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Urban Planning Guru Says Driverless Cars Won't Fix Congestion

By John Markoff

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MOUNTAIN VIEW, Calif. — Peter Calthorpe thinks Silicon Valley has it all wrong. He rejects the ideas of tech industry visionaries who say personal autonomous vehicles will soon be the solution to urban problems like traffic congestion.

Mr. Calthorpe is a Berkeley-based urban planner who is one of the creators of New Urbanism, which promotes mixed-use, walkable neighborhoods. His designs emphasize the proximity of housing, shopping and public space.

He is not opposed to autonomous vehicles. Mr. Calthorpe's quarrel is with the idea that the widespread adoption of personally owned self-driving cars will solve transportation problems. In fact, he worries it will lead to more urban congestion and suburban sprawl.

"One thing is certain: Zero- or single-occupant vehicles," even ones that can drive themselves, "are a bad thing," he and the transportation planner Jerry Walters wrote in an article last year in Urban Land, an urban planning journal. "They cause congestion, eat up energy, exacerbate sprawl and emit more carbon per passenger-mile."

Mr. Calthorpe believes that in trying to solve a very hard technical problem, Silicon Valley is ignoring an easier application for autonomous technology that has the potential to quickly change mass transit and help solve the Valley's housing crisis. It starts with backing away from solo car trips.

A popular claim by the advocates of self-driving cars is that not only will they be safer than human-driven cars, but they will lead to fewer cars, faster commutes and a radical rethinking of cities where finding a place to park is no longer a priority.

But Mr. Calthorpe, citing a range of transportation studies, has simulated through computer models the impact of self-driving vehicles in urban settings. He argues that if they are used the way today's vehicles are — carrying a single individual in most cases — they will lead to more congestion.

What a rail station might look like under Mr. Calthorpe's proposal for autonomous rapid transit.

"The key distinction is the number of people per vehicle," said Mr. Walters, a principal at Fehr & Peers, a transportation consultancy in Walnut Creek. "Without pretty radically increasing the number of people per vehicle, autonomous systems will increase total miles traveled."

When it is easier to travel in a city in self-driving cars, Mr. Calthorpe said, everyone will want to do so. And when self-driving vehicles are more affordable — which could take years to happen — people who currently rely on public transit while running their errands will instead send their cars to pick up the groceries and the dry cleaning, adding significantly to what Mr. Walters and other urban planners call "total vehicle miles."

This year, Mr. Calthorpe challenged Silicon Valley to take another look at its housing and transportation problem in a proposal in which he asked: "Can one street solve the San Francisco Bay Area housing crisis?"

In addition to his planning consultancy, Mr. Calthorpe has created Urban Footprint, a company that offers a software design tool for planners, architects and environmental analysts who want to model different kinds of development in urban and regional settings.

He used his software to show that by changing just commercial zoning to permit higher density along El Camino Real — the 45-mile boulevard that stretches through the heart of Silicon Valley from San Francisco to San Jose — it would be possible add more than a quarter-million housing units.

The Valley's housing crisis can be explained in data that shows that since 2010, the region has added 11 jobs for every new home built; the median home price has reached $934,000; and rents have gone up 60 percent since 2012. One of the consequences of the growing imbalance between housing and jobs is the increasing traffic and congestion, according to an Urban Footprint report.

To avoid congestion, the plan requires efficient mass transit. Mr. Calthorpe has proposed an alternative — autonomous rapid transit, or ART — using fleets of self-driving vans in reserved lanes on main arteries like El Camino Real. Those lanes would allow the vehicles to travel faster and require a lower level of autonomous technology. And the vans could travel separately or be connected together.

A recent study that Urban Footprint did in collaboration with Fehr & Peers determined that an autonomous rapid transit system, which could be built today, would be twice as fast as a conventional bus and cost a little more than half as much to operate.
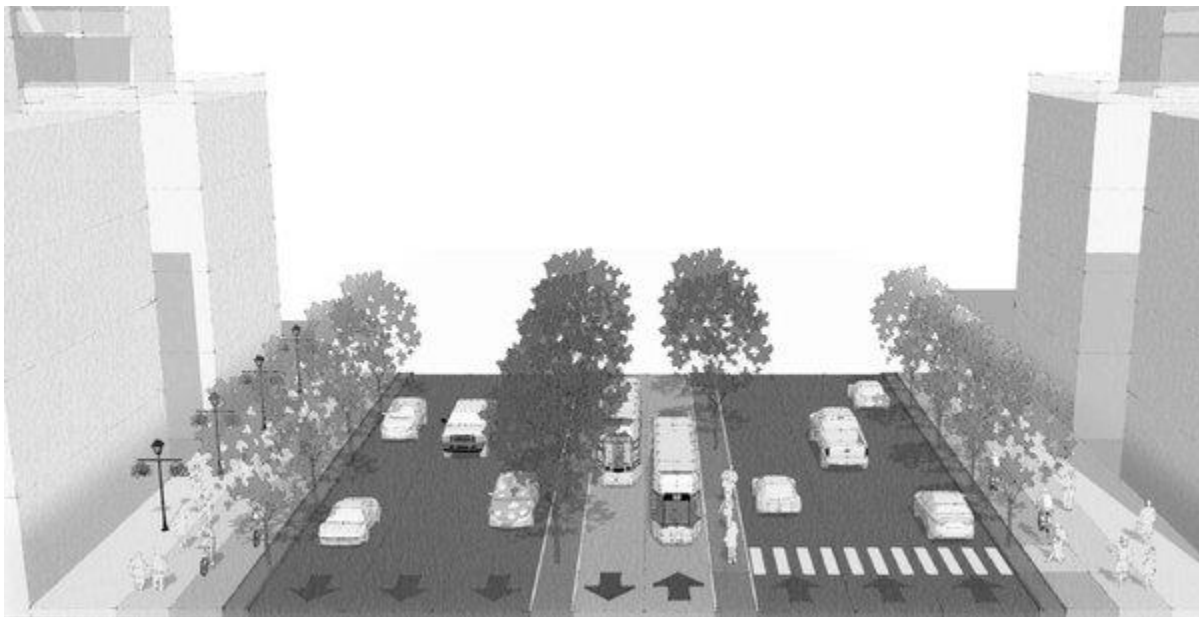
A rendering of El Camino Real with dedicated lanes in the middle for self-driving buses.

Mr. Calthorpe's plan is an evolution of the concept of "transit-oriented development" he pioneered while teaching at the University of California, Berkeley, in the late 1980s. It focuses on designing urban communities that encourage people to live near transit services and decrease their dependence on driving.

The idea has attracted the attention of public transit activists in Southern California.

"Autonomous rapid transit's greater capacity combined with lower cost could really be the stimulus for the housing development," said Denny Zane, executive director of Move LA, a group that has built broad community support for funding improvements in transportation. "We need to integrate autonomous technologies in a setting that will enhance transit use."

Mr. Zane said the ART technology would dovetail nicely with a planning idea called Grand Boulevards, which has been funded by two ballot propositions in the Los Angeles region and has until now been focused on a human-driven system known as bus rapid transit.

Most recent Silicon Valley start-ups have focused on personal vehicles rather than mass transit. But in July, Waymo, the self-driving car unit of Google's parent company, Alphabet, announced a partnership with Valley Metro in the Phoenix region to develop a transportation system that would look very much like Mr. Calthorpe's ART concept.

To gain broad acceptance for his idea, however, Mr. Calthorpe needs to convince city officials like Lenny Siegel, the mayor of Mountain View, where Google is based.

Mr. Siegel is a veteran community activist whose focus is on the imbalance between jobs and housing and the impact of the long commutes made by people who work in the city. He also has expressed concerns about anything that will affect the flow of conventional automobile traffic.

Mountain View is trying to plan for a future that will require moving as many as 40,000 people back and forth each day from the CalTrain railroad corridor that runs between San Francisco and San Jose to workplaces like Google. Currently, city planners envision an autonomous system like the one that Mr. Calthorpe envisions, but on an elevated track.

Mr. Calthorpe insists that planners need to take bold steps and argues that rethinking major boulevards like El Camino by filling in with denser housing and adding a more efficient autonomous transit system is the best place to start.

"You have to redesign the street itself," he said. "You need to add autonomous transit, and you need to get rid of parallel parking and put in bikeways and better sidewalks."

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