



## Highlights of Reason Foundation's High-Speed Rail in Europe and Asia: Lessons for the United States

Texans Against High-Speed Rail is adamantly opposed to the Dallas Houston high-speed rail project being promoted by Texas Central Railway (TCR). A document entitled "Rumors vs Reality" was recently submitted to state legislators and distributed to the public by TCR officials. The document states that TCR agrees with a report on high-speed rail by Reason Foundation.

*"A report by Reason Foundation—a respected free-market think tank—is often cited as proof that a national high-speed rail network doesn't make sense in America, and points out that only two high-speed rail systems in the entire world actually earn a profit. **Actually, we agree with the Reason Foundation report!**"*  
**-Texas Central Partners Rumors vs. Reality Presentation, Page 8**

Since Texans Against High-Speed Rail and Texas Central Partners agree that Reason Foundation is a respected think tank and the report is agreeable to both entities, it is important to also note the other points in the report. The authors of the Reason Foundation report, as well as the compilers of this highlight of the report, do not stand to gain financially from sharing this information, unlike TCR officials, when sharing their representation of these subjects. The full, 39-page report can be found at [http://reason.org/files/high\\_speed\\_rail\\_lessons.pdf](http://reason.org/files/high_speed_rail_lessons.pdf).

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*"This paper's purpose is not to evaluate the Obama administration's high-speed rail program, but rather to analyze whether a successful HSR program could work in the U.S. To do so, it examines high-speed rail in Europe and Asia and the potential for high-speed rail in the U.S."*  
**-Reason Foundation HSR Report, Page 1, Introduction**

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## Not an intra-city traffic congestion solution

*“HSR riders take another form of transit to board a high-speed train. In the United States, only New York has a transit system that can shuttle enough people to a high-speed rail station. Most U.S. cities would have to build large parking garages to have enough ridership for HSR. And riders who begin their commute by car are more likely to drive or fly than riders who begin their commute by transit.”*

**-Reason Foundation HSR Report, Page 5, Executive Summary**

## Luxury transportation not financially feasible for many

*“Ultimately, high-speed rail falls into the “luxury” category for the U.S. It does provide another transport mode and can move people from one core city to another core city quickly and conveniently. But it is also very expensive and is utilized mostly by the wealthy.”*

**-Reason Foundation HSR Report, Page 5, Executive Summary**

## Deflated cost estimates, inflated ridership numbers

*“There is considerable political pressure for both governments and consultants to underprice high-speed rail. If the accurate cost of the Los Angeles-San Francisco California line—\$98 million for mostly true high-speed rail since reduced to \$65 million for a blended approach—had been divulged to taxpayers, the California bond referendum would have been much less likely to pass. While any infrastructure project can be underpriced, a recent study indicates that rail projects are the most numerous and worst offenders. It is also clear that transportation project cost estimates should be rigorously scrutinized, especially those authored by project sponsors.<sup>69</sup> **A study that examined 258 transportation infrastructure projects around the world found that in almost 90% of cases costs were underestimated, that actual costs on average were 28% higher than estimated, and that rail projects in particular were the most severely underestimated, costing on average 45% more than estimated.**<sup>70</sup> **Another world-wide study, which included 27 rail projects, one of which was a high-speed rail project, found that ridership forecasts for over 90% of the rail projects were overestimated, and 67% were overestimated by more than two-thirds. Urban passenger rail projects on average, went 40% over their projected costs. At the same time, U.S. passenger rail planners typically overestimate ridership by an average of about 100%.**<sup>71</sup> A Reason Foundation review of the*

*California rail authority's plan called the ridership projections "the most unrealistic projections produced for a major transport project anywhere in the world."<sup>72</sup>*

*One reason that high-speed rail loses money is project sponsors overestimate the number of travelers who will switch from car or plane. This will be an even bigger problem in the U.S. than in Europe and Japan. **A 1997 study on the feasibility of high-speed rail in the U.S. conducted by FRA determined that in most cases rail improvements would divert only 3%–6% of intercity automobile trips.**<sup>73</sup> The Department of Transportation's Inspector General (IG) reached a similar conclusion in a more recent analysis of HSR in the Northeast Corridor. The IG examined two options: the first involved cutting 30 minutes from journey times between Boston and New York, and New York and Washington DC, to 3 hours and 3.5 hours respectively; the second option cut journey times on both routes by 60 minutes. In both scenarios the IG found that the improvements reduced automobile ridership along the NEC by less than 1%.<sup>74</sup> **The IG noted "automobile travel differs from air or rail travel in that it generally involves door-to-door service, offers greater flexibility in time of departure, and does not require travelers to share space with strangers. Consequently, rail travel must be extremely competitive in other dimensions, such as speed or cost, to attract automobile travelers."**<sup>75</sup> **Several of the previous high-speed rail studies have overestimated the number of automobile users who choose rail over highway or air by a factor of 10.**<sup>76</sup>*

***Estimates of the level of ridership needed to justify the cost of high-speed systems similar to those in other countries range from six million to nine million riders per line in the first year.**<sup>77</sup> While this may be realistic in Europe and Japan, it would be challenging to reach such numbers in the U.S. **To put that figure in context, Amtrak's current high-speed service, the Acela, which began operating in 2000 in the most densely populated corridor in the United States, only carries a total of 3.4 million passengers per year.**<sup>78</sup>*

**-Reason Foundation HSR Report, Pages 18 - 19, Fiscal Evaluation of World Wide High-Speed Rail Systems**

## Concern for TCR's estimates of construction (\$41.7M per mile) & ridership (4.3M per year)

*“Adding it up: There is no magic formula for predicting high-speed rail profitability but generally rail lines need low construction costs (**generally \$20 million per mile or less**), low operating costs (generally less than \$0.20 per occupied seat mile), and high ridership (**generally at least 5,000,000 people per corridor**).”*

**-Reason Foundation HSR Report, Page 17, Fiscal Evaluation of World Wide High-Speed Rail Systems**

## Taxpayer subsidies needed

*“One of the problems with high-speed rail is that government money is needed because the private sector is unwilling to pay the exorbitant costs needed for the lines to break even. When Japan privatized its HSR lines, it received only an average of five million yen (\$56,402) per km. As such, true public-private partnerships are unlikely because the public subsidies have to be very high for the risk to be acceptable to a private entity. While public-private partnerships are an excellent way to fund other infrastructure improvements, they are unlikely to work for U.S. passenger rail.”*

**-Reason Foundation HSR Report, Page 18, Fiscal Evaluation of World Wide High-Speed Rail Systems**

## Economic benefit and job creation

*“As for the supposed advantages of high-speed rail over air travel and highways, few of these stand up to critical scrutiny. **Firstly, its economic benefits are questionable at best: it may shift economic activity and development to the areas it affects, but there is scant evidence that it produces any new, positive-sum benefits.** Moreover, if creating construction jobs is the goal, other infrastructure projects may make more economic sense: the U.S. has many unmet infrastructure needs that would rationally take priority over high-speed rail (like widening or modernizing highways).”*

**-Reason Foundation HSR Report, Pages 30, Analysis and Conclusion**

## Security

*“Time Savings and Security Delays: The high-speed rail industry has been fortunate to avoid any terrorist activities. However, while planes were once the top target, increased aviation security runs the risk of diverting malicious activity elsewhere—sadly, the hijacking of trains could easily become a reality. A train bombing, chemical attack or derailment could cause significant destruction, especially at speeds of more than 100 miles per hour. A comprehensive high-speed rail system would almost inevitably end up subject to an extensive security system. This would negate many of the time and cost savings of trains compared to planes.”*

**-Reason Foundation HSR Report, Page 12, HSR Realities**

## US not successful environment for HSR

*“The U.S. lacks many of the factors that make high-speed rail successful in other countries. For starters, the U.S. has neither the population density nor the land-use regulations necessary to support the development of high-speed rail. It lacks a pre-existing, successful passenger rail system, and spends far less on urban transit than Europe and Japan. **High-speed rail cannot work in a vacuum—in the absence of large urban populations clustered around city center rail terminals and extensive transit systems that allow passengers to easily complete their journeys, high-speed rail will never be an appealing transportation choice to most travelers.***

*Secondly, the U.S. is a uniquely auto-centric country: it has a much lower gas tax, cheaper gas prices and a much more extensive free highway network than comparable countries around the world. The U.S. interstate network remains the only large-scale toll-free network in the world for both cars and trucks. As a result, car travel is deeply embedded in the American economy, culture and geography. Simply building new high-speed rail lines will do nothing to change that.*

***Thirdly, it is important to remember that Europe and Japan built high-speed rail because their conventional lines were so successful that they needed to add capacity to increase train service. Many of these lines already had double or triple tracking. The high demand for conventional rail created a market for high-speed rail. This clearly cannot be said of the U.S.”***

**-Reason Foundation HSR Report, Pages 29, Analysis and Conclusion**

## Population density needed

*“Trains depend on population density to operate efficiently. To compete with the airlines, trains must depart frequently but they must also fill, or nearly fill, their seats to generate enough ticket revenue to cover their operating costs. Both the population size of a city and the concentration of economic activity in the central business district and near the train station(s) are important determinants in the percentage of people who ride rail transit. This means that New York City is more suited for train travel than many other U.S. cities because of the high concentration of activity on the island of Manhattan. About 35% of the city’s jobs are within three miles of Wall Street, while in other American cities, on average, about 22% of employment is within a three-mile radius of the city’s center.<sup>79</sup> Although the nation as a whole is becoming more urbanized, trends show that employment is steadily decentralizing in almost all U.S. cities.<sup>80</sup>”*

**-Reason Foundation HSR Report, Pages 22, Variables Determining High-Speed Rail Success**

## Connecting, reliable public transportation at stations needed

*“Connectivity of rapid transit is the third major factor. In Tokyo and Paris, passengers can arrive at stations and travel by heavy-rail or commuter-rail to nearly all the destinations in the urban area. A short taxi ride or bus ride may be necessary to reach one’s final destination. In the U.S. very few metro areas are sufficiently dense or have the extensive transit systems necessary to make this possible. **And since transit usage is one of the greatest indicators for rail success, ridership is important: only in the New York urban area does transit account for more than 15% of total travel.** In three of the 10 largest U.S. metro areas, it is less than 5%.<sup>81</sup> Contrast this with Paris where it is 25% and Tokyo where it is 60%.<sup>82</sup> This does not bode well for the success of high-speed rail in the U.S.”*

**-Reason Foundation HSR Report, Pages 23, Variables Determining High-Speed Rail Success**

## Diversion of highway travelers unsubstantiated

*“Safety: Aviation is the safest transport mode followed by train, bus and automobile.<sup>60</sup> The ability of HSR to divert highway travelers to rail is likely to be limited, and the diversion of fliers will make little difference because air transportation is very safe. It is unlikely that HSR will significantly reduce the number of transportation-related deaths and injuries in the U.S.”*

**-Reason Foundation HSR Report, Page 11, HSR Realities**

## Increasing preference for car and plane, even with HSR as option

*“Even where new high-speed rail services are being offered, automotive and plane usage has increased more quickly over the past 40 years. In Japan between 1965 and 2005, per capita driving increased by more than 900%, while per capita rail travel increased only 19%.<sup>109</sup> The average Japanese person travels about 1,950 miles per year by train, which is more than people in any other country. But only about 20% of those rail-miles are by high-speed rail.”*

**-Reason Foundation HSR Report, Pages 27, Government Travel Policy**

## Ridership and highway/airport congestion

*“Mobility: High-speed rail is unlikely to reduce congestion on highways or at airports. Travelers would have to switch modes; travelers choose car-travel because of the flexibility it offers and air travel because of its speeds. Even if car drivers switch to rail, induced demand on highways will lead to new trips on these roads reducing congestion very little. Even if 40% of travelers by car switched to trains, which is four times higher than is likely to happen in the U.S., highway travel would only decrease by 7%.<sup>61</sup> Plane travelers are slightly more likely to switch to rail than automobile travelers. And while a forecasted 20–30% decrease in passengers is significant, less- congested skies would cause more people to fly, recreating the problem. And delays in plane travel are mostly due to a 60 year-old radar system, not to insufficient runways or terminals. Modernizing this system would eliminate most of the delays.”*

**-Reason Foundation HSR Report, Page 11, HSR Realities**

## Tokyo Osaka HSR

*“Crucially, high-speed rail also tends to be very expensive—for both travelers and taxpayers. **Practically everywhere it operates, high-speed rail is more expensive (and slower) than plane travel.** Those on a very tight budget would be better off traveling by bus, while those seeking flexibility would likely stick with the automobile. And yet despite high prices, **only two of the world's high-speed rail lines have turned a profit. The rest lose substantial amounts of money and require taxpayer subsidy.** Even the world's most successful high-speed line, which runs between Tokyo and Osaka in Japan, must be subject to a disclaimer: it was built when only 12% of the Japanese population had cars. As such, it might not be cost-effective if it were being proposed today.”*

**-Reason Foundation HSR Report, Pages 30, Analysis and Conclusion**

## Not an environmentally friendly alternative

*“Secondly, estimates of the reduced energy use and pollution arising from HSR often fail to consider its construction and maintenance costs, while also assuming that automotive and airplane engine technology will not become more energy efficient in the future. For example, the California High Speed Rail Authority’s uses its own environmental impact statement (EIS), to suggest that high-speed trains will produce large energy savings.<sup>51</sup> According to the EIS, the energy savings from operating high-speed rail will repay the energy cost of construction in five years. However, this assumes that the energy efficiency of autos and planes will not improve. If, over the lifetime of a high-speed rail project, autos and planes become 30% more fuel-efficient (which is not an unreasonable assumption), then the energy payback period for high-speed rail rises to 30 years. **And since rail lines require expensive (and energy-intensive) reconstruction about every 30 years, high-speed rail may not actually save energy at all.**”*

**-Reason Foundation HSR Report, Page 10, HSR Realities**

**More information about Texans Against High-Speed Rail,  
a volunteer-led non-profit organization,  
can be found at [www.TexansAgainstHSR.com](http://www.TexansAgainstHSR.com)**