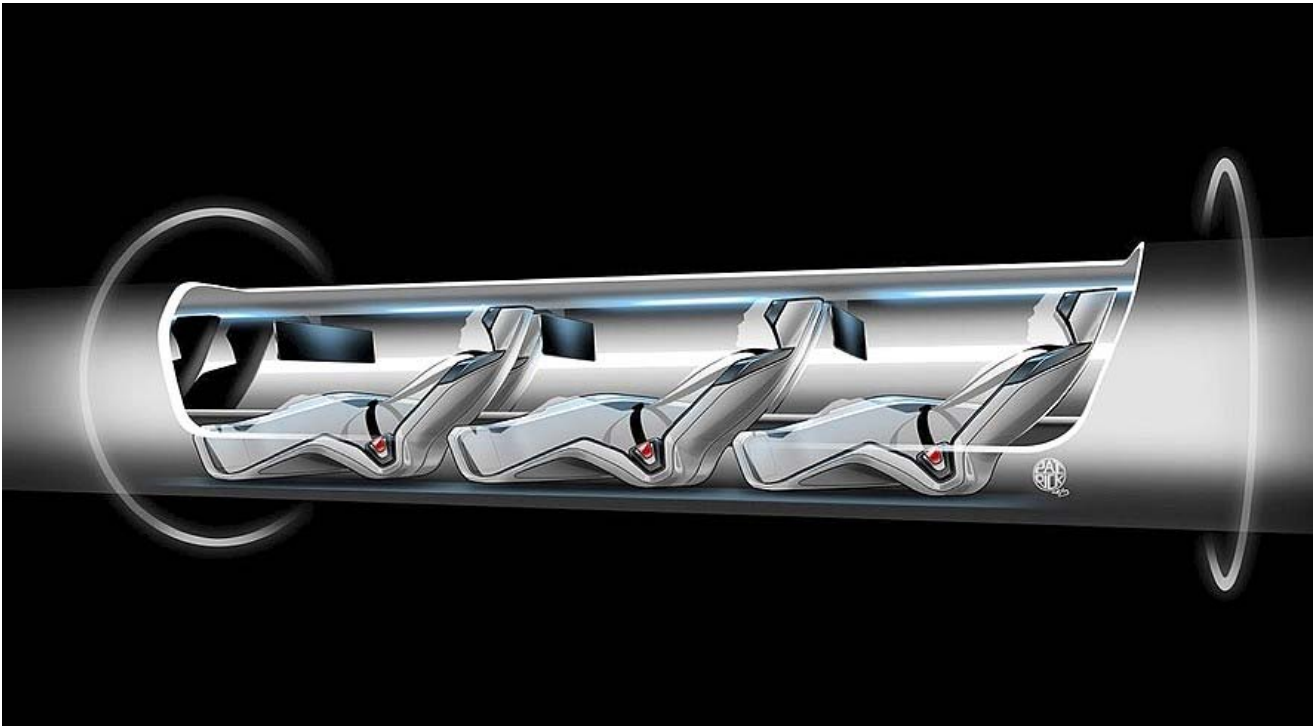


A dream project: 30-minute hyper trip from LA to San Francisco

By Los Angeles Times, adapted by Newsela staff

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This image, released by Tesla Motors, is a sketch of the Hyperloop capsule with passengers on board. Elon Musk unveiled a concept for a transport system he says would make the nearly 400-mile trip in half the time it takes an airplane. Photo: AP Photo/Tesla Motors)

LOS ANGELES — Imagine paying \$20 and sitting down inside a Space Age capsule in Los Angeles. About half an hour later, you're in sight of the Golden Gate Bridge in San Francisco.

Los Angeles billionaire Elon Musk made electric vehicles sexy, revolutionized the online payment business, and transformed spaceflight missions for NASA. Now he is taking on California's public transportation system.

On Monday, Aug. 12, Musk unveiled the design of his Hyperloop, a \$6 billion high-speed transit system powered by solar energy. The line would travel at speeds of up to 760 miles per hour (mph) and have the feel of an airliner, Musk said. Capsules would hold 28 people each.

California hasn't asked for his help, and Musk's dream exists only on paper.

California Bullet Train A Dud?

The state is in the middle of trying to build its own bullet train. Its \$68 billion project has grown in cost and fallen behind schedule. Musk contends his system is superior and cheaper. He wanted to get it into the public discussion, he said, before the state wastes more time and money on what he called a failed system.

“How could it be that the home of Silicon Valley and JPL ... would build a bullet train that is both one of the most expensive per mile and one of the slowest in the world?” he asked. JPL is NASA's Jet Propulsion Lab. “It would be great to have an alternative to flying or driving, but obviously only if it is actually better than flying or driving.”

Musk said the answer is his Hyperloop.

If it were by anyone else, Monday's display probably would be dismissed as the exaggerated ramblings of a crank. But Musk is a straight-talking modern-day businessman. He's led numerous start-up companies in a wide range of industries and become famous.

The sandy-haired entrepreneur from South Africa first made millions when he co-founded and then sold PayPal to EBay for \$1.5 billion. Then Musk started the rocket company SpaceX and co-founded electric car giant Tesla.

Now he's declared a new mode of transportation. This one operates like delivery systems that have been used at neighborhood banks, sending packages through pressurized air tubes.

Hyperloop To Hyper Speed

“Normally I would think this idea is borderline crackpot, but this guy has a track record,” said Michio Kaku. He is a physicist who hosts television shows about futurist technologies. “You have to take him seriously. The guy is a doer.”

According to Musk's design, the Hyperloop's capsules would be transported at speeds of 300 to 760 mph through a steel tube. The capsules would shoot through the tube on a cushion of air. They would be like pucks gliding on an air hockey table. A magnetic system would speed them up along the way.

Solar panels on top of the tube would generate much more energy than the Hyperloop would use, he said.

It would be an express trip across the 382 miles, connecting two stations. More stations could be added later. Musk said the system could transport 7.4 million people a year. Capsules could be launched as frequently as every 30 seconds.

By contrast, the California bullet train system envisions a much bigger annual ridership: at least 20 million. The plan, however, has been sharply disputed by outside experts. They doubt that large numbers of drivers or airline passengers will be attracted to the bullet train.

The Hyperloop's 57-page design is still in its earliest stages. It was put together by about a dozen engineers from SpaceX and Tesla. The version released Monday was produced after an all-night Sunday session, Musk said.

New Technology Worth Considering

The group in charge of building California's bullet train said Musk's new technology is worth considering. But the group's Chairman Dan Richard also stressed the realities Musk would need to face if he went forward with the idea. Those include building a project across earthquake zones, protecting environmental areas and animals, and doing as little as possible to hurt businesses and communities.

The plan already has drawn criticism for its unusual design, lack of details and absence of review by outsiders. Bill Ibbs, a University of California, Berkeley civil engineering professor, said Musk's idea comes up short on the economics.

"There's a reference to 7.4 million riders per year on this system, but there's no background, no explanation of where he comes up with that figure," he said.

Planning for the California bullet train got caught up in politics. The route twists to include medium-size cities on its way to San Francisco. But the winding path added to the cost, and resulted in slower projected trip times.

It's unclear whether Musk could get the support needed to build a system that would bypass many of the cities on the bullet train's planned path. Transportation experts warned that Musk's proposal would still have to operate in California's difficult political system, even if it works technically.

"Musk has been able to get away with what he has done because he does it with his own money," said Lou Thompson. He heads review panel that oversees the bullet train project. "You get into the public arena and that is a different game."