Self driving cars could free up rush hour traffic

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A fleet of shared self-driving cars in Stockholm could reduce rush hour traffic volumes by 14 cars for every shared vehicle, according to researchers at Sweden's KTH Royal Institute of Technology.

Meanwhile, the remaining automobile commuters would need only 20 percent of the metropolitan area's existing parking spaces, their study says.

The study sheds further light on what can happen if cities build on the growing interest in car-share programs and other alternatives to car ownership, indicating that self-driving technology could be a game-changer.

"Driverless cars are the smart car, and just as revolutionary as the smart phone," says Pierre-Jean Rigole of KTH Centre for Traffic Research. "They will revolutionize car ownership, lead to more flexible traffic, with far fewer crashes. And they will free up valuable space in cities that is currently occupied by parked cars."

Rigole says the study looked at the possibility of a fleet of 9,700 Shared Autonomous Vehicles (SAV) with four seats each being introduced to the Stockholm metropolitan region, where an estimated 136,000 automobiles are driven in the daily commute.

Already in Stockholm taxi traffic accounts for half the total traffic, with about 272,000 such trips daily.

The study also presupposes that people agree to carpool, and that they accept 13 percent longer travel times plus a wait time of six minutes before the self-driving car arrives to collect its passenger. The study took account of only car-based commuting within the greater Stockholm area—not long trips or mode-shift from public transport, that is, people who could switch from commuting by public transportation to commuting by self-driving car.

Provided by KTH Royal Institute of Technology