

# As road work increases, tablet software makes inspections more efficient

By Dug Begley | January 19, 2016 | Updated: January 19, 2016 4:48pm

Business is about to boom for transportation project inspectors in Texas, so officials are testing new tools in hopes of reducing the time spent filling out reports.

Texas Department of Transportation officials are considering outfitting inspectors with tablet computers to connect construction sites with the mounds of data required to manage, maintain and build highways. The devices wirelessly send that data back for review by managers across the state.

The results of a recent test, part of a lengthy process that officials hope to use to snag a federal grant, indicated the tablet-based approach to information saved time - and by doing so, saved the state money.

With billions of dollars in new road construction set to begin in the next three years - buoyed by voter-approved increases in highway spending in 2014 and 2015 - Texas will have to accelerate not only the work, but also the paperwork that comes with juggling multiple multimillion-dollar road expansions in 27 TxDOT districts.

Inspectors on three projects in the Houston area were some of the first in Texas to use a tablet-based program to submit daily reports and status updates.

"Across the country, the state of the practice hasn't changed," said Si Katara, co-founder of Pavia Systems, makers of the new tablet software for inspectors. "You're going to the job site and jotting notes down there and maybe snapping photos with a digital camera. ... Then you're going back to the office or the truck to file a report."

In late 2014, inspectors on projects to widen I-45 south of the Sam Houston Tollway, U.S. 59 in Fort Bend County near Spur 10 and U.S. 290 between Eldridge and Telge were given tablets with the software loaded.

The pilot program followed others in Washington state and Minnesota. Inspectors are trained and skilled but also leery of changes to their routine, officials said.

"(Road construction) is known for being a late adopter of technology," Katara said. "What we did was assess a person's technology comfort, and what we found is there were some willing to learn the new technology."

On average, Katara said, it took less than three days for inspectors to feel comfortable with the tablet and software, HeadLight.

"We had a full spectrum of different personality types," Katara said, recalling one inspector who was skeptical the tablet could help him. "Seeing him go from one of the most resistant to most supportive ... was extremely rewarding."

Across the three states and 31 construction projects, use of the tablets gave each inspector more than 100 minutes of additional time per day for inspecting materials and facilities, while increasing the amount of data they supplied by 275 percent per day.

The tablet software provides information more efficiently. Every photo snapped at a job site to confirm a pillar was built properly automatically comes with a specific location and time tied to it. By combining the notes taken by inspectors with the time- and location-stamped photos taken with the tablet, mounds of paper become bits of data available online anywhere.

More time for inspectors and more information translates to better results and smoother operations, officials said. In the case of TxDOT employees inspecting and certifying job sites, that documentation is essential when contracts are closed. Much like building a new house or leaving a rental apartment, road projects require that final walk-through to verify everything is in place.

"Materials are arriving on a job site daily," said Roxana Garcia with TxDOT's construction division in Austin. "They have to meet specifications."

When they do not, Garcia said, the materials cannot be used on the project and TxDOT excludes them from payments.

"TxDOT will need documentation of why we did not accept those materials," she said. "Each one of those decisions cost money."

Statewide, TxDOT has about 1,100 inspectors. Already stretched, those inspectors will have even more job sites and lanes of road to handle. For fiscal 2016, which started Sept. 1, TxDOT has \$1.1 billion in rainy day funds to boost its spending, with \$2.5 billion more looming in fiscal 2017. That will increase construction - and officials hope decrease congestion - but also will generate more projects to keep on track.

Lawmakers are prioritizing those projects now, with a key Texas House committee scheduled to discuss the matter Wednesday in Austin.

Texas is not alone in looking for ways to cut costs and improve efficiency. Software companies are looking at so-called e-construction improvements as a way to sell states on changing policies. Utah and other western states have been testing programs for more than a decade.

The next step in Texas is more study. TxDOT has applied for competitive grant money available through the Federal Highway Administration to give tablets to inspectors statewide. Garcia said districts are interested, but the specifics of the grant are still being worked out.

Michigan, meanwhile, has focused on "paperless projects" where online tracking and communication replaced paperwork. In a three-year test, the state saved \$12 million annually, removing 6 million pieces of paper yearly from future record-keeping.