

Roadways

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Passing the Road Test in Florida

Public road testing provides the reality check in live traffic.

By [Diana Granitto](#)



SunTrax Partnership

The 400-acre SunTrax closed-track test site will feature a high-tech automated vehicle/ connected vehicle research center embedded in an oval roadway track.

Florida is hosting both closed-track and public road testing of transportation technology. The closed-track environment allows near real-world testing for safety-critical applications without risking impact to road users. Public road testing provides the reality check in live traffic.

Construction will start this summer on the 400-acre SunTrax test facility, a partnership between the [Florida DOT](#) (FDOT) and [Florida Polytechnic University](#). Also involved are Florida's Turnpike Enterprise, Polk County, and the City of Auburndale.

Targeted for completion in late 2018, the initial phase is a 2.25-mile oval track around the site's perimeter to be used for toll testing. This track is designed with multiple lanes and parallel tolled express lanes incorporating hardware and software used in tolling facilities.

"The track will allow for speeds of at least 70 mph, which the turnpike authority needs to evaluate electronic toll collection," says FDOT Traffic Engineering & Operations Office Director Trey Tillander.

Then, the 200-acre infield will be developed as a hub for automated vehicle (AV) and connected vehicle (CV) testing, where 40 or 50 vehicles can operate simultaneously. Design work is underway and development is expected to start in 2019 to 2020. Features will likely include a simulated city center, suburban and rural roadways, interconnected signalized intersections, interchange ramps, roundabouts, and various pavement types.

The facility will enable research, development, and testing for data and security, vehicle safety, and equipment certification. The university is "a research partner with a potential labor force for testing and analysis," says Tillander, as students will have the opportunity to get involved.

Pilot Project Nearby

Just 50 miles west of the SunTrax closed track, the City of Tampa is gearing up for some on-the-street testing. In September 2015, the Tampa Hillsborough Expressway Authority received \$17 million in funding as one of three sites selected for U.S. DOT's Connected Vehicle Pilot Deployment Program. The other two are New York and Wyoming.

Later this year, Tampa will begin equipping buses, streetcars, and private vehicles with vehicle-to-vehicle and vehicle-to-infrastructure technology. By mid-2018, the expressway authority will equip about 10 buses; 10 streetcars; and 1,500 participants' vehicles with wireless communication devices.

Vehicles participating in the pilot project will require in-vehicle displays, antennas, and direct short-range communication (DSRC)-enabled onboard units (OBUs). Drivers of unequipped vehicles can also benefit from the program. For example, data from connected vehicles will be used to improve traffic signal timing at certain intersections.

Pedestrians are invited to participate by downloading and using a smartphone app.

Tampa will also measure the environmental benefits of the pilot.

Commsignia, Savari, and SiriusXM will supply vehicle OBUs and Brandmotion will provide systems integration and testing. Other partners include HNTB, Siemens, the University of South Florida Center for Urban Transportation Research, Global-5 Communications, Florida DOT, the City of Tampa, the Hillsborough Area Regional Transit Authority, the TECO Line Streetcar System, and Hillsborough Community College.

State and Local Alliance

In yet another initiative, FDOT will partner with Tallahassee to install signal phasing and timing (SPaT) equipment in 22 intersections along U.S. 90. The equipment will be procured with FDOT money and installed by the city.

The project was conceived in response to the "AASHTO SPaT Challenge," an American Association of State Highway and Transportation Officials initiative to get state and local transportation agencies working together to install DSRC networks with SPaT broadcasts. The goal is to have at least one corridor (20 signalized intersections) in each state by January 2020.

History of Demonstrations

Orlando has twice hosted the Intelligent Transportation System World Congress and both times developed demonstration projects for 10,000 attendees to visit.

"It's an impetus to get something going," says Tillander. "When you're the host for an international event, you need something to show."

For the 1996 Congress, Florida conducted one of the nation's first AV pilot projects, a \$12 million private/public partnership called Travtek. One hundred Oldsmobile Toronados were equipped with route planning, route guidance, and a database of local services and attractions. The yearlong experiment was designed to illustrate how motorists might use a navigational system with up-to-the-minute traffic to travel central Florida more efficiently.

When the Congress returned in 2011, FDOT served up a connected vehicle test bed that deployed 26 roadside units on a stretch of Interstate 4 and arterials around the Orange County Convention Center. These units interfaced with onboard units and connected to FDOT's transportation management system software through a fiber optic network.

The equipment has since been removed to make way for construction on I-4, but also because of technological leaps in the six years since.

"Roadside unit lifespan is short and there are more vendors now," says Tillander. "Rather than maintain those, we're looking at more advanced options for our other projects."

About the Author

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