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FDOT laying groundwork for future technology *Smart cars and smart roads need infrastructure*

Jacksonville – Across the globe, transportation agencies and car makers are testing smart cars and smart highways – including autonomous cars and trucks that drive themselves.

But before any of that technology can work on U.S. highways, major investments in technology and infrastructure have to be made in the form of cameras, video detection devices, variable message signs and miles and miles of fiber optic cable, according to Peter Vega, transportation systems and operations program manager for the Florida Department of Transportation's (FDOT) District Two, which covers 18 counties in northeast Florida.

Vega and other traffic operations engineers in Jacksonville and Lake City understand that cars that can talk to each other will make the roads safer for everyone by avoiding crashes; and cars that talk to the road will provide a wealth of data that will allow them to design, build and operate safer and more efficient highways.

“These are the tools that have to be in place for the next stage of technology, which is connected vehicles,” said Vega. “We want to get to the point when someone gets in a fender bender our system knows it immediately and responds accordingly,” he added.

FDOT has a \$5.75 million project to install fiber optic cable along I-75 from Alachua County to the Georgia line underway now with plans to start an estimated \$11.8 million project this fall that will place fiber optic cable along Interstate 10 from I-295 in Duval County to U.S. 90 East in Leon County. A \$1.1 million project to add fiber optic cable along State Road 16 from I-95 to St. Augustine is also scheduled to start this fall.

“When you see electronic message signs on the Interstate there usually has to be fiber optic cable out there,” said Vega. “There are a few exceptions where we use wireless but it's usually fiber,” he added.

The information gathered by FDOT cameras and sensors is transmitted to the Regional Transportation Management Center (RTMC) in Jacksonville where FDOT, Florida Highway Patrol, Jacksonville Sheriff's Office and the Florida Fish and Wildlife Department staff work stations in a mission control atmosphere.

The RTMC is housed in a new \$11 million building just north of downtown. The RTMC is filled with 32 workstations and an 18-screen video wall that streams real-time traffic conditions from hundreds of roadside cameras.

“The Transportation Management Center is the brains of the system,” said Josh Reichert, Intelligent Transportation Systems (ITS) program manager.

“We’re the quarterback now, but in the future our role will become more like a coach as the systems become more sophisticated,” said Vega.

Vega said the ITS system uses cameras, vehicle detection devices, Bluetooth sensors and variable message signs to gather real-time traffic information and push it out to motorists. During a crash or major incident, FDOT can zoom in on a camera location and detour traffic via variable message signs. Dispatchers can send appropriate personnel and equipment in moments. Connected vehicles of the future will make the transfer of information more seamless.

FDOT’s Road Rangers service patrol trucks are in constant contact with the RTMC. Other elements of the ITS system include smoke and fog detection devices and message signs on U.S. 441 and a truck parking program that reads how many spaces are available at a rest area and delivers that information to truckers needing to take a rest break.

In the federal *Fixing America’s Surface Transportation (FAST) Act*, signed into law in December, Congress approved a number of programs that will enable the advancement of these technologies.

“This landmark bill recognizes the critical role of technology and innovation in making transportation safer and more convenient while laying the groundwork to build a smarter transportation system of the future,” said Regina Hopper, president and CEO of ITS America.

In December, Tampa was one of three sites selected to participate in USDOT’s Connected Vehicle Pilot Deployment Program, joining New York City and southern Wyoming.

U.S. DOT Secretary Anthony Foxx said his agency was making an additional commitment to empowering cities to solve congestion and safety issues with connected vehicle technology by awarding \$17 million to solve peak rush hour congestion in downtown Tampa and to protect the city’s pedestrians by equipping their smartphones with the same connected technology being put into vehicles. Tampa committed to measuring the environmental benefits of using this technology.



EYE ON TRAFFIC – Video wall at the North Florida Regional Transportation Management Center in Jacksonville.