



# Meeting Record Ridership and Sustaining a State of Good Repair

February 1, 2013



# State of Good Repair (SOGR)



**A condition in which the existing physical assets, both individually and as a system are:**

- **Functioning as designed within their useful lives; and**
- **Sustained through regular maintenance and replacement programs**

**State of Good Repair represents just one element of a comprehensive capital investment program that also addresses system capacity and performance.**

# New York Subway in the 1970s

## The Consequences of Not Maintaining SOGR



**It took New York MTA three decades to recover.**

# Maintaining SOGR – Not Just a BART Problem



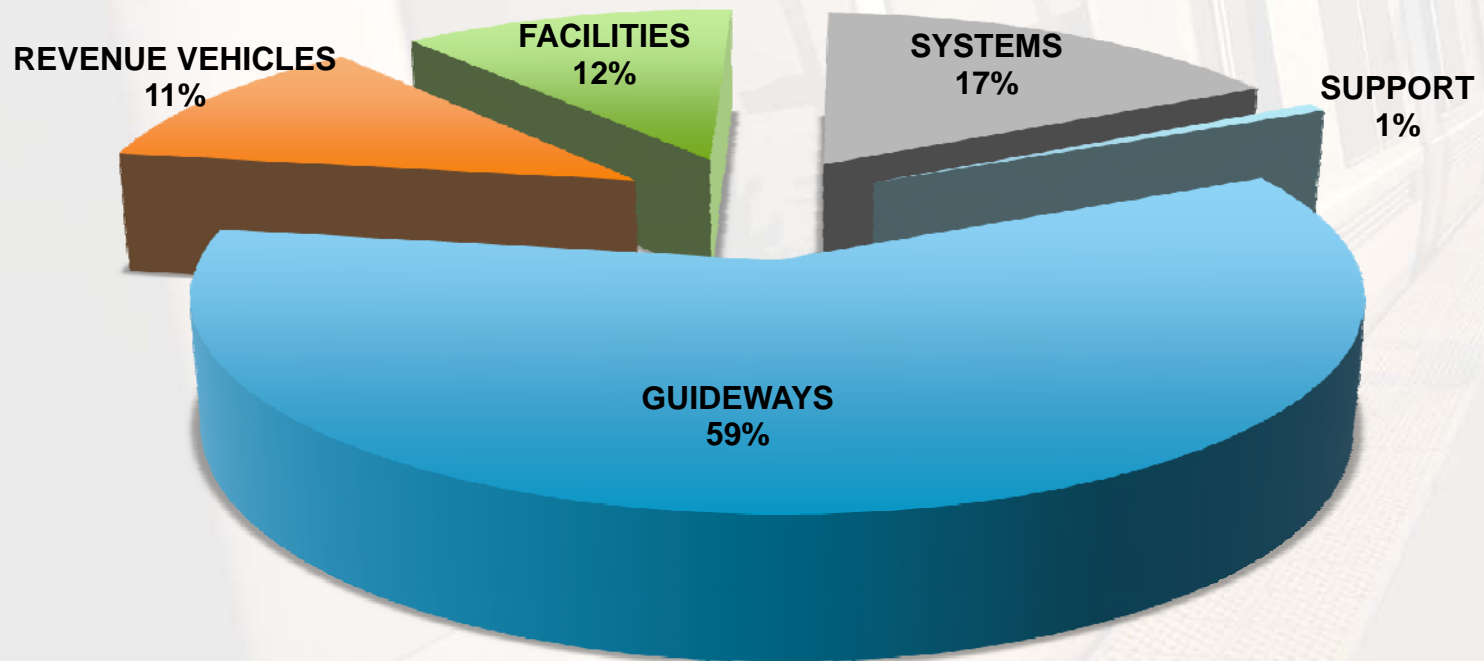
- 2009 Federal Transit Administration – 7 largest rail agencies have \$50 Billion in assets in poor/marginal condition
- 2010 California Transportation Commission – \$142 Billion to fix and maintain state's transportation system over next 10 years

# BART's SOGR Status



- Held our own up to now
  - *Customer expectations high*
  - *System resiliency/redundancy low*
- 40-year old plant is decaying
- We operate at the limits of capacity to meet growing demand
- Increased service demand is consuming the assets
- Reduces asset useful life and pushes forward needed capital rehabilitation projects

# BART ASSETS (~\$20B)



**BART owns 40,000 assets**

# BART Assets by Category

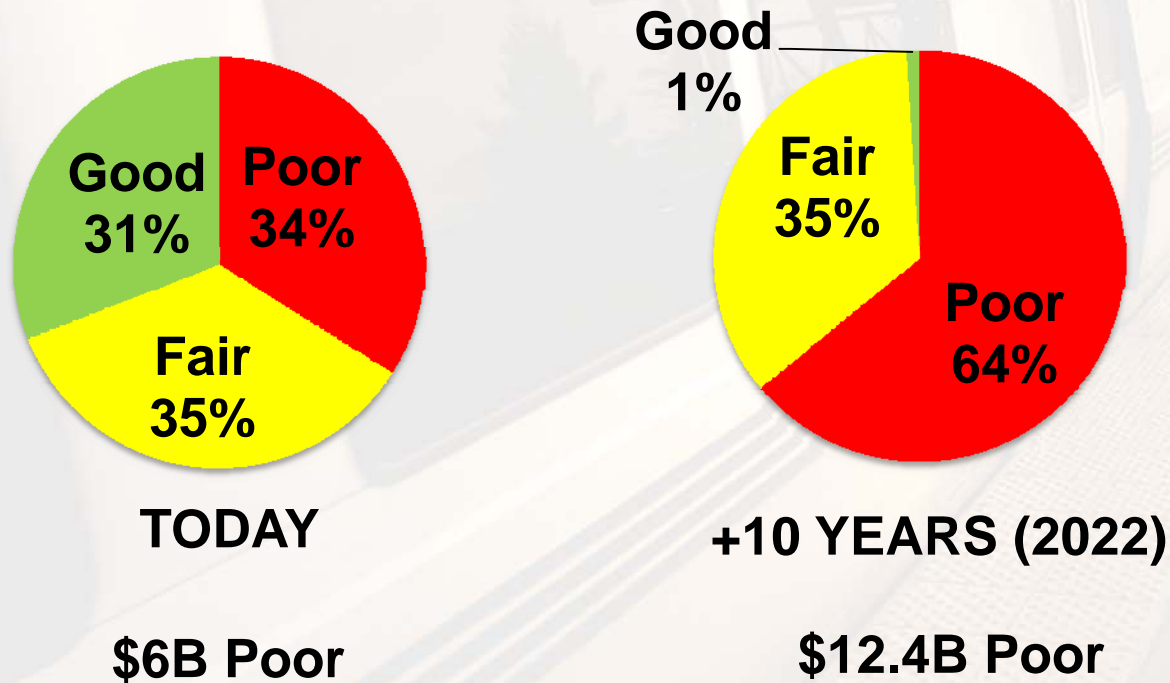


|   |                                 |                                   |
|---|---------------------------------|-----------------------------------|
| <b>STATE<br/>of<br/>GOOD<br/>REPAIR</b> | <b>VEHICLES</b>                 | <b>VEHICLES</b>                   |
|   | <b>POWER &amp; MECHANICAL</b>   | <b>TRACTION POWER</b>             |
|   |                                 | <b>ELEVATOR / ESCALATOR</b>       |
|   |                                 | <b>MECHANICAL</b>                 |
|   |                                 | <b>ELECTRICAL</b>                 |
|   | <b>WAYSIDE &amp; FACILITIES</b> | <b>TRACKS</b>                     |
|   |                                 | <b>BUILDINGS &amp; STRUCTURES</b> |
|   |                                 | <b>GROUNDS</b>                    |
|   |                                 | <b>ARCHITECTURAL</b>              |
|   | <b>SYSTEMS</b>                  | <b>TRAIN CONTROL</b>              |
|   |                                 | <b>COMPUTER SYSTEMS</b>           |
|   |                                 | <b>FARE COLLECTION</b>            |
|   |                                 | <b>COMMUNICATIONS</b>             |
| <b>MISCELLANEOUS</b>                    | <b>CROSS-PORTFOLIO</b>          |                                   |

# “CONDITION” of ASSETS (at current level of investment)



The state of the asset, including its stage in life cycle





# BART's SOGR Need



- **\$6B need for 10 year high priority projects**
- **\$17B need for next 30 years**
  - *539 capital projects identified*
- **At 40, BART is facing its FIRST comprehensive rehabilitation cycle**

## Maintaining the Nation's Oldest Fleet

### 1. Planned Maintenance and Regular Mini-Overhauls

- Rolling 5-year overhauls have replaced model of running system to non-performance
- Maintenance work stations evaluated and redesigned by employees
- Introduction of modern industry and “lean” efficiencies



# BART's Strategic Maintenance Program



## 2. Data Driven Investments

- Decisions based upon greatest reliability impact
- Targeted investment to reduce in-service failures
- Staying in front of equipment degradation to extend useful life

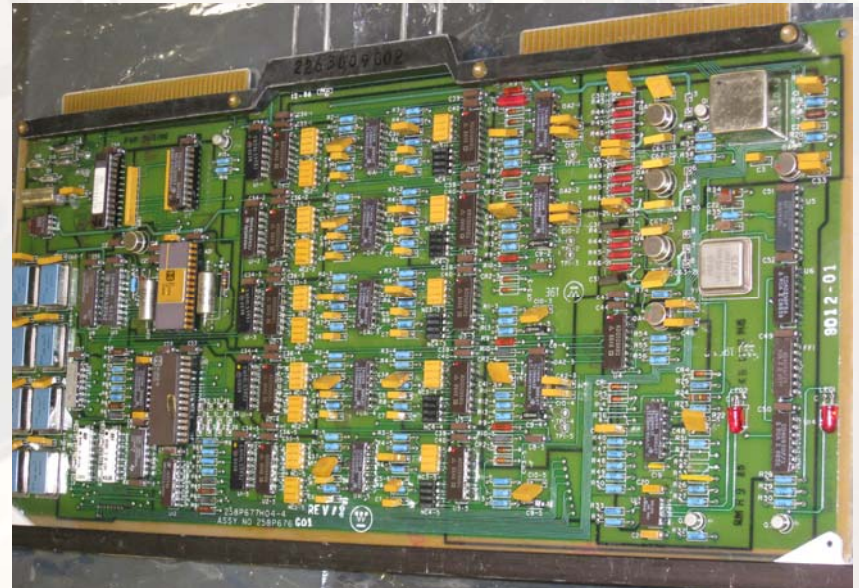


# BART's Strategic Maintenance Program



## 3. Ownership and responsibility at all levels in the organization

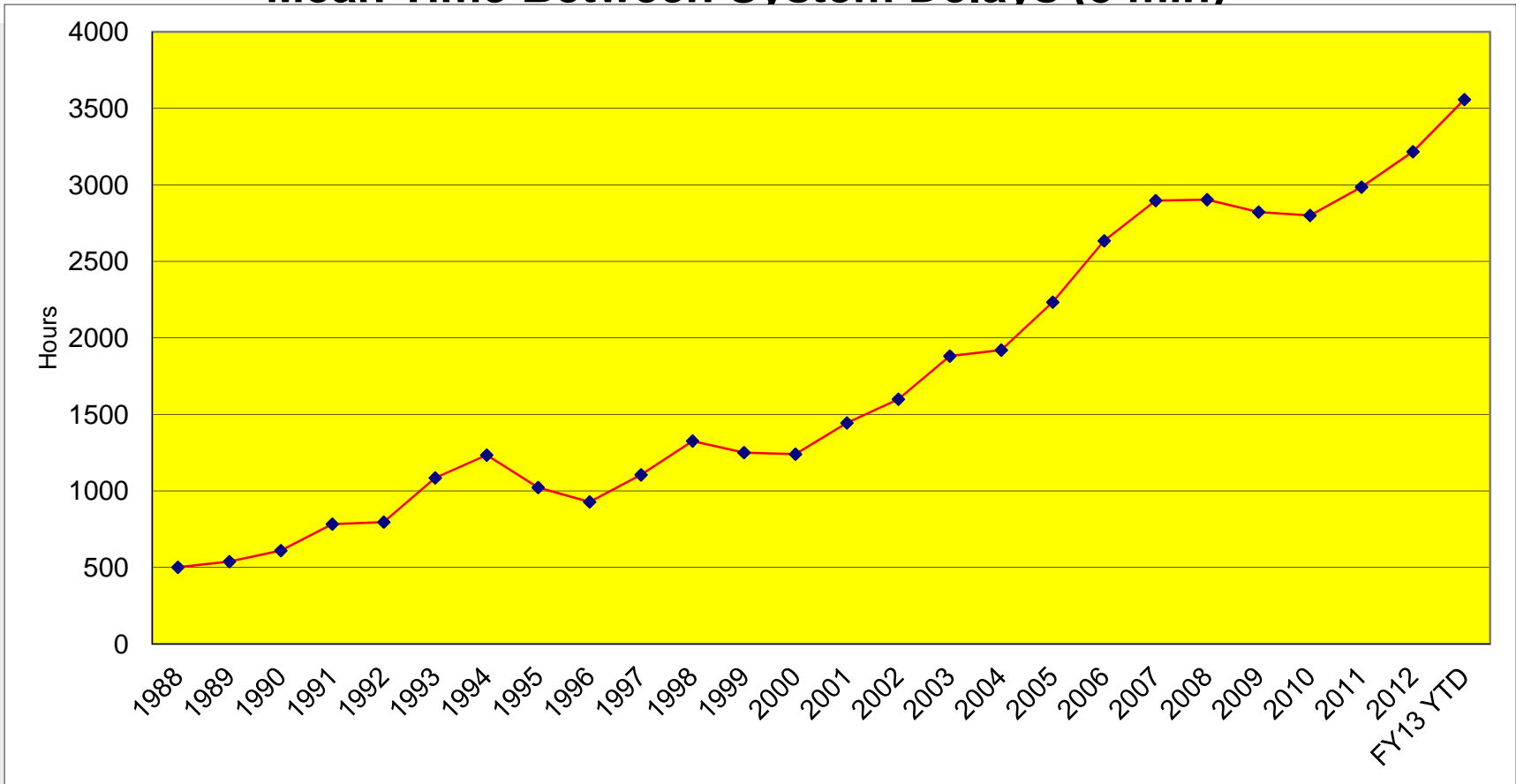
- Own the product, do the job right the first time
- Integrated goals and objectives throughout the department
- Identify opportunities for continuous improvement



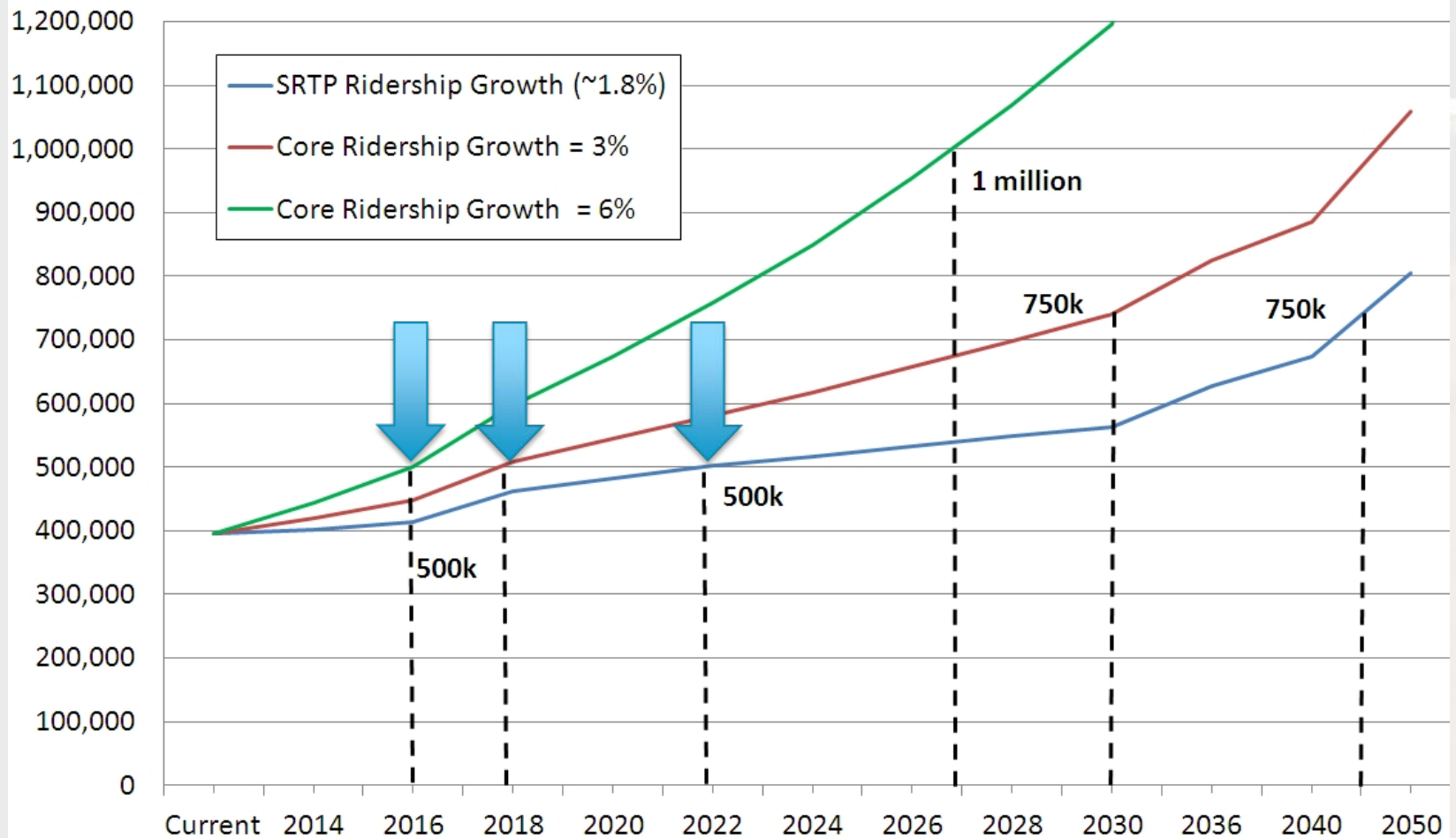
# Doing Car Maintenance Smarter: The Results



## Mean Time Between System Delays (5 min)



# Projected BART Weekday Ridership Demand vs. Year



# Time is Running Out on BART Vehicles



1. BART rail cars oldest in the nation
2. BART cars average 112,000 miles/year – by far highest in North America
3. Car availability requirements among the highest

| Transit Agency                     | Vehicles | Average Age |
|------------------------------------|----------|-------------|
| BART<br>San Francisco Bay Area     | 669      | 30.1        |
| CTA<br>Chicago                     | 1,190    | 26.3        |
| MBTA<br>Massachusetts              | 432      | 21.0        |
| NYCT<br>New York City              | 6,442    | 20.6        |
| WMATA<br>Washington, DC            | 1,132    | 19.7        |
| SEPTA<br>Southeastern Pennsylvania | 371      | 16.9        |

\*2011 Data

# BART Moves Ahead with Fleet of the Future Contract



- 2012's Theme: No Cars – No BART
- In May 2012, the BART Board awarded new car contract to Bombardier Transit Corporation (775 new cars)
  - 410 ordered so far
- \$2.5 billion project – BART 25% / Metropolitan Transportation Commission 75%
  - \$538 Million BART \$ needed for 411 – 1,000
- Delivery 2017 – 2023





# Carrying 500,000 Passengers/Day and Beyond



3% growth = 500,000 by 2018, 750,000 by 2030

Three big ticket capacity improvement projects are on the near-term critical path:

1. *225 more cars* → *1,000 Rail Vehicle Fleet*
2. *Closer running trains* → *Train Control System Modernization*
3. *Expanded / Improved maintenance facilities* → *Hayward Maintenance Complex*

Approximate cost = \$2.1 Billion (BART Share \$650 Million)

Price tag for other key capacity projects is \$1.5 Billion: (New Rail Yard, Saddlebags, Crossovers, Connector, Pocket Tracks, Elevators)

# The Ultimate Solution to these Station Capacity Issues: “Saddlebag Platforms”



## Montgomery Station

New Platform/Tunnel Lateral Section



Appendix A.2

3

BART General Engineering Services

## Embarcadero Station

New Platform/Tunnel Lateral Section



Appendix A.1

3

BART General Engineering Services

Total Estimated Construction Cost: \$615 million (2009 dollars)

Mission Critical Improvement as ridership starts to exceed 500,000 per weekday

# Keep BART and Bay Area Moving



## Impacts of not providing SOGR

- More frequent breakdowns – Loss of Capacity – Loss of Public Confidence
- Higher costs to Operate – Much higher costs to recover
- Fewer Riders – Greater Traffic Congestion
- Negative Environmental Impacts
- Hit to Regional Economy

## Increased & Stable Transit Funds!



# Brighter Economy May Improve Transit Funding



- New deficit free California budget finally halts trend of public transit cuts
- Long delayed state bond money (1A, 1B) finally beginning to flow to transit
- Local officials continue to prefer initiatives to extend service rather than help maintenance and rehabilitation
- Lots of ideas in Sacramento and DC to secure long-term transit funding – BUT takes courage to act