

# BART Capacity Overview for UCLA Lake Arrowhead Conference

October 18, 2010



# BART Basics



- 360,000 daily riders
- 104 miles
- 43 stations
- 1.3 billion annual passenger miles



# Transit's Green Challenge



- Regional planning focus on smart growth/sustainable communities
- Expectation that transit ridership will increase as a result
- Many rail systems are already experiencing capacity problems
- Rail transit infrastructure requires long lead times to implement, and substantial investment to build, maintain and operate



# Downtown SF Capacity Outlook

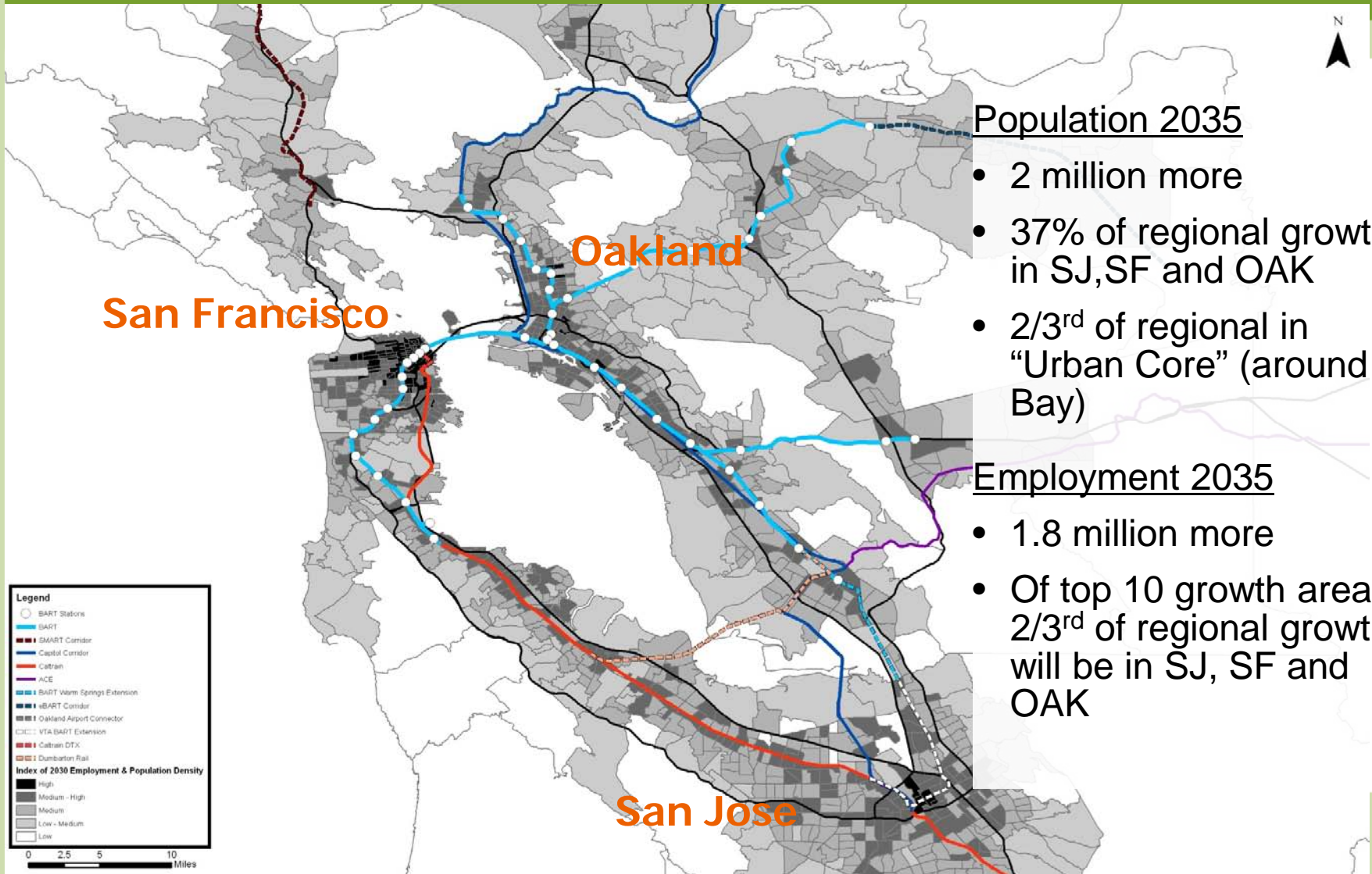


- BART not out of capacity today
- Near-term growth can be managed:
  - service adjustments
  - station crowd management
  - targeted ticket pricing measures
- Long-term growth requires major capital improvements
- Investments require substantial lead time
- Capacity improvements unfunded
- State-of-Good Repair largely unfunded





# Bay Area 2035 Forecast Growth

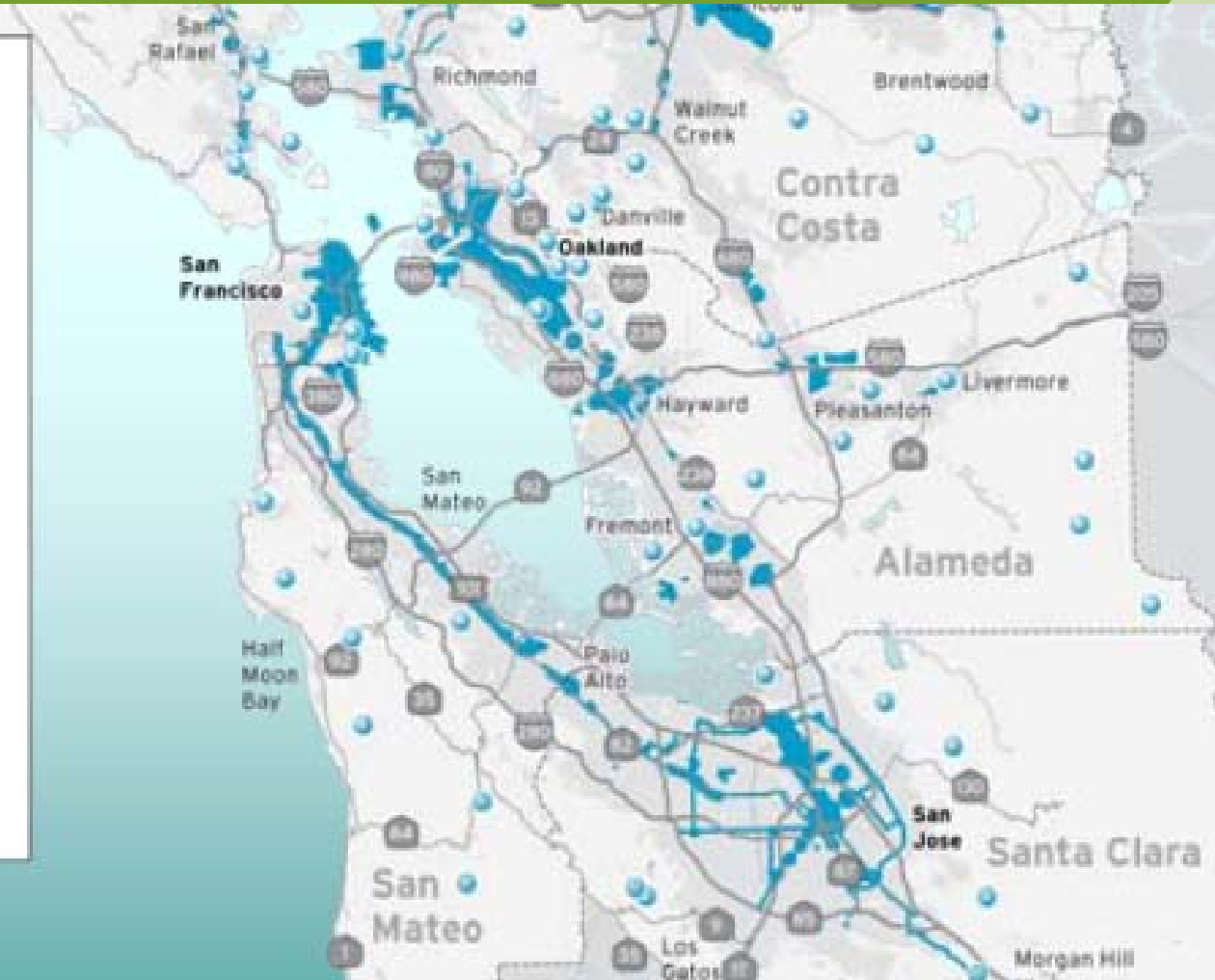


# Priority Development Areas



## Priority Development Areas and Priority Conservation Areas

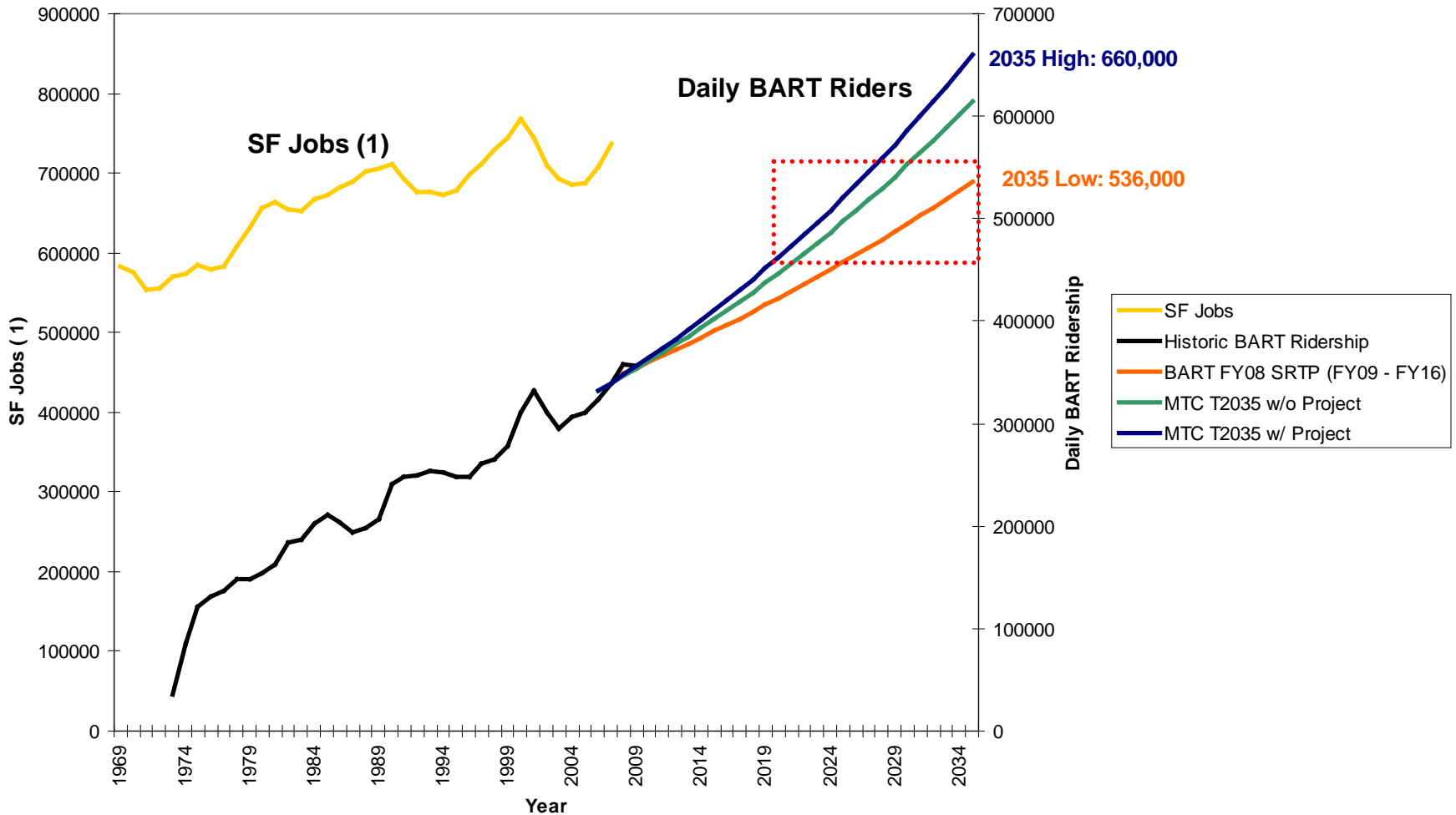
-  Priority Development Area
-  Priority Conservation Area
-  Freeway
-  Highway
-  Local Road



# BART Average Daily Ridership Historic Trends and Projections



BART Ridership and SF Job Growth



(1) US Bureau of Labor Statistics

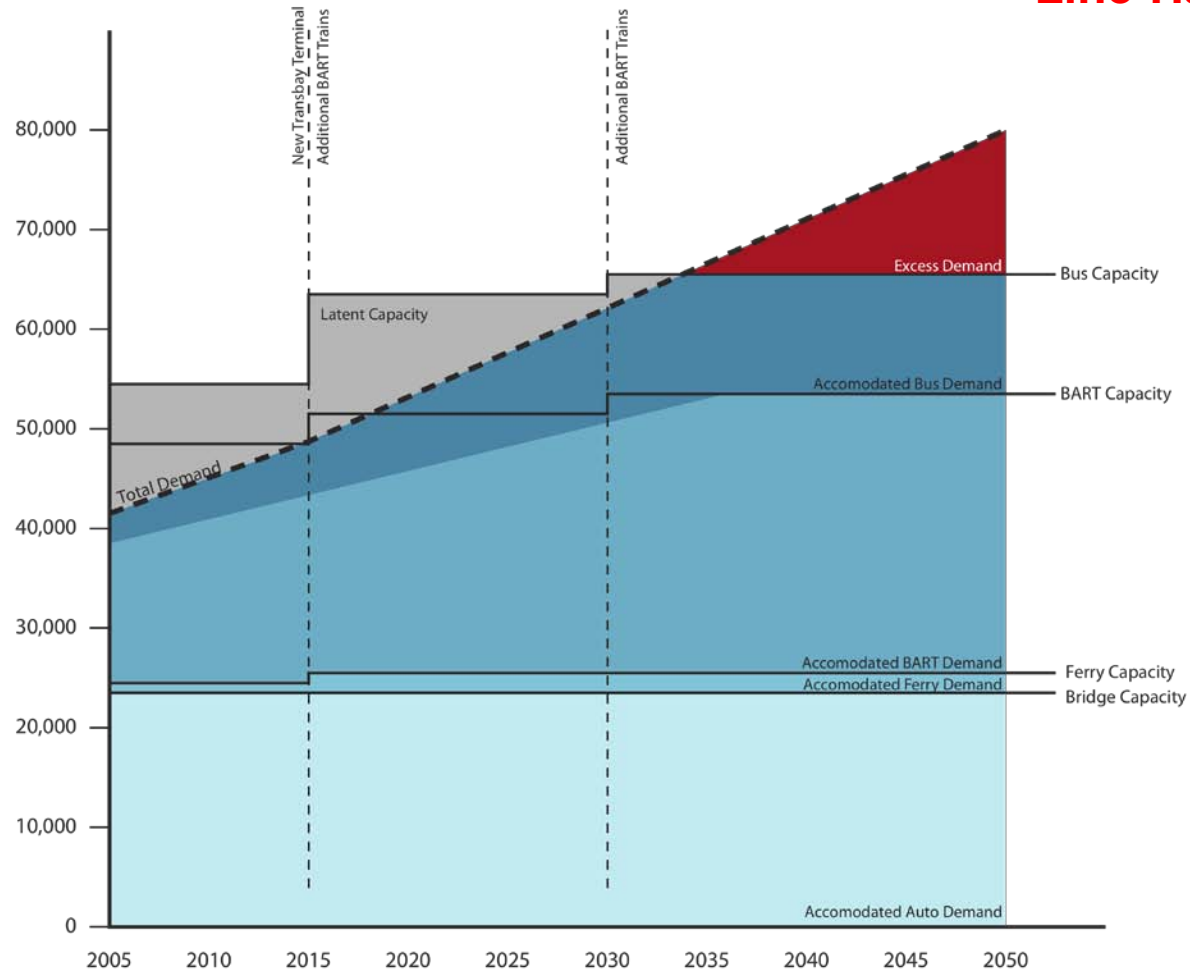
# SPUR Future of Downtown Report

## East Bay Commute is the Most Constrained



EASTBOUND PM PEAK HOUR BAY BRIDGE CORRIDOR DEMAND/SUPPLY

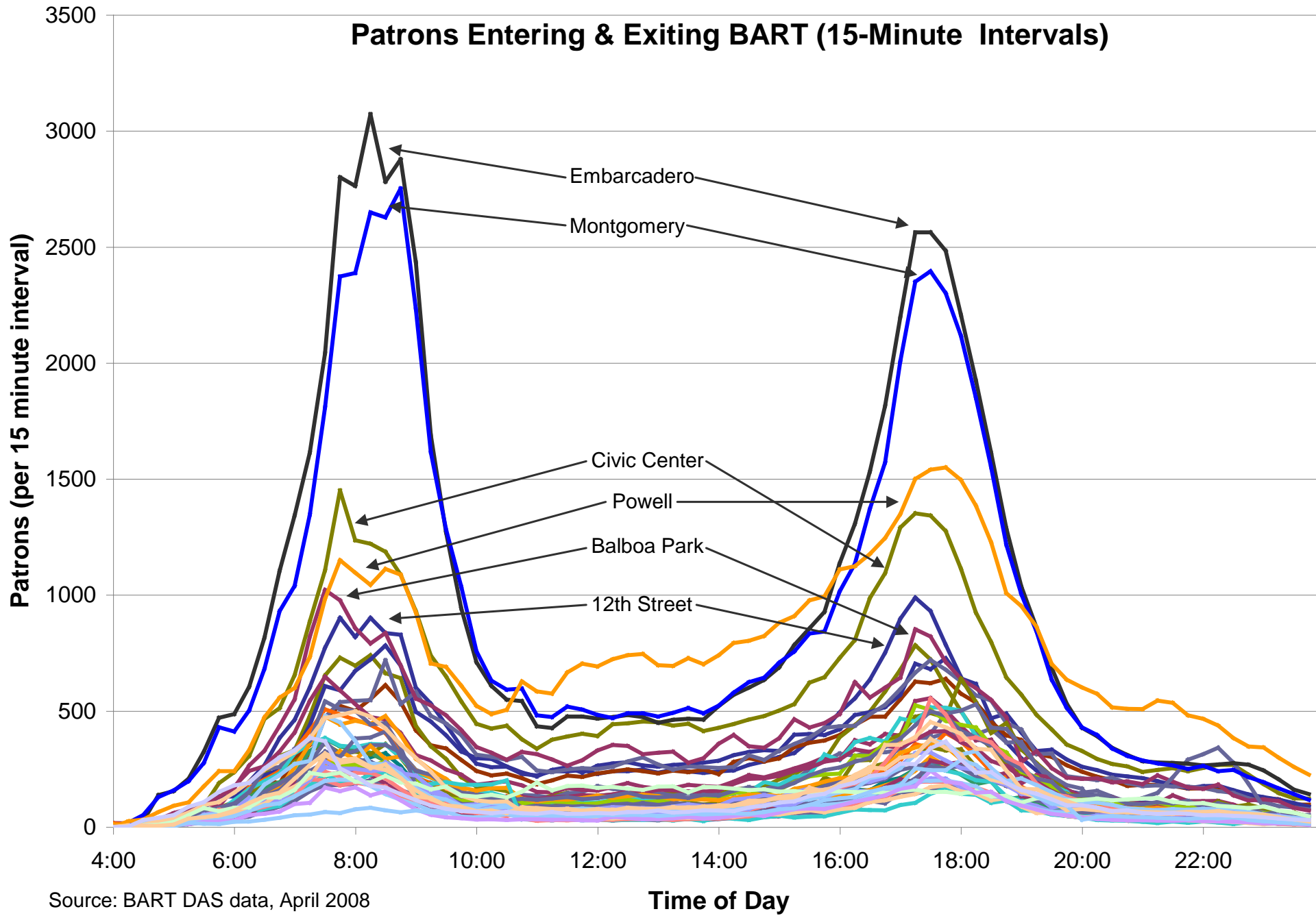
Line-Haul Only



Source: Cambridge Systematics & Arup  
CalTrain Downtown Extension & Transbay Ridership Analysis



# Patrons Entering & Exiting BART (15-Minute Intervals)



Source: BART DAS data, April 2008

Time of Day



# Current Travel Markets

2/3rds of BART trips to/from Market Street stations

Weekday Trips by Sub-Area

- 48%: Transbay
- 28%: intra-West Bay
- 24%: intra-East Bay



# Capacity Limiters



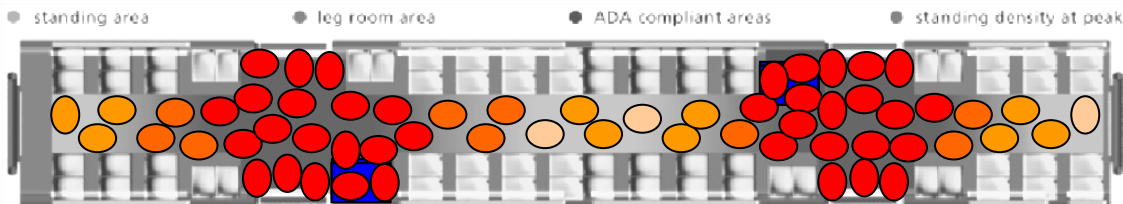
- San Francisco station dwell times limit Transbay throughput
  - *Platform and onboard crowding*
  - *Stairs and escalators*
- Current car design – 2 doors per side
- Transbay Tube - train control system
- Oakland Wye junction – conflicting movements
- Lack of crossovers, turnback tracks, storage tracks



# Where Could BART See Problems in the Future?



- On-Board Train Crowding
  - ❑ Passenger per Seat or per Car (Load Factors)
  - ❑ Train Control System
  - ❑ Vehicles
- SF Downtown Stations
  - ❑ Platform Crowding (PM)
  - ❑ Stair, Escalator & Faregate Queuing (AM)
  - ❑ Emergency Exiting
- Yards & Shops
- Station Access



# Transit Capacity Increases



- Easier to increase capacity on bus systems quickly, but trade-offs may be operational efficiency.
  - *Capital – buses, transit lanes/busways, bus stop improvements, maintenance facilities*
  - *Operating costs*
- Rail systems require much longer lead times to increase capacity.
  - *Capital – Additional tracks, civil structures (tunnels, elevated sections), station improvements, maintenance facilities, right-of-way, vehicles, power and signaling systems*
  - *Operating costs*





# Transbay Corridor Management

Illustrative – Phased Improvements over 50 Years



Max. Load Point in peak direction (future peak hour <u>increase</u> )	Short < 2,500	Medium 2,500 – 7,500	Long 7,500 – 12,000
<b>BART</b>			
Remove Train Seats	●		
Demand Management Strategies	●	●	●
Station Access	●	●	●
Station Capacity	●	●	
3-Door Train Fleet		●	
Train Control Improvements		●	
Expand Train Fleet		●	●
Construct New Transbay Tube + Stations			●
<b>Bus</b>			
Transbay Terminal	●		
Bay Bridge Contra-Flow Lane		●	

# BART in MTC Regional Rail Plan

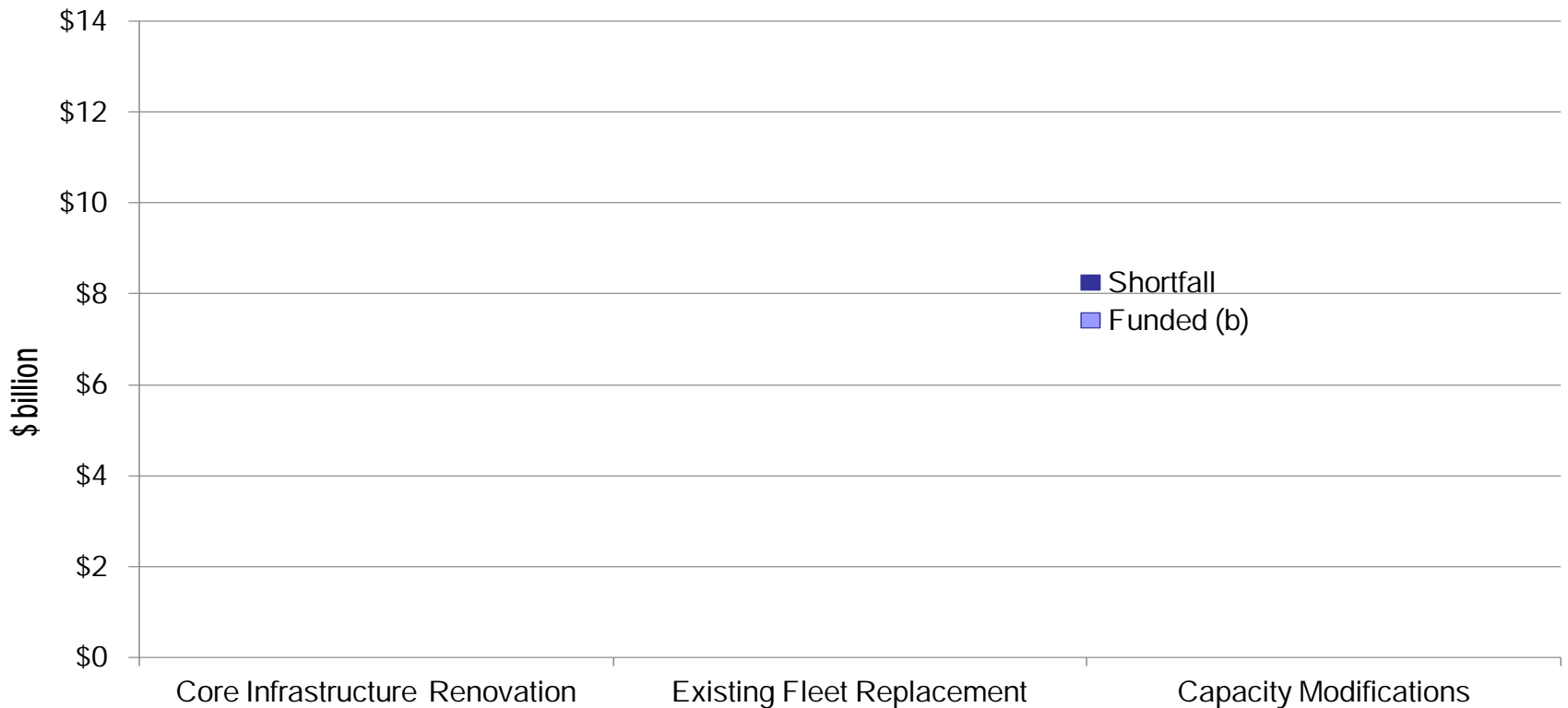


# BART Capital Program for Core System

## Major Funding Shortfalls



BART Capital Program (a)  
(\$billion)



(a) Not shown are \$30 million in Security improvements and \$30 million in Quality Enhancements

(b) Funding as "programmed" in MTC 2035 Regional Transportation Plan

# Examples from Other Cities



- Paris RER System – “Regional Express Metro” overlaid on top of Paris Metro system – 40+ years to develop
- New York Subway – major lines built originally as 4-track lines with express train capability
- US commuter rail – conversion to double deck equipment



JR Railway (Japan)  
**Supply-Side Strategy**





# Capacity Overview



**Questions?**