

What Will Come In 2020?

From a Native American trail, to missions, to the first motel, to Interstate 5, to Amtrak and Greyhound, to airplanes, transportation has come a long way for travel between San Francisco and Los Angeles! Currently, researchers and developers are working on two new methods of transportation—the California High-Speed Rail and the Hyperloop.

What's the cost to build it?

- | Voters were told in 2008 that the project would cost no more than \$33 billion
- | The latest estimate, as of late 2016, is that the cost is \$64 billion

What are the fares going to be like?

┆ Originally, in 2008, the fares were going to be “about \$50 a person.” But look how this compares to other high-speed trains:

A study on California High-Speed Rail Fares:

BY THE LOS ANGELES TIMES

France’s High Speed Rail	52 cents/mile
Washington-Boston’s High Speed Rail	50 cents/mile
Germany’s High Speed Rail	46 cents/mile
Italy’s High Speed Rail	25 cents/mile

EXPECTED: California High-Speed Rail (438 mile phase) 20 cents/mile

Will high-speed rail fares rise from 2008 estimates?

┆ Yes—according to more recent estimates, a ticket cost between San Francisco and Los Angeles would be \$80-\$90.

CALIFORNIA HIGH-SPEED RAIL CONNECTING CALIFORNIA



What's the route and when will it be completed?

- ┆ By 2029, the system will run from San Francisco to the Los Angeles basin under 3 hours with speeds capable of over 200 miles per hour (as of June 2016)
- ┆ Operations between Merced and the San Fernando Valley (Burbank) are expected to begin in 2022 (as of 2015)
- ┆ The system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations

< **Route Map** of High-Speed Rail (as of June 2016)

Pacheco Pass vs. Altamont Pass

When crossing over to the Central Valley, the California High Speed Rail tracks could pass through Pacheco Pass (east of Gilroy, adjacent to Highway 152, near Casa de Fruta) or through Altamont Pass (east of Livermore, adjacent to Highway 580). What are the benefits of each?

Benefits of Pacheco Pass:

- ┆ More direct route than through Altamont Pass
- ┆ No construction of new Transbay Tube or bridge across the Bay needed
- ┆ If going through Altamont Pass, they would need to build additional tracks through developed Tri-Valley communities—Pacheco Pass is not developed
- ┆ A bridge across the Bay along the Peninsula would split trains—some would go to San Jose and some would go to San Francisco

Benefits of Altamont Pass:

- ┆ Already a train line in service here, the Altamont Commuter Express (ACE), so if tracks were built over the Bay next to the Dumbarton Bridge, ACE could take passengers immediately to Redwood City, and then north to San Francisco or south to San Jose
- ┆ Tracks through the Altamont Pass would serve more commuters to the Peninsula and more visitors in general; Pacheco Pass, along Highway 152, passes through no communities except Gilroy and Los Banos in Merced County, where there are not many commuters or visitors!
- ┆ After two California High-Speed Rail tracks are finished being built between Stockton and San Jose, and while they are building the other sets of tracks, ACE could use the tracks
- ┆ No need to extend BART into San Jose (another local transportation issue!), because commuters could use the California High Speed Rail on the new, currently ACE-used, tracks
- ┆ Pacheco Pass holds some of the largest inland natural wetlands in the state, and important bird and other wildlife habitat; the train route is expected to disturb wildlife and cause development there

Pacheco Pass, the route east of Gilroy that connects to Highway 5 near the town of Los Banos, has been chosen and work has started there as of June 2017. **What's your opinion—was the right route chosen?**

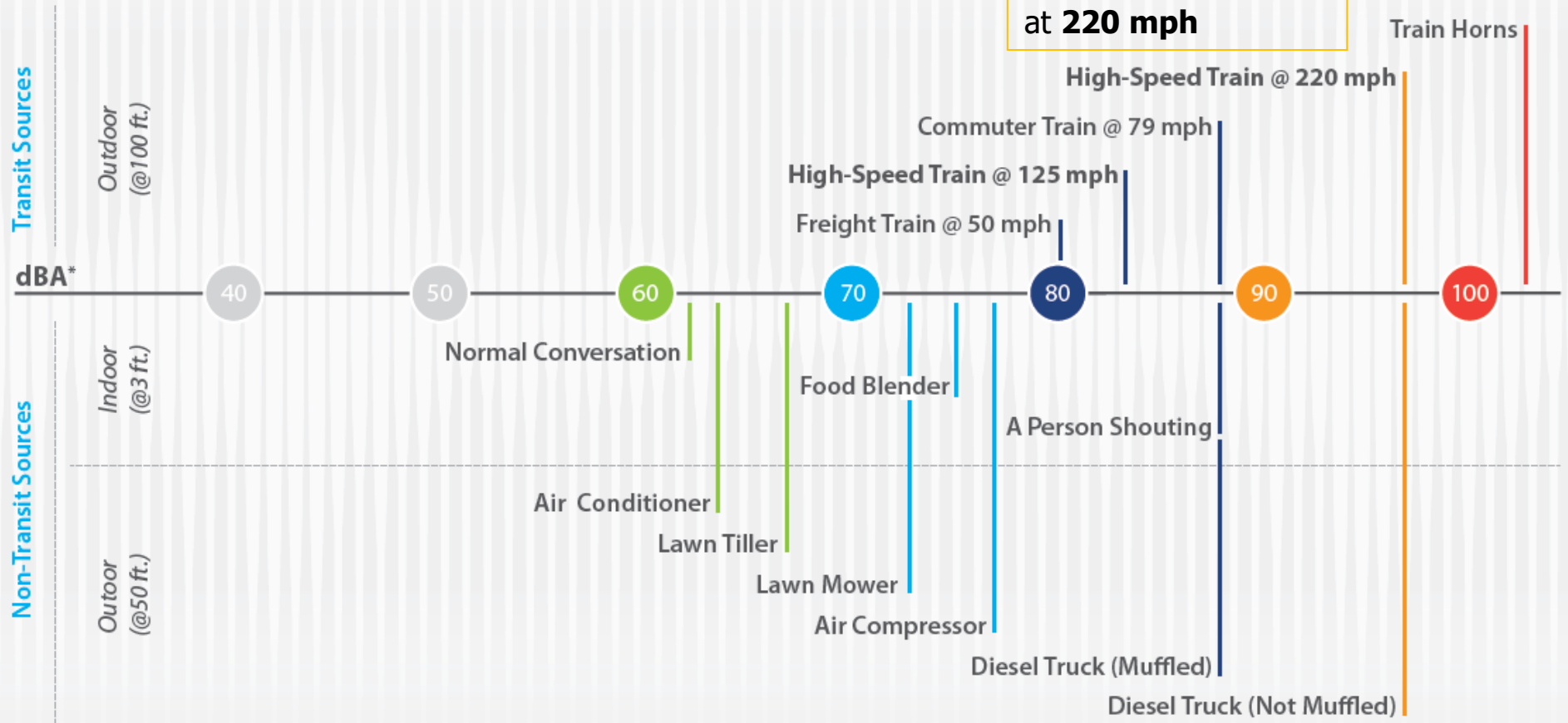
Environmental Benefits of the California High-Speed Rail:

- ┆ According to California High-Speed Rail's website, in the first year of operation, high-speed rail will take the equivalent of 31,000 passenger vehicles off the road, resulting in greenhouse gas reductions between 141,000 to 333,000 metric tons of carbon (as of June 2016)
- ┆ By 2040, the system will reduce vehicle miles of travel in the state by almost 10 million miles of travel every day (as of August 2014)
- ┆ Over a 58 year period, the system will reduce auto travel on the state's highways and roads by over 400 billion miles of travel (as of August 2014)
- ┆ Starting in 2030, the state will see a reduction of 93 to 171 flights daily (as of August 2014)
- ┆ By 2040, the state will see a reduction of 97 to 180 flights daily, and the cumulative reduction of carbon dioxide is estimated to be between 5 and 10 million metric tons (as of August 2014)
- ┆ On flat terrain, a rail line can move as many or more people than a highway using a much narrower right-of-way. Building a rail line usually involves far less destruction of private property than widening an Interstate, and the Central Valley is mainly flat, so building rail lines is more environmentally-friendly than widening or even maintaining Interstate 5. (Note: Trains can't turn corners as tightly as rubber-wheeled vehicles, and they need gentler grades than trucks or cars to maintain speed, meaning that in hilly and mountainous areas, building a rail line may require more earthmoving, including tunneling, than building a highway.)
- ┆ Both trains and cars powered by electricity directly or requiring electricity to recharge their fuel cells have an advantage over planes in that electricity can be generated by multiple sources, whereas planes rely solely on fossil fuels

What's the deal with noise?

The Sound of High-Speed Train Travel

Typical Maximum Noise Levels Before Mitigation



*A-weighted decibels (dBA) are an expression of the relative loudness of sounds in air as perceived by the human ear

How to Minimize the Effects of Noise in Sensitive Areas

Sound walls, sound barriers (solid and/or transparent), or earthen berms built between the train tracks and residential or other noise-sensitive areas can help reduce noise disturbance caused by the train service. The Authority has committed to mitigating all noise impacts that are classified as severe under FRA guidelines.⁽¹⁾

Additionally, at areas where the train will need to travel through at-grade crossings, the establishment of “quiet zones” where additional safety measures remove the need to sound train horns can help significantly reduce noise-disturbance.

⁽¹⁾ FRA High-Speed Ground Transportation Noise and Vibration Impact Assessment (2012)



*Above images serve as examples of noise mitigation measures and are not an indication of a preferred method for use on the California High-Speed Rail project

Other Notes about High-Speed Rail:

One of the greatest proposed benefits of the train is that it will be cheaper than flying, which takes the same amount of time. However, airlines might lower their prices to compete with High-Speed Rail tickets.

And lastly, it is likely that riding the train will actually be slower than predicted. If it does actually take 3 hours (as the High-Speed Rail board states), flying will take the same amount of time as the train:

Times comparison:	<u>Flying</u>	<u>High-Speed Rail</u>
Driving to Departure Area:	1/2 hour	1/2 hour
Check-in/Security:	2 hours	1 hour (estimate)
Length of Trip:	1 1/4 hours	3 hours (estimate)
Get Baggage:	1/2 hour	1/4 hour
Driving to City:	1/2 hour	— (Already in Downtown)
TOTAL:	4 1/2 – 5 hours	4 1/2 – 5 hours

But there are many ways for the travel time to increase...

┆ High-Speed Rail is expected to connect San Francisco and San Jose in 30 minutes—this is based on no at-street crossings (of which there are multiple), four-track structures (there will only be 2 tracks). In addition, there will be three “levels” of Caltrain trains (slow/medium/fast) and freight trains to deal with. **This will likely slow down the travel time, both in the Bay Area and Los Angeles Basin.**

- ┆ For a 3-hour connection to occur, a 200 mph speed in urban areas is needed...as stated above, this is unlikely to happen
- ┆ There are safety concerns of non-stop trains passing through two-track stations at high speeds, where commuters are gathered on platforms
- ┆ Other safety concerns where trains speed past crossings used by vehicles and pedestrians
- ┆ Potential demands to reduce excessive noise might cause the train to lower its speed

For now, the times are the same, but will it stay that way? Only time will tell...

**Stay tuned on updates and more information by visiting
TheTransportationMuseum.com and clicking "Current Events."**