- Inventoried and tagged all non-disposable assets (e.g. transmissions, engines, rotors, etc.)
- Linked supply rooms to work orders
- Tracked tool times on work orders
- Mimicked existing processes as much as possible
- Needed to include employees at every step (Mgmt)
- Purchase Management System not a limo, avoid being tethered to consultants. Use the system

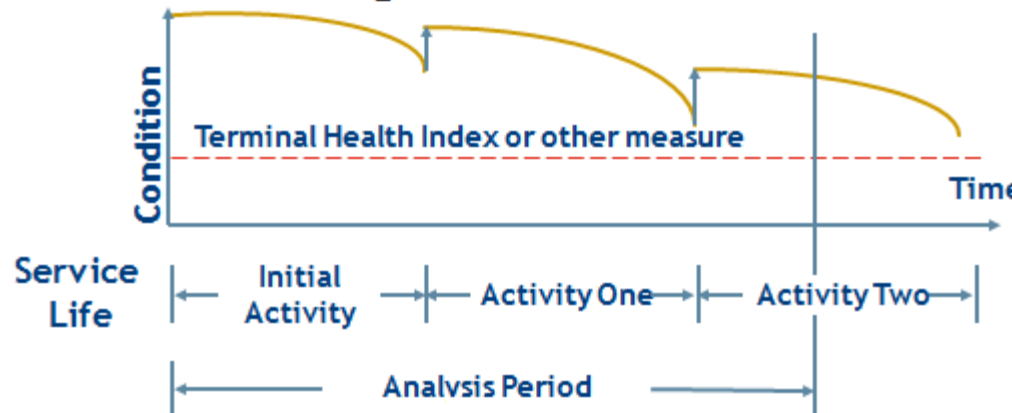
## If I new then what I know now, I would...

- Looked for efficiencies through network performance
- Tied management people (leverage)
- Provided mechanisms for rebuild and repair
- Know when rebuilding

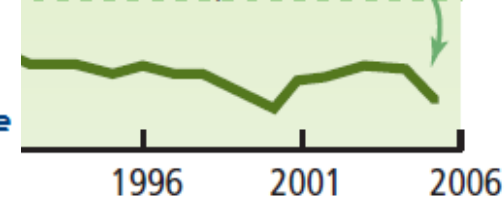
Condition of Washington State's Highway Pavements, 1971-2005



Timing of Activities



Decrease in percentage of pavement in poor condition, 2004 to 2005



## How I should be measured is....

- State Highway Departments have leveraged AASHTO to provide their view on they should be measured.(see NCHRP 20-24 series of Comparative Studies as well as AASHTO's Report to congress on performance measure)
- Leverage TRB Asset Management and Performance Management Committees(Asset Management Committee meets here on Wednesday)

## Have we defined practical performance measures?

- “A management strategy focused on replacement of deficient assets delivers a program of deficient assets that need replacement.” NCHRP Report
- A management strategy focused on preservation delivers a program for preserving assets.
- Look for long term network goals and meet them through selecting actions that achieve those long term goals economically.



“C'mon, c'mon — it's either one or the other.”

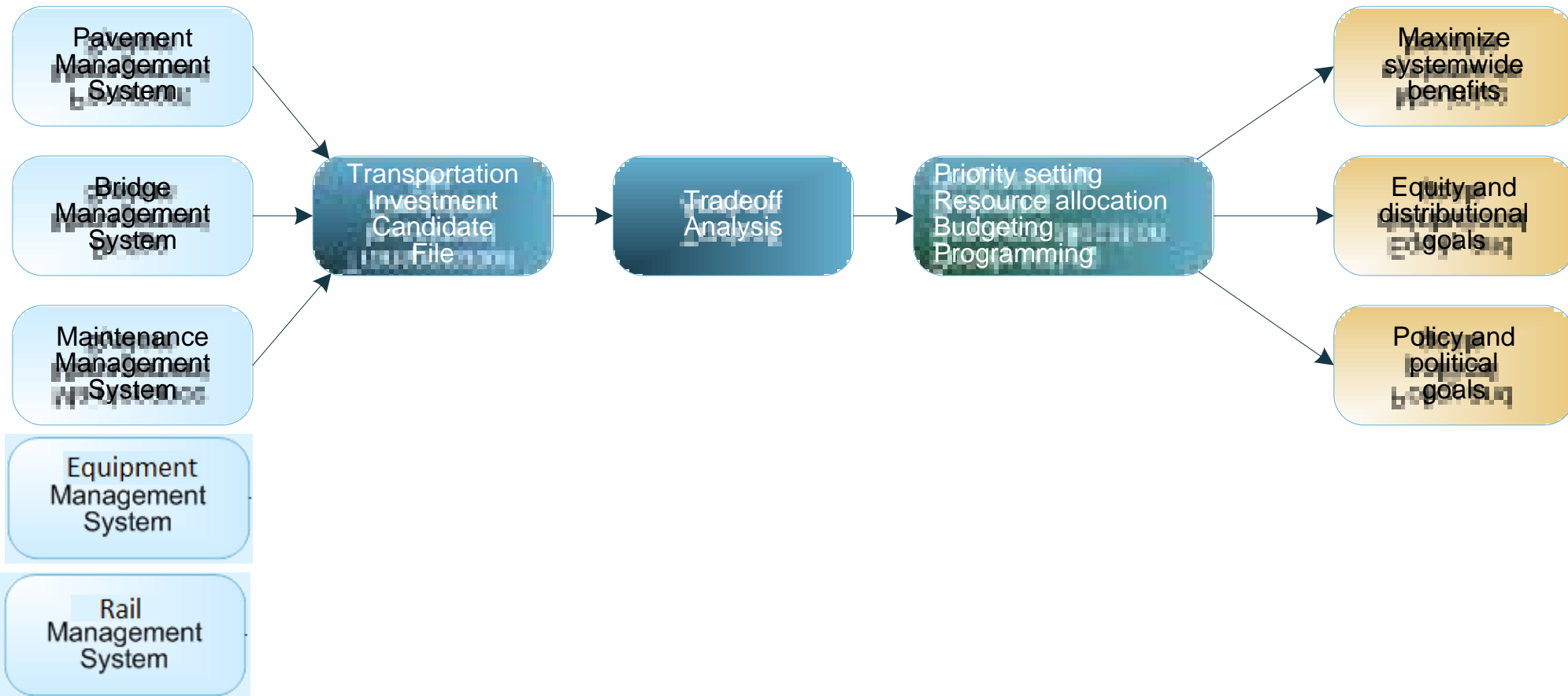


## Asset Management Principles

- 1 POLICY DRIVEN** – decisions reflect policy goals and objectives that define desired system condition and service levels
- 2 PERFORMANCE BASED** – clear measures of performance and target service levels are established
- 3 OPTIONS EVALUATED** – comprehensive choices and tradeoffs are examined at each level of decision-making
- 4 DECISIONS BASED ON QUALITY INFORMATION** – management systems and tools are used
- 5 CLEAR ACCOUNTABILITY** – performance results are monitored and reported

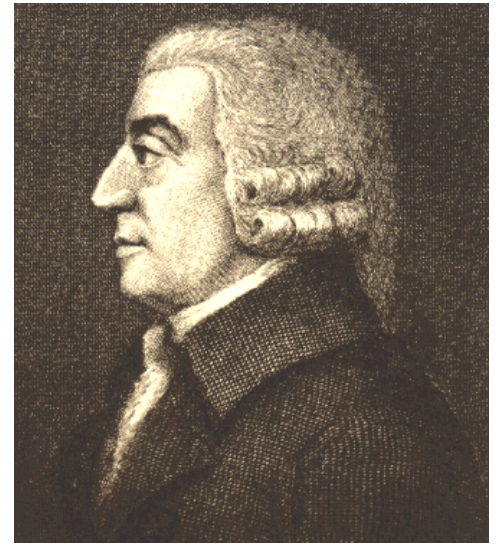
## Leveraging BCA to Support Policies

# Transportation Asset Management Guide: Vol. 2 A Focus on Implementation (Chapter 5)



## Economic Analysis and Asset Management

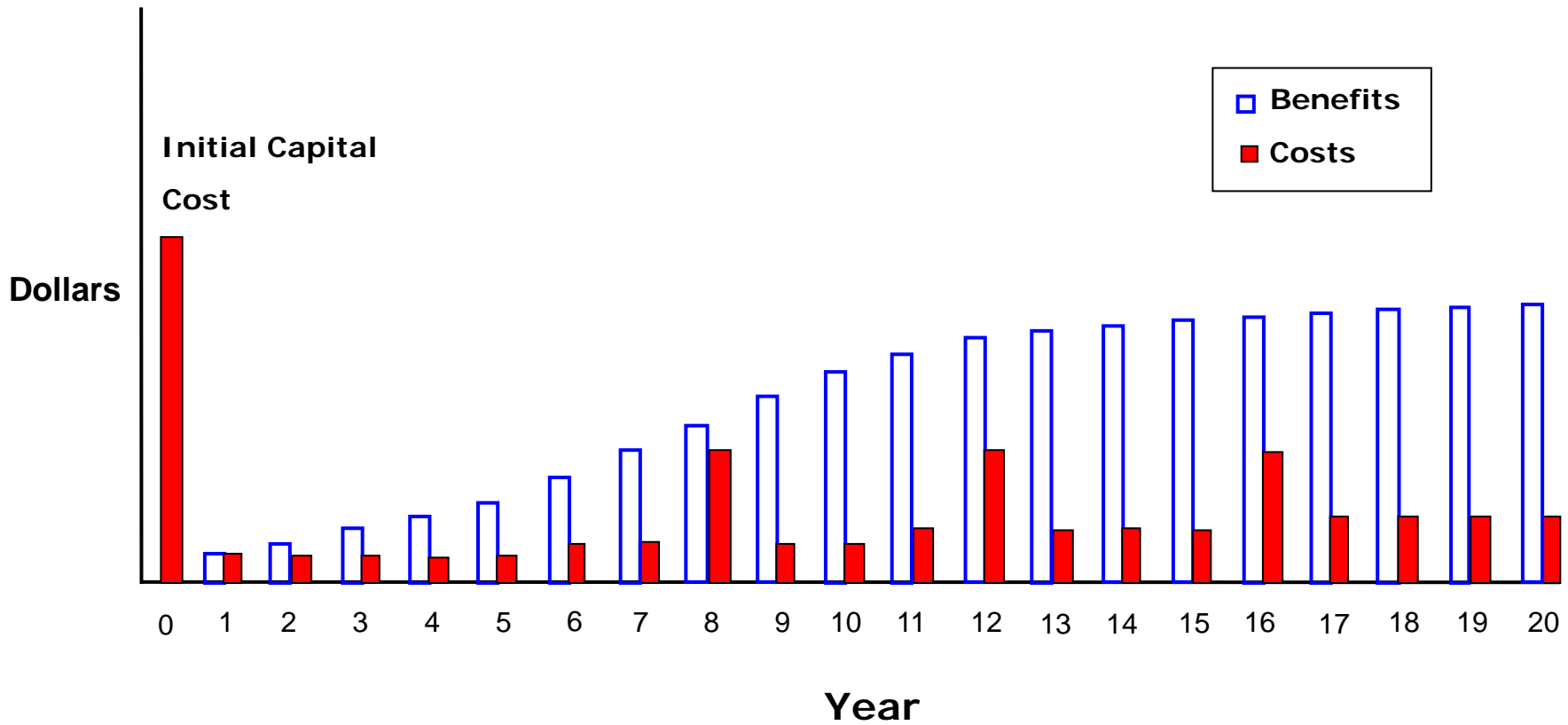
- Mechanism for evaluating and comparing long-term costs and benefits of alternatives
- Economic analysis results
  - Help structure project-level tradeoffs
  - Quantify & Qualify costs and benefits to the agency and to customers
  - Support repeatable and transparent project justification and prioritization
- Management systems can help with economic analysis



Adam Smith

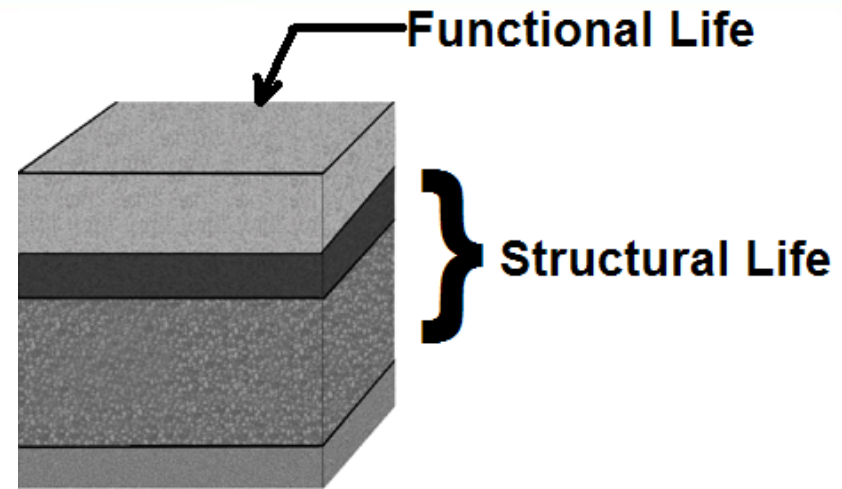
# Life-Cycle Comparisons

## Typical Life-Cycle Profile



## Performance Life v.s. Design Life

Performance Life is associated with the asset's ability to provide "desired" performance. It has 2 components: structural and functional (Comfort/Mechanical?)



Design life is associated with time frame from initial construction to major rehabilitation or replacement

## Thank You

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<http://www.fhwa.dot.gov/infrastructure/asstmgmt/economic.cfm>