AN ALTERNATIVE PLAN FOR CALIFORNIA HIGH SPEED RAIL

AN INDUSTRY PRO SPEAKS OUT: HOW PROMISED L.A.-S.F. TRAVEL IN 2 HOURS 40 MINUTES COULD BE ACHIEVED AFFORDABLY

by Anthony E. Waller

People have gotten the notion that California is going to build high speed rail comparable to Western Europe or East Asia. Nothing of the sort is about to happen.

High-Speed Rail (HSR) predominantly serves line-haul trips between endpoint metropolitan areas. There are usually very few stops enroute. The majority of HSR mileage is built on an all-new alignment as straight as possible; not shared with other rail operations. Close to terminal cities, European and Asian HSR do share short stretches of track with other rail services (freight, local commuter, etc.) and operate at reduced speeds. In virtually every case, however, HSR diverges as early as possible from shared tracks to begin high-speed operations on its own exclusive right-of-way. The sooner HSR leaves shared-use segments, the greater the high-speed mileage is relative to the length of the trip.

The proposed California HSR will not have an exclusive alignment for the majority of its mileage. The only exception is an east-west transition from Gilroy to just south of Merced. The project shares north end trackage with Caltrain commuter trains for the first 78 miles out of San Francisco; with no quick exit to a high-speed alignment. It makes a circuitous crossing of the Tehachapi Mountains. Near Los Angeles, plans by the High-Speed Rail Authority (HSRA) show the project making use of Metrolink commuter tracks for the last 77 miles into downtown.

Trains will be routed down the center of the San Joaquin Valley parallel to existing freight rail rights-of-way with lower speed curves, not on arrow-straight tracks designed specifically for high-speed trains. The alignment will pass through the centers of numerous municipalities; including Bakersfield, Fresno, and many small towns. This is comparable to a motorist driving between the Bay Area and Los Angeles via Route 99, rather than using the more direct Interstate 5 or Route 101.

By routing HSR through municipal centers in Bay Area and Los Angeles suburbs and in the towns and cities of the San Joaquin Valley, the project will require massive grade separations and right-of-way widening along the majority of its mileage. This is the reason California HSR already is projected to cost tens of billions of dollars before preliminary engineering has even started.

The California HSR also will make numerous stops. A circuitous route, saddled with lower than optimal speeds over much of its mileage and making constant stops and starts, means that the Board's plan for California HSR will not meet the project's target 2 hour 40 minute end-to-end schedule for its 470 mile trip.

HSR in California can be executed better and at lower cost:

1) **Build an arrow-straight alignment parallel to Interstate 5:** This would be a high-speed trunk designed specifically for HSR, equivalent to the majority of mileage of typical European or Asian systems. This would eliminate construction disruption through the centers of municipalities of the San Joaquin Valley.
2) **Exit Caltrain at Redwood City:** This is the equivalent to an overseas system exiting shared-use tracks at the earliest opportunity and it enables California HSR to access its high-speed trunk in the San Joaquin Valley further north. A Redwood City divergence (26 miles from San Francisco) also prevents extensive and expensive right-of-way widening along the entire length of the Caltrain route, disrupting both commuter rail service and the communities themselves for the several years' duration required for construction completion. Routing trains across the Bay on a reconstructed railway bridge from Redwood City to Union City and then over Altamont Pass on an existing, unused rail right-of–way has been dismissed without adequate or honest study. There are engineering consulting firms that produce preconceived answers for their clients (No doubt Alaska's "Bridge to Nowhere" had just such an endorsement.). The HSRA study cited "environmental" as its principal reason to dismiss the rival alternative and promote a politically favored one. A Capital Cost Comparison Analysis should be undertaken of both alternatives as part of a Peer Review of the consultant's work, with the additional expense involved in the widening and grade-separation of the entire Redwood City-to-Gilroy segment fully authenticated.
3) **Use existing state-supported conventional speed passenger trains as feeders to HSR as a means of providing service in the San Joaquin Valley:** The state of California presently supports conventional speed intercity trains operating the length of the San Joaquin Valley from Oakland and Sacramento to Bakersfield, between Los Angeles and San Diego, and between San Jose and Sacramento. These trains should feed the Los Angeles-Bay Area HSR trunk. This enhances the utility of the investment the State has previously made and enables intermediate markets to be served without interfering with the LA-to-Bay Area line-haul market and the target running time by creating an excessive numbers of local stops. A station near Tracy ("North Valley Transfer") and another near the bottom of the "Grapevine" ("South Valley Transfer") would be the interface points. This would provide a 240-mile, arrow-straight segment with nonstop 220 mph running. Similarly, commuter trains and the State-supported trains between Sacramento-San Jose and LA-San Diego would bring riders into connecting stations in the endpoint regions.
4) **Take a shorter and more direct route over the Tehachapi Mountains:** The HSRA plan takes the long way around over Tehachapi Pass, across the high desert via Mojave, and down through Soledad Canyon in order to serve little-used Palmdale airport. This diverges from high speed rail's mission of connecting the two endpoint metropolitan areas. Very expensive cut-and-fill and bridge-and-tunnel work will be required to get over the mountain range, regardless of which route is chosen. A shorter route over Tejon Pass (instead of the one over Tehachapi Pass with twice the linear mileage) would enable high speed trains to connect to Metrolink tracks at Santa Clarita 35 miles from downtown Los Angeles, instead of the HSRA plan to connect to Metrolink at Lancaster (77 miles from Los Angeles).

The alignment proposed in this article is about 90 miles shorter than that proposed by the HSRA and its pliant consultants. This proposal can achieve the target 2 hour 40 minute end-to-end schedule time, in turn enabling trains to be a competitive alternative to both flying and driving.

The HSRA's own PR admits that the first 78 miles on its chosen route from San Francisco to Gilroy will take most of an hour. That leaves just 1 hour and 50 minutes to cover the remaining 390 miles. This mileage includes paralleling freight railways with lower speed curves through the San Joaquin Valley, a long circuitous path over the Tehachapi mountain range, and shared tracks at reduced speed for 77 miles into Los Angeles.

The HSRA plan involves shoe-horning a twenty-first century rail operation onto a nineteenth century rail alignment. It is hard to believe that HSRA's alignment will have any 220 mph running at all.

The HSRA plan cannot meet the target 2 hour 40 minute schedule.

No level of government (Federal, State, or local) possesses unlimited financial resources. The California State financial crisis, combined with foreseeable cost overruns on a project already shaping up as poorly planned, are likely to result in periodic suspensions of construction that would leave incomplete structures sitting half-finished in municipal centers for years.

California HSR needs to be brought back down to earth fiscally and physically. The Board of the California HSRA has done the project a disservice by dictating a private agenda that is little more than drawing lines on a map to connect politically desired dots. The project's cost is now poised to soar out of control; and the finished project risks huge deficits due to uncompetitive travel times.

Speaking as a professional Transportation Planner with a background in rail operations, I know that HSR in California can be done better.

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