

Texas enters race to host first U.S. bullet train

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HOUSTON — In just five years, the trip from this energy hub to north Dallas could be shaved from a typical 4 ½ hours to just 90 minutes on a new bullet train.

So says a group of investors aiming to build the nation's first operational high-speed rail line. They're in a race to finish before California's high-speed rail project, now under construction. But officials at Texas Central High-Speed Railway believe a shorter route, easier terrain and a different financing model favor their project.

Public opposition to the project is rapidly melting away in Texas. A bid in Austin to halt the effort failed quickly. Aging landowners, fast-expanding cities, congested airports and worsening freeway traffic are helping propel the effort.

Aggressive public outreach also appears to be aiding the cause. Texas Central has held 25 public open houses here. At the most recent event, in Houston's Spring Branch neighborhood, turnout was strong, with many participants proudly wearing buttons supporting a Texas bullet train.

Proposed Texas bullet train route options

The multiple colored alignments represent possible routes. Map courtesy of Texas Central Railway.

Travis Kelly, vice president for government relations at Texas Central, said so far the project cost is estimated at \$10 billion, but he admits that may be conservative, given typical cost overruns for transportation infrastructure in the United States. So far, \$75 million has been raised from Texas investors to cover the initial phase of the project, planning and the environmental impact statement.

Texas Central hopes to build most of the line, around 70 percent, adjacent to existing road and utility right-of-way easements. Negotiations have begun with property owners in the way of the route. In Houston, that means largely newer communities built in the far northwest corner of the city — prosperous suburbs rather than more vulnerable and disenfranchised communities.

Brenda Stardig, a Houston city councilwoman representing District A, where the bullet train line would be built, voiced little concern for the project. In fact, she doubts the City Council will take a stand on the proposal.

She praised Texas Central's public outreach endeavors. She said the city's main concern is that this project be built with "the least amount of impact ... if this proposal goes forward."

Alon Levy, author of the popular transit blog Pedestrian Observations, thinks Texas' project has a shot. The strong tradition of eminent domain favoring oil and gas, pipelines and utilities over property owners could help Texas Central win should recalcitrant property owners choose to fight it in court, he argued. He also said a \$10 billion price tag is about in line with what it costs to build new or expand existing bullet train lines.

"It's actually a little bit on the high side," Levy said.

Texas advantages

Texas Central aims to bring the standard Japanese high-speed model to Texas. That means there are no technological hurdles to overcome, Kelly said.

His company chose the Dallas-to-Houston route for its relative ease. The train could span some 250 miles through relatively flat terrain, with an elevation increase of around 600 feet, compared with the mountains and valleys the California project would need to skirt.

And rather than build more than a dozen stations, which would slow California's line, Texas Central is planning on just three stations: Houston, a central stop roughly halfway between College Station and Huntsville, and Dallas.

Though historically, governments built these systems, Kelly says his company's private financing model actually gives it the advantage.

"It's really hard, especially on those long routes, to have fares that are high enough but don't price everybody out of the market and still pay for the service," he said. "But even in Amtrak, you find some profitable routes, like the Northeast Corridor."

Texas Central is essentially enticing investors to a profitable short rail corridor like Amtrak's Northeast Corridor, he said, minus the long stretches often demanded by politicians and their constituents. "We're cherry-picking the line and not having to build an entire system and subsidize it, but a single line based on the market and the construction cost," said Kelly. "No other government really has that luxury."

Levy thinks the introduction of high-speed rail to Texas could help the technology rapidly spread in the United States, as successful public transportation in a politically red state would encourage conservative skeptics to take another look.

After Denver proved its successful light rail municipal transportation concept, other U.S. cities emulated it, including Minneapolis. It may take decades, but something similar could happen in the United States should the Texas bullet train roll out in 2021, Levy argued.

"If something succeeds in one state, it will be adopted elsewhere," he said.

Texas Central aims to finish a draft environmental impact statement by December. Construction could begin by late 2017 if its funding is realized. Kelly says the full project would be financed by a combination of debt, equity, government loans and possible low-interest lending support from the Japan Bank for International Cooperation. He likened it to financing structures used to build private toll freeways.

Late to America

Proponents of introducing high-speed rail to the United States say the bullet train would propel the country into the 21st century. But bullet train technology is more than five decades old. It first appeared in 1964 in Japan, in time for that year's Tokyo Olympic Games.

The first line to run from Osaka to Tokyo was slower than modern versions, but Japanese engineers quickly enhanced its speed.

They had to virtually reinvent rail transportation. A precision-crafted wheel was designed to fight "hunting oscillation," the tendency for a train to rock back and forth on the track at high speeds, potentially severely damaging the track. They tossed out the locomotive in favor of a system delivering electricity directly to the wheels along the length of the train. The track itself was straightened, then banked at turns, allowing bullet trains to lean into curves without slowing down.

Levy said the bullet train was initially slow to catch on outside Japan, but once France embraced it in the 1970s and '80s, the concept rapidly spread throughout Western Europe. In Japan, where operating speeds of 200 mph are typical, engineers are working to expand the system to that archipelago's northernmost large island of Hokkaido. Bullet trains can also be found in South Korea, China and Taiwan.

"It's taking much longer for the Europe success and Japan success to come to the U.S. and acted on," Levy noted. He suggested politics may be to blame. It took 10 to 12 years to build some systems in Europe, too long for U.S. budgetary attention spans, he said.

Levy also pointed to the tendency of some prominent Americans to dismiss existing, workable foreign technology in favor of a made-in-the-U.S. version, citing Elon Musk's Hyperloop.

Musk proposed a few years ago in a white paper that the expensive California bullet train — with a projected cost of \$64 billion — be replaced with Hyperloop, a vision to hurtle passengers in specialized pods through parallel tubes between Los Angeles and San Francisco. That paper has since inspired investors to have a go at it (*Greenwire*, Feb. 2).

Indeed, some vocal opponents in Texas have appeared at rallies dismissing the bullet train as antiquated technology. Some point to the Hyperloop project as proof that the United States can leapfrog the successful high-speed rail concept for something even faster.

Levy has described Hyperloop as "completely unhinged from physics and civil engineering." He believes that Musk's cost estimates are far too low and that due to the wait through security lines and discomfort to ride Hyperloop for a one-hour trip, Californians would be better off going to the airport.

Levy notes that high-speed rail boasts energy efficiency and environmental attributes that could win it broader support in the United States, as well. The systems are much more energy efficient than the airplane on short routes, he said. Kelly said his company expects the Houston-to-Dallas bullet train to pull cars off Interstate 45, lowering gasoline consumption and air emissions while getting travelers to their destination faster and in greater comfort.