



DEMOGRAPHIA

# High Speed Rail: Plans vs. Reality & Cautions

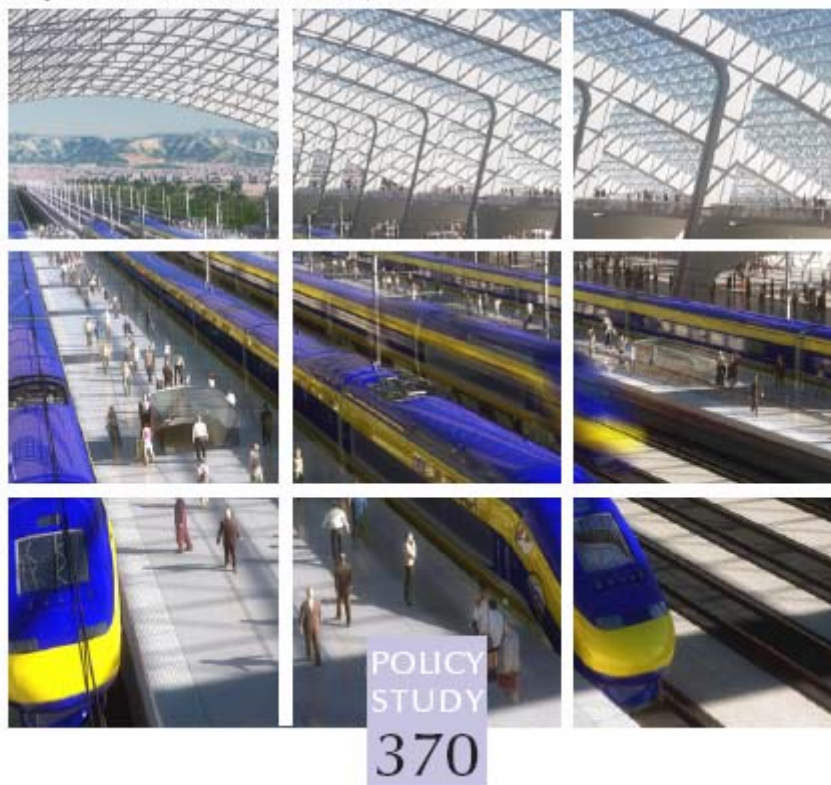
Presentation by  
Wendell Cox, Demographia  
National Conference of State Legislatures  
Philadelphia 23 July 2009



September 2008

## THE CALIFORNIA HIGH SPEED RAIL PROPOSAL: A DUE DILIGENCE REPORT

By Wendell Cox and Joseph Vranich  
Project Director: Adrian T. Moore, Ph.D.





# TYPES OF HIGH SPEED RAIL

According to Federal Plan

Genuine HSR: HSR Express

Now gravitating to higher  
cost approaches

## Definitions:

### High-Speed Rail (HSR) and Intercity Passenger Rail (IPR)\*

**HSR – Express.** Frequent, express service between major population centers 200–600 miles apart, with few intermediate stops. Top speeds of at least 150 mph on completely grade-separated, dedicated rights-of-way (with the possible exception of some shared track in terminal areas). **Intended to relieve air and high-way capacity constraints.**

**HSR – Regional.** Relatively frequent service between major and moderate population centers 100–500 miles apart, with some intermediate stops. Top speeds of 110–150 mph, grade-separated, with some dedicated and some shared track (using positive train control technology). **Intended to relieve highway and, to some extent, air capacity constraints.**

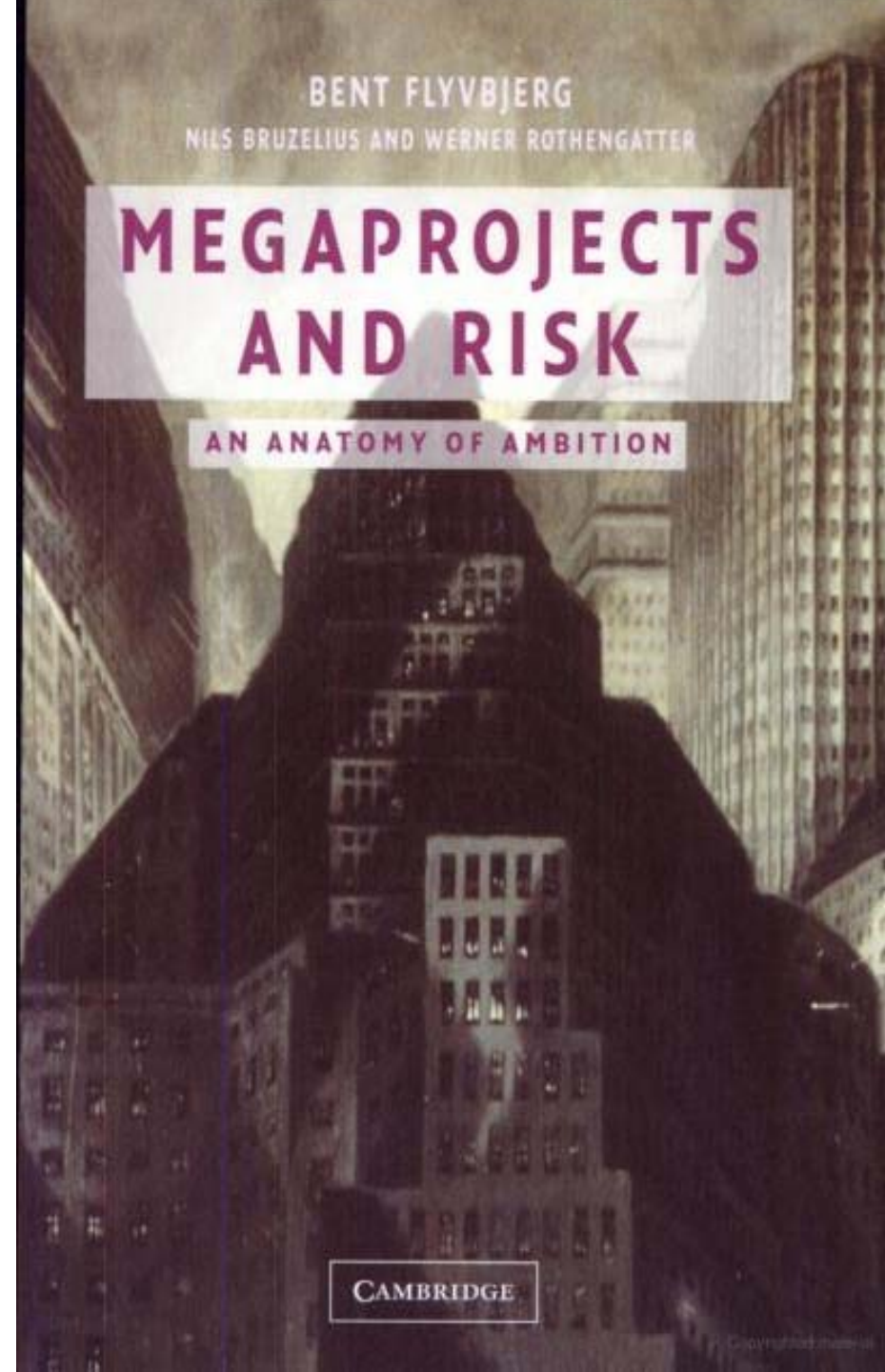
**Emerging HSR.** Developing corridors of 100–500 miles, with strong potential for future HSR Regional and/or Express service. Top speeds of up to 90–110 mph on primarily shared track (eventually using positive train control technology), with advanced grade crossing protection or separation. **Intended to develop the passenger rail market, and provide some relief to other modes.**

**Conventional Rail.** Traditional intercity passenger rail services of more than 100 miles with as little as one to as many as 7–12 daily frequencies; may or may not have strong potential for future high-speed rail service. Top speeds of up to 79 mph to as high as 90 mph generally on shared track. Intended to provide travel options and to develop the passenger rail market for further development in the future.

\* Corridor lengths are approximate; slightly shorter or longer intercity services may still help meet strategic goals in a cost-effective manner.

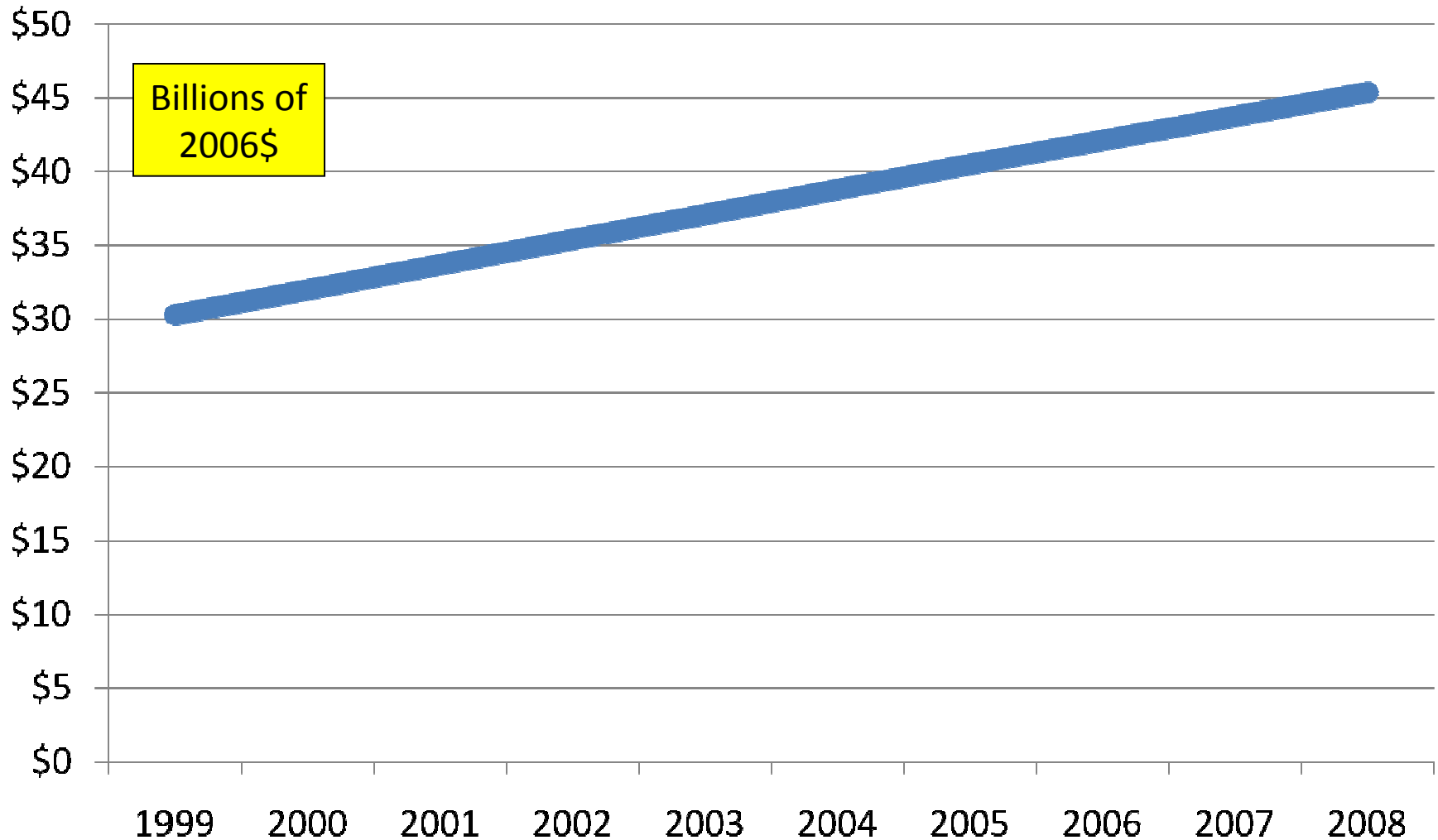
RECORD OF  
COST ESCALATION &  
RIDERSHIP  
PROJECTION  
EXAGGERATION

International Study



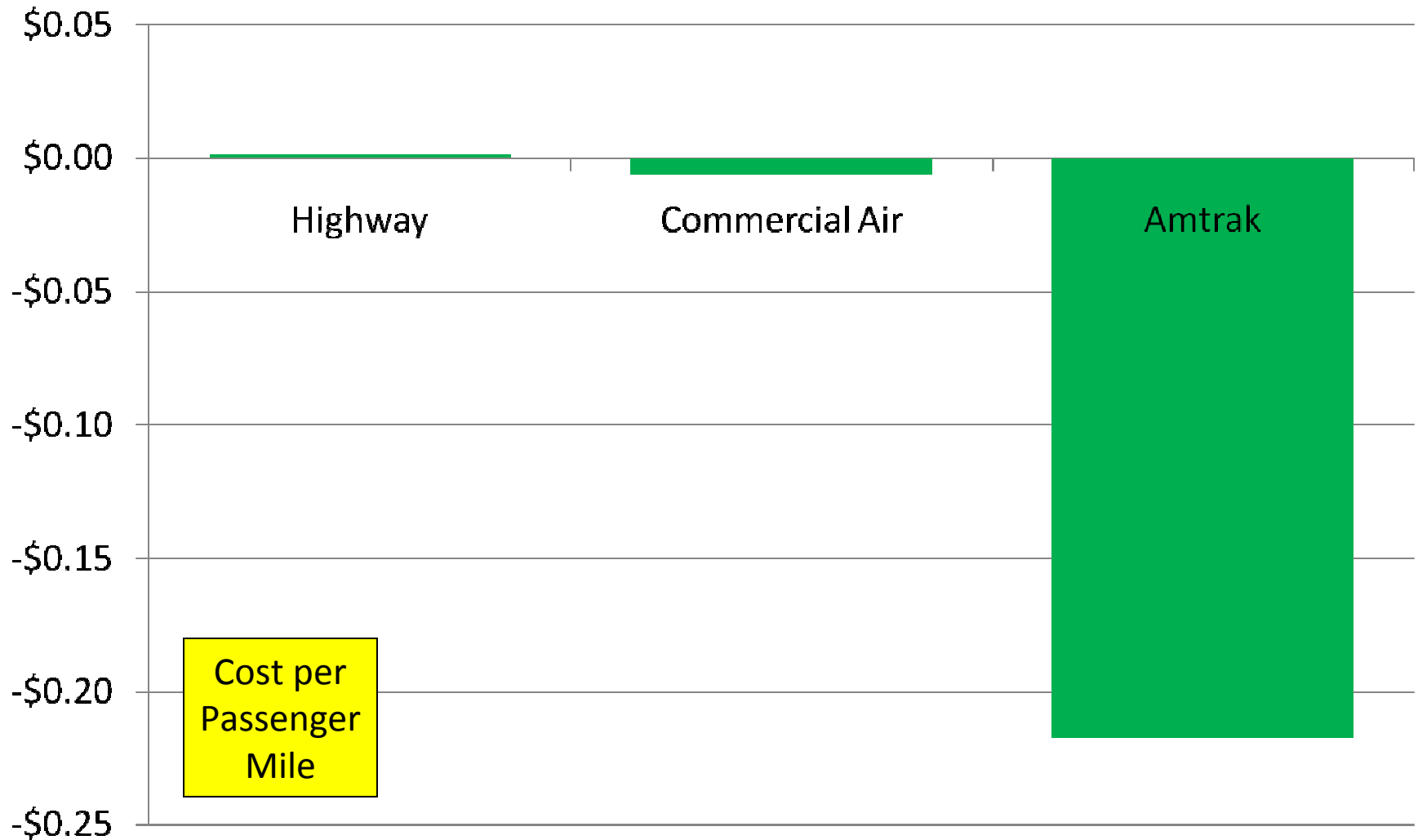
# Capital Cost Projection

## DUE DILIGENCE HIGH & LOW COST OVERRUN



# Federal Profits & Losses

AMTRAK ONLY SUBSTANTIAL INTERCITY SUBSIDIES



# The Profits Claim

## DATA DOES NOT SUPPORT

Iñaki Barrón de Angoitia, director of high-speed rail at the International Union of Railways in Paris, referred to the short Paris-Lyon and Tokyo-Osaka routes as the only ones in the world that have “broken even.”

*The New York Times*, May 29, 2009

6/4/2009

Taiwan Today

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Taiwan High Speed Rail seeks fund injections

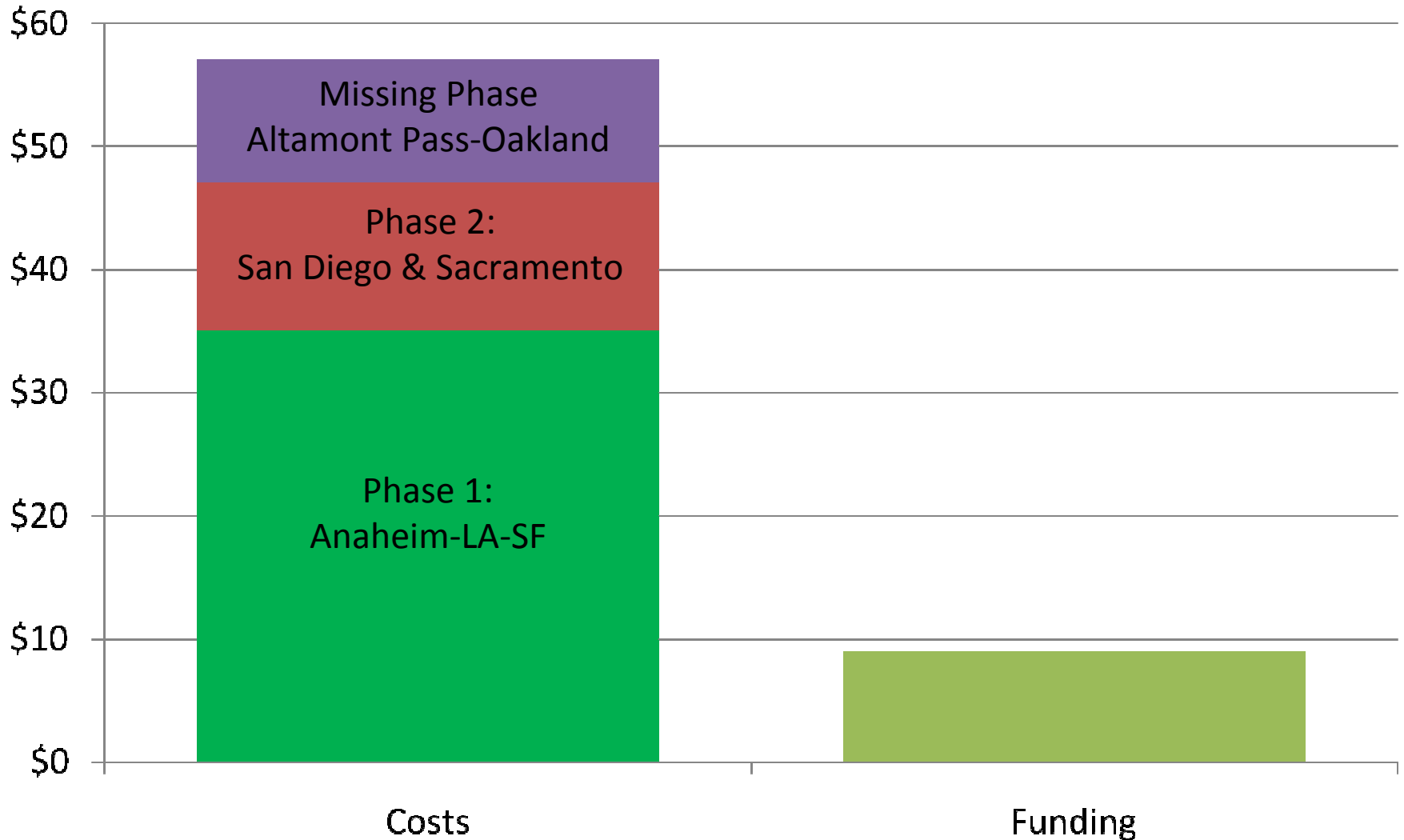
• Publication Date : 06/04/2009

• Source : [Economic Daily News](#)

Loss-plagued Taiwan High Speed Rail Corp. is seeking to attract fund injections from insurance firms and take out new bank loans by the end of the year to bring to completion a financial restructuring plan.

# California High Speed Rail Financing

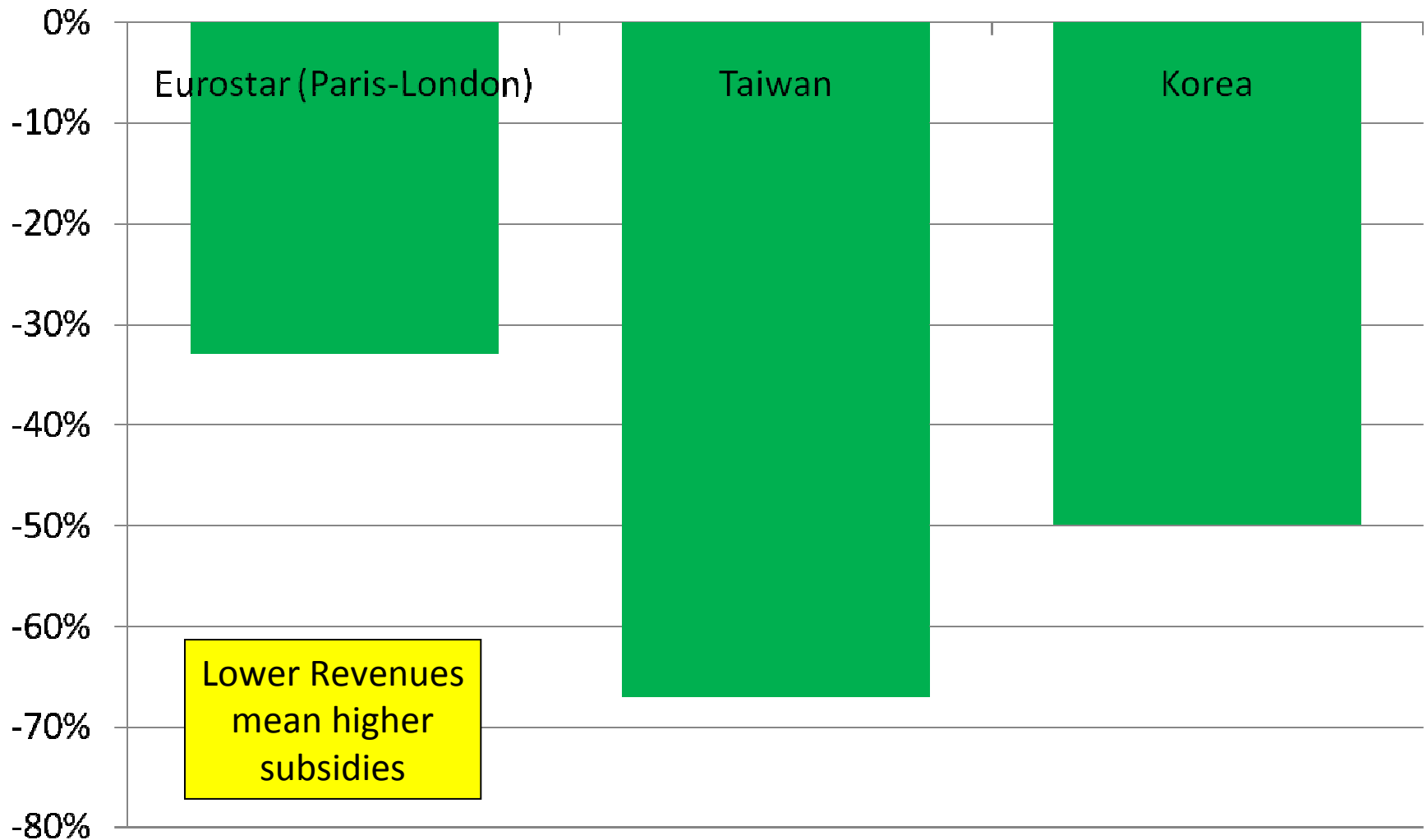
## HUGH UNFUNDED BALANCE





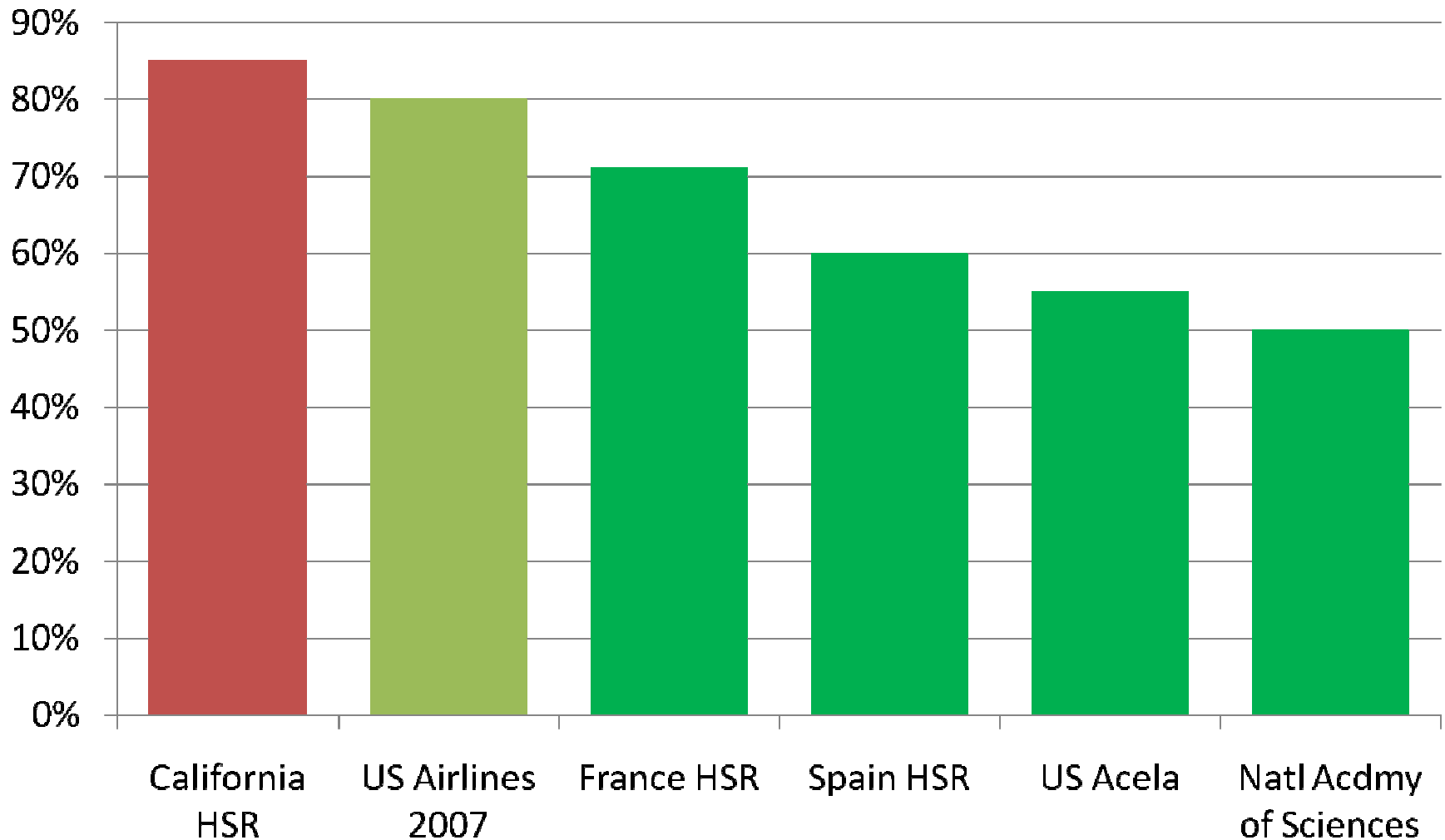
# Ridership (Fare) Projections High

## LOWER REVENUES CAN BE A PROBLEM



# California HSR Load Factors in Context

## COMPARED TO AIRLINES AND OTHER HSR SYSTEMS



# Impact on Highway Traffic

## HSR IS TOO COSTLY FOR MOST PEOPLE

- **CONGESTION IS IN URBAN AREAS**
  - NOT BETWEEN
- **HIGH TOLLS:**
  - TOKYO-OSAKA \$100+
    - 2<sup>ND</sup> (PARALLEL) FREEWAY UNDER CONSTRUCTION
  - PARIS-MARSEILLE \$75+

# HSR Reduces Car Travel Little

## NECESSITY FOR CAR RENTAL AT DESTINATION



# California: “Highway Alternative” Costs

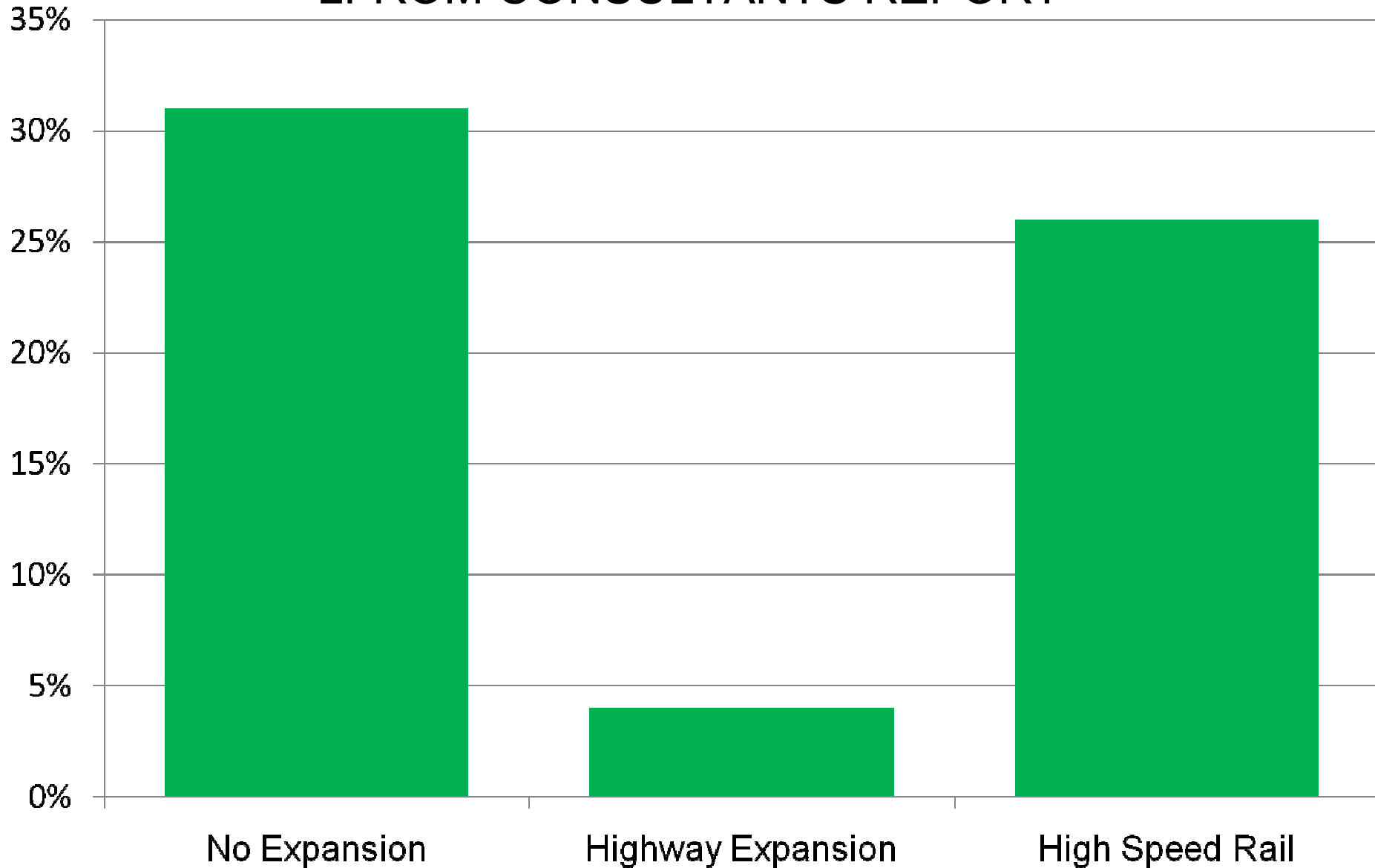
EXAGGERATION ESTIMATED AT 200+ TIMES

- Included expansions where not needed
- Costed at multiples of FHWA standards
- Intense urban costs used in rural areas
- Attributed all costs to HSR



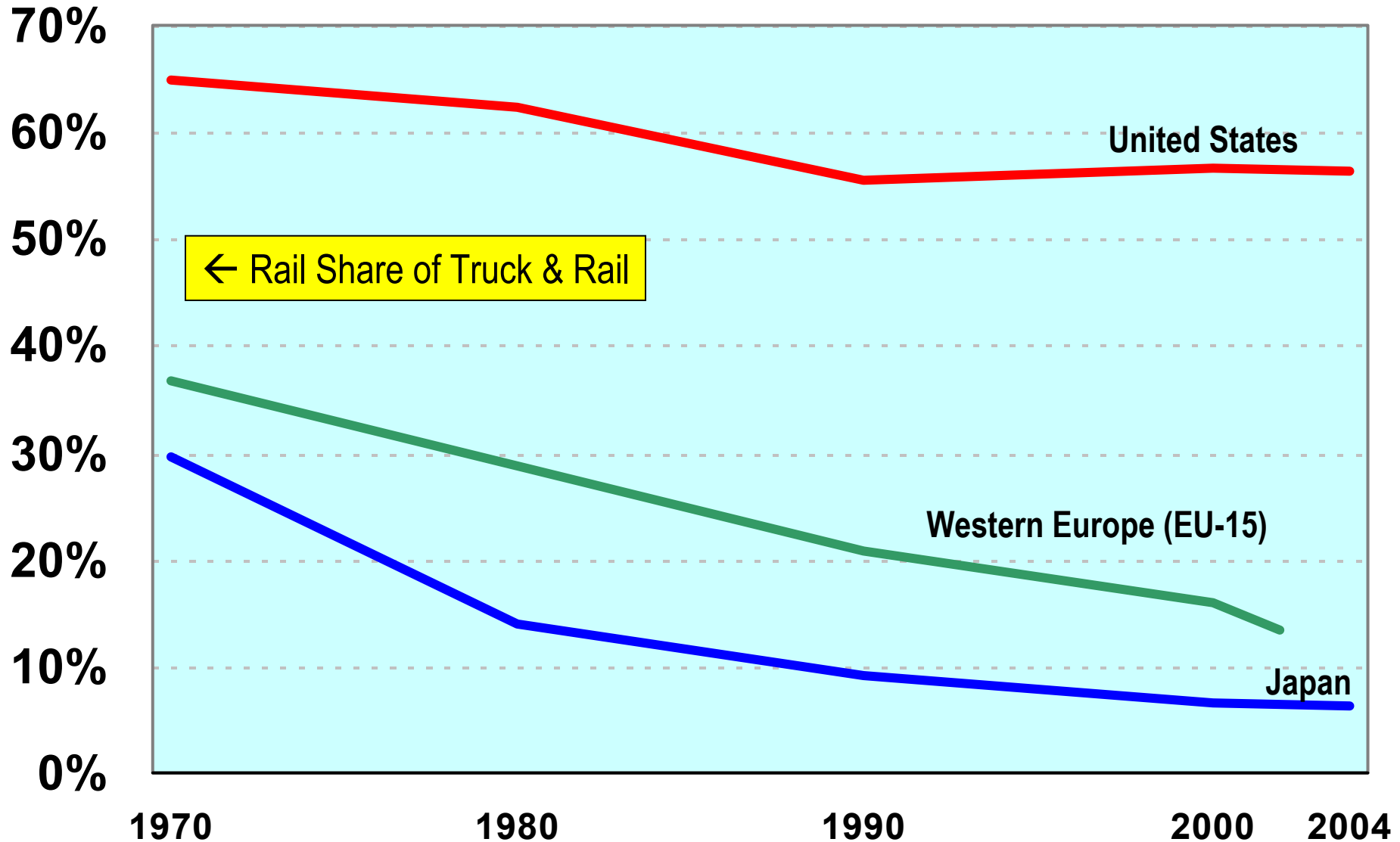
# Traffic in 2030: Over Highway Capacity

FROM CONSULTANTS REPORT



# Market Share Trend: 1970-1004

FREIGHT MODES: US, WESTERN EUROPE & JAPAN



# Impact on Airports

## VERY SHORT MARKETS HAVE IMPACTS

- **MARKET SHARE CLAIMS**
  - IGNORE PRE-EXISTING LARGE RAIL SHARE
- **SIGNIFICANT IN SOME SHORT MARKETS**
  - PARIS TO LYON
- **INSUFFICIENT TO REDUCE FUTURE EXPANSION**
  - PARIS-MARSEILLE 23 FLIGHTS DROPPED TO 17
  - TOKYO TO OSAKA: HOURLY 777 AIR SERVICE

O'Hare International Airport: Chicago

# Impact on Airports: Slight

## SAN FRANCISCO AREA

*Even with the large diversion of air passengers predicted by the Rail Authority (35% to 56%), we found that the projected runway demand at SFO **would only be reduced 4-7%, due to the large number of SFO flights not associated with the California market. ...Finally, it is possible that the airlines would compete more effectively with fares than assumed in the HSR report.***

Regional Airport System Plan (San Francisco Bay Area)  
[www.mtc.ca.gov/planning/air\\_plan/RASP\\_FinalReport.pdf](http://www.mtc.ca.gov/planning/air_plan/RASP_FinalReport.pdf), p.32

# Barcelona-Madrid Flights: No Reduction DESPITE 50% MARKET LOSS CLAIM BY HSR

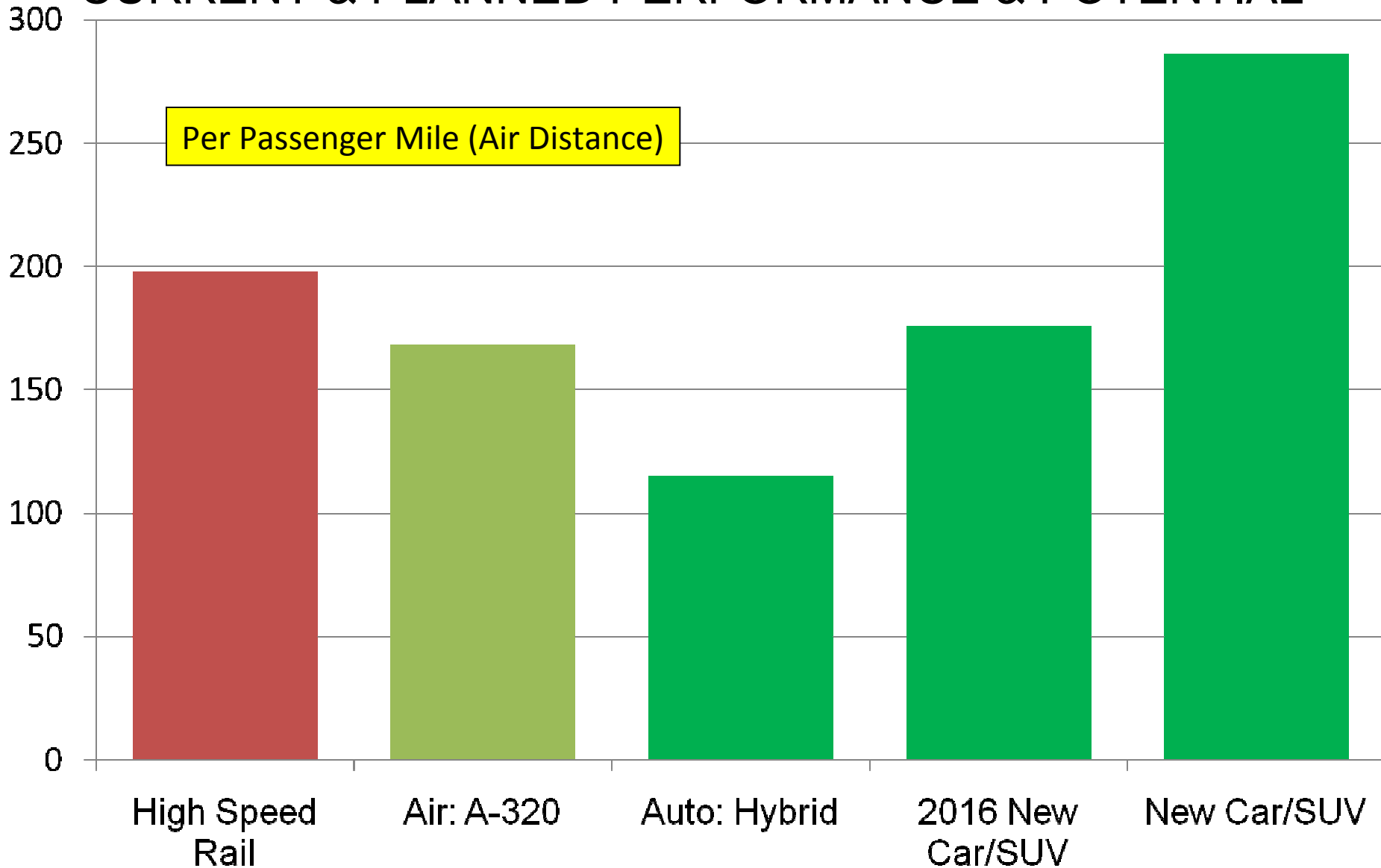




# GHG Emissions: LA to SF

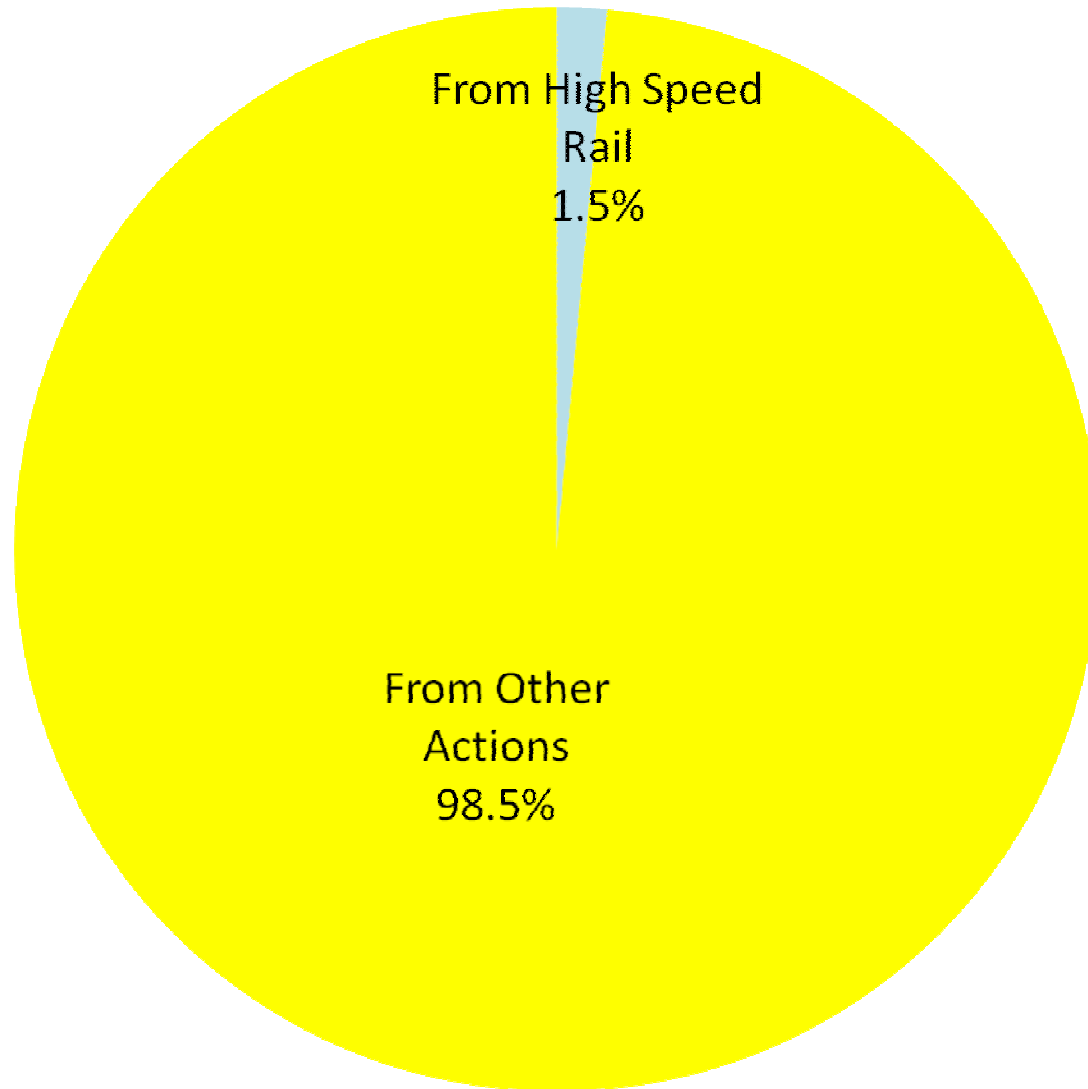
## CURRENT & PLANNED PERFORMANCE & POTENTIAL

Per Passenger Mile (Air Distance)



# Impact of HSR on GHG Reduction Goal

## 2020: USING 2030 HSR IMPACTS



Based on  
California  
Air Resources  
Board Data

# Cost Effective Greenhouse Gas Reduction

UN IPCC MAXIMUM RANGE

Shenyang,  
China

**\$20**

**\$50**

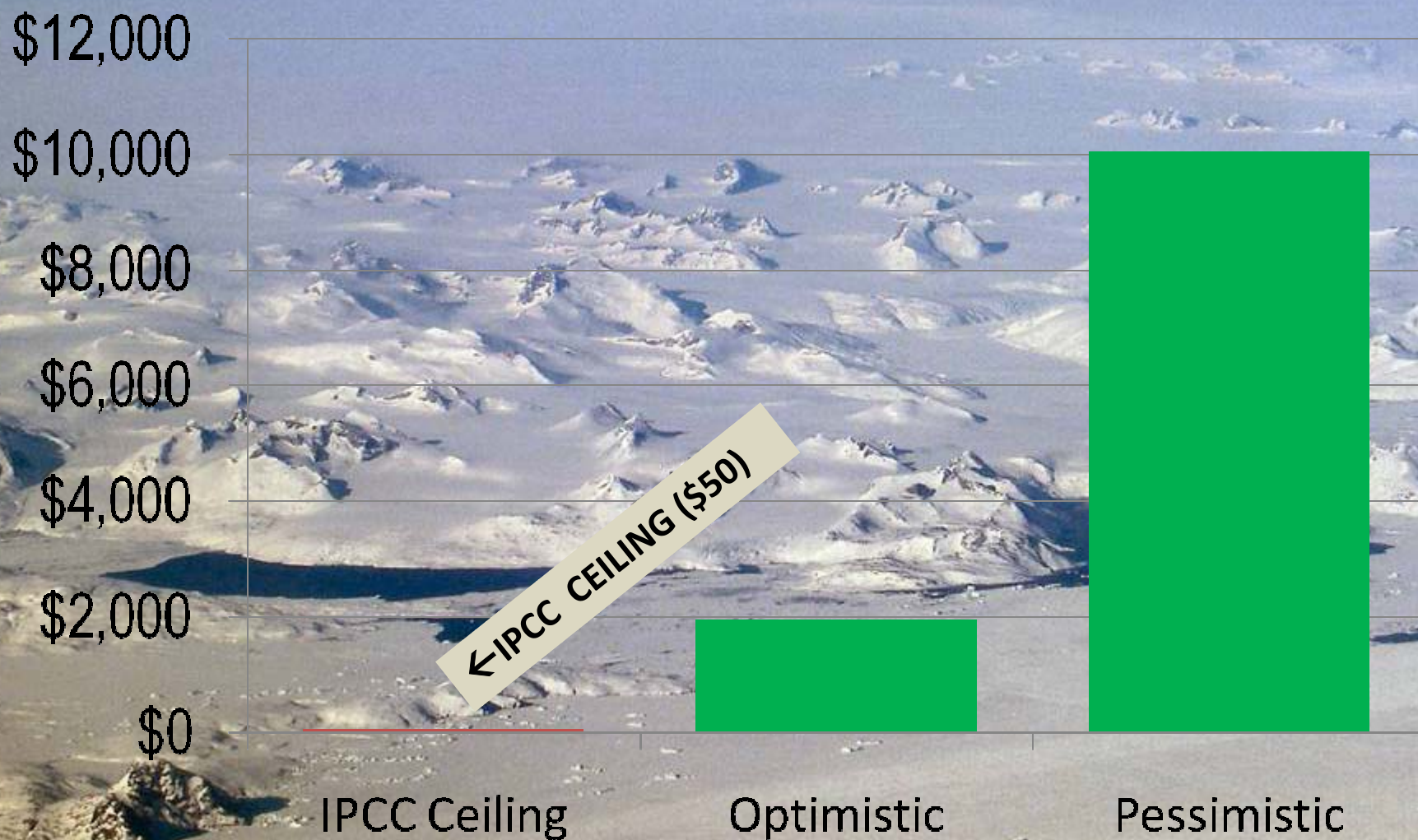
Market  
Less than  
\$15

Above \$50 is wasteful  
Detracts from efforts to reduce GHGs

McKinsey  
Average  
\$17

# Cost per Ton of CO2 Removed: California

## 2030 PROJECTIONS & IPCC CEILING



# Plans vs. Reality & Cautions

## BOSTON “BIG DIG”

- The Plan
  - Massachusetts to pay 10% (Federal share: 90%)
  - Massachusetts costs to be \$1 Billion (2009\$)
- The Reality
  - Massachusetts paying 73% (Federal share 27%)
  - Massachusetts costs \$18 Billion
  - Will take to 2038 to pay debt
  - Borrowing to pay salaries (\$28.80 per hour v \$18)

**Big Dig's red ink engulfs state**

*The Boston Globe*

Cost spirals to \$22b; crushing debt sidetracks other work, pushes agency toward insolvency