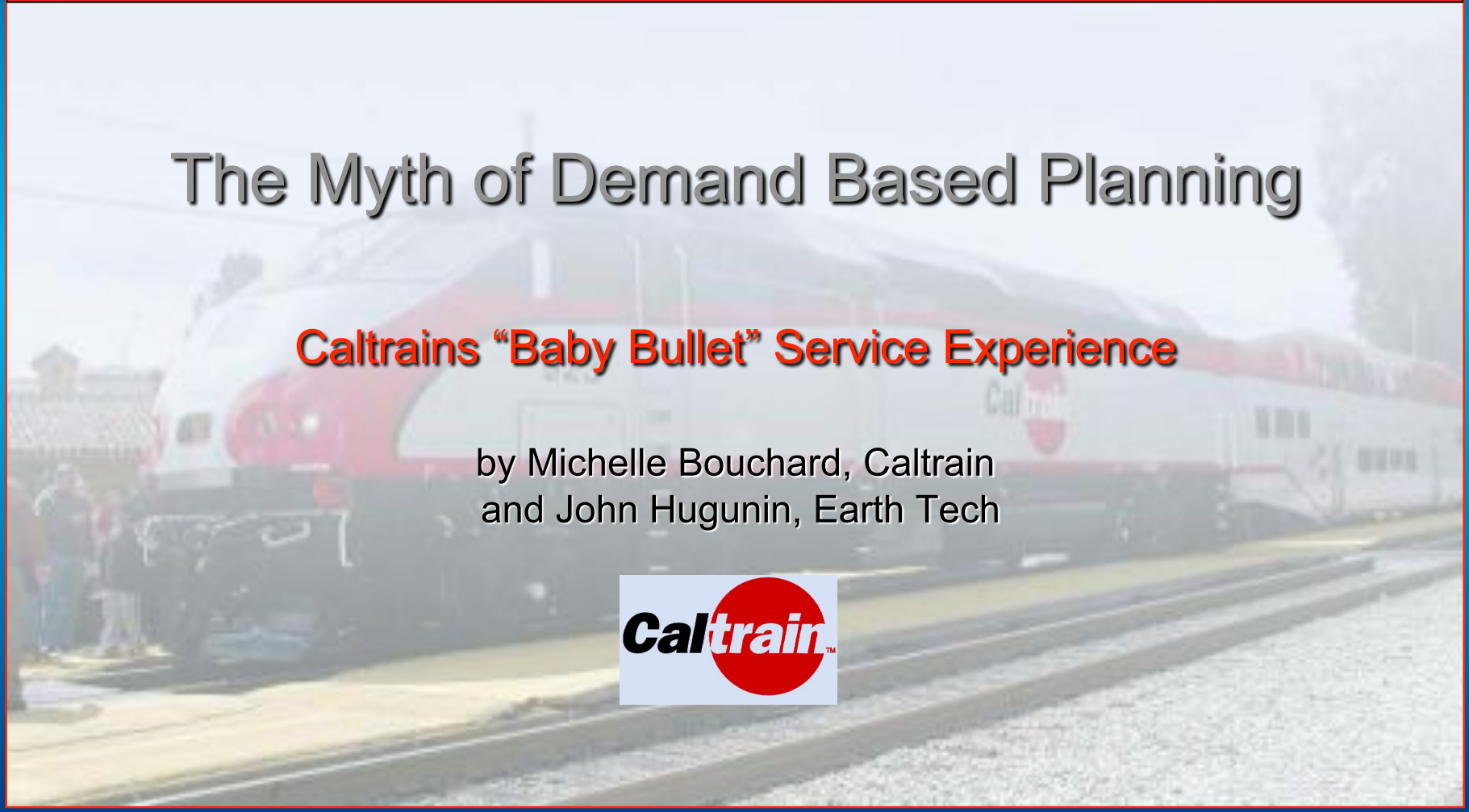
P R E S E N T A T I O N

The Myth of Demand Based Planning

Caltrains "Baby Bullet" Service Experience

by Michelle Bouchard, Caltrain
and John Hugunin, Earth Tech



Presentation Outline

1. Description and History of Caltrain Corridor
2. Improvement Program (1996-2005)
3. Baby Bullet Service/Operation Planning
4. Results and Lessons Learned
5. The Future

Excerpts from the

S.F. Business Times 11/10/05 & Gilroy Dispatch 11/11/05

San Francisco
BUSINESS TIMES
Caltrain ridership increases

"Average weekday ridership in September rose to 34,430 from 26,603 before Baby Bullet service began in June 2004. Revenue, meanwhile, is up 27.6% over last year's figure. Fares increased 17.5% July 1, which had been expected to reduce ridership

Clearly, passengers want the faster travel times that Caltrain now offers."

GILROY DISPATCH
Caltrain Ridership up Since Baby Bullet Debut in Aug.

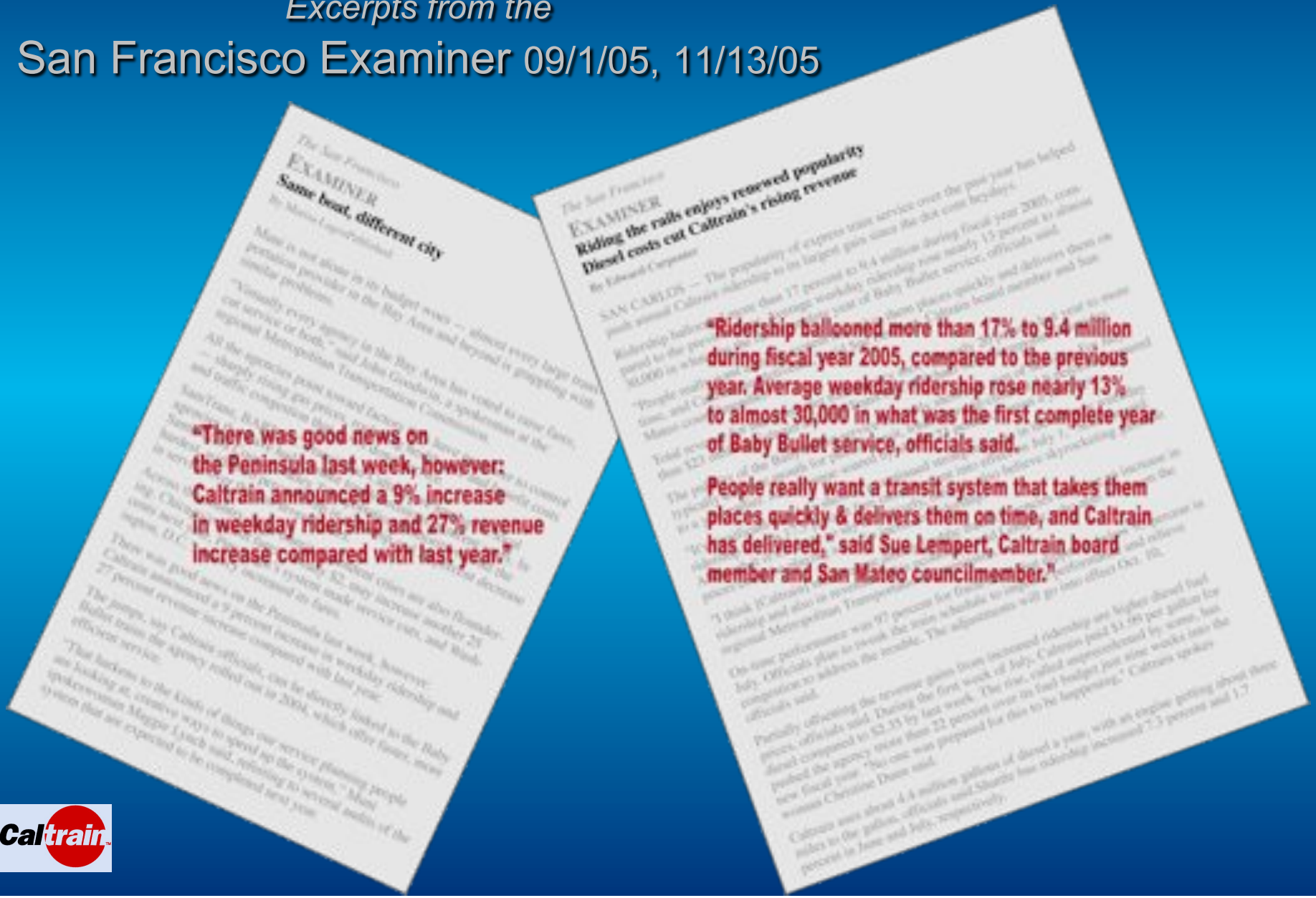
"Average weekday ridership is up about 9.4% compared to the same months last year

Revenue, meanwhile, is up 27.6% over last year's figure, despite a 17.5% fare increase

Average weekday ridership has gone from from 26,608 pre-Baby Bullet to 34,430 as of September of this year, & revenue is up 50 percent, Harvey said."

Excerpts from the

San Francisco Examiner 09/1/05, 11/13/05



The San Francisco
EXAMINER

Same beat, different city

"There was good news on the Peninsula last week, however: Caltrain announced a 9% increase in weekday ridership and 27% revenue increase compared with last year."

The San Francisco
EXAMINER

Riding the rails enjoys renewed popularity
Diesel costs cut Caltrain's rising revenue

"Ridership ballooned more than 17% to 9.4 million during fiscal year 2005, compared to the previous year. Average weekday ridership rose nearly 13% to almost 30,000 in what was the first complete year of Baby Bullet service, officials said.

People really want a transit system that takes them places quickly & delivers them on time, and Caltrain has delivered," said Sue Lempert, Caltrain board member and San Mateo councilmember."

Caltrain

Description & History of Caltrain Corridor

- Context
  - 77-mile corridor length, 29 stations
    - Commute-hour service from San Jose to Gilroy
  - 3 Counties, 15 Cities Served Directly
  - Large CBD on both ends (SF, SJ)
  - Solidly suburban in between
    - Stations Typically in Historic Suburban Cores
    - Burgeoning TOD's at Several Stations
  - Parallels Congested US101, I-280 Corridors
  - Connects to Local Transit, Regional Rail, and more…
    - BART, SF Muni, VTA, ACE, Amtrak, Samtrans, others
    - San Francisco International Airport

Description & History of Caltrain Corridor (continued)

- Evolution – SPRR to Public Entity
  - Continuous Passenger Service Since 1861
  - SPRR Owned/Operated Until 1970's
  - Caltrans Operated Until 1991
  - 1991: ROW Purchased by 3-County Joint Powers Board
  - 1998-2001: Dot-Com "Boom to Bust"

Description & History

Caltrain System/Regional Context

Description & History (continued)

- Political Climate
  - 3-County Governing Board
  - Viewpoints Often Differ Among:
    - Member Counties
    - Local Cities
    - Connecting Transit Providers (BART, Muni, VTA)
  - Result: Implementing Change Can Be Difficult

Description & History (continued)

- Budget Issues
  - Operating funds from fares/partner contributions
  - Revenues have remained relatively flat
  - Partner's Contributions have remained flat over last three years
  - One-time revenues have been used in the last three years to close the gap
  - Expenditures have continued to grow

Improvement Program
1996-2005

- Capital Upgrades (Ponderosa, Bonanza, CTX & Beyond)
  - 13 miles of Passing Track (3rd and 4th Tracks)
  - Crossovers
  - Grade Separations
  - Rail/Tie Refurbishment Program
  - Station Upgrades
    - Station Redesign
    - Reconfigure “holdout” stations
  - New Maintenance Facility
    - Lenzen Yard
- Goal: Increase Reliability, Safety and Throughput

Improvement Program

1996-2005 (continued)

- Systems Upgrades
  - Expansion of Centralized Traffic Control
  - Signal/Communication System Upgrades
  - Enhanced Dispatch Facility
- Equipment Upgrades
  - New Locomotives/Rolling Stock
- Other
  - Visual Messaging, P/A Systems, Transition to POP Fare System

Along the Line

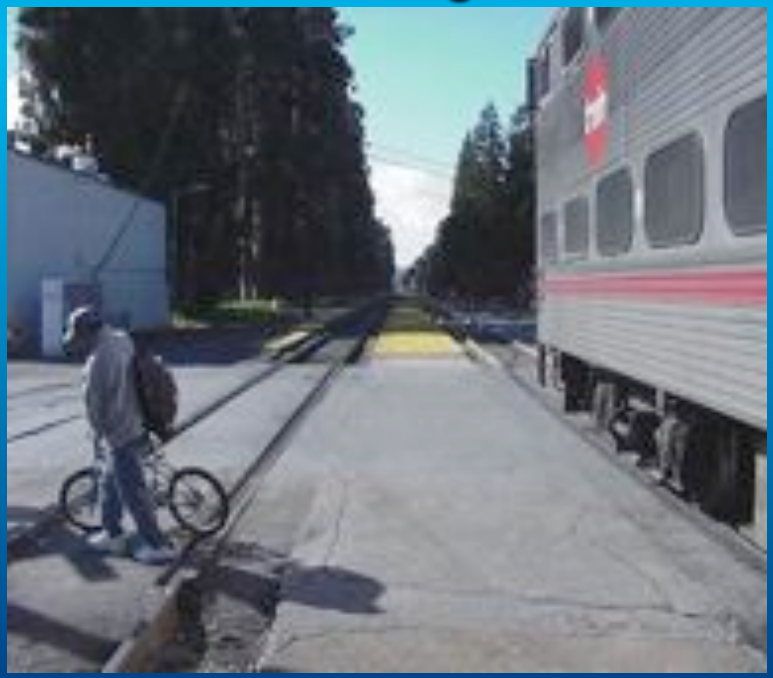
Through the Communities

San Antonio Station
Transit Oriented Development

Eliminate Hold Out Rule

Side Loading Platform
Across Two Active Tracks

Center Loading Platform



At the Stations

Menlo Park Station

San Carlos Station

Four – Intermodal Transit Connections

- *Millbrae Station*
  Shuttle Service to SFO
  Upcoming BART Service

- *Mountain View Station*
  with VTA Light Rail

- *Diridon Station with VTA Light Rail / ACE / Capitol Corridor*
- *4th & King Station Muni Light Rail (N Line)*

Yard Construction

Current Diridon Maintenance Facility

Future Site of CEMOF Facility

Control Enhancements

Centralized Traffic Control System

Enhanced Dispatch Facility

Track Rehabilitation

Tracks and Infrastructure

Baby Bullet Service/Operation Planning

Baby Bullet Service/Operation Planning

- Framework:
  - Service Based on Business Principles
    - I.e., Focus on High-Revenue Service
  - Maximize Productivity (earned revenue per employee)
    - I.e., Shorten End-to-End Run Times
  - Maximize Efficiency (contain costs)
  - Maximize Revenue by transitioning from “Push” to “Pull” model

Baby Bullet Service/ Operation Planning (continued)

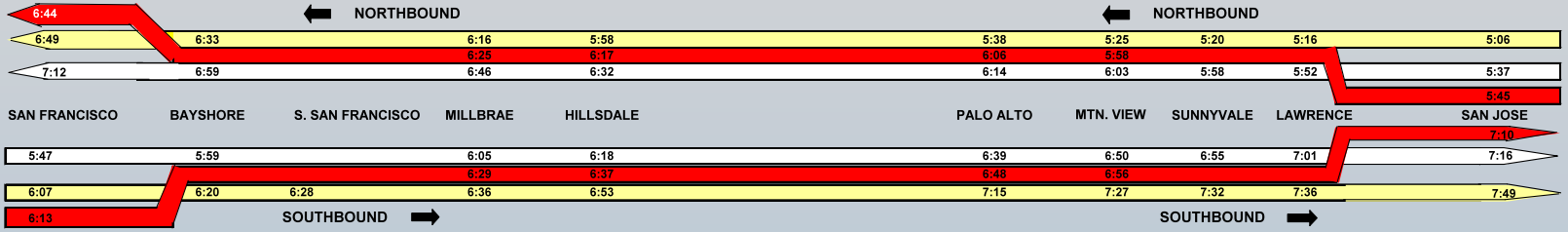
- Planning Process:
  - Reject the Demand Modeling Approach
  - Use Capacity/Operations Modeling Approach
    - What end-to-end runtimes must be achieved to maximize efficiency AND reliability?
  - Reconfigure Service Resources based on Demand and Perceived Demand
    - Link Level of Service to Known Ridership Generators

Baby Bullet Service/ Operation Planning (continued)

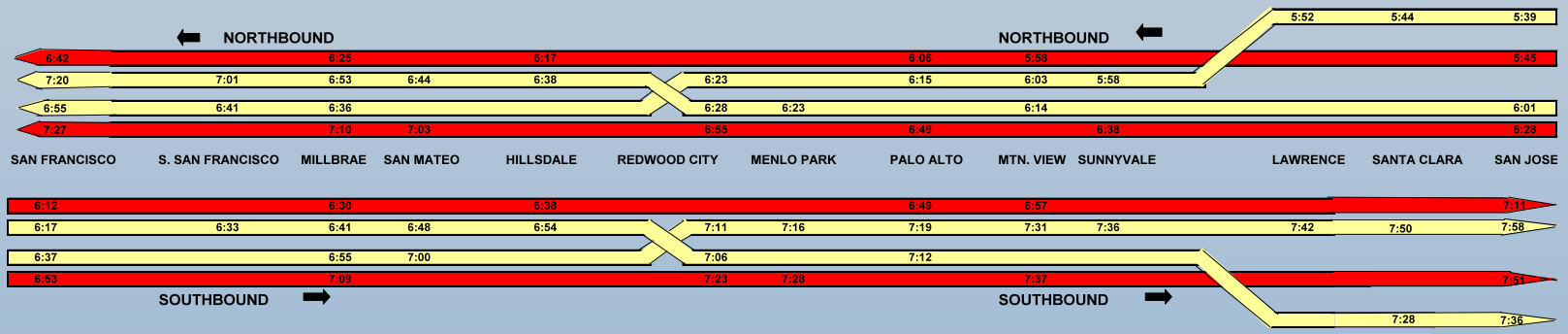
- Challenges
  - Limited Choices for Planners
    - Few Service Plans “fit” available infrastructure
  - Some Stakeholders “Lose”
    - Some Service Curtailed for Plan to Work
- Difficult Decisions Made
  - Service Reductions/Suspensions
    - Some Stations Get Less Service
    - Replace Service with shuttle or local bus services
    - Locals Replaced with Limiteds + Timed Transfers

Baby Bullet Service/ Operation Planning (continued)

Initial Service Plan

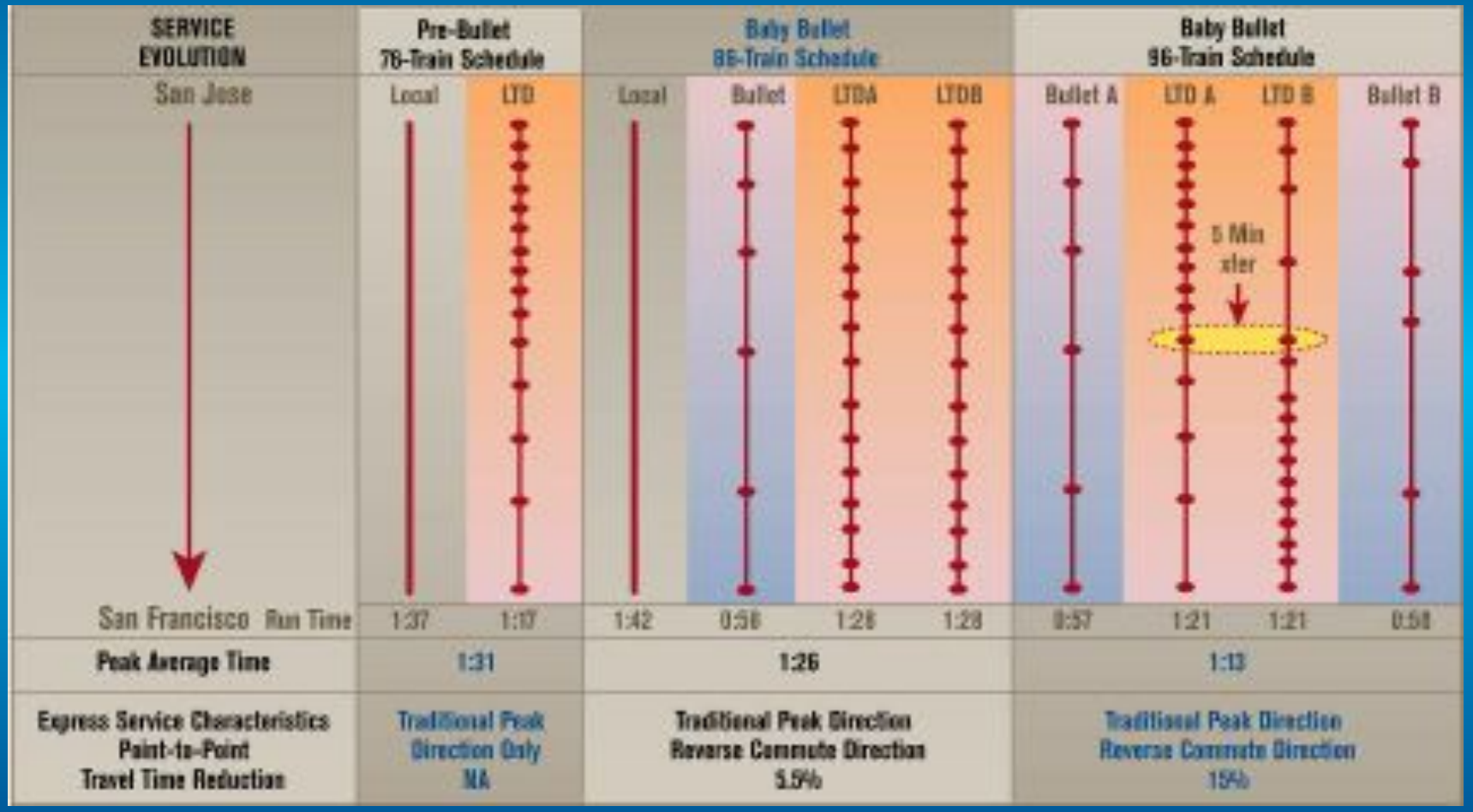


Current Service Plan



LOCAL LIMITED BULLET

Baby Bullet Service/Operation Planning (continued)

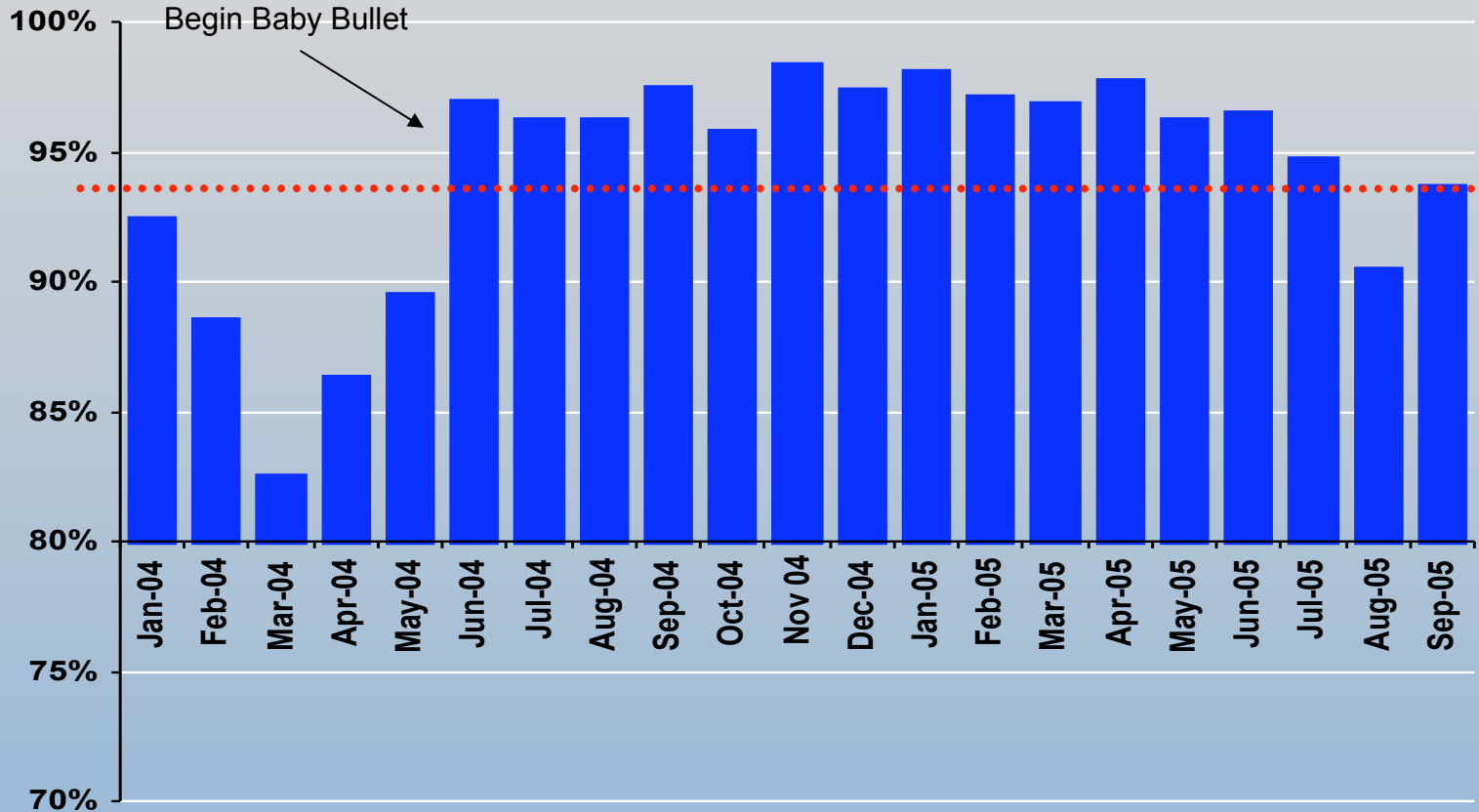


Results

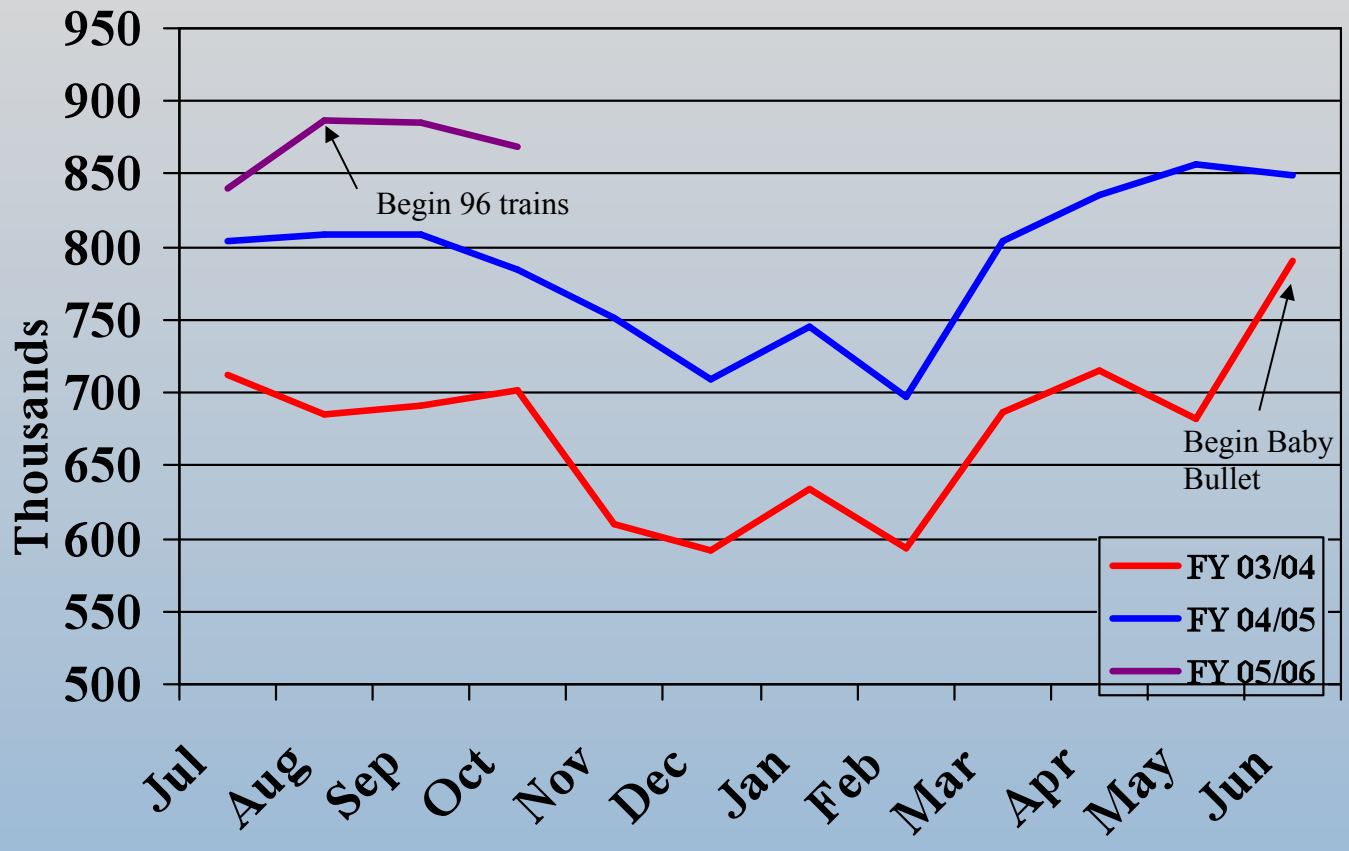
- Service Increase from 76 to 96 Daily Trains
  - Same crew and equipment resources
- Gains in Ridership, Reliability
  - 20% Gain in New Riders
  - 50% Gain in Revenue
  - On-time performance increased
- "Synergisms" Created
  - Budget Deficit Offset with Service Increase
    - 86 to 96 daily trains (August 2005)

Results

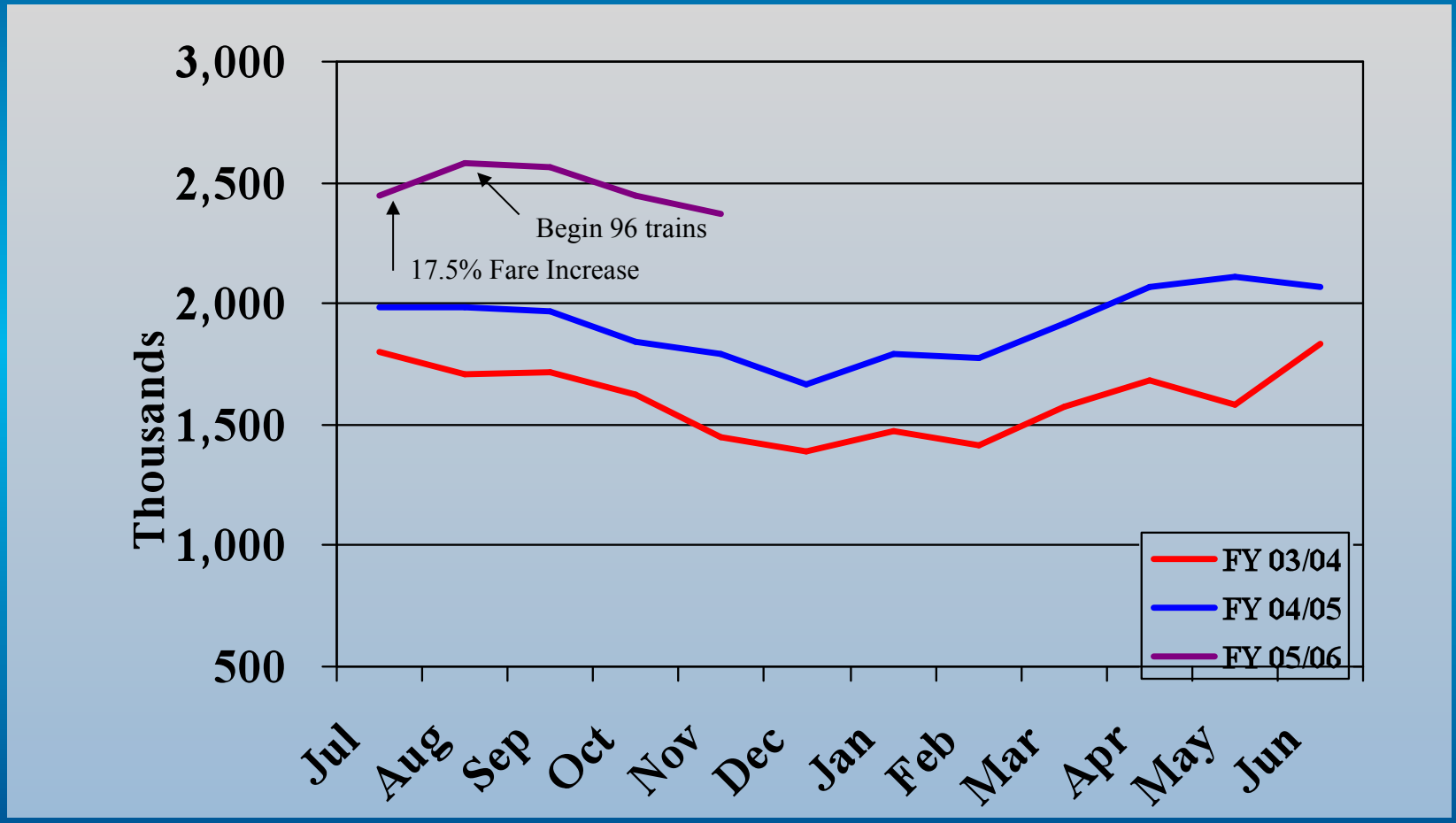
On-Time Performance



Results-Total Ridership



Results-Fare Revenue



Lessons Learned

- Riders are Flexible, Given Choice of Superior Service
  - Will change Origin/Destination station
  - Will trade off Access for Frequency/Speed Benefits
  - Will Pay More – 17.5% Fare Increase, No Ridership Elasticity
  - Perceived Reliability is Key to Passengers
- Labor Appreciates Enhanced Productivity
  - They like going fast
- Some "Unintended Consequences"
  - Parking Demand at "Bullet" Stations Approaching Supply Limits
  - Capacity limits being reached – rolling stock design, signal system, terminal platform, train storage

Implications for Other North American Operators

- Superior Service Overlain on “Blank Slate” Can:
  - Trump Output of “Traditional” Planning
  - Result in a Rich Mix of Integrated Service (Local, Limited, Express)
  - Significantly Reduce Travel Time (Compete w/Car)
  - Gain Acceptance by Existing and New Riders
  - Drive Demand

Implications for Other North American Operators (cont'd)

- Caveats:
  - Relatively Few "Bi-Directional" Corridors
    - San Jose-Oakland-Sacramento (170 miles)
    - Los Angeles-Orange County-Oceanside (90 miles)
    - Chicago-Milwaukee (80 miles)
    - New York-Trenton (65 miles)
    - Albuquerque-Santa Fe (60 miles)
    - Boston-Providence (45 miles)
    - Boston-Worcester (45 miles)
    - Washington-Baltimore (40 miles)
    - New York-Stamford (40 miles)
    - Salt Lake City-Ogden (40 miles)
    - Dallas-DFW-Ft. Worth (35 miles)
    - Seattle-Tacoma (35 miles)
- Possible Applications of Lessons Learned:
  - High-Speed Rail Initiatives

Caltrain

Keys to Success

- Understand Your Corridor/Ridership
- Question Traditional Planning Processes
- Trust Your Intuition
- Inform the Public/Stakeholders
  - Robust Outreach Program BEFORE, DURING and *AFTER* Service Changes
- Be Prepared to Respond to Change
  - …and be prepared to prepare your Board!

The Near Future

- Deal with immediate capacity constraints
  - Increased passenger loads create dwell time issues (rolling stock quantity and design)
  - New storage facilities (to loosen up Diridon station)
  - Install intermediate signals

Long-Range Plans

- Continued Phased Infrastructure Upgrades
- Rail/Service Extensions
  - Gilroy – Monterey/Santa Cruz
  - Dumbarton – Union City
- Major Upgrades
  - Downtown Extension/Electrification
- Anticipating and Responding to Customer Needs
- Other

Questions & Answers


Thank You !
923
Caltrain