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# California's High-Speed Rail Yields the Greatest Accessibility Gains to the Most Vulnerable Communities

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## Issue

California High-Speed Rail (CAHSR) is a publicly funded high-speed rail system under construction in the state of California. According to the latest Business Plan<sup>1</sup>, the 119-mile segment from Madera to Bakersfield is under development. The Initial Phase is projected to provide service from Merced to Bakersfield starting from 2029, and will later connect Anaheim and Los Angeles with San Francisco via the Central Valley in 2033. The ride between Los Angeles and San Francisco will cover a total distance of 380 miles and take 2 hours and 40 minutes.

A major criticism of California's high-speed rail project is that it will mainly serve urban elites and that low-income people and people of color likely won't be able to afford the fares.<sup>2</sup> Also, the project may benefit the middle-income group the least since the proposed station locations, usually in or near city centers, will probably serve high- and low-income populations better than middle-income families.<sup>2</sup> Besides these arguments, however, there are very few studies that have analyzed the equity impacts of California's high-speed rail project. Current studies have either focused on benefits to California residents as a whole with little consideration to the specific opportunities for how high-speed rail will improve the lives of marginalized groups; or

only studied the disproportionate adverse impacts received by marginalized groups.

To address this gap, we studied the equity impacts of California's high-speed rail systems in terms of potential accessibility improvement to communities of concern. Specifically, we assessed the impact of high-speed rail on accessibility to employment and educational opportunities for the census tracts in the California Central Valley. For the baseline scenario, accessibility is assessed for driving-only and transit-only. The baseline is compared to scenarios with driving plus high-speed rail and transit plus high-speed rail. We examined the accessibility distribution for census tracts and calculate the spatial equality index of accessibility distribution to compare the accessibility before and after high-speed rail starts operation, as well as the accessibility for census tracts that, based on census data, are considered to be communities of concern.

## Key Research Findings

**High-speed rail yields the greatest accessibility gains to the most vulnerable communities in the Central Valley.** This improvement is attained for both employment and education accessibility, and whether high-speed rail access/egress is by driving or transit. It is also the case that

vulnerable communities have higher baseline accessibilities as a result of being located in urban areas. As viewed through the lens of accessibility, high-speed rail “makes the rich richer”, but the “rich” in this context tend to be communities of concern.

**High-speed rail accessibility gains are restricted to higher travel time thresholds.** This is generally trips that take 60 minutes or greater, since high-speed rail does not offer travel time savings for shorter trips.

**Driving has consistently higher accessibility as well as accessibility improvement due to high-speed rail compared to transit.** With the same travel time, the number of employment opportunities accessible by using driving or driving plus high-speed rail is almost double the number of employment opportunities accessible using transit or transit plus high-speed rail.

**There is a great need for improving transit services.** To bring the accessibility impact of high-speed rail to more disadvantaged communities beyond the urban areas, transit service must be improved between the high-speed rail stations and the rural and suburban areas. There is also a need for high-speed rail pricing schemes that make high-speed rail affordable to lower income residents. Improved transit and innovative pricing can allow Californians in disadvantaged communities to join urban elites as beneficiaries of California high-speed rail.

## More Information

This policy brief is drawn from the report “Assessing and Improving the Equity Impacts of California High-Speed Rail” available at [www.ucits.org/research-project/2022-27](http://www.ucits.org/research-project/2022-27). For more information about findings presented in this brief, please contact Kaijing Ding at [kaijing@berkeley.edu](mailto:kaijing@berkeley.edu).

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<sup>1</sup>California High-Speed Rail Authority. (2022) California High-Speed Rail 2022 Business Plan. Available from: <https://hsr.ca.gov/wp-content/uploads/2022/05/2022-Business-Plan-FINAL-A11Y.pdf>

<sup>2</sup>Nuworsoo, C. (2017). 18 Equity analysis of California high-speed rail. High-Speed Rail and Sustainability: Decision-making and the political economy of investment, 299.

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