

# AVA Pilot Program

## Who is AVA?

AVA is introducing the cutting-edge technology of autonomous vehicles to Pinellas County as a temporary member of PSTA's fleet. She is the first autonomous vehicle in the Tampa Bay Area to share the road with other traffic.

## What does AVA stand for?

AVA stands for Autonomous Vehicle Advantage.

## How does AVA work?

AVA is a 100% electric, driverless shuttle. She has no steering wheel or pedals and uses a pre-programmed, fixed route in combination with localization techniques and state-of-the-art sensor technology. Each vehicle is staffed with a copilot to serve as an ambassador to the riders, educate about the technology, and ensure a high-quality passenger experience.

## Why did PSTA launch the AVA Pilot?

PSTA is innovative and is finding new ways to help safely connect people to places. As autonomous vehicle technology is becoming more advanced, PSTA is exploring its potential use in Pinellas County. During her three-month pilot, AVA will help PSTA gain feedback on how the community feels about using autonomous vehicles as a transit option in the future.

## How is AVA funded?

PSTA funds AVA with a match donation from Tampa Bay Area Regional Transit Authority (TBARTA). AVA's Clearwater pilot would not be possible without the Edge Hotel, who is housing and providing power to AVA during her visit.

## Where was AVA previously?

AVA debuted in downtown St. Petersburg in November 2020 and stayed through March 2021. Then she traveled to Dunedin from May until late June.

## Will AVA return to previous locations?

PSTA is currently working with both the City of St. Petersburg and the City of Dunedin, TBARTA, and FDOT to find new funding to bring AVA back to both cities.

## Why does AVA in Clearwater look different than she did in St. Pete?

Our autonomous vehicle partner, Beep, has several vehicle models. In St. Pete, AVA was a Navya model vehicle. In Clearwater, AVA will use an Ollie model. Riders will experience a different look and feel, including new technological advancements and large windows throughout. AVA's new vehicle was made in the USA, specifically Knoxville, TN.

## What advancements does the new AVA vehicle feature?

The technology onboard the vehicle also allows AVA to think, perceive, and navigate mixed-traffic environments. AVA is 100% electric and is powered by two hub motors in the rear wheels with a full sensor array to ensure precise vehicle location and enriched vehicle reaction.

# Autonomous Vehicles

## What are autonomous vehicles?

An autonomous vehicle (AV), also known as a driverless or self-driving vehicle, is a vehicle capable of sensing its environment and moving with little or no human input. The shuttles are manufactured by Local Motors.

## What are the advantages of autonomous vehicles such as AVA?

- **Safety:** With the use of LiDAR sensors, AVA has more eyes on the road than a human driver possibly could. This results in safe transportation for riders, and other vehicles on the road.
- **Environmentally Friendly:** AVA is 100% electric. Using electricity generated from a power plant burns less fossil fuel and is more efficient than generating power/fuel for personal use (i.e., the internal combustion engine on a vehicle). In addition, fewer moving parts means less environmental impact due to reduced maintenance and AVA has no consumable fluids onboard, like oil or engine coolant, that can harm the environment.
- **Connectivity:** In the future, autonomous vehicles such as AVA could be used as a complimentary and long-term solutions for circulator service or a first mile / last mile solution to areas not served by PSTA's network.
- **Equity:** PSTA leads the way in innovation and introduces cutting-edge technology to as many high-traffic parts of the Pinellas County region as possible. AVA allows residents and visitors alike to experience a future transit solution.

## What are AVA's capabilities?

AVA has a wide range of tasks that she can complete on her own, including braking and U-turns. With a variety of sensors and two cameras, AVA can see more of the road than any human driver. If a car or pedestrian becomes too close for comfort, AVA will almost instantaneously utilize her decision-making skills to slow or come to a complete stop.

## Is AVA in other cities?

AVA is unique to Pinellas county. However, AVA has friends all over the United States in cities such as Tampa, FL; Lake Nona, FL; Jacksonville, FL; Peachtree Corners, GA; and Peoria, AZ.

## What makes AVA different than other autonomous vehicle programs?

AVA is one of the first autonomous vehicle programs with a transit agency in the state to operate in mixed use traffic, on an open road next to other vehicles.

## What is AVA made out of?

Under her vibrant exterior, AVA is made of a combination of 3D-printed composite, a recyclable steel frame, and a fiberglass body.

## Who is BEEP?

Beep is an autonomous mobility solutions provider of driverless shuttles and fully managed services for the private and public sector and headquartered in Lake Nona, Florida. Beep launched its first autonomous shuttle in Florida in September 2019 in Lake Nona with a 1-mile route connecting the residential and retail areas. It is currently operating the largest and longest running autonomous shuttle fleet network at one location in the United States in Lake Nona. In the future, Beep will develop an AV mobility network over the next couple of years with the help of a BUILD grant awarded in November 2019 from the USDOT. Beep is also the only service provider involved in the initial launch of the NHTSA AV-TEST program.

## Safety

### What safety features does AVA have for her riders?

AVA is equipped with seatbelts, an onboard emergency kit, and an emergency stop button. AVA is in constant communication with the Beep Command Center through interior cameras and GPS locators that monitor her movement and location. A copilot is always on board to ensure passenger safety and comfort.

### What precautions are being taken for COVID-19?

Similar to PSTA's policy, passengers and attendants onboard AVA are always required to wear a mask. AVA's copilots undergo a temperature check before the start of every shift and are required to wear masks when on board. Disinfecting wipes and hand sanitizer stations are available on AVA for copilots and passengers to use before boarding AVA and buckle their seatbelts. We have enhanced our cleaning procedures while AVA is in service and at the end of the day.

### What is AVA's operating speed?

AVA can travel up to 15 mph along the corridor and travels at varying safe speeds along the route.

### How is AVA monitored?

AVA and her copilot are in constant communication with the Beep Command Center located in Orlando, Florida. The personnel in the Beep Command Center continuously monitor AVA's movement and operations. The copilot can communicate with the command center at any time should the need arise. AVA is equipped with cameras so that the command center can see outside and inside at any time.

### When and why is there a copilot on board?

AVA's copilot will always be onboard while she is operational, ensuring a pleasant and safe experience for our passengers. Our team of copilots are highly trained to provide prompt and efficient transportation for all our guests. They are also trained on AVA's safety features. AVA's copilot can take over manually at any time by utilizing a controller on board. They are also very friendly and would love to share more with you about the area, the attractions, and the service. Copilots are meant to serve as ambassadors for the autonomous shuttle and educate riders on how the shuttle operates.

### How does AVA safely navigate traffic signals and stop signs?

When AVA approaches a traffic signal or sign, her copilot will take control of the operating systems. The copilot will complete a visual check of the intersection before entering. Once the intersection has been deemed clear, the copilot will let AVA know that it is safe to proceed.

### How does AVA safely share the road with traffic, PSTA buses, and pedestrians along Gulfview Boulevard?

AVA will share the road with buses and other vehicles during operational hours. Similar to transit buses and traditional vehicles, AVA will observe all traffic signals. The copilot onboard will also do a visual check of the intersection before entering to ensure the vehicle's safe operation. There are 9 optical sensors on the outside of AVA, providing a 360-degree view of the environment. Each sensor allows AVA to respond to traffic or pedestrians that may come in the vehicle's path.

### What training has taken place to ensure the safety of passengers riding AVA?

Copilots have been fully trained on the safety features of the vehicle. The service personnel in the Command Center are also trained on how to respond to an emergency should the copilot need assistance. Beep has conducted safety training with First Responders, such as the Clearwater Fire Department and Clearwater Police department. First Responders are familiar with AVA and trained on appropriate actions to take if the need arises.

## Riding AVA

### How much does it cost to ride AVA?

It is free to ride AVA. Passengers are limited to one consecutive round trip.

### How many passengers can AVA carry?

AVA can transport up to 8 passengers. Passengers are required to wear a mask and seatbelt at all times while the vehicle is in motion.

### Can I flag AVA?

At this time, you cannot flag AVA. She runs on a fixed route and only makes designated stops. AVA is unable to make any additional stop requests.

### Can I request a stop at any point along the route?

No. AVA will stop at every stop on the route, and will not pull over anywhere other than at designated shuttle stops.

### What can I bring onboard AVA?

To provide a comfortable and safe riding experience for everyone on AVA, we ask all passengers to bring and wear a mask while riding the shuttle. At this time, we cannot accommodate items larger than a backpack, foldable umbrella, stroller, or foldable walker. AVA is equipped to transport passengers with ADA needs with a Q'Straint system onboard.

### What ADA features does AVA have?

AVA has several features onboard that allow all riders, to ride and experience the technology. When pulling up to a stop station, AVA kneels toward the curb. The copilot will then deploy a ramp allowing for passengers to board. Inside AVA, there is a Q'Straint system to secure both the passenger and mobility device when the vehicle is in motion. When disembarking and boarding, the copilot onboard will announce the next stop and following on the route. AVA is also equipped with monitors that display a route map and upcoming stop names.

### Can I bring my pet aboard AVA?

Service and companion animals are allowed to ride AVA.

### Does AVA offer air-conditioning and heating?

AVA is equipped with a heating and air conditioning system.

### Can my child ride AVA alone?

Under our minor policy, children under 16 years of age must be accompanied by an adult. The adult must remain with the child for the trip's duration, and children must stay seated and buckled up. Children too small to safely wear a seatbelt are asked to be seated in a parent's lap and sit towards the front of AVA.

### Do I need to bring my own car seat or booster for my children?

AVA does not have car seats or accessible tether anchors so bringing a car seat or booster is not an option for transporting small children. Children must always be seated and wear seatbelts. Children too small to safely wear a seatbelt are asked to be seated in a parent's lap and sit towards the front of AVA.