

# Could drones be the solution to traffic gridlock?

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Could passenger-carrying drones someday be the answer to traffic delays?

It seems like an outlandish, space-age fantasy—but some in the burgeoning urban air mobility industry believe short-haul flights in unpiloted electric flying vehicles will be a key answer to gridlock in major metropolitan areas.

A number of startups, including Uber Elevate, are working on developing such a system that could transport people and goods. Some have attracted millions of dollars in venture capital funding.

Yet there are staggering hurdles, ranging from cost to safety, noise, [public acceptance](#), regulations, space for vertiports, and questions about who would pay for and who would control the infrastructure for such transportation.

In metro Atlanta, discussion about the technology's future has already begun.

Georgia Tech this year created a Center for Urban and Regional Air Mobility to explore the development of aircraft for transportation in densely populated urban areas. Professors leading the effort held an urban air mobility workshop in Atlanta in January. Three months later, national industry publication Aviation Week held an urban air mobility conference at the Georgia World Congress Center.

"We're entering this era in [large cities](#) where we're facing intense gridlock and it's just getting worse," said Mark Moore, engineering director of Uber's urban air mobility unit Uber Elevate, at the Georgia Tech conference.

The Uber air service his company envisions could potentially cut peak commute times by more than 50 percent, according to Moore. Uber Elevate plans to eventually start demonstration flights of small electric aircraft in Dallas and Los Angeles and launch commercial service in

2023.

Georgia Tech professor Brian German, director of the new Center for Urban and Regional Air Mobility, said there are more than 100 electric vertical-takeoff-and-landing aircraft under development by different companies. These aircraft would not be as powerful as helicopters, but would cost much less to operate and maintain, and would be designed for short hops.

A survey of 2,500 commuters in Atlanta and other cities is underway to determine the potential demand for an air taxi service for what is now a 30-minute commute, according to Georgia Tech civil engineering professor Laurie Garrow, associate director of the new air mobility center.

"We are trying to understand different factors that will help adoption, or the barriers for urban air mobility taxi service in Atlanta," Garrow said.

The city of Atlanta's transportation plan notes that autonomous vehicles can change the way people get around but does not address the prospect of drone transportation in particular.

Last year, Georgia Tech engineering professor John-Paul Clarke testified at a U.S. House committee hearing on the subject "Urban Air Mobility—Are flying cars ready for takeoff?" He called urban air mobility a "logical response to the perennial quest for speed in congested urban areas," but noted the challenges that lie ahead, including concerns about noise, privacy and safety.

The technology has not yet developed to the point where local officials are making any plans for vertiports, since flying passenger drones are still unproven and years away from becoming a reality in everyday life.

But the Georgia Department of Transportation says it is "actively engaged with the industry" looking at emerging transportation technology, according to GDOT's intermodal division director Carol Comer.

German said he expects commercial service of the new electric aircraft in five to 10 years or so, possibly starting with flights from small general aviation airports.

"Some people think the aircraft will (first) be flown by human pilots. Other people think it will be autonomous from the beginning," German said. "If it's a piloted aircraft operating from existing airports and existing heliports, the operation will look a lot like ordinary aviation."

The first customers might be business travelers transferring to a commercial airport for a flight, or between corporate sites in a metro area, since the cost of service will be high to start, he said. Then, as costs come down, a greater variety of people might use the service.

Hartsfield-Jackson International Airport general manager John Selden, a former airline pilot, sees potential in the idea that autonomous pods that run along a rail might someday be able to transport people between the domestic terminal and international terminal.

But to make pilotless passenger planes a reality, "You would have to overcome a whole lot," Selden said.

Among the biggest challenges would be getting regulatory approval from the Federal Aviation Administration and developing vertiports.

Aside from the safety of the aircraft themselves, flying passenger drones would add even more complexity to air traffic control. "If this increases the number of flight operations in a city by a large amount, then the old

mechanisms we have won't be adequate anymore," German said.

In considering where the aircraft would take off and land, Uber Elevate sees parking decks in downtown areas as a potential location for "skyports." If ride-sharing and, eventually, self-driving cars reduce the need for parking in downtowns, then parking decks might be used less and the upper levels could be converted into vertiports. Building rooftops, already a common spot for heliports, might also be used as vertiports.

While some private operators might want to develop their own vertiports and control them, with limited space available in city centers, that could affect how much competition develops. Airports, for example, are typically run by local governments or local or state government authorities, but can involve public investment.

"I think cities are going to have a lot of say and questions related to land use, whether they would allow a vertiport or not, questions like noise ordinances, what would be the flight paths over a city," German said.

The biggest demand for urban air mobility, or UAM, would likely come from the cities with the worst congestion, Garrow said—making Los Angeles a preferred city for the first wave of service. Other cities near bodies of water where commuters have to drive over bridges to get to work, causing traffic pinch points, could also be good candidates, she said.

"One promising aspect for Atlanta is we're not as built up around the suburbs as some other cities are," allowing more room for vertiports, German said. "We want to see it here, and we want to have Atlanta as kind of a living laboratory for urban air mobility," with test corridors.

Debra Lam, managing director of Smart Cities and Inclusive Innovation

at Georgia Tech, said she sees urban air mobility as one of the "tools to get from point A to point B" that could tie into the airport, public transit, an e-scooter or an Uber car ride.

A key question: Will people be willing to fly in the aircraft? And will residents of cities be comfortable with the noise and with passenger-carrying drones buzzing overhead?

Some note that helicopters already generate a backlash from residents, causing many heliports to go unused. In San Francisco, there's even a website called Stop The Helipad where residents organize to block helipads.

During a panel discussion on barriers to urban air mobility at the Aviation Week conference, HMMH Aviation Services vice president Gene Reindel said: "To some people it's a fear of the aircraft coming down, crashing on them. ... Now we're talking about putting these (low-flying) UAMs over [urban areas](#) where there are people."

With new technology, "you will have some public failures," Lam said.

"Even once this goes forward there are still going to be challenges. There will be a crash at some point," she said.

"I don't think that should necessarily preclude it from continuing," she said. "There should be room for some of those challenges."

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