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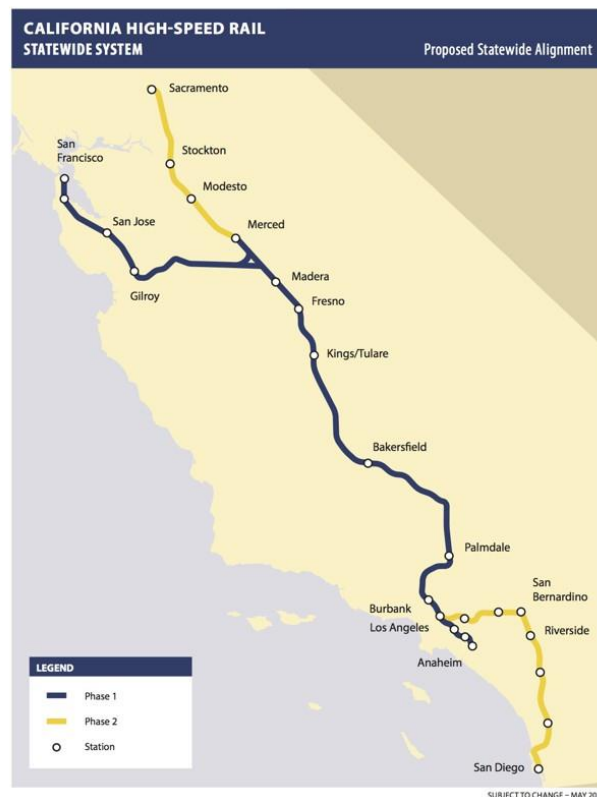
## Could High-Speed Rail Ease California's Housing Crisis? See Japan.

Joe Eaton

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The future of California's ambitious but troubled high-speed rail project is murkier than ever.

Always controversial, the California High-Speed Rail (CHSR) project, which promises to whisk passengers from Los Angeles to the Bay Area in about 2 hours and 40 minutes at speeds that hit 220 mph, has experienced cost overruns and delays since it was conceived a decade ago. When approved by California voters in 2008, the project was projected to cost \$40 billion. Since then, however, the price tag has swelled to \$77 billion, with some estimates going up to \$100 billion. Construction is now in progress in the state's less-populated Central Valley, and the first phase of the line, between San Jose and Bakersfield, could open by 2025, with San-Francisco-to-L.A. service beginning in 2029. Phase 2 of the project would extend service to Sacramento and Stockton in the north and San Diego to the south.



As costs mount, public opinion on the project has been closely watched. One 2018 USC/L.A. *Times* poll found that just 31 percent of California's registered voters supported the project after they were told it would cost twice the initial estimates; another 2018 survey, however, from the Public Policy Institute of California, found a slim majority of state residents still on board. The project's full funding remains uncertain, as well. Perhaps most alarming to those who share the high-speed rail dream, California's new governor, Gavin Newsom, appears to be less enthused about CHSR than predecessor Jerry Brown was. In the run-up to his recent inauguration, Newsom signaled a willingness to reassess the project.

CHSR has been touted as a job creator and smog fighter, as well as a way to help lower the state's carbon footprint by taking cars off the road and airplanes from the skies. Bullet-train boosters are hoping that another, less-examined impact of the project is due for attention: the possibility that the rail network could eventually help ease the housing affordability crisis in the cities at either end of the line.

That's the question that a recent UCLA study explores, through the lens of Japan's extensive high-speed rail system, the Shinkansen. The authors, led by UCLA management professor Jerry Nickelsburg, analyzed more than 50 years of prefecture-level economic and demographic data. The study follows up on a similar one from 2012, which used the Shinkansen to take a critical look at the expectation that high-speed rail would boost tax revenues in the towns and cities along the route. This time, the team charted the impact the Japanese trains had on housing affordability.

Their findings are no great surprise—Japan's rail network allowed lower-wage workers to access exurban areas where housing development is less expensive. While areas close to stations experienced price increases, in general prefectures linked by rail were more affordable than they would have been without rail. “What happens is you have effectively increased the size of the city,” Nickelsburg said. “The size of the city expands, and you get urbanization moving out.”

Nickelsburg developed the study with California in mind, and he expects to see the same socio-economic sorting if CHSR is completed. The study suggests that high-speed rail could be a boon specifically for workers in the Bay Area and Los Angeles metros that find themselves priced out of increasingly unaffordable central cities. Higher-income workers who can afford urban amenities and rents would be more likely to live in inner cities, Nickelsburg said. Speedier rail might liberate more lower-wage Bay Area workers, many of whom have already migrated to inland exurbs, from their epic commutes. “We see that in cities everywhere,” Nickelsburg said of the rush to the exurbs in search of affordable housing. “[High-speed rail] just facilitates that.”

That, at least, has been the story in Japan, a nation whose development patterns have been shaped by their extensive high-speed rail network. In the postwar era, as the U.S. and many other countries invested heavily in air and auto infrastructure, Japan went all-in on trains: In 1959, the Japanese national railway company began construction on the Shinkansen, in part to relieve rail congestion between Tokyo and Osaka. The system opened in 1964 and added on average one new line every four years until 2004.

To determine the impact of Shinkansen lines on real estate values over the last 50 years, Nickelsburg and researchers from the University of New Mexico and the International Monetary Fund analyzed the difference between real estate values in Japanese prefectures with rail lines

and their expected values based on other economic factors. Prefectures where lines were not built were used as a control.

The authors found that the presence of a Shinkansen line was enough to keep overall housing prices lower than they would have been without the line, Nickelsburg said, because the train gave access to lower-income housing in exurban areas, when compared to prefectures that did not have a Shinkansen line. “The Shinkansen helped Japanese cities to decentralize, which in return reduced prices in cities from what they otherwise might have been,” the study states.

Japan’s rail network makes the best model to examine how high-speed rail could reshape California over the next decades, Nickelsburg said, because of certain parallels. Like California’s proposal, Japan’s system passes through mountainous regions and is built in an active earthquake zone. The state is roughly comparable in size to Japan, and its bullet-train routes would serve similar roles: The Tokaido line, for example, links two major cities, Osaka and Tokyo, with smaller cities and farmland between. Nickelsburg also considered studying China’s fast-growing high-speed rail system or France’s expanding TGV network, he said, but found that the Shinkansen offered the best point of comparison for what California is trying to achieve. “Japan’s has been running the longest and it has the most variation on where it goes, so it was the local case study,” he said.

But there are many limits to the comparison. For one, Japan is far more densely populated than California, with multiple cities that developed alongside its high-speed rail system. CHSR has more ground to cover, too: The Tokaido line links Tokyo and Osaka in just over 340 miles of track, while the proposed route from San Francisco to Los Angeles is 438 miles. Some experts have observed that the length of the proposed line from San Francisco to Los Angeles could make it difficult for the train to compete with airlines.

For high-speed-rail skeptics like Cato Institute transportation pundit Randal O’Toole, that’s more than enough to dismiss the study’s findings on affordable housing. “What a fantastically dumb idea,” O’Toole wrote on his *Antiplanner* blog. “[T]he high-speed rail line would probably do more to make the Central Valley less affordable than it would to make the coastal areas more affordable.”

Rail proponents have their own doubts about CHSR. Joe Nation, a public policy professor at Stanford who represented Marin and Southern Sonoma Counties in the California State Assembly from 2000 to 2006, thinks the speedy train no longer makes sense, regardless of what it might some day do to spur affordability. Nation, who commutes to Stanford from San Jose via the Caltrain commuter rail system (and bike), thinks the HSR funds would be better spent on upgrades to conventional rail, which is vastly cheaper and could offer similar benefits to rent-strapped commuters priced out of cities. “I believe commuting by car is a waste of time and a waste of fuel,” he said. “I am a rail advocate, but I believe that regional rail makes much more sense.”

Nation also pointed to the most fundamental difference between California and Japan: With roughly similar land area, the island nation packs in three times as many residents. “High-speed rail tends to work in areas that are densely populated. Europe and Japan are densely populated. California is not.”

Nickelsburg declines to take sides in the debate over the fate of CHSR or the overall worthiness of the project, but he insists that Japan's experience does indeed have lessons for California. Right now, it's still very unclear exactly how, and with what speed, the state can deliver on its bullet-train dream.

"How could California fall off track?" Nickelsburg said. "There are hundreds of ways. There are a lot of unknowns relative to high-speed rail in California."