

Robots on Our Sidewalks

Electronic Personal Delivery Devices

Michele Satterlund, September 30, 2017



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Virginia is the first state to legalize delivery robots

You better start getting used to a more crowded sidewalk.



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America is now one step closer to becoming a sci-fi utopia, thanks to a new law passed in Virginia. On Friday the state's governor signed a ruling which will allow [delivery robots](#) to use its sidewalks and crosswalks from July 1st. Advised by [Starship Technologies](#) (an Estonian robotics company that specializes in ground delivery) the legislation states that the bots cannot travel faster than ten miles per hour, or weigh over 50 pounds.



Your delivery man is being replaced by this cute, sidewalk-cruising...

Thursday, 27 Apr 2017 | 11:00 AM ET

Starship Technologies has partnered with Postmates to start making robotic deliveries in Silicon Valley.

<https://www.cnbc.com/video/2017/04/27/your-delivery-man-is-being-replaced-by-this-cute-sidewalk-cruising-robot.html>

What the Law Means for Virginia

- What is an Electronic Personal Delivery Device
- When, Where and How: What the Law Allows
- What Local Governments can Expect in the Future

What is an Electronic Personal Delivery Device

- Senate Bill 1207 (Desteph) / House Bill 2016 (Villanueva) were signed by the Governor on 4/5/17
- Numerous stakeholders (VML, State Police, DMV, USAV)
- An Electric Personal Delivery Device is a small autonomous device that designed to manage the last mile of a local delivery journey. They operate at the speed of a pedestrian.
- Consumer orders online. Chooses the Device as the delivery method. The order is placed and the consumer can call for the delivery at any time convenient to them. The Device will then travel via the sidewalk to the consumer's doorstep, and the consumer can "unlock" the lid through his or her mobile app and obtain the order.
- For consumers who are transit dependent, non-ambulatory or live in neighborhoods with limited shopping choices, the device represents a new and cost-effective option.

What is an Electronic Personal Delivery Device

- The device is capable of identifying objects and making the necessary course corrections in order to avoid the object. To date, the device has encountered over 3.1million people without any incidents.
- While the device is equipped with autonomous technology, the bill requires that an Electric Personal Delivery Device Operator monitor the device at all times. The Operator can step in and assume full control of the operation and navigation in the event it is needed. (*The Senate Transportation committee amended the legislation to require that the Device Operator is at least 16 years of age*).
- The Device is equipped with 9 cameras and a suite of ultrasonic sensors, and it uses a mixture of GPS and computer vision to pinpoint its exact location and obstacles. Whether it be a dog, a pedestrian or a cyclist, the Device will always stop at a safe distance, and will be programmed to operate at 4 mph.
- The Device is equipped with a two-way audio system that will allow the Operator to talk to nearby people.

When, Where and How: What the Law Allows

- The legislation prohibits the device from carrying hazardous material and limits the speed to 10mph, although the device will be programmed to 4mph (Segways are allowed to travel at a rate of 25mph on Virginia's sidewalks).
- It clarifies that the Device, like bicycle couriers, are not defined as property carriers.
- The device must weigh less than 50 pounds excluding cargo and it must be equipped with technology that allows the device to operate with or without the active control or monitoring of a natural person.
- The law gives localities the ability to prohibit or limit the use of the Device on any sidewalk or shared-use paths.

Facing the Autonomous Future: What Local Governments Can Expect

- Parking redesign
- Robots on sidewalks
- Mass transit changes
- Services: Street sweeping, snow plowing, parking enforcement
- Decline in accidents
- Smoother traffic flows
- Parking and traffic violation/revenue changes

Virginia is a Leader in Unmanned Systems

Virginia is Leading.....

- Proactively passed legislation prohibiting a locality from regulating privately owned unmanned aircraft systems.
- First state to establish a state-focused trade association to lobby on behalf maritime, aerial and ground unmanned sectors.
- Established the Virginia Automated Corridor to streamline the use of AV testing on major interstate and toll roads.
- Home to the Mid-Atlantic Aviation Partnership Test Site – one of only six sites in the nation to achieve this designation from the FAA.
- Home to the Virginia Smart Road, a state-of-the art, full-scale 2.2-mile controlled-access test track built to Federal Highway Administration standards.
- Cutting-edge technology firms and federal interests from defense to NASA call Virginia home and use Virginia's unique topographical advantages (air, land and sea domains) to test unmanned systems.
- The Secretary of Transportation's office is leading strategic planning for the commonwealth, Virginia Automated 20xx that will outline strategies to prepare for the transition of autonomous vehicles into the transportation network

VIRGINIA BUSINESS

The home for drones?

Virginia wants to become ‘the Silicon Valley’ for unmanned vehicles

November 2016 issue

Cover story

By Jessica Sabbath

On a foggy October morning, gray haze draped over Richmond’s skyline, providing an alluring landscape for aerial photographer Daryl Watkins.

The rumbling of a distant train grabbed his attention as Watkins prepared to fly his drone from Great Shiplock Park in the city’s East End.

Snapping a new battery into his six-pound drone, a DJI Inspire Pro equipped with a high-tech camera, Watkins picked up the remote control. Within seconds, the drone was traveling 40 miles per hour above the elevated railroad tracks, to capture photos of the approaching Amtrak train. “The top speed of this drone is 50 miles per hour,” says Watkins. “Speed is important for getting out to where you want to shoot from because the battery life is about 15 minutes.”



Daryl Watkins flies his DJI Inspire Pro drone above the Richmond skyline. Photo by Mark Rhodes

“To create a unified voice for users of unmanned systems in Virginia, industry representatives recently formed a trade association.”

Smart Cities Workgroup

- The Administration recently launched the Commonwealth of Virginia's Smart Communities Task Force, which is charged with developing plans for "Smart Communities." The task force is reviewing transportation, technology, connectivity, data security, and privacy perspective models and will develop legislative proposals and agency programs.

Recent Legislation

- Privacy and trespass
- Local governments are prohibited from passing ordinances regulating the use of UAS
- Critical Infrastructure
- Moving images in autonomous mode



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Questions?

Questions or Comments?

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