

California High Speed Train System's Impact on the Inland Empire, 2030



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Executive Summary

What will be the impact on the Inland Empire if California's High Speed Train system is built? This is an important question as Proposition 1A that would start the funding of the system will be on the November 2008 ballot. The answer can be framed by looking at a variety of questions:

- **What are the direct cost savings that will result to consumers and businesses in the Inland Empire from High Speed Trains?**

The direct cost savings to consumers and businesses can be viewed as having two parts. One is the difference in cost between the cost of traveling by car or High Speed Train between various destinations. This includes the cost of fuel (*set at \$3.75 per gallon*), wear and tear on the vehicle (*66% of fuel cost*) and parking (*\$7.50*). The other is the value of time savings from getting between destinations at reliable high speeds. Here, the time cost was measured using the \$19.33 per hour average pay for jobs in the Inland Empire.¹ Examples of results:

- **Commute from Ontario to Los Angeles:** In 2008, round trip rail cost would be \$23 per day including parking. Round trip automobile and time cost with the California average of 1.4 passengers at 65 mph with \$3.75 gasoline would be \$27 per day. The \$4 per day lower costs by High Speed Train, for 50 weeks a year, five days a week would be an **annual savings of \$900**. If it is a solo driver at 40 mph in traffic with \$3.75 gasoline, the automobile and time cost would be \$49 per day. The \$26 per day lower cost by High Speed Train, for 50 weeks a year, five days a week would be an **annual savings of \$6,400**.
- **Commute from Murrieta to San Diego:** In 2008, round trip rail cost would be \$28 per day including parking. Round trip automobile and time cost with California average of 1.4 passengers at 65 mph with \$3.75 gasoline would be \$45 per day. The \$17 per day lower costs by High Speed Train, for 50 weeks a year, five days a week would be an **annual savings of \$4,300**. If it is a solo driver at 45 mph in traffic with \$3.75 gasoline, the automobile and time cost would be \$74 per day. The \$46 per day lower cost by High Speed Train, for 50 weeks a year, five days a week would be an **annual savings of \$11,500**.
- **Trip from Riverside to San Francisco:** One way rail cost would be \$72. One way automobile and time cost with California average of 1.4 passengers at 65 mph with \$3.75 gasoline would be \$159 per trip. There would be a High Speed Train cost **savings of \$87 per trip**. If it is a solo driver at 55 mph in traffic with \$4.00 gasoline, the automobile and time cost would be \$218 per trip. There would be a High Speed Train cost **savings of \$146 per trip**. Note an "anytime" Southwest Airlines flight to Ontario-Oakland costs \$124 plus there would be \$18 extra cost for a solo drive to the airport from Riverside or \$13 per passenger for the California average of 1.4 people per automobile trip.

What are the potential efficiency gains to consumers and businesses in the Inland Empire from High Speed Train?

- As indicated, individual users of the High Speed Train system, as well as businesses needing to get their staff to customers or their clients to them, will gain the benefits of the lower costs, less time and higher reliability compared to moving along congested freeways. In addition,

¹ Occupational Wage Survey, CA Employment Development Department, 1st Quarter 2008 weighted average of \$40,204 or \$19.33 per hour.

the LA-Ontario International Airport station will be the only dual use facility involving a major airport on the High Speed Train system. As many Inland Empire travelers will opt to use the rail system rather than the airlines for trips to Northern California, it will extend the time before intra-state trips cause that facility to reach capacity. Meanwhile, the High Speed Train system would cause San Diego based travelers to find LA-Ontario International Airport to be a viable option to the heavily constrained San Diego International Airport. Their demand added to that of Inland Empire travelers should cause the range of inter-state flights from the inland airport to expand, a major goal of local leaders.

- **What will High Speed Train do to create more jobs, wages & salaries, economic output and local governmental revenues in the Inland Empire?**

Extending economic impact work conducted by Cambridge Systematics to look specifically at the Inland Empire reveals that, compared to a No Project Alternative, the Inland Empire region would:

- Gain 19,226 additional jobs that would otherwise not exist by 2030.
- Add \$711.9 million in additional constant 2008 dollar wages & salaries by 2030 and each year thereafter.
- See \$2.15 billion in added constant dollar economic output by 2030 and each year thereafter.
- Have \$101.6 million in added indirect taxes to local governments by 2030 and each year thereafter.

- **What new business and economic activities will be generated in the Inland Empire from High Speed Train? What will High Speed Train do to create more jobs in the Inland Empire?**

The 19,200 additional jobs and \$711.9 million in added payroll created by having the High Speed Train system by 2030 and thereafter would be divided between:

- The highest number of jobs would be in the lower paying service (10,400) and retail sectors (2,700) with respective average 2008 average pay of \$33,324 and \$29,929.²
- Gains in five relatively good paying sectors would rank next: transportation, communications and utilities (1,900; \$40,023), financial activity (1,800; \$51,894), wholesale trade (1,100; \$50,922), manufacturing (900; \$45,648), and government (600; \$52,986).
- Weak job would occur in the low paying farming sector (200; \$26,269)
- The mining sector (\$67,895) and construction (\$48,943) sectors would remain essentially unchanged.

- **What other potential quality of life benefits will result from High Speed Train in the Inland Empire and who is likely to benefit?**

The principle quality of life benefit will be to simulate transit orient housing and business nodes around the Inland Empire's stations. The effect will be focused in Ontario and Riverside which

² Quarterly Census of Employment & Wages, average annual wages by sector, CA Employment Development Department, 2007, scaled up to yield the Occupational Wage Survey, 1st Quarter 2008 weighted average of \$40,204.

are already the largest job centers in the region. The Murrieta station will benefit the Southwestern Riverside area by decreasing the time-distance to that growing area from Orange and Los Angeles counties. This is important as that area has received a huge population increase coming out of San Diego County. However, unlike Orange County and Los Angeles County, that coastal area has not sent many jobs inland. The Murrieta area needs to be “closer” to Orange and Los Angeles, and High Speed Train will help do so.

Finally, given the sudden realization that the long term future of fossil fuels is a question mark, the building of an electrified High Speed Train system would highlight the commitment of California, and by extension, the Inland Empire to being part of a project that could be a metaphor for the future of the state’s economy. The project would likely act as a catalyst causing demand for more such activity by the government, private businesses and the public.

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High Speed Train System: Inland Empire Impact

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What will be the impact on the Inland Empire if California's High Speed Train system is built? The question is important as on August 26, 2008, California Governor Schwarzenegger signed Assembly Bill 3034 into law. This measure places Proposition 1A, the High-Speed Train Bond Act, on the November 4, 2008 election ballot. If approved, this measure would authorize California to issue \$9.95 billion in bonds, of which \$9.0 billion would go to match federal, private and local funds for a new High Speed Train system eventually running from San Francisco to San Diego via California's Central Valley and the Inland Empire (*see map on cover*).

Inland Empire Included. Initially, the bond issue was to be solely used for the stretch of the High Speed Train system from San Francisco through the Central Valley and L.A.'s Union Station to Anaheim. However, while AB 3034 maintained that route as a priority, it opened the possibility of using funds for the segments that run from Union Station through San Bernardino County (*Ontario*) and Riverside County (*Riverside, Murrieta*) and on to San Diego County. This fact was included in language stating that:

“Upon a finding by the [*California High Speed Rail*] authority that expenditure of bond proceeds for capital costs in corridors other than [*San Francisco to L.A. Union Station to Anaheim*] would advance the construction of the system, ... and would not have an adverse impact on the construction of Phase 1 of the high-speed train project, the authority *may request funding for capital costs, and the Legislature may appropriate funds ...* to be expended for any of the following high-speed train corridors: ... (E) Los Angeles Union Station to Riverside to San Diego.”

While the language indicates that the system from Los Angeles Union Station through San Bernardino and Riverside counties on to San Diego County will not be the first priority of the initial construction, it does open up the possibility that this part of the system may get some funding. For that reason, it is meaningful to look at the ultimate impact that the construction of the system will have on the Inland Empire (*San Bernardino & Riverside counties*).

Types of Impacts. If California's High Speed Train System is built, it will impact the people of the San Bernardino and Riverside Counties (*Inland Empire*) in a wide variety of ways. Individual consumers and businesses would have access to a new rapid way to move around California. This would certainly allow them to save time, which in many cases translates into money. Like any major addition to the region's infrastructure, the inauguration of the High Speed Train system would change the competitive dynamics of the inland area, making it profitable for some sectors to expand, adding both new businesses and increased employment. Those changes would translate into greater output, earnings and local governmental revenue for the Inland Empire's economy.

There would also be quality of life benefits to specific areas of the Inland Empire. Those with proposed stations: Ontario, Riverside and Murrieta, would likely see the creation of transit oriented housing and business nodes. In particular, LA-Ontario Airport would be impacted since it

would become a dual use facility. It would be the site of a High Speed Train stop as well as a major air terminal. In the latter role, the rail system would likely add many years before the airport reaches its maximum air passenger capacity.

To review these issues, this discussion starts with the work of Cambridge Systematics which has looked at the statewide impact of the High Speed Train System from several vantage points including: economic impact; demand for High Speed Train service; ticket prices; and travel times. This report extends or comments on the implications of that organization's work for the Inland Empire. It is organized around answers to a series of questions designed to illustrate the potential economic impact of the High Speed Train System on the Inland Empire.

Savings To Consumers & Businesses

1. What are the direct cost savings that will result to consumers and businesses in the Inland Empire from High Speed Trains?

A High Speed Train system traveling at high speed for most of the length of California would impact individual consumers and businesses by allowing them to move between major locations at rapid speed without using the state's congested freeways. Anyone who has used systems like the TGV in France (*Train à Grande Vitesse* or *Train at High Speed*) has wondered why similar travel has not been possible in the state or the U.S.

For Inland Empire travelers, the High Speed Train option would provide a savings in money and time. With petroleum prices now just under \$4.00 per gallon and expected to go higher in the long term, and parking fees rising in the urban cores, short distance commuters to Los Angeles or San Diego would save money using the High Speed Train system to those locations. Included in their savings is the value of the time they are not spending battling traffic. Long distance travelers generally fly because it is cheaper and quicker than driving from the Inland Empire to San Francisco. The High Speed Train option would be less expensive than either option, especially with aviation fuel also rising in cost.



Inland Empire to Los Angeles

Every day, thousands of Inland Empire residents drive round trip to Los Angeles. Most go there to work. Many go for shopping or entertainment. What would be the cost savings for these trips from each of the three inland High Speed Train terminals? For this analysis, it is assumed that gasoline costs \$3.75 a gallon, for a vehicle averaging 21.9 miles per gallon and with its non-fuel costs equal to 66% of fuel cost, and a \$7.50 downtown parking cost:³

³ Bay Area/California High-Speed Rail Ridership and Revenue Forecasting Study, Cambridge Systematics, p. 2-2

- **Ontario Station.** In 2008, a 74 mile round trip commute from Ontario to Los Angeles would cost **\$29 per day** at \$3.75 per gallon for a solo driver. Even if the car had the state average of 1.4 passengers, the cost would be **\$20 per day**.

In addition, the roundtrip drive of 74 miles would take 1.14 hours at 65 miles per hour (*mph*) and 1.85 hours at 40 mph in reasonably heavy traffic. By contrast, the roundtrip High Speed Train trip would take 0.80 hours in either case. The time savings using the train would thus range from 0.34 to 1.05 hours. If a driver considered their time worth the Inland Empire's first quarter 2008 average hourly wage and salary of \$19.33 per hour,⁴ the train trip would save the equivalent of **\$7 per day** compared to driving at 65 mph, up to **\$20 per day** for driving at 40 mph. Those savings would be on top of the cost of the vehicle outlay.

The 2005 constant dollar cost of High Speed Train cost is estimated at \$18 round trip plus \$3 parking or \$21 per day, applying the 10.8% inflation rate through first quarter 2008, the **2008 high speed train** cost would be **\$23 per day**. It would be **\$4 per day lower** than the \$27 per day for the faster commute with the 1.4 passengers. It would be **\$26 per day below** the \$49 per day for a slower commute with a solo driver. For a commuter driving five days a week, 50 weeks a year the annual savings would be **\$900 to \$6,400**.

- **Riverside Station.** In 2008, a 110 mile round trip commute from Riverside to Los Angeles would cost **\$39 per day** at \$3.75 per gallon for a solo driver. If the car had the state average of 1.4 passengers, the cost would be **\$28 per day**.

The roundtrip drive of 110 miles would take 1.69 hours at 65 mph and 2.75 hours at 40 mph in reasonably heavy traffic. The roundtrip High Speed Train trip would take 1.07 hours regardless of freeway traffic. The time savings would range from 0.63 to 1.68 hours. At \$19 per hour, the train trip would save the equivalent of **\$12 per day** compared to driving at 65 mph, up to **\$33 per day** compared to driving at 40 mph. These savings would be on top of the vehicle outlay.

The 2005 constant dollar cost of High Speed Train cost is estimated at \$22 round trip plus \$3 for parking or \$25 per day, applying the 10.8% inflation rate through first quarter 2008, the **2008 high speed train** cost would be **\$28 per day**. It would be **\$12 per day lower** than the \$40 per day for the faster commute with the 1.4 passengers. It would be **\$44 per day below** the \$71 per day for a slower commute with a solo driver. For a commuter driving five days a week, 50 weeks a year the annual savings would be **\$3,000 to \$10,900**.

- **Murrieta Station.** In 2008, a 170 mile round trip commute from Murrieta to Los Angeles would cost **\$56 per day** at \$3.75 per gallon for a solo driver. Even if the car had the state average of 1.4 passengers, the cost would be **\$40 per day**.

The roundtrip drive of 170 miles would take 2.62 hours at 65 mph and 4.25 at 40 mph in reasonably heavy traffic. The roundtrip High Speed Train trip would take 1.50 hours. The time savings would range from 1.12 to 2.75 hours. At \$19.33 per hour, the train trip would save the equivalent of **\$22 a day** versus driving at 65 mph, up to **\$53 a day** driving at 40 mph. These savings would be on top of the vehicle outlay.

⁴ Occupational Wage Survey, CA Employment Development Department, 1st Quarter 2008 weighted average of \$40,204 or \$19.33 per hour.

The 2005 constant dollar cost of High Speed Train cost is estimated at \$24 round trip plus \$3 parking or \$27 per day, applying the 10.8% inflation rate through first quarter 2008, the **2008 high speed train** cost would be **\$30 per day**. Again, it would be **\$32 per day less** than the \$62 per day for the faster commute with the 1.4 passengers as well as **\$79 per day** below the \$109 per day for a slower commute with a solo driver. For a commuter driving five days a week, 50 weeks a year the annual savings would be **\$7,900 to \$19,800**.

Inland Empire to San Diego

At \$3.75 a gallon, for a vehicle averaging 21.9 miles per gallon and with non-fuel costs equal to 66% of fuel cost, and a \$7.50 downtown parking cost:

- **Ontario Station.** In 2008, a 228 mile round trip commute from Ontario to San Diego would cost **\$73 per day** at \$3.75 per gallon for a solo driver. Even if the car had the state average of 1.4 passengers, the cost would be **\$52 per day**.

The roundtrip drive of 228 miles would take 3.51 hours at 65 mph and 5.07 at 45 mph in reasonably heavy traffic. The roundtrip High Speed Train trip would take 1.90 hours. The time savings would range from 1.61 to 3.17 hours. At the \$19.33 per hour average pay for an Inland Empire worker, the train trip would save the equivalent of **\$31 per day** at a driving speed of 65 mph, up to **\$61 per day** driving at 45 mph. These savings would be on top of the vehicle outlay.

The 2005 constant dollar cost of High Speed Train cost is estimated at \$52 round trip plus \$3.00 parking or **\$55 per day**, applying the 10.8% inflation rate through first quarter 2008, the **2008 high speed train** cost would be **\$913 per day**. It would be **\$22 per day lower** than the \$83 per day for the faster commute with the 1.4 passengers, and **\$73 per day below** the \$134 per day for a slower commute with a solo driver. For a commuter driving five days a week, 50 weeks a year the annual savings would be **\$5,500 to \$18,200**.

- **Riverside Station.** In 2008, a 198 mile round trip commute from Riverside to San Diego would cost **\$64 per day** at \$3.75 per gallon for a solo driver. Even if the car had the state average of 1.4 passengers, the cost would be **\$46 per day**.



The roundtrip drive of 198 miles would take 3.05 hours at 65 mph and 4.40 at 45 mph in reasonably heavy traffic. The roundtrip High Speed Train trip would take 1.57 hours. The time savings would range from 1.48 to 2.83 hours. At \$19.33 per hour, the train trip would save the equivalent of **\$29 a day** for a 65 mph drive, up to **\$55 per day** at 45 mph. These savings would be on top of the vehicle outlay.

The 2005 constant dollar cost of High Speed Train cost is estimated at \$48 round trip plus \$3.00 parking or \$51 a day, applying the 10.8% inflation rate through first quarter 2008, the **2008 high speed train**

cost would be **\$57 per day**. Again, it would be **\$18 per day lower** than the \$74 per day for the faster commute with the 1.4 passengers, and **\$62 per day below** the \$119 per day for a slower commute with a solo driver. For a commuter driving five days a week, 50 weeks a year the annual savings would be **\$4,500 to \$15,600**.

- **Murrieta Station.** In 2008, a 124 mile round trip commute from Murrieta to San Diego would cost **\$43 per day** at \$3.75 per gallon for a solo driver. Even if the car had the state average of 1.4 passengers, the cost would be **\$31 per day**.

The roundtrip drive of 124 miles would take 1.91 hours at 65 mph and 2.76 at 45 mph in reasonably heavy traffic. The roundtrip High Speed Train trip would take 1.17 hours. The time savings would range from 0.74 to 1.59 hours. At \$19.33 per hour, the train trip would save the equivalent of **\$14 per day** at 65 mph, up to **\$31 per day** at 45 mph. This would be on top of the vehicle outlay.

The 2005 constant dollar cost of High Speed Train cost is estimated at \$22 round trip plus \$3.00 parking or \$25 per day, applying the 10.8% inflation rate through first quarter 2008, the **2008 high speed train** cost would be **\$28 per day**. Again, it would be **\$17 per day lower** than the \$45 per day for the faster commute with the 1.4 passengers, and **\$46 below** the \$74 per day for a slower commute with a solo driver. For a commuter driving five days a week, 50 weeks a year the annual savings would be **\$4,300 to \$11,500**.

Inland Empire To San Francisco

Using \$3.75 per gallon, looking at a one way trip from the Inland Empire to San Francisco, the savings would also be substantial using a High Speed Train. No cost is added for the drive to the nearby train station. It is assumed someone brings the passenger to the station:

- **Ontario Station.** In 2008, a 417 mile one way trip from Ontario to San Francisco would cost **\$119 per trip** at \$3.75 per gallon for a solo driver. Even if the car had the state average of 1.4 passengers, the cost would be **\$85 per trip**.

The one way drive of 417 miles would take 6.42 hours at 65 miles mph and 7.58 at 55 mph in reasonably heavy traffic or fog. The High Speed Train trip would take 3.00 hours. The time savings would range from 3.42 to 4.58 hours. At \$19.33 per hour, the train trip would save the equivalent of **\$66 per trip** compared to a drive averaging 65 mph, up to **\$89 per trip** compared to a drive averaging 55 mph. Again, this would be on top of the vehicle outlay.

The 2005 constant dollar cost of High Speed Train cost is estimated at \$60, applying the 10.8% inflation rate through first quarter 2008, the **2008 high speed train** cost would be **\$66 per trip**, assuming a passenger is dropped at the station. It would be **\$85 per trip less than** the \$151 per day for the faster drive with the 1.4 passengers, and **\$141 per trip below** the \$208 per day for a slower drive with a solo driver. Note: a Southwest Airlines flight “any time” **flight from Ontario to Oakland costs \$124**

- **Riverside Station.** In 2008, a 437 mile one way trip from Riverside to San Francisco would cost **\$125 per trip** at \$3.75 per gallon for a solo driver. Even if the car had the state average of 1.4 passengers, the cost would be **\$89 per trip**.

The one way drive of 437 miles would take 6.72 hours at 65 mph and 7.95 at 55 mph in reasonably heavy traffic or fog. The High Speed Train trip would take 3.12 hours. The time savings would range from 3.60 to 4.83 hours. At \$19.33 per hour, the train trip

would save the equivalent of **\$70 per trip** compared to driving at 65 mph, up to **\$93 per trip** versus driving at 55 mph. These savings are on top of the vehicle outlay.

The 2005 constant dollar cost of High Speed Train cost is estimated at \$65 , applying the 10.8% inflation rate through first quarter 2008, the **2008 high speed train** cost would be **\$72 per trip**, assuming a passenger is dropped at the station. It would be **\$87 per trip** less than the \$159 per day for the faster drive with the 1.4 passengers, and **\$146 per trip below** the \$218 per day for a slower drive with a solo driver. Note: a Southwest Airlines flight “any time” **flight from Ontario to Oakland costs \$124**. In addition, there would be a cost of a round trip automobile trip to the airport of \$18 for a solo driver or \$13 for a car averaging 1.4 passengers.

- **Murrieta Station.** In 2008, a 466 mile one way trip from Murrieta to San Francisco would cost **\$133 per trip** at \$3.75 per gallon for a solo driver. Even if the car had the state average of 1.4 passengers, the cost would be **\$95 per trip**.

The one way drive of 466 miles would take 7.17 hours at 65 mph and 8.47 at 55 mph in reasonably heavy traffic or fog. The High Speed Train trip would take 3.33 hours. The time savings would range from 3.84 to 5.14 hours. At \$19.33 per hour, the train trip would save the equivalent of **\$74 per trip** versus driving at 65 mph, up to **\$99 per trip** for a drive at 55 mph. These costs are on top of the vehicle outlay.

The 2005 constant dollar cost of High Speed Train cost is estimated at \$68 the **2008 high speed train** cost would be **\$75 per trip**, assuming a passenger is dropped at the station. It would be **\$94 per trip** lower than the \$169 per trip for the faster drive with the 1.4 passengers, and **\$157 per trip** below the \$232 per trip for a slower drive with a solo driver. Note: a **Southwest Airlines flight to Oakland costs \$124**. In addition, there would be a cost of a round trip automobile trip to the airport of \$35 for a solo driver or \$25 for a car averaging 1.4 passengers.

[Travel Efficiency Increase](#)

2. What are the potential efficiency gains to consumers and businesses in the Inland Empire from High Speed Train?

As shown above, commuters or long distance travelers will find a combination of out of pocket costs as well as significant time savings due to the ticket prices of using the High Speed Train system and its speed of movement. Those same advantages will accrue to businesses needing to get their staffs from the Inland Empire to clients along the system. It will also lower the cost and increase the ability of consumers living along the High Speed Train system to access places where they wish to shop or visit.

However, for consumers or businesses who are non-users of the High Speed Train system, one of the hoped for benefits will be less in evidence for the Inland Empire. That is an increase in the mobility of non-system users of the system. This is the case because one implication of Cambridge Systematics’s modeling (*below*) is that the congestion already hampering the ability of people to move between the Inland Empire and the coastal counties will get much worse. Their data indicate that the High Speed Train system will do nothing about this difficulty as it does not fundamentally alter that tendency of more people to live in the inland area while the major job nodes remain in the coastal areas (*see page 15*). If anything, the system has the slight impact of exacerbating this difficulty by stimulating the Orange, Los Angeles and San Diego economies.

LA-Ontario International Airport



LA-Ontario International Airport's situation will be improved by access to High Speed Trains. Currently, the airport is forecasted to reach capacity in 2030 with 30.0 million air passengers and 2.52 million tons of air cargo.⁵ However, with a High Speed Train stop at the site, the facility will serve a dual function as an air travel and a High Speed Train station.

Many people from within the Inland Empire who would have traveled by air inside of California will instead opt to travel by train, lengthening the time before intra-state travel

causes the facility to reach its air passenger capacity. Importantly, with petroleum reserves and prices now clearly becoming a long term issue for the airlines, the High Speed Train option will very likely be an ever more economical option for travelers to the Bay Area. In addition, given the numerous delays inherent in air travel, the home-to-destination time would likely be the same, if not better, choosing the rail option.

While the High Speed Train system would reduce intra-state flights from LA-Ontario International Airport, it could well serve to increase the number of inter-state flights from the facility, a desirable goal for the Inland Empire. This is the case because High Speed Trains would make the airport an alternative for San Diego-based travelers who currently only have easy access to heavily constrained San Diego International Airport. Their demand for long distance flights, added to that of the Inland Empire, could increase the range of such activity at LA Ontario International Airport.

Stimulating New Business & Economic Activity

3. What will High Speed Train do to create more jobs, wages & salaries, economic output and local governmental revenues in the Inland Empire?

To determine the effects of High Speed Train activity on the Inland Empire's overall economy, the Cambridge Systematics modeling on the economic impact of the High Speed Train system is used as a basis for discussing the forecast of what it would do to the Inland Empire's economy.

Cambridge Systematics. The source document for any analysis of the system is the economic impact report finalized in July 2007 for the California High Speed Rail Authority by Cambridge Systematics.⁶ This work forecasted the impacts of the system on California as well as its various regions and looked at three options: no project; increase in highway and air terminals but not High Speed Train; and High Speed Train. Importantly, the research considered four regional effects that the High Speed Train System could have:

- Population Growth

⁵Regional Aviation Plan for the 2004 Regional Transportation Plan, Southern California Association of Governments, September 7, 2004

⁶Economic Growth Effects Analysis for the Bay Area to Central Valley Program-Level Environmental Impact Report and Tier 1 Environmental Impact Statement, Cambridge Systematics, July 2007

- Job Growth and the Types of New Jobs
- Acreage of Urban Land Development
- Acreage of Land Development Per Capita and Per Job



These impacts would come about because this major new form of infrastructure should:

- Increase the speed of travel, lower travel costs and boost the safety of the system's users.
- To the extent people are diverted from other transportation modes, it will reduce congestion and save time for the system's non-users.
- Provide a competitive advantage to firms that congregate near the system's stations, especially in high-income service sectors that need to move staff members or clients.
- Increase the efficiency of land use for each new resident or job created in areas where the system is located. This will occur because firms and people will find it in their economic interest to congregate in transit oriented housing and business centers near the system's stations. This will be of particular importance if combined with local land use policies encouraging this form of development.

Analytical Procedure. In evaluating the potential long term impact of the system on the Inland Empire, the manner in which the system will cause these effects within the region must be assessed. The process relies heavily on the conclusions of Cambridge Systematics's research about the inland area and will extend its logic.

2005 Base Year

The analysis begins by looking at population and employment in 2005, and urbanized acreage and the share of the county's total acreage that had been urbanized as of 2002 (*Exhibit J*). It was estimated that Riverside County's job base was 699,899; it was 779,369 in San Bernardino County. In Riverside County, the 2005 population was 1,724,958 people; it was 1,863,670 in San Bernardino County.

Exhibit 1.-Year 2005 Population, Employment, and Urbanized Densities					
County ⁽¹⁾	2005 Employment	2005 Population	2002 Urban Acres	2002 Share of Urban Acres	2005 Jobs:Population
Los Angeles	5,810,209	10,268,346	763,373	29%	0.57
Orange	2,001,464	2,986,768	273,713	54%	0.67
Riverside	699,899	1,724,958	255,230	6%	0.41
San Bernardino	779,369	1,863,670	237,905	2%	0.42
San Diego	1,895,002	2,936,609	340,837	13%	0.65
Southern California	10,473,953	19,482,742	1,871,058	8%	0.54
Inland Empire	1,479,269	3,588,628	493,135		0.41
Inland Empire of So. CA.	14.1%	18.4%	26.4%		

(1) Breakdown of Southern California's non-San Diego County shares in 2005 based upon 2002 county shares in Cambridge Systematics 2003 study.

Source: Cambridge Systematics, 2007 Final Economic Report, Tables 1.1, 1.2, 2.4 & John Husing, Ph.D.

In 2002, urbanized acres included 255,230 in Riverside County and 237,905 in San Bernardino County. Because of the size of the two counties, very little of their land: 6% and 2% respectively, was urbanized that year.

Looking at the Inland Empire as a whole, its job base of 1,479,269 positions represented 14.1% of Southern California. However, its population of 3,588,628 was 18.4% of Southern California. This raises a key transportation issue. The area experiences heavy commuting and related congestion since it has only 14.1% of Southern California's job base but 18.4% of its population. The difficulty is further seen in that for every person in the Inland Empire, there were 0.41 jobs. The standard is the 0.54 ratio for Southern California and 0.58 for the state. Los Angeles (0.57) was close to the average, San Diego (0.65) and Orange County (0.67) were very job rich.

2005-2030: No Project Alternative

According to the forecasts used in Cambridge Systematics's report, without High Speed Trains, the Inland Empire will add 852,654 jobs to reach 2,331,923 from 2005-2030 (*Exhibit 2*). That would represent 21.8% of jobs created in Southern California. At the same time, the inland area's population will grow by 2,459,260 people to reach 6,047,888. That would represent a 48.5% share of Southern California's new people.

Exhibit 2.-Year 2005 v. 2030, No Project, Population & Employment										
County ⁽¹⁾	No Project Employment				No Project Population				Jobs:Population	
	2005	2030	Change	So. CA Share	2005	2030	Change	So. CA Share	2030	Of Change
Los Angeles	5,810,209	7,166,825	1,356,616	34.7%	10,268,346	11,424,123	1,155,776	22.8%	0.63	1.17
Orange	2,001,464	2,809,432	807,968	20.7%	2,986,768	3,372,784	386,017	7.6%	0.83	2.09
Riverside	699,899	1,138,025	438,126	11.2%	1,724,958	3,069,045	1,344,087	26.5%	0.37	0.33
San Bernardino	779,369	1,193,898	414,528	10.6%	1,863,670	2,978,843	1,115,173	22.0%	0.40	0.37
San Diego	1,895,002	2,783,258	888,256	22.7%	2,936,609	4,005,624	1,069,015	21.1%	0.69	0.83
So. California	11,185,943	15,091,437	3,905,494	100.0%	19,780,351	24,850,419	5,070,068	100.0%	0.61	0.77
Inland Empire	1,479,269	2,331,923	852,654	21.8%	3,588,628	6,047,888	2,459,260	48.5%	0.39	0.35

(1) Breakdown of Southern California's non-San Diego County data in 2030 based upon average of 2020 and 2030 county shares in Cambridge Systematics 2003 study.

Source: Cambridge Systematics, 2007, Table 3.1 & John Husing, Ph.D.

If these forecasts take place, the Inland Empire's jobs:population ratio would fall from 0.41 in 2005 to 0.39 in 2030. At the same time, the overall standard ratio for Southern California will rise from 0.54 to 0.61, a little above the state's 0.58. The somewhat higher standard can be justified in that there will be more non-working people in the region due to the growing number of baby boomer retirees in the population. However, it implies that commuting from the Inland Empire to the coastal counties will grow worse in both volume and share. This is the case since there would be slightly less jobs per person in the inland area, but a larger share needed to be in balance between people and jobs. The commuting difficulty will be offset by speed and cost of High Speed Trains to the extent travelers choose to use that option.

Exhibit 3.-Year 2005 v. 2030, High Speed Train, Population & Employment

County ⁽¹⁾	High Speed Train Employment				High Speed Train Population				Jobs:Population	
	2005	2030	Change	So. CA Share	2005	2030	Change	So. CA Share	2030	Of Change
Los Angeles	5,810,209	7,238,404	1,428,196	35.1%	10,007,779	11,494,341	1,486,562	26.5%	0.63	0.96
Orange	2,001,464	2,832,130	830,666	20.4%	2,910,976	3,389,035	478,059	8.5%	0.84	1.74
Riverside	699,899	1,137,225	437,326	10.7%	1,681,186	3,044,378	1,363,192	24.3%	0.37	0.32
San Bernardino	779,369	1,213,923	434,554	10.7%	1,816,378	3,022,790	1,206,412	21.5%	0.40	0.36
San Diego	1,895,002	2,837,183	942,181	23.1%	3,066,423	4,132,577	1,066,154	19.0%	0.69	0.88
So. California	11,185,943	15,258,866	4,072,923	100.0%	19,482,742	25,083,121	5,600,379	100.0%	0.61	0.73
Inland Empire	1,479,269	2,351,149	871,880	21.4%	3,497,564	6,067,168	2,569,604	45.9%	0.39	0.34

(1) Breakdown of Southern California's non-San Diego County data in 2030 based upon average of 2020 and 2030 county shares in Cambridge Systematics 2003 study.

Source: Cambridge Systematics Table 4.1 & John Husing, Ph.D.

Note, that in this period:

- 2.09 jobs are added for every person added by Orange County.
- 1.17 jobs are added for every extra person in Los Angeles County.
- 0.83 extra jobs are added for each additional person for San Diego County.

As a result, all three coastal counties are forecasted to move deeper into job surplus compared to the Southern California average (0.61): Orange County (0.83), San Diego County (0.69) and Los Angeles (0.63). The coastal freeway routes from the Inland Empire (0.39) to these counties will be under ever greater stress.

High Speed Train Forecast: 2005-2030

Next, the modeling looks at what would happen from 2005-2030, assuming that the full High Speed Train system has been built. With the full system in operation by 2030, the Inland Empire would add 871,880 jobs to reach 2,351,149 or 19,200 more than the No-Project alternative (*Exhibit 3*). That would represent 21.4% of jobs created in Southern California. At the same time, the inland area's population will grow by 2,569,604 to reach 6,067,168. That would represent a 45.9% share of Southern California's new people.

If these forecasts take place, the Inland Empire's jobs:population ratio would again drop to 0.39 in 2030. And again, the overall ratio for Southern California will rise from 0.54 to 0.61, with the higher Southern California ratio justified since there will be more non-working people due to the rising share of baby boomer retirees. However, it also implies that even with High Speed Train,

commuting from the Inland Empire to the coastal counties will grow worse in both volume and share. Note, that in this period, High Speed Train means there will be:

- 1.74 instead of 2.09 extra jobs for every person added by Orange County.
- 0.88 instead of 0.83 extra jobs for each extra person for San Diego County.
- 0.96 instead of 1.17 extra jobs for each extra person for Los Angeles County.

Exhibit 4.-Year 2005-2030 Changes, No Project vs. High Speed Train								
	No Project vs. HSR Employment	2030 Shift	Share	No Project vs. HSR Population	2030 Shift	Share	2030 Job:Pop. Chg.	2005-2030 Job:Pop. Chg
Los Angeles	71,580	1.0%	42.8%	70,218	0.6%	88.2%	0.002	-0.213
Orange	22,698	0.8%	13.6%	16,251	0.5%	20.4%	0.003	-0.356
Riverside	(799)	-0.1%	-0.5%	(24,667)	-0.8%	-31.0%	0.003	-0.005
San Bernardino	20,026	1.7%	12.0%	43,947	1.5%	55.2%	0.001	-0.012
San Diego	53,925	1.9%	32.2%	126,953	3.2%	159.5%	-0.008	0.053
So. California	167,429	1.1%	100.0%	232,702	0.9%	292.3%	0.001	-0.043
Inland Empire	19,226	0.8%	11.5%	19,280	0.3%	24.2%	0.002	-0.007

Source: Exhibit 2 & 3

From 2005-2030, with High Speed Trains in place:

- Orange County would go from 0.67 to 0.84 (*not 0.83*) jobs for each resident.
- Los Angeles County would go from 0.57 to the same 0.63 in 2030, without the system.
- San Diego County would go from 0.65 to the same 0.69 in 2030 without the system.

In essence, the system would tend to slightly lower the jobs:population ratio in the inland area (*0.41 to 0.39*), and leave more inland workers commuting to the job rich coastal counties.

[HSR Impact on Inland Empire's Job Base 2005-2030](#)

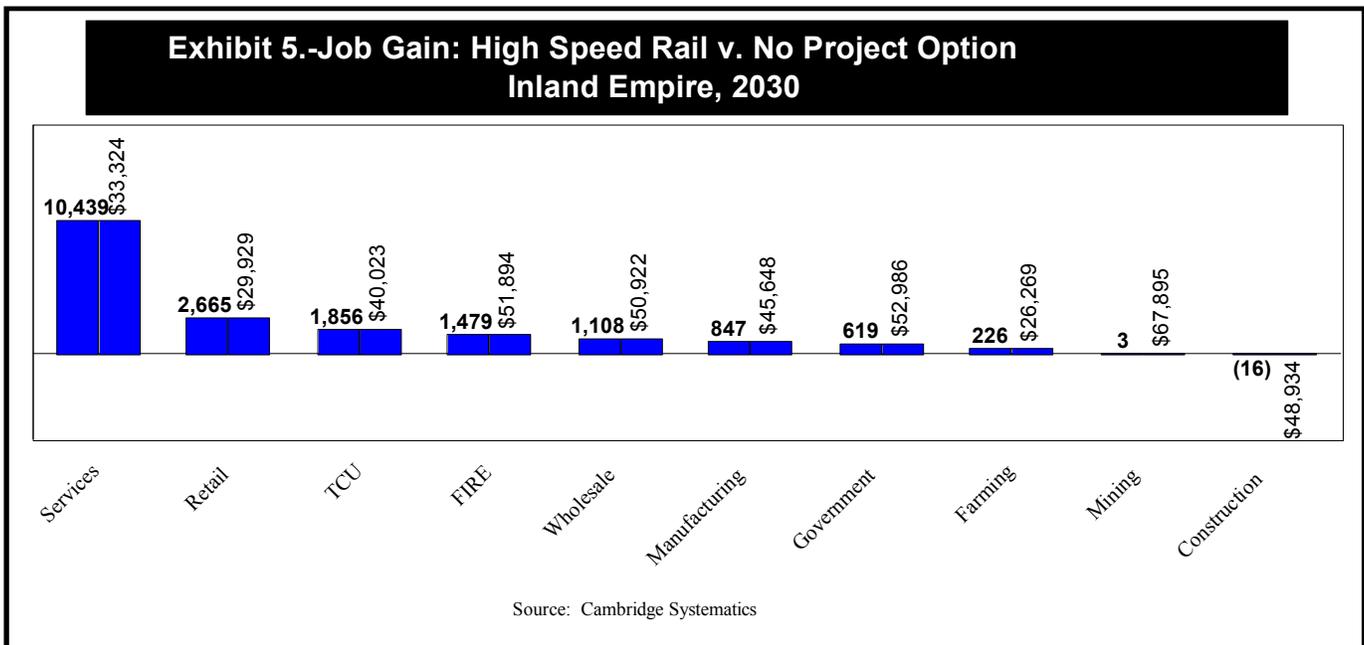
4. What new business and economic activities will be generated in the Inland Empire from High Speed Train? What will High Speed Train do to create more jobs in the Inland Empire?

Compared to the No Project option, the High Speed Train (*HSR*) option would increase the Inland Empire's job base by 2030 from 2,331,900 to 2,351,100, **up 19,200 or a 0.8% shift in growth**. This would be divided between an *increase* of 20,000 jobs in San Bernardino County, but a *decrease* of 800 in Riverside County (*Exhibit 4*). Of the 167,400 additional jobs added in Southern California by the system, the extra 19,200 jobs in the Inland Empire would be an 11.5% share. San Bernardino County would have a 12.0% share of Southern California's gain; Riverside County would lose -0.5% of it.

While the Inland Empire's job base would grow under the High Speed Train option, on a regional basis, the Inland Empire's share of Southern California's jobs would become a little bit worse than under the No Project option, falling from 21.8% to 21.4% of the region's 2030 jobs. Orange County's share would also fall, from 20.7% to 20.4%. The primary beneficiary would be Los Angeles County with its share of the region's job growth rising from 34.7% to 35.1%. San Diego County's share would increase from 22.7% to 23.1%.

For the Inland Empire, from an economic perspective, these findings have several implications:

- There will be 19,200 or 0.8% more jobs by 2030 under the High Speed Train option than under the No Project option.
- Of the 19,200 extra jobs created by the High Speed Train option by 2030 (*Exhibit 5*):
 - The highest number of jobs would be in the lower paying service (10,400) and retail sectors (2,700) with respective average 2008 average pay of \$33,324 and \$29,929.⁷
 - Gains in five relatively good paying sectors would rank next: transportation, communications and utilities (1,900; \$40,023), financial activity (1,500; \$51,894), wholesale trade (1,100; \$50,922), manufacturing (900; \$45,648), and government (600 ; \$52,986).
 - Weak job would occur in the low paying farming sector (200; \$26,269) and no jobs in the high paying mining sector (\$67,895).
 - The construction sector would also remain stagnant (\$48,943).



- Using the estimated average 2008 pay for each of these sectors, the 19,200 extra jobs under the High Speed Train option would increase constant dollar wage and salary earnings in the 2030 inland economy by \$711.9 million and each year thereafter. Their weighted average pay would be \$37,028, 3.7% (-\$3,704) under the \$40,204 for the economy generally. Note: this calculation assumes no increase in real incomes by sector due to high productivity in the various sectors from 2005-2030, as there is no realistic way to measure it.
- In 2030, the estimated Inland Empire employment under the No Project option was 2,331,923. Using the 2008 figure of \$40,204 for mean annual salaries for the full economy, *constant dollar* No Project wages and salaries would total \$93.6 billion in 2030. As indicated, with High Speed Train, the extra 19,226 jobs would generate \$711.9 million in additional income in the Inland Empire, an increase of 0.8%.

⁷ Quarterly Census of Employment & Wages, average annual wages by sector, CA Employment Development Department, 2007, scaled up to yield the Occupational Wage Survey, 1st Quarter 2008 weighted average of \$40,204.

- The ratio of output to earnings in the Inland Empire is 3.026 to 1.00.⁸ An additional \$711.9 million in earnings in 2008 dollars would be associated with an estimated additional output of \$2.15 billion by 2030 and each year thereafter due to High Speed Train.
- At the 3.026 ratio of output to earnings, the \$93.6 billion in total earnings in 2030 would be associated with Inland Empire output of \$283.6 billion in 2030 in the No Project case. The \$2.15 billion in extra output from High Speed Train would represent an increase of 0.8%.
- The ratio of indirect business taxes to output in the Inland Empire is 0.047 to 1.⁹ The extra output of \$2.15 billion from the High Speed Train option would thus generate an additional \$101.6 million in indirect business taxes going to the local governments of the area by 2008 and each year thereafter.

HSR Impact on the Inland Empire's Commuting & Travel Congesti on

Another way in which High Speed Train might help an area is by decreasing traffic congestion as some passengers choose to use the system instead of driving. However, for the Inland Empire, there does not appear to be a measurable change in the cost of freeway travel or a lowering of the pollution and other costs of congestion. This is the case as the modeling by Cambridge Systematics shows that the system will not fundamentally alter the deep imbalance between the pace at which the inland area's population growth is expected to occur compared to the speed of its job growth. As a result, in 2005-2030, the increase in population with the High Speed Train system in place of 2.57 million people will not be matched by sufficient change in the local job base to reduce commuting. This will leave more and more commuters jammed on the freeway system trying to reach their jobs in the coastal counties. Those arteries will be so clogged that even though many travelers will divert to the High Speed Train because it is in their economic interest, the modeling predicts no noticeable effect on balance of people and jobs:

- In 2005, the number of jobs for each person in Southern California was 0.54. Using that standard, the fact that the Inland Empire had just 0.41 jobs per person showed up in congested freeways and associated air quality difficulties as large numbers of people and goods moved between the inland area and the coastal counties. By contrast, the ratio was 0.67 in job rich Orange County, 0.65 in San Diego County and 0.57 in Los Angeles County (*Exhibit 1*).
- By 2030, the number of jobs for each Southern California resident will rise to 0.61 with more baby boomer retirees in the population. However, the Inland Empire is forecasted to drop to a 0.39 ratio in both the No Project and High Speed Train options. As there will be more people and goods moving, this implies that freeway congestion will be much worse than in 2005. Note that the 2030 jobs:population ratios under the High Speed Train scenario will be 0.84 in Orange County, 0.69 in San Diego County and 0.63 in Los Angeles County. Those will be the destinations for inland commuters (*Exhibits 2-3*).

Compared to the No Project option, the Inland Empire's 2030 population would increase from 6,047,888 to 6,067,168, up 19,280 people or 0.3%. This would be divided between an *increase* of 43,947 people in San Bernardino County, but a *decline* of -24,667 in Riverside County. The slightly smaller population increase (0.3%) than job increase (0.8%) in the Inland Empire means

⁸ IMPLAN ratio of Inland Empire's output (\$148.7 billion) to earnings (\$49.1 billion) was 3.026 to 1 in 2003.

⁹ IMPLAN ratio of Inland Empire's indirect business taxes (\$7.02 billion) to output (\$148.7 billion) was 0.472 in 2003.

that the High Speed Train option would cause a very slight change in the area's ratio of jobs:population. There would be **0.39 jobs per person with or without High Speed Train in 2030.**

- The High Speed Train system would not have much impact on lower commuting and congestion between the Inland Empire and the coastal counties. There would thus not be a significant impact on delays, wear and tear on drivers or vehicles or reductions in fuel consumption.

Quality of Life

5. What other potential quality of life benefits will result from High Speed Train in the Inland Empire and who is likely to benefit?

A key additional quality of life objective of several local governments in the Inland Empire would be advanced by the building of the High Speed Train system. This would be the development of transit oriented business and housing developments. This is a major feature of the new General Plan awaiting adoption in the city of Ontario. It is also a major consideration in recent decisions in the city of Riverside. In both cases, the communities have begun funding multiuse/transit oriented developments through their redevelopment agencies to begin to put customers, jobs and retail outlets in close proximity to one another.

If the High Speed Train option were to become reality, it would be consistent with where these cities are already heading. Since both are scheduled to have stations, it can be expected that they would undertake the planning to take full advantage of the system, realizing it would be a draw for firms wanting to locate near it. They would tend to be companies needing to move their staffs to customers around the state at high speed or to have customers be able to efficiently access them. The system would clearly promote the long term economies of these two cities, which already have the most jobs and retail sales in the Inland Empire.

Having a High Speed Train station in the Murrieta-Temecula area would also be very important to the Inland Empire. This is the portion of the inland community that has had the greatest difficulty in drawing employers to it because of the market's location at a considerable distance from Orange and Los Angeles counties. Murrieta and Temecula have generally received their population impulse from San Diego County. However, unlike its coastal neighbors to the north, it is sending a lot of people inland, but very few jobs. Here, the High Speed Train system would have the effect of closing the distance-time gap between Murrieta-Temecula and the rest of Southern California. It would thus make it more likely that firms would be comfortable bringing jobs to one of the inland areas with the lowest number of jobs per capita.

Meanwhile, given the sudden realization that the long term future of fossil fuels is a question mark, the building of an electrified High Speed Train system would highlight the commitment of California and, by extension, the Inland Empire to being part of a project that could be a metaphor for the future of the state's economy. The project would likely act as a catalyst causing demand for more such activity by the government, private businesses and the public.

Summary

Should the High Speed Train system be built, it would have several impacts on the Inland Empire. Certainly, users of the system would see their cost decline and speed of travel increase. The region would gain 19,226 additional jobs that would otherwise not exist by 2030. By 2030 and each year thereafter, there will also be \$711.9 million in additional constant 2008 dollar wages & salaries, \$2.15 billion in added constant dollar economic output and \$101.6 million in

added indirect taxes to local governments. The system would stimulate transit oriented housing and business nodes in Ontario and Riverside and would help the Murrieta-Temecula area close the jobs:population gap that has emerged because most inland job creation comes from Los Angeles and Orange counties while its population growth impulse has come from San Diego County, a place not sending it a significant number of jobs. The one issue that the High Speed Train system will not address for the region is reducing freeway congestion for non-users as it will not reduce the jobs:population gap that results in high levels of commuting.