

January 2013



# Capacity Planning: Board Workshop

Operations Planning



# Track & Facility Capital Projects Needed to Maximize Fleet Utilization



## **BART Metro Phase 1 (up to 500,000 trips/day)**

- 24<sup>th</sup> / Mission (Upgrade) and Richmond Crossovers
- Hayward Maintenance Complex Phase I

## **BART Metro Phase 2 (500,000 to 750,000 trips/day)**

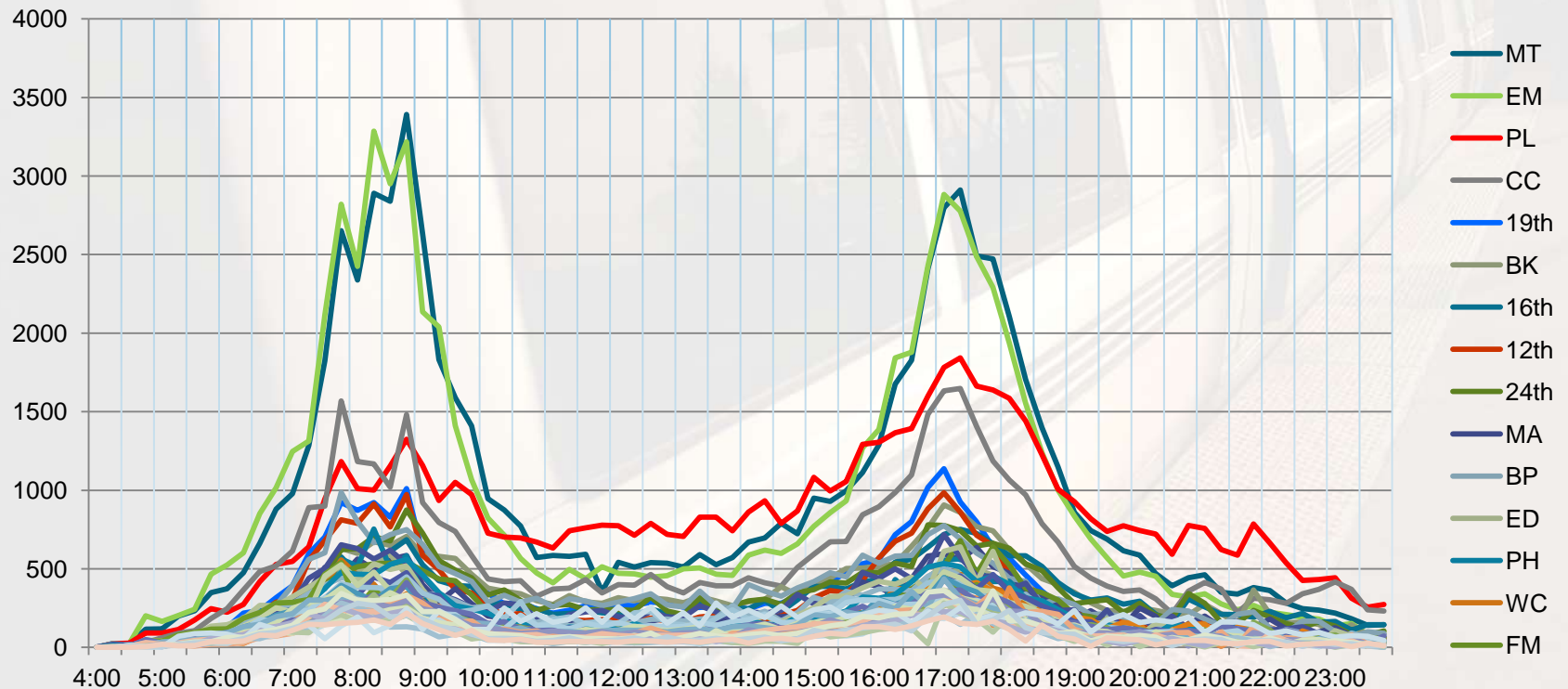
- Train Control System Modernization Project
- Glen Park Pocket Track
- Bay Fair Connection
- Hayward Maintenance Complex Phase II: Eastside Storage Yard

# Station Capacity is a Peak Period Issue at Embarcadero & Montgomery



## Combined Station Entries & Exits in 15 Minute Increments

Sample Date: November 15, 2012



# Two Concerns: AM Escalator Queues & PM Platform Crowding



VTA-BART Core Station Impact Study (2010) had the following conclusions:

## AM Escalator Queues

- @735,000 riders: Embarcadero & Montgomery each had an escalator whose queue did not clear in under 2 min during minor delay events

## PM Platform Crowding

- @487,000 riders: Embarcadero & Montgomery platforms were OK during normal service, but failed during an extreme delay event
- @735,000 riders: Embarcadero was stressed during normal service and failed during minor and extreme delay events. Montgomery only failed during an extreme delay event

# Interim Measures to Address Station Capacity



- Replacement or removal of under-utilized platform furniture: benches for seating disks, fewer pay phones
- Platform Screen Doors: Gain 1,400 sq. ft. of usable net space per platform (*EM current is 7,500, MT current is 12,000*)
- Metering Measures: real time platform headcount system
- Skip Stop Service: Montgomery has more capacity than Embarcadero (New Years Eve Plan)
- In Station Crowd Management (Giants Parade Day)
- Higher Performance Escalators (Hong Kong & Shanghai)
- Additional High Capacity Elevators (Portland MAX, Sound Transit)



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



Total Estimated Construction Cost: \$615 million (2009 dollars)  
Mission Critical Improvement as ridership starts to exceed 500,000 per weekday

# *“Two Birds with One Stone”*

Measures to address both Vehicle and Station Capacity



Objective: To flatten out peak demand without negatively impacting overall ridership levels

## **Demand Management**

- Peak of the peak period, peak direction fare surcharges (WMATA, NJ Transit, LIRR, Metro North)
- Embarcadero and Montgomery Station peak premium fares

## **Station Access (reduce the AM rush to find parking)**

- Expanding the market-based reserved parking program
- Transit Oriented Development, increasing walk-access
- Bicycle facilities improvements and operating rule changes
- Making feeder bus work: speed improvements and joint fares

# Conclusions



Weekday ridership could be 500,000 within 5 years and 750,000 a decade thereafter

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* → *HMC*

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

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