

Futuristic city planned for Kings County gets people-mover to match

By Tim Sheehan



An artist's rendering shows a cutaway view of a hyperloop capsule racing through a sealed, low-air-pressure tube across a rural countryside. A Southern California company wants to build a \$100 million, five-mile prototype hyperloop system in southwestern Kings County as part of a proposed new community near Interstate 5.

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The hype over hyperloop

- A Southern California entrepreneur has an ambitious plan to build a prototype “hyperloop” high-speed transport system in western Kings County.
- About \$100 million would be needed to construct the five-mile demonstration hyperloop.
- The hyperloop prototype would be part of the proposed new Quay Valley community being planned near Interstate 5.

It's something that exists now largely on a drawing board, but a Southern California entrepreneur has ambitious plans to begin construction next year on a project to build, test and prove the concept of a futuristic, high-speed people-moving system called a “hyperloop.”

And he wants to do that test in, of all places, the shadow of the Kettleman Hills in southwestern Kings County.

Dirk Ahlborn, the German-born CEO of [Hyperloop Transportation Technologies](#) in El Segundo, announced last week his desire to build a five-mile hyperloop test system as part of Los Angeles developer Quay Hays' [Quay Valley](#) community near Interstate 5 south of Kettleman City. All it's going to take is raising about \$100 million, Ahlborn said, to bring it from an abstract concept to a test-track reality.

"Nothing has ever been done like this," Ahlborn told The Bee. "Is it doable, and how much do we need to do this? We know it's doable, and we know we'll need about \$100 million to do this."

Exactly what is a hyperloop, you might ask? At its most basic, think of the pneumatic-tube systems at the drive-up service lanes of banks or drugstores — the ones that sucked a container from your car window to the teller or cashier inside the building. Ramp that notion up to a pair of sealed, low-air-pressure tubes, supported on pylons above the ground and big enough for a pod or capsule to carry up to 28 people at subsonic speeds between major cities .

There is, however, a big pile of "ifs" standing between that vision and the real thing — not just black-and-white engineering and technical ones, but all the green ones with George Washington's portrait on them.

The hyperloop idea generated a huge buzz in technology and transportation circles in mid-2013, when Elon Musk — the tech billionaire behind SpaceX rocket systems and high-end Tesla electric automobiles — [floated the idea](#) for a system of tubes, pods and solar-powered electric motors. In a [58-page white paper](#), Musk described the hyperloop as a 700-plus mph alternative not only to short-haul airline travel, but also to California's high-speed rail project, which would have 220-mph trains carrying passengers between Los Angeles and San Francisco by way of the San Joaquin Valley.

[Ahlborn's vision for HTT](#), building on Musk's concept, is no less grand. "But before we can build a full-length transportation system and spend billions of dollars, there are a lot of things that have to be optimized," Ahlborn said. "It has to be tested on a small-scale prototype. There is a need to build somewhere a full-sized version for testing, and obviously we prefer to put it to use and create some returns for our shareholders."

Matching interests

The Quay Valley project is that "somewhere" for Ahlborn. Quay Valley is planned for 7,500 acres (a little bigger than the footprint of Lemoore) and up to 75,000 residents incorporating what Hays describes as the latest in green technology to conserve water and energy and preserve the environment. Hays said he hopes to clear Kings County's permitting process and begin putting in the necessary infrastructure in 2016. Hays and Ahlborn both describe the small-scale HTT prototype as "a natural fit" for such a city. Hays said the hyperloop concept immediately caught his interest when Musk first served up the idea, "and we started tracking whether there was an application in the community."

Hays added that the current planning is for the HTT hyperloop to be "something to get people out of their cars" and "a method of moving people around a 1,900-acre entertainment destination zone" within the community. "It's something where people can park once and move anywhere in that entertainment zone on the hyperloop," he said. "We're wiring it into the DNA of our project." Hays said his company is providing the land and right of way for the hyperloop.

Hays' vision for the community meshes with the overall idea of a modern transportation system, Ahlborn said. "The things they have planned are all cutting-edge technology, sustainable planning, 100% solar power ... and it incentivizes inhabitants to walk rather than take a car." And the location is a plus as well. "We're right on I-5, and we are looking at the area for a potential intermediate hub if you're talking about a hyperloop from L.A. to San Francisco," Ahlborn added.

Quay Valley would provide a real-life opportunity for HTT to not only prove the hyperloop concept, including the transportation tubes, passenger capsules and propulsion systems, Ahlborn said, but also to work out the logistics and

economics of operations, station design and the passenger experience. It has the potential to also provide a quick revenue stream through selling tickets, although that's an issue that the company has yet to address in detail.

The community's developers "are projecting 10 million visitors per year, so for us, getting a fairly fast return on investment is important as well," Ahlborn said. "But we're going to look for a way to generate revenue without charging for a ticket." Musk's original hyperloop concept proposal suggested that if it cost \$6 billion to build a full-length system connecting Los Angeles and San Francisco and carried 7.4 million passengers each year, the capital investment could be recouped over 20 years with a per-ride ticket price of about \$20 plus operating costs. Those operating costs, however, are not enumerated in Musk's original proposal, but HTT's documentation states that the company's goal "is to keep the ticket price between LA and SF in the \$20-\$30 range."

As for the speed — on a modest test track, at least, you can forget about Musk's dream for something just south of the speed of sound. Ahlborn hesitated to predict speeds for the short Quay Valley prototype, but said something in the neighborhood of 200 mph may be possible. At faster speeds, "it doesn't make sense to accelerate and then just brake," he said, adding that higher speeds make it necessary to minimize curves to avoid subjecting passengers to uncomfortable G forces.

Ahlborn is promoting HTT through another of his enterprises, a crowdsourcing website called JumpStartFund.com, through which he's recruiting and assembling volunteer brainpower to manhandle the myriad technical details of how to make the thing go. So far, Ahlborn said he's enlisted experts with experience at aerospace concerns including Boeing, Airbus, SpaceX and NASA, other technology companies, and from universities including UCLA. "It doesn't work much different than any other startup," Ahlborn said. "Right now everyone is working toward a goal and receiving participation in the company." That's another way of saying that for now, the development team — which Ahlborn said numbers several hundred and continues to grow as people apply via the crowdsourcing site — is working for free in exchange for future stock options in the company.

Conceptual feasibility, however, is a different issue than financial feasibility. So what about that \$100 million Ahlborn needs to build the Quay Valley prototype? To date, HTT has raised no money. Ahlborn, who describes himself as a serial entrepreneur with a background in banking and finance, said his plan is to make what he calls a direct public offering of interest in the company in late 2015. If the money materializes, Ahlborn said construction could begin in Kings County in 2016.

"Testing in one form or another would occur right away," Ahlborn said. "It depends a little more on (when Quay Valley) goes. ... We're planning on the end of 2017 (to complete construction), and on 2018 for the first rides on the hyperloop."

If the Quay Valley hyperloop can prove the concept and work out the operational and passenger-experience kinks, Ahlborn predicts major interest in large-scale projects worldwide. "The moment we have the first one up and it's working and we have our first passengers, we will move on and build the first full-length track," he said. In a December 2014 cost estimate summary, HTT projected that it would cost between \$7 billion and \$19 billion to build a 350-mile hyperloop system with a "most likely total cost" of about \$16 billion.

Competition for HSR?

Coincidentally, 350 miles is about the distance between Los Angeles and San Francisco that a hyperloop trip would cover in 34 minutes — the same cities that California's \$68 billion bullet train would eventually connect to make the trip in under three hours.

Lisa Marie Alley, a spokeswoman for the California High-Speed Rail Authority, said the hyperloop "is an innovative and interesting concept," but one that's not necessarily ready for prime time.

"We never want to speak negatively about an innovative idea. We're a state full of innovation, the next big thing, the future," Alley said. "But we don't necessarily see the comparison. The hyperloop might be promising, but it's still

unproven and just an idea. High-speed rail is a proven technology that's been in use around the world for decades. Japan just celebrated 50 years of its high-speed trains.”

The rail agency is starting work on the first phase of its statewide line in the central San Joaquin Valley, where it is acquiring right of way, demolishing buildings and just beginning some of its rudimentary construction work in the Fresno-Madera area. “We have broken ground, we are doing work,” Alley said. “We are a thing that’s happening.”

A hyperloop, she added, will run into the same challenges of any other large infrastructure project.

“They’re going to need funding, they’re going to need right of way, they’ll need the environmental permits, approvals and clearances,” Alley said. “None of it is easy.”

But while the Los Angeles-San Francisco line was mentioned by Musk in 2013, Ahlborn said there are other viable city pairs in the U.S. and overseas where the technology could be applied. Among the other optimal routes identified in HTT’s feasibility study are Los Angeles-Las Vegas; a Texas triangle connecting Houston, Dallas and San Antonio; and the Northeast Corridor from Boston to Washington, D.C.

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