

The Economic Impact of the California High-Speed Rail in the Sacramento/Central Valley Area



Simulation Artwork from NC3D

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Introduction

Proposition 1A – the “Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century” – on November 4, 2008, if approved, would enable the state to issue \$9.95 billion in general obligation bonds to develop high-speed rail (HSR)

- \$9 billion for the planning, design, and construction of the HSR system
- \$950 million of the bond revenue for capital improvements to other passenger rail lines that would connect to the HSR system

Introduction (continued)

HSR system would:

- connect the major population areas of the state with 800 miles of track
- be mostly dedicated, fully grade-separated track with technologically advanced safety and control systems
- operate at speeds in excess of 200 mph
- accommodate 117 million passengers annually by 2030
- offer longer-distance door-to-door travel times comparable to air travel and less than one-half as long as an automobile trip

The Report: Economic Benefits of HSR in the Sacramento/Central Valley Area

- Direct cost savings from faster, cleaner, more cost-effective means of transportation (direct benefits to travelers and society)
- The economic benefits to Central Valley communities
 - population and employment growth
 - direct effect of the construction project
 - benefits of market integration
 - impact on government revenues
 - influence on the real estate market
 - fiscal consequences to Central Valley residents
- Quality-of-life enhancements

Direct Costs Savings from HSR

– *Mode-shift benefits*

- savings that travelers receive as a result of shifting their mode of travel from relatively expensive automobiles, airplanes, and conventional trains to HSR.
 - variables to consider include:
 - » time saved
 - » out-of-pocket expenses (e.g., gas, wear and tear on a car, tolls, and parking less the price of an HSR ticket)
 - » productivity gains (e.g., ability to work on train)
 - » reduced accident risk
- consumer surplus from induced travel (i.e., trips not otherwise taken)

Estimate of Mode-Shift Benefits

- Cambridge Systematics's (2007) rigorous calculation for the Central Valley found the expected benefits to be \$780 million

Direct Costs Savings from HSR (continued)

- *Congestion-reduction benefits*
 - social savings resulting from the decreased travel times induced by the HSR
 - » benefit to those remaining on the roads or skies, but facing less congestion
- Cambridge Systematics study calculated benefits accruing in the Central Valley to be:
 - nearly \$2 billion savings from less freeway congestion
 - \$2.6 million savings from less airway congestion

Direct Costs Savings from HSR (continued)

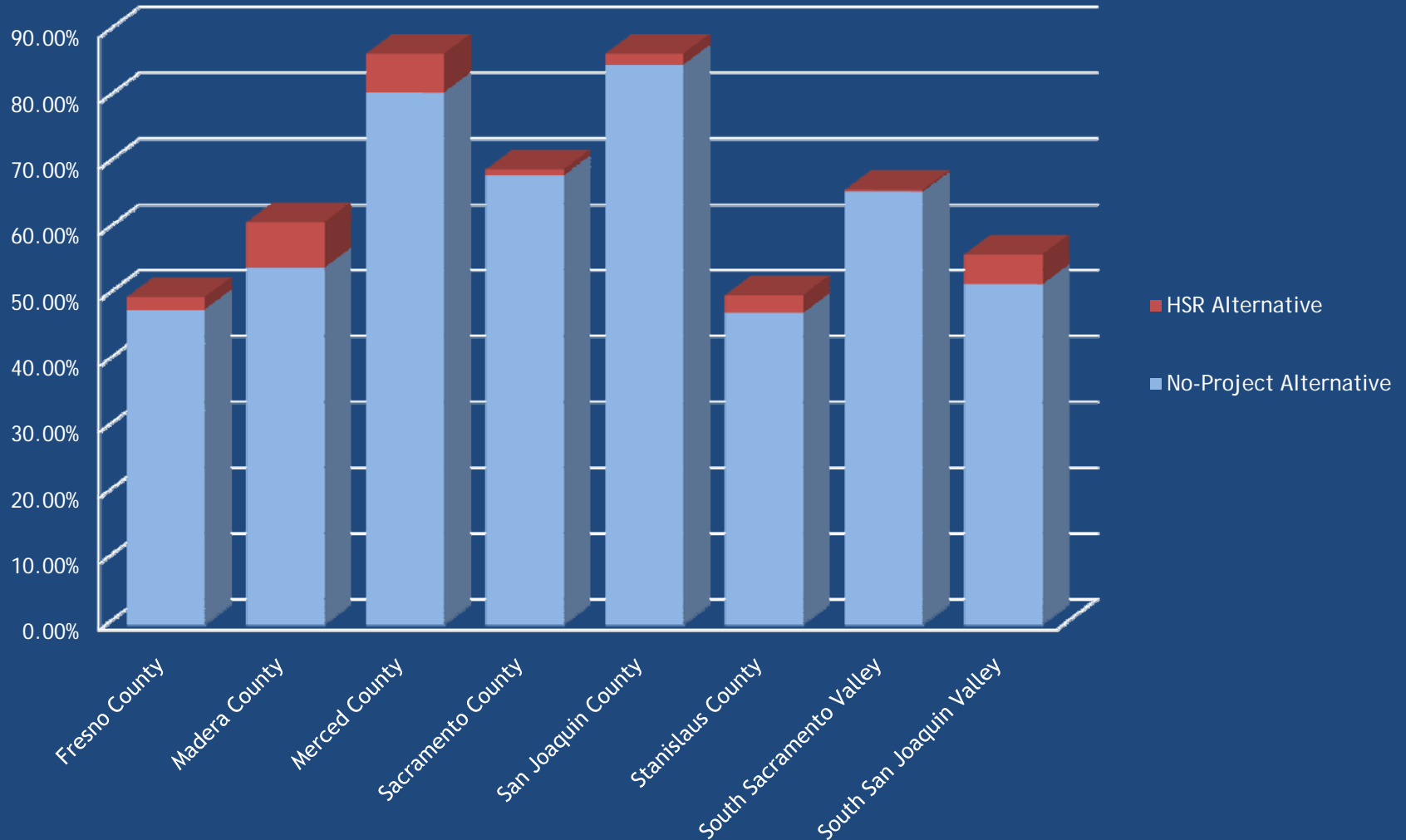
- *Social benefits*
 - reduction in automobile accidents
 - accidents rates on HSR are extremely low compared to automobile travel
 - reduction in air pollution
- Cambridge Systematics study calculated benefits accruing in the Central Valley to be:
 - \$366 million for accident reduction
 - \$48 million for pollution abatement

The Economic Benefits of HSR to Central Valley Communities

– *Population growth*

- population will grow dramatically in the Central Valley over the next 20 years
- HSR will have modest effect, except in Madera and Merced Counties

Projected Population Growth Within the Central Valley, 2005 to 2030

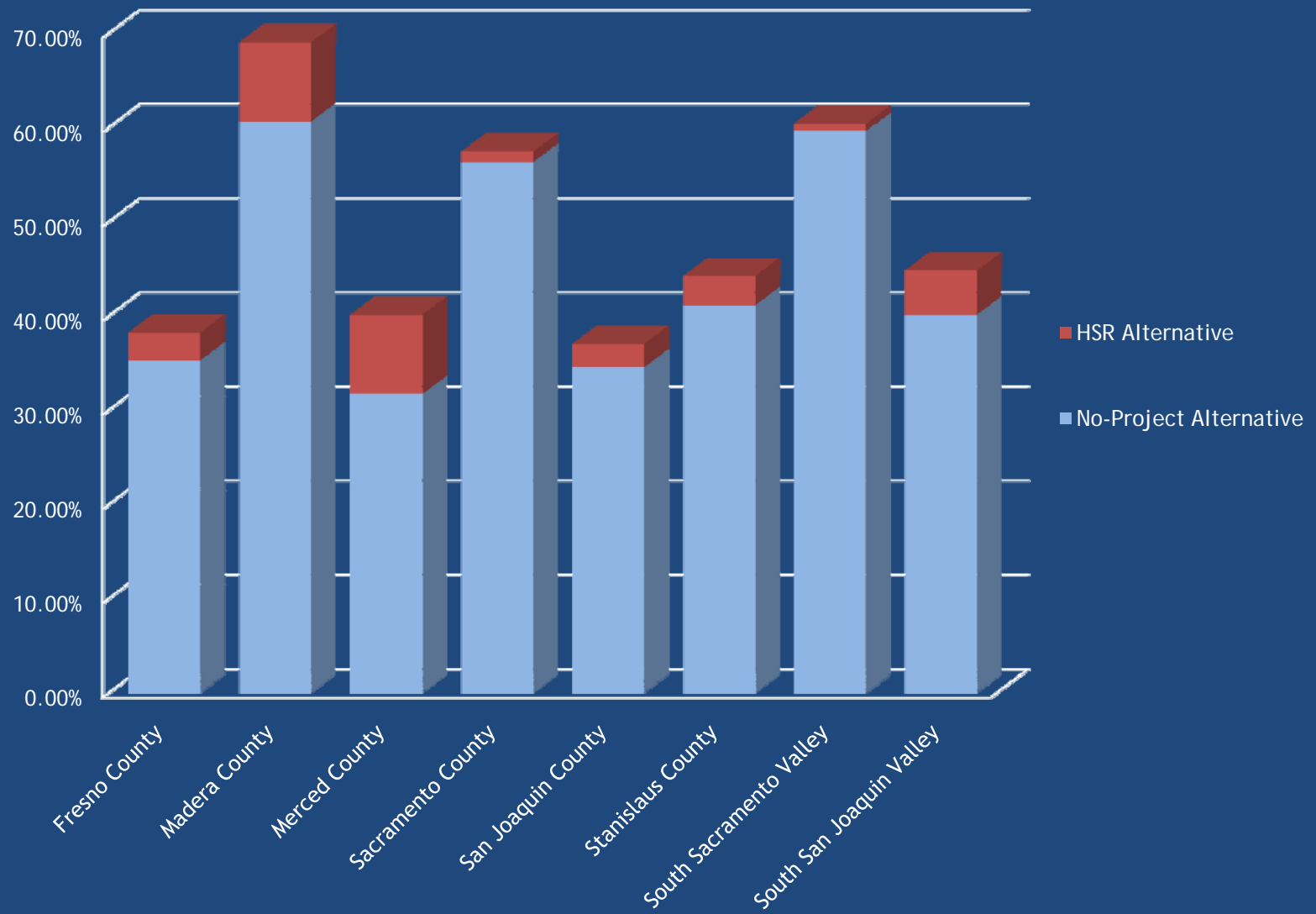


The Economic Benefits of HSR to Central Valley Communities (continued)

– *Employment growth*

- employment opportunities will grow dramatically in the Central Valley over the next 20 years, prominently in Madera and Sacramento Counties and the South Sacramento Valley
- Merced and Madera Counties stand to gain significantly from HSR

Projected Employment Growth Within the Central Valley, 2005 to 2030

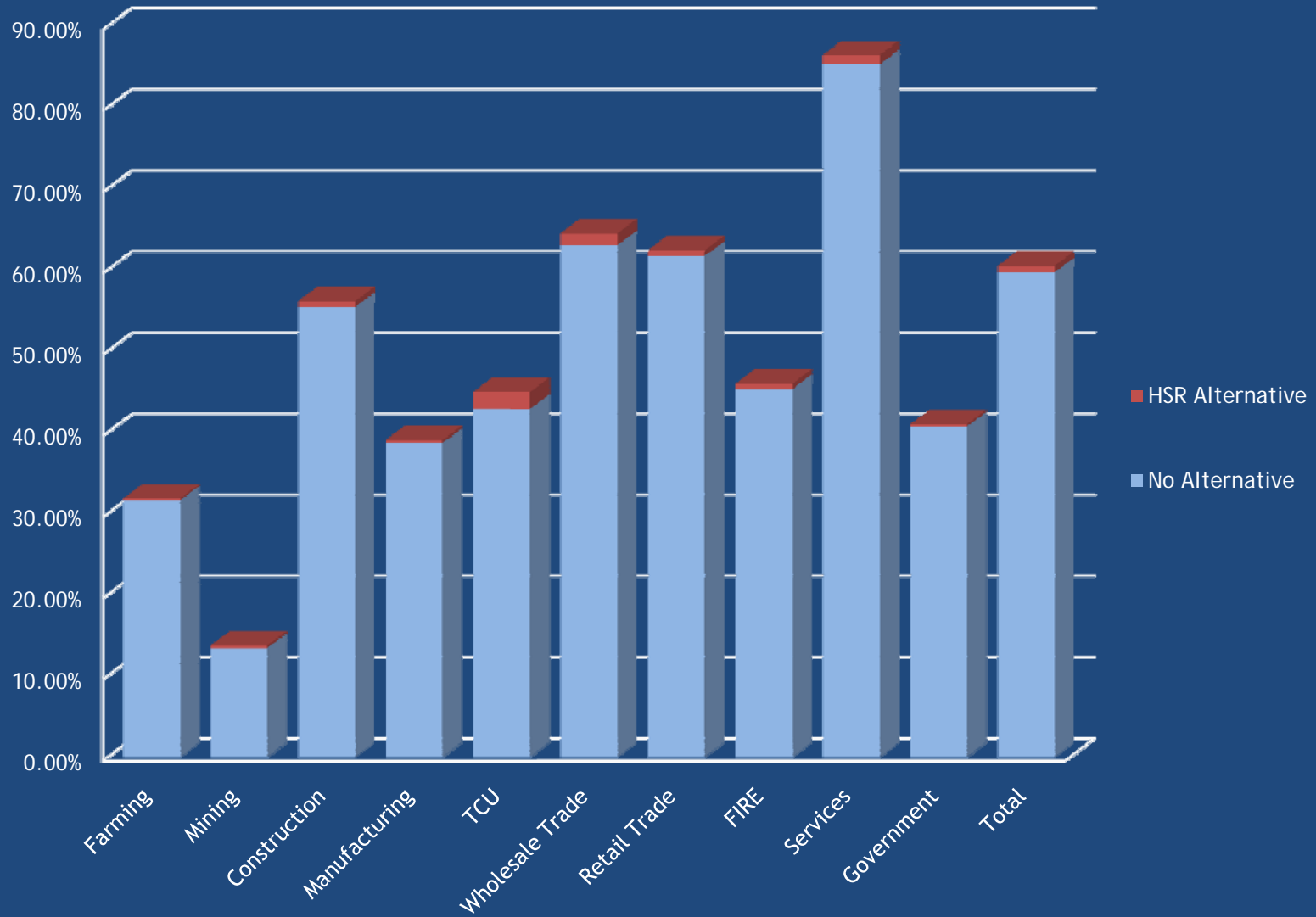


Source: California High-Speed Rail Authority and USDOT Federal Railroad Administration (May 2008, p. 5-9)

The Economic Benefits of HSR to Central Valley Communities (continued)

- *Industry sector growth*
 - Southern Sacramento Valley will experience significant job-growth in the service sector, retail and wholesale trades, and construction over the next 20 years
 - HSR will only have a marginal impact on employment growth there

Projected Industry Growth Within the South Sacramento Valley, 2005 to 2030



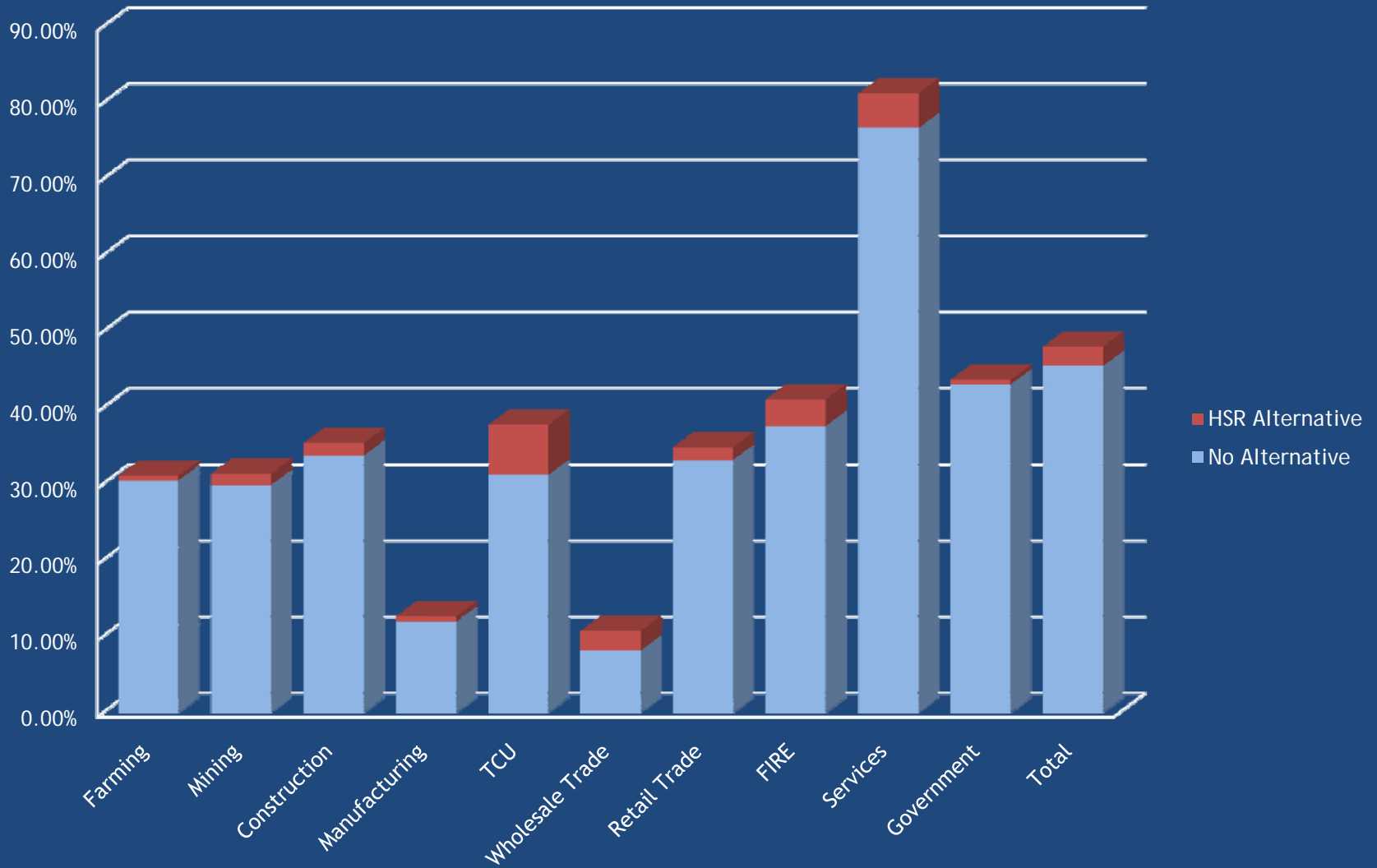
Source: Calculation based on data in Cambridge Systematics, Inc. (2007, pp. G-2-G-4)

The Economic Benefits of HSR to Central Valley Communities (continued)

– *Industry sector growth (continued)*

- Central Valley will experience explosive growth in the service sector
 - effect will be amplified as a result of HSR by 4.5 percentage points
- transportation, communications, and utilities (TCU) sector will grow significantly as a result of HSR - 6.7 percentage points
- finance, insurance, and real estate (FIRE) sector will also grow disproportionately with the introduction of HSR - 3.5 percentage points

Projected Industry Growth Within the Central Valley, 2005 to 2030



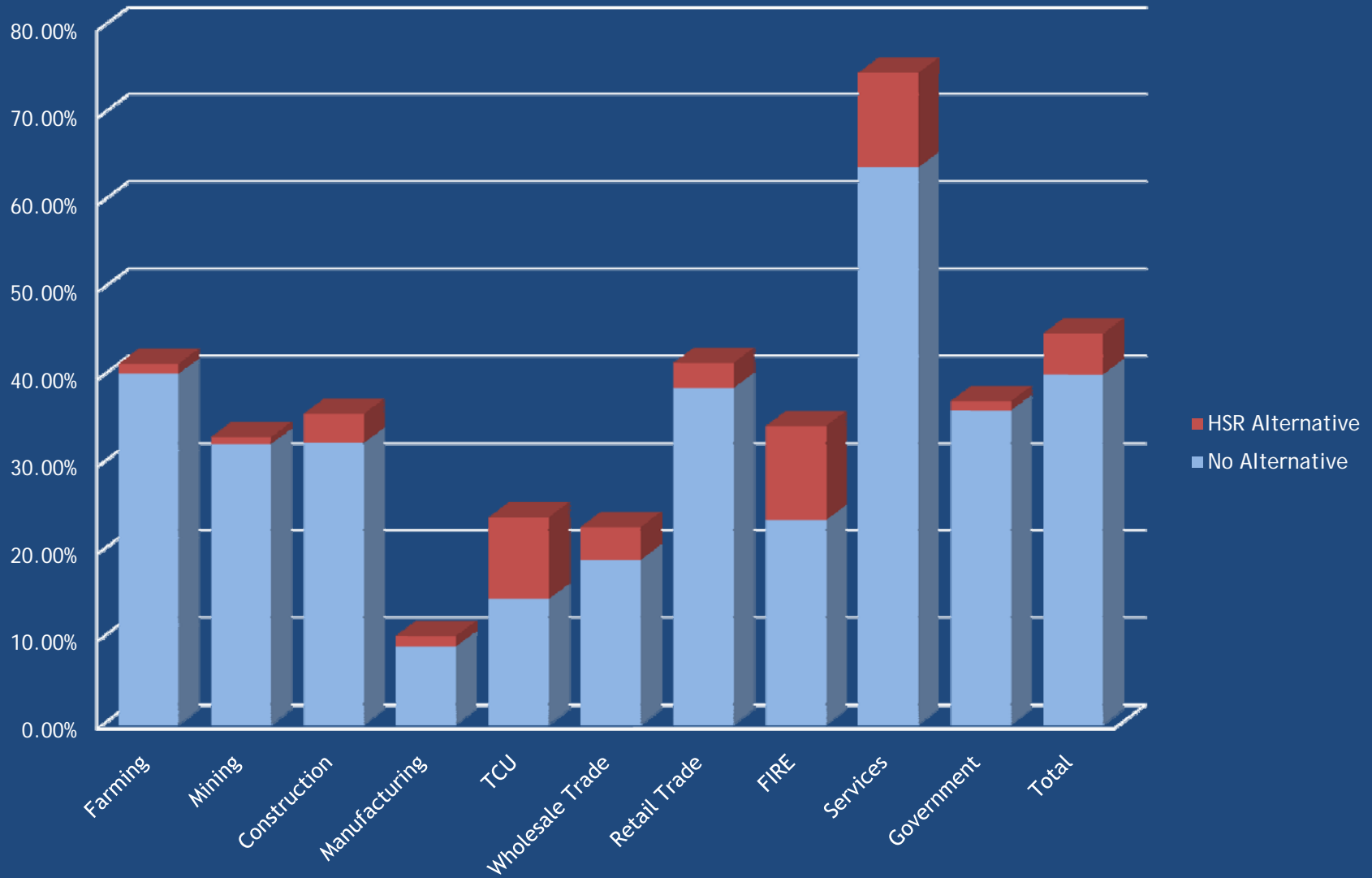
Source: Calculation based on data in Cambridge Systematics, Inc. (2007, pp. G-2-G-4)

The Economic Benefits of HSR to Central Valley Communities (continued)

– *Industry sector growth (continued)*

- Southern San Joaquin Valley will experience explosive growth in the service sector
 - effect will be amplified as a result of HSR by 10.8 percentage points
- transportation, communications, and utilities (TCU) sector will grow significantly as a result of HSR - 9.3 percentage points
- finance, insurance, and real estate (FIRE) sector will also grow disproportionately with the introduction of HSR - 10.8 percentage points

Projected Industry Growth Within the Southern San Joaquin Valley, 2005 to 2030



Source: Calculation based on data in Cambridge Systematics, Inc. (2007, pp. G-2-G-4)

The Economic Benefits of HSR to Central Valley Communities (continued)

- *Direct impact of public expenditures*
 - High-Speed Rail Authority estimates 160,000 construction-related jobs will be created to plan, design, and then build the HSR system
 - approximate cost of \$40 billion
- Central Valley will receive 40 percent of the HSR track, yet the region only has 15 percent of the overall population residing near the HSR system
- provides a possible range of expenditures within the Central Valley between \$6 and \$16 billion

The Economic Benefits of HSR to Central Valley Communities (continued)

- *Market integration*

- transaction costs, including, but not limited to, transportation costs, determine an economy's ability to reap the benefits of market integration

- reduced transportation costs enable:

- » consumers to access more distant markets
- » producers to deliver products to their consumers at lower cost
- » workers to access more distant labor markets
- » employers to tap into a wider and deeper labor pool

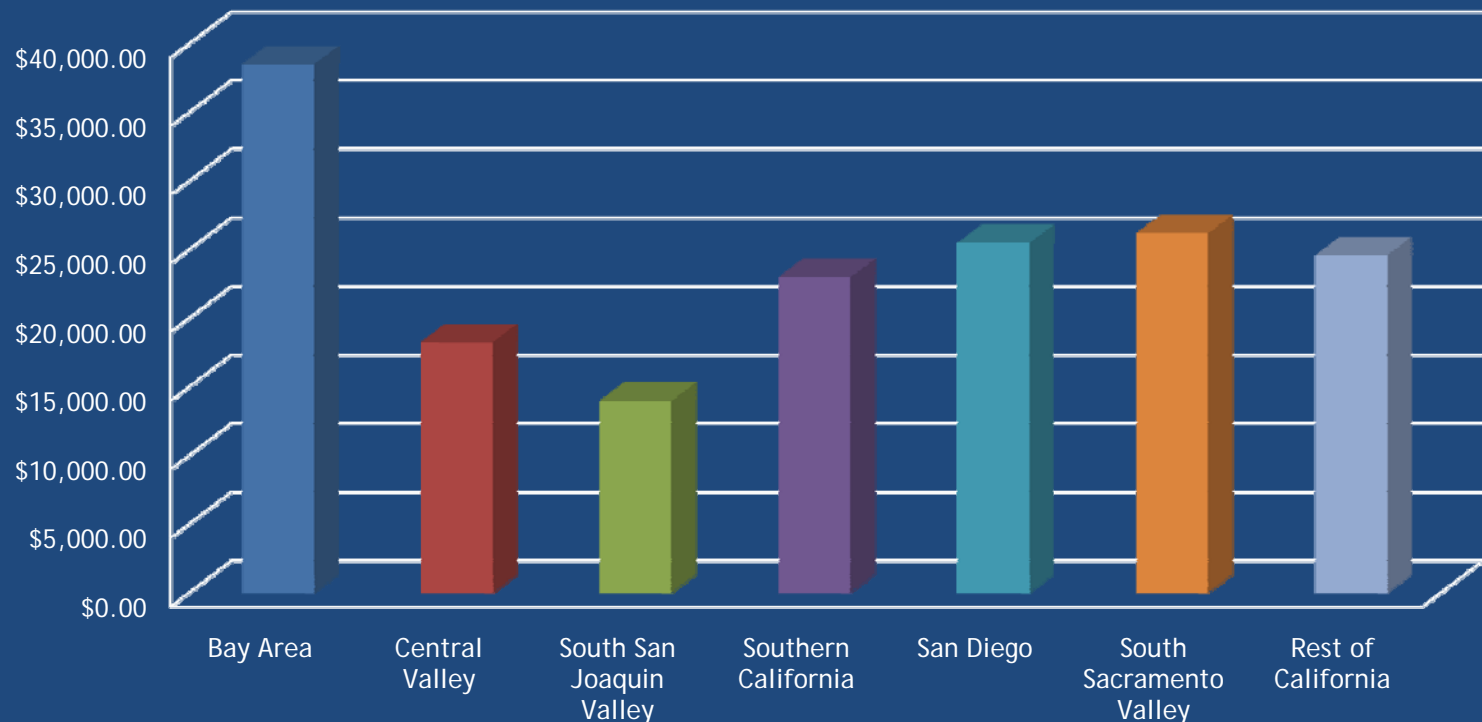
The Economic Benefits of HSR to Central Valley Communities (continued)

- *Market integration (continued)*
 - high transportation costs encourage producers, consumers, workers, and employers to use urban areas as focal points for their location decisions
 - “agglomeration economies” exist as businesses find it easier to operate if they are able to more easily access technology, wholesalers, consulting services, workers, or anything else that enables them to produce as efficiently as possible
 - agglomeration effects are self-reinforcing
- What if the Central Valley were fully integrated into the California economy?

The Economic Benefits of HSR to Central Valley Communities (continued)

– *Market integration (continued)*

- Central Valley lags behind the state in per capita income



Source: Author's calculation based on data from California Franchise Tax Board, *Annual Report, 2006*, Table B-6: Synopsis of Adjusted Gross Income by County, 2005 Taxable Year

The Economic Benefits of HSR to Central Valley Communities (continued)

– *Market integration (continued)*

- average per capita adjusted gross income in the three Central Valley regions is approximately \$18.4 thousand, but \$26.4 thousand in the remainder of the state
- Central Valley integration (or income parity) implies an increase in annual adjusted gross income of \$47.9 billion
- at average tax rates, this enhanced income would translate into \$2.2 billion in new state revenues

The Economic Benefits of HSR to Central Valley Communities (continued)

- *Market integration (continued)*

- What if enhanced regional income leads to greater taxable sales?
 - Central Valley region residents pay sales and use taxes on \$14,613 worth of goods and services; the rest of the state has an average per capita amount of \$15,380
 - Central Valley parity would lead to increased sales and use taxes in the amount of \$333 million per year, of which nearly \$46 million would flow directly to counties and cities within the Central Valley

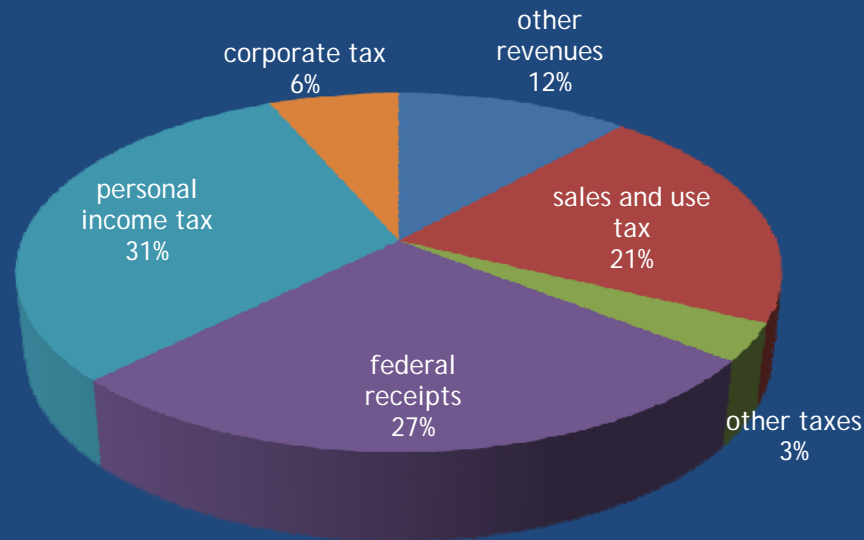
The Economic Benefits of HSR to Central Valley Communities (continued)

– *Real estate markets*

- value of real estate, either commercial or residential, is determined by the value of its bundled attributes, including accessibility to transportation links
- HSR's ability to reduce transportation times and costs, opening Central Valley communities to wider economic markets, will make real estate more desirable and, thus, more valuable
 - Research on European HSR indicates
 - » effect will be stronger in areas having a station stop
 - » effect will depend on local policies supporting Transit Oriented Development

The Economic Benefits of HSR to Central Valley Communities (continued)

- *Distributional Fiscal Implications of HSR*
 - Central Valley residents will disproportionately benefit from state's investment in HSR
 - California citizens are directly taxed and pay for over half of the state's budget

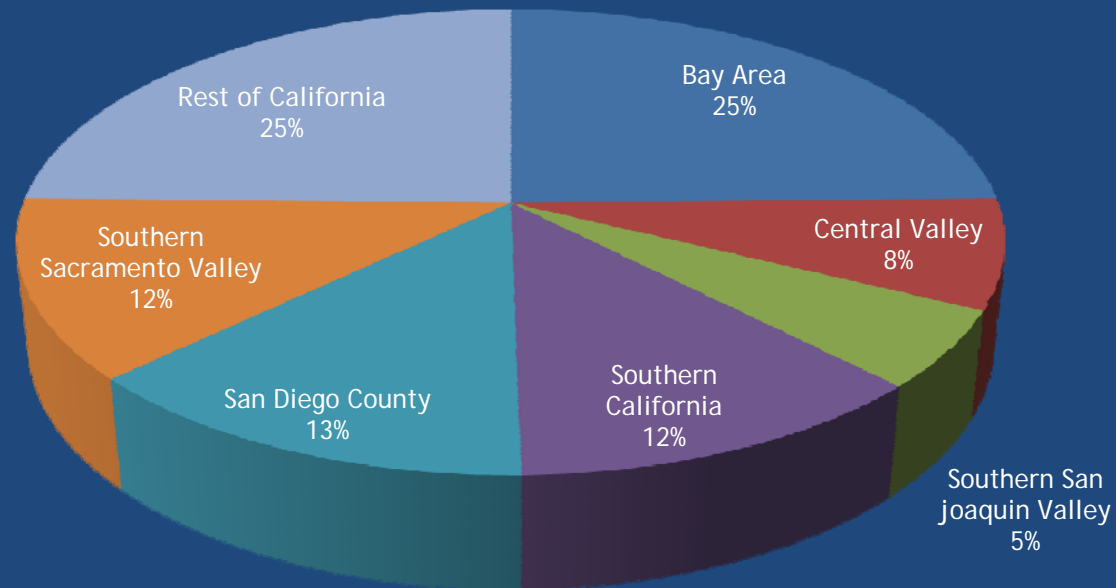


Source: Author's calculation based on data from California Office of the State Controller, *Comprehensive Annual Financial Report for the Year Ended June 30, 2007*

The Economic Benefits of HSR to Central Valley Communities (continued)

– *Fiscal Implications (continued)*

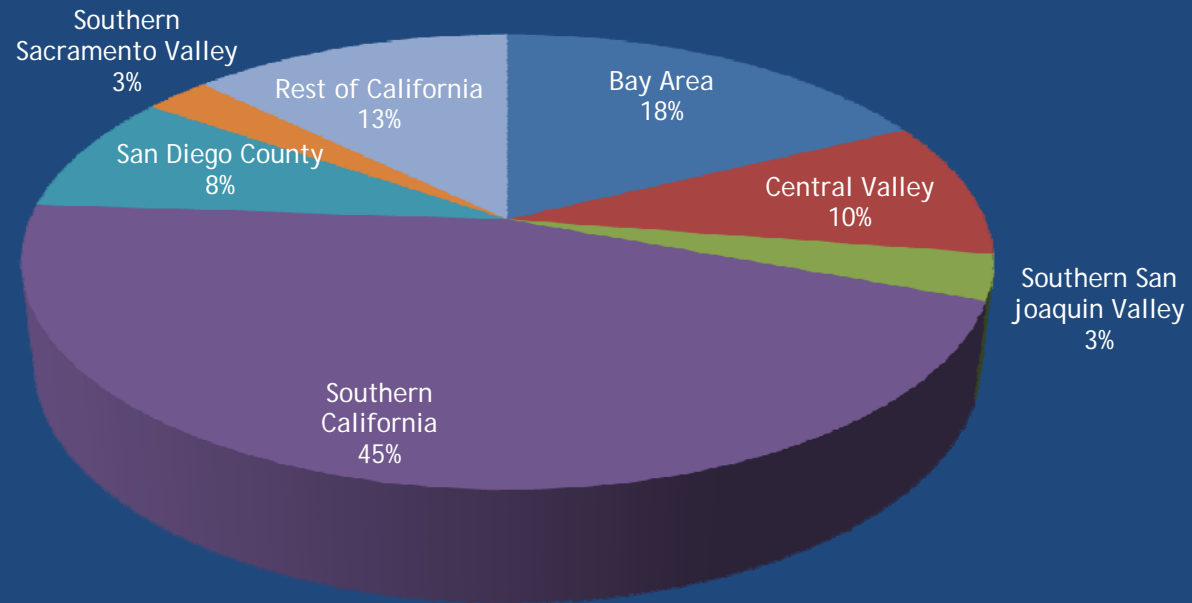
- Central Valley regions pay 25% of state's personal income tax



Source: Author's calculation based on data from California Franchise Tax Board, *Annual Report, 2006*, Table B-6: Synopsis of Adjusted Gross Income by County, 2005 Taxable Year

The Economic Benefits of HSR to Central Valley Communities (continued)

- *Fiscal Implications (continued)*
 - Central Valley regions pay 16% of state's sales and use tax



Source: Author's calculation based on data from California State Board of Equalization, *Annual Report 2006-2007*, Table 20: State Sales and Use Tax Statistics, by County, 2006-07

Quality of Life Enhancements from HSR

– *Environmental*

- Station placements will lead to revitalization of downtown districts
- HSR will have a modest impact on urbanization
- HSR system is largely expected to use existing transportation corridors, less open space will be consumed than it otherwise would with freeway development
- HSR estimated to reduce airborne pollution from fewer vehicle and airplane miles travelled
 - pollutants would be reduced 8% in the Central Valley and up to 36% in the Bay Area

Concluding Remarks

- The Central Valley will experience unprecedented growth over the next 20 years, placing critical strains on existing transportation infrastructure
- HSR has proven effective around the world in reducing automobile and airline traffic, integrating wider geographic regions into a unified economic market
- HSR has the potential to materially and positively impact economic development in the Central Valley