

# Double-Tracking Baltimore's Light Rail Transit System

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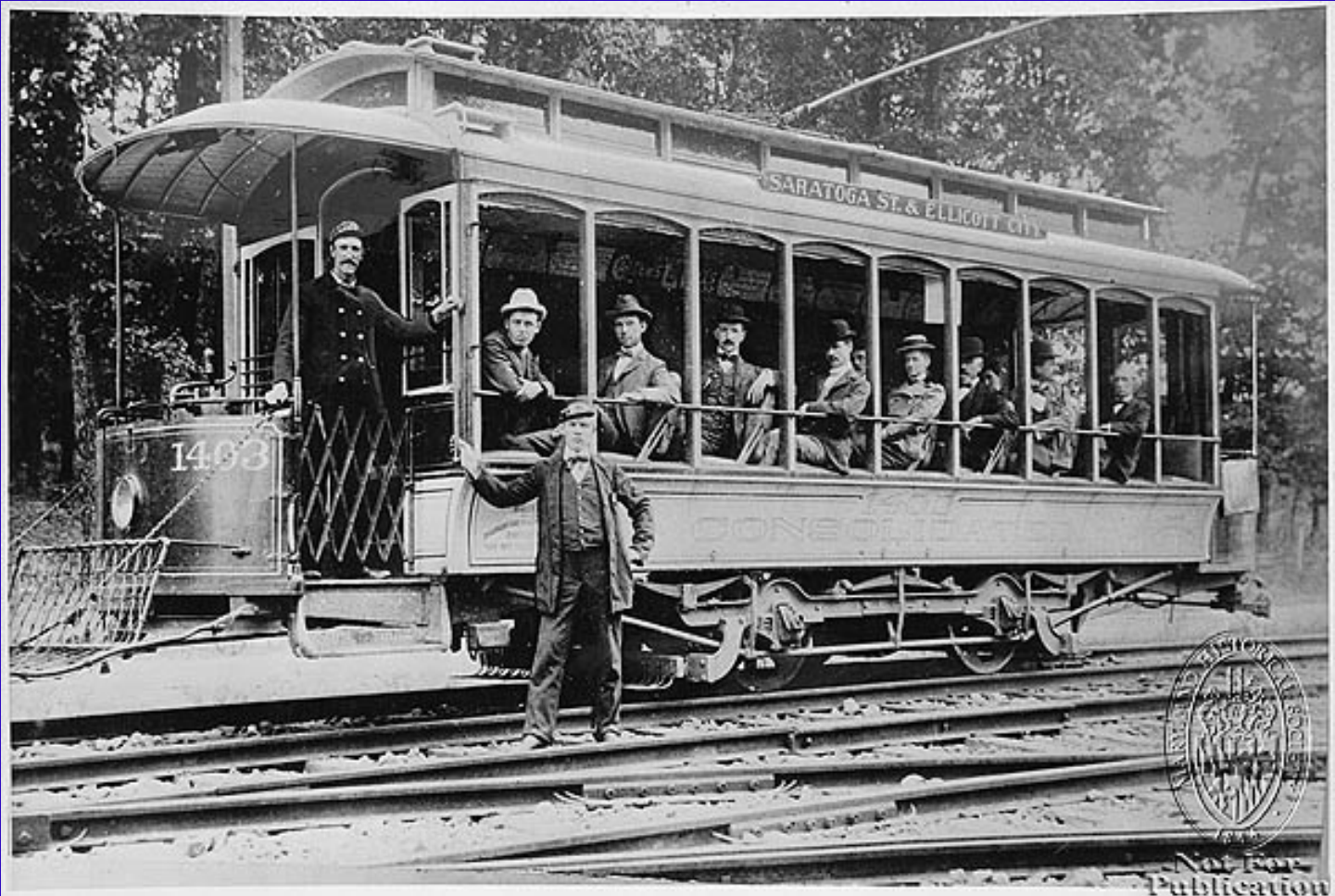
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Omni Strategy



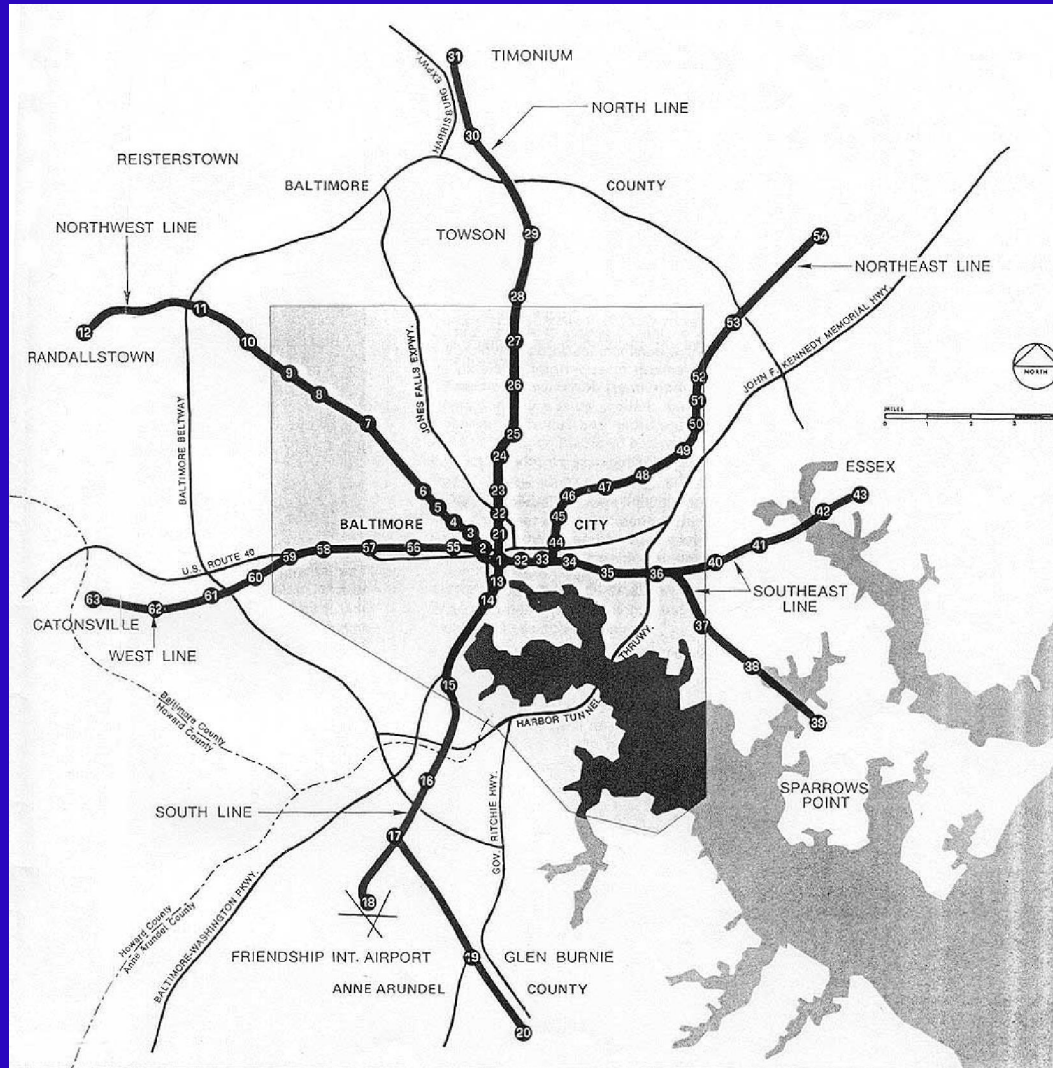
# Key Presentation Take Aways

- It's okay to think small.
- A constrained rail system can be expanded into a robust system, as additional budget and schedule become available.

# Obligatory Old-Tyme Photo

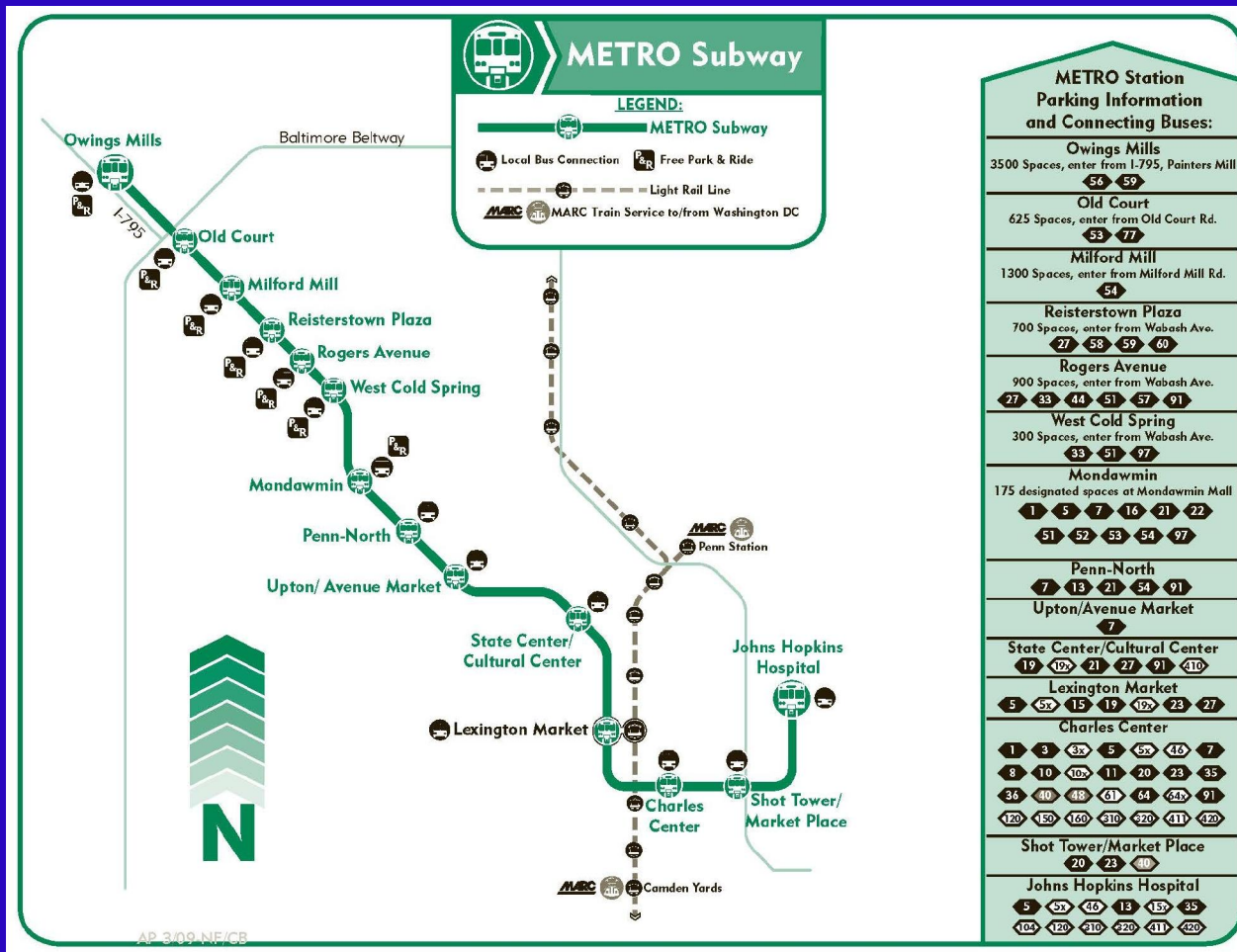


# Baltimore Region Rapid Transit System



1. Baltimore Region rapid transit system routes and station locations.

# Baltimore Heavy Rail (Subway)

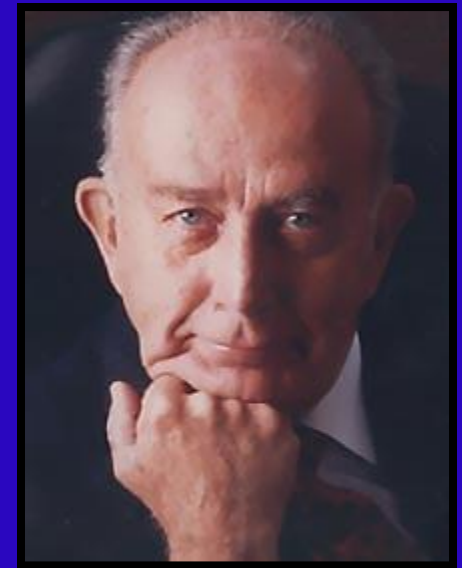


# Why implement a constrained rail system?

- Cost
- Schedule

# Schedule

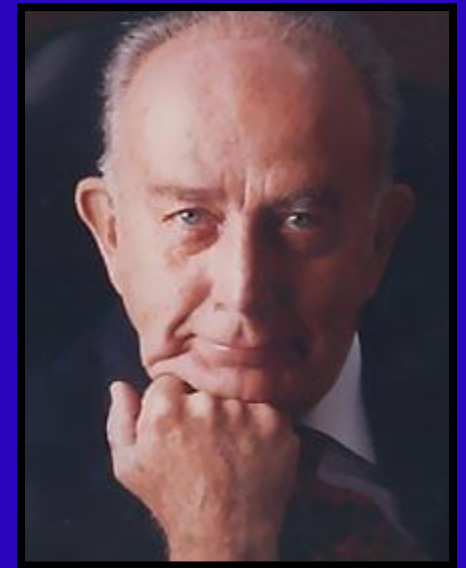
## Mid-80's: Changes are Happening





# Schedule

## Mid-80's: Changes are Happening



**Governor Schaefer**

# Schedule

## 1987: A time for decisions

- Build Oriole Park at Camden Yards to open Spring 1992
- Build a light rail system to serve the stadium on opening day
- Proceed without federal funds to accelerate the schedule

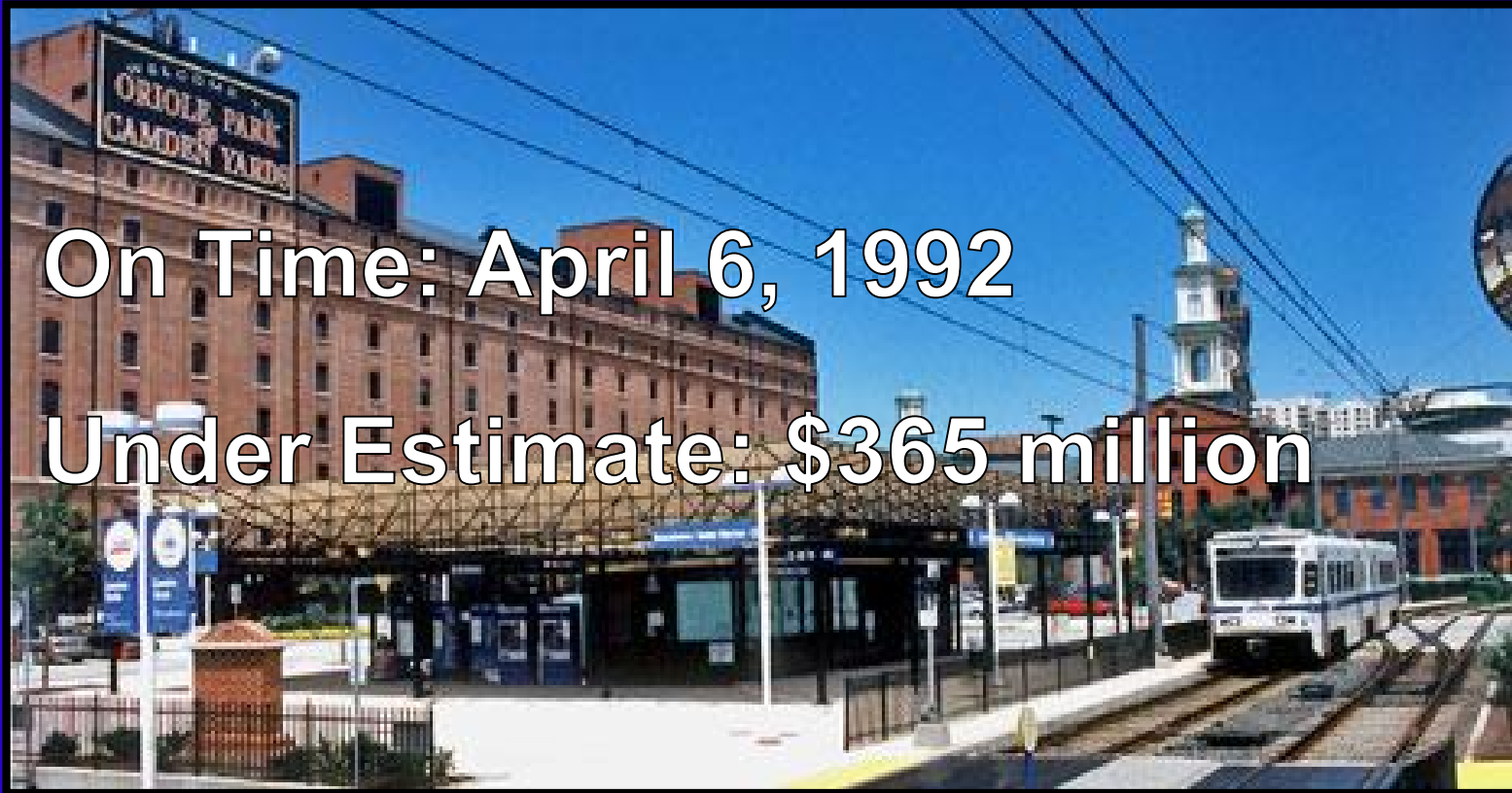
# Cost

## Baltimore's Central Light Rail Line

- Conceptual estimate - \$190 million
- PE estimate - \$400 million

# Opening Day Camden Yards Stadium

- On Time: April 6, 1992
- Under Estimate: \$365 million



# Cost and Schedule Savings

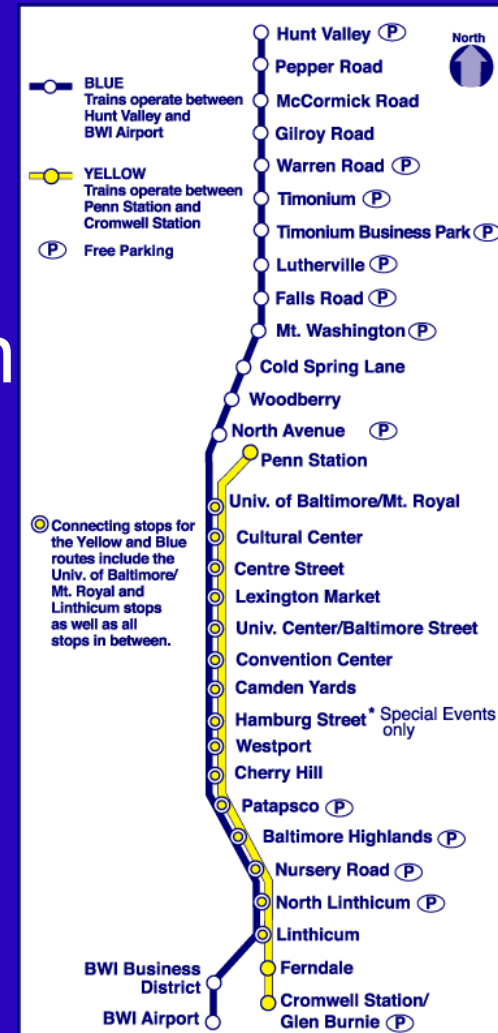
- Single-track sections
- Local power feeds
- Fixed block signaling
- Early bidding

# Single Track Sections

- Seven track sections
- 8.2 miles of single track
- 15 minute headways
- Bridge substructure for future track

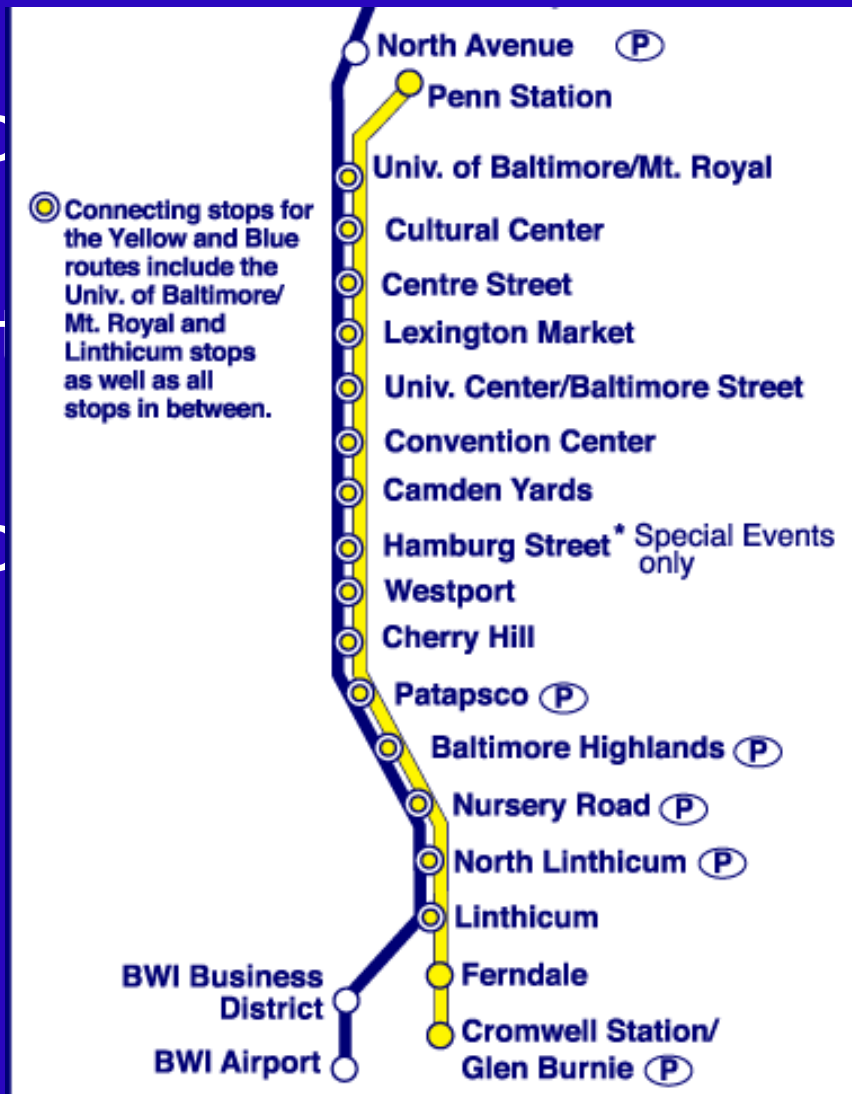
# Central Light Rail Extensions, 1997

- 4.5 mile to North
- 0.34 mile to Penn Station
- 2.7 mile to BWI Airport



# Central Light Rail Extensions, 1997

- 4.5 mile to
- 0.34 mile to
- 2.7 mile to





# Double Tracking the Central Light Rail Line

- Second track
- Three bridges
- Four station platforms
- Cab signaling system
- Central control upgrade



# Double Tracking the Central Light Rail Line

- Conceptual Estimate – \$175M
- First construction contract – 2002
- South of downtown shutdown – 2004
- North of downtown shutdown – 2005
- Final budget – \$205M

# Baltimore Central Light Rail Line Lessons Learned

- Large shutdowns can work
- Seek to:
  - Anticipate future infrastructure upgrades
  - Acquire right-of-way for future upgrades during the initial program.

# Baltimore Central Light Rail Line Primary Lesson / Takeaway

Don't let cost and schedule constraints kill your program; a staged transit system implementation is an effective means for introducing a rail system.