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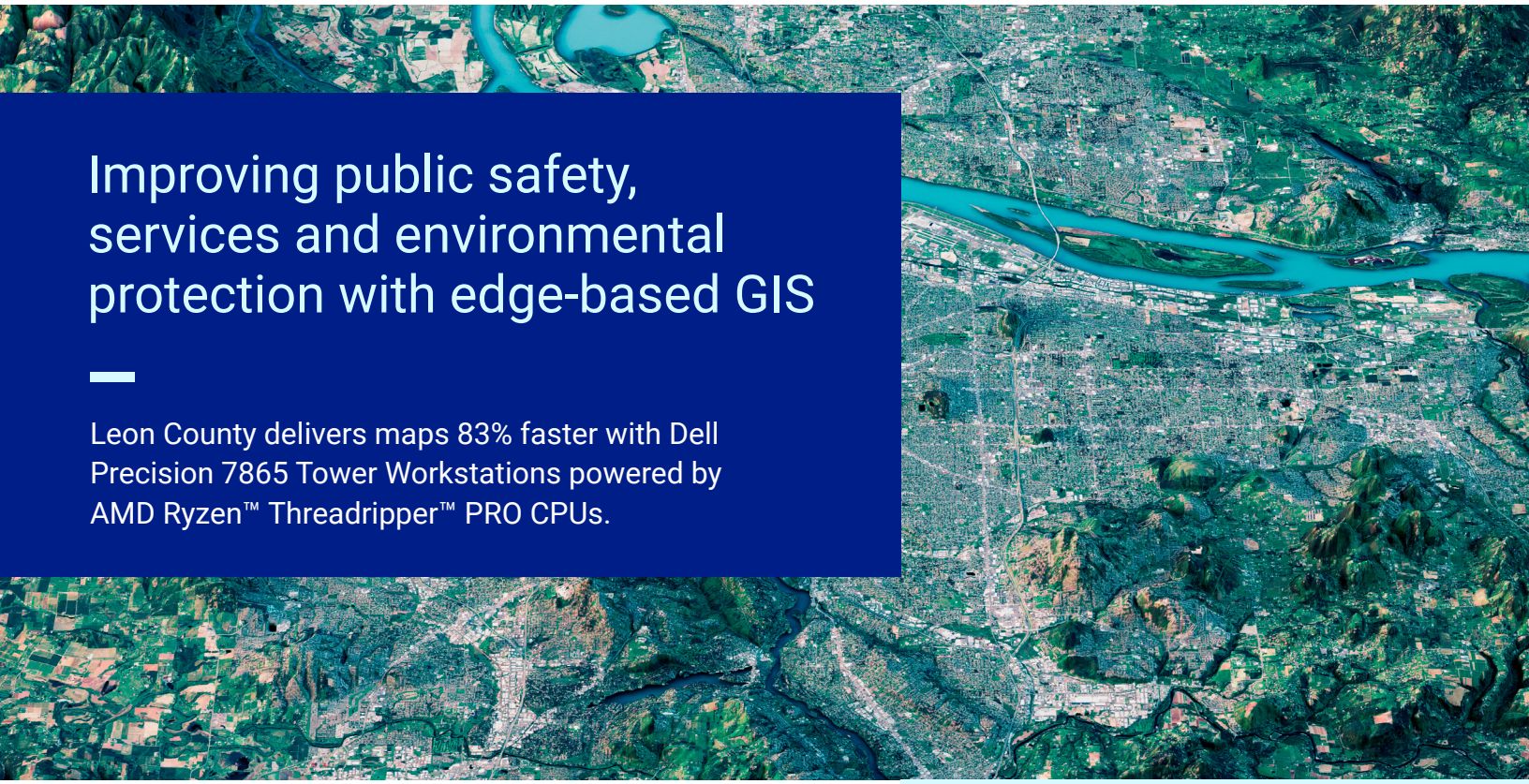
STATE AND LOCAL GOVERNMENT
UNITED STATES



Improving public safety, services and environmental protection with edge-based GIS

Leon County delivers maps 83% faster with Dell Precision 7865 Tower Workstations powered by AMD Ryzen™ Threadripper™ PRO CPUs.

Business needs

Tallahassee-Leon County Geographic Information Systems Department must ensure first responders, scientists, organizations, and citizens have the maps and geographic data they need for efficient navigation, service planning, and environmental research by enabling staff to seamlessly run GIS, AI and ML tools.

Business results

- 2x faster GIS performance.
- 83% faster delivery of needed mapping layer, in 1 month rather than 6 months.
- Enables seamless GIS, AI and ML processes at the edge so staff can innovate faster.
- Ensures that the county can deliver needed maps, GIS data and applications — and meet budgets.
- Empowers staff to turn ideas into lifesaving solutions by performing GIS and AI R&D at their desks.

Solutions at a glance

- Dell Precision 7865 Tower Workstation with AMD Ryzen™ Threadripper™ PRO CPUs
- Workstation Recommendations for Esri ArcGIS Pro

AMD THREADRIPPER PRO

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GIS workloads run 50% faster on Dell Precision 7865 Tower Workstations.

Mapping the pathways of life to serve the greater good

Maps are quiet enablers of modern society. First responders and city planners need them to protect and save lives by arriving faster to 911 calls and establishing evacuation plans for events such as hurricanes. Scientists use maps to protect and improve environmental health by monitoring resources like lakes, rivers and water tables. Companies also depend on maps and geographic data to enable safe construction, cost-effective insurance and applications including the ubiquitous navigation services citizens depend on.

Local governments are responsible for maintaining and creating new maps for the cities they govern using geographic information systems (GIS) and often, limited resources. For the 13-person team at the Tallahassee-Leon County GIS (TLCGIS) Department in Florida, aging IT made it nearly impossible to keep up with demands for new map layers, GIS datasets and web services. As a result, little time was left to work on the development of 3D models, the adoption of AI and ML, and other strategic goals. When employees used their GIS tools like Esri ArcGIS Pro, response times were painfully slow, even if they closed all other applications. Running extremely compute-heavy projects on a shared server was an option for them, but the server was also unable to deliver the level of performance required to seamlessly work with geospatial data.

IT performance issues were beginning to limit what TLCGIS could deliver, but the department had to work within its budget. Given its options at the time, the department thought it would have to lean into a shared server strategy rather than invest in new desktops at the edge. "We were debating whether to extend the warranty on our server or replace it," says Scott Weisman, GIS program coordinator at Tallahassee-Leon County GIS. "When I heard we could get Dell Precision workstations with AMD Ryzen Threadripper PRO CPUs, I got our rep on the phone immediately. Instead of upgrading one server that few had access to, we decided to replace our desktops with Dell workstations that give server-level performance for our high-demand GIS processes — at an excellent price."

The power to multitask with GIS

A Dell Precision 7865 Tower Workstation with one AMD Ryzen Threadripper PRO CPU can deliver up to 64 cores, 128 threads and 256MB of cache. These specs translate into leading desktop parallel-processing capabilities and responsive GIS experiences. TLCGIS staff can now use ArcGIS Pro and Esri's Spatial Analyst extension to seamlessly work with complex GIS models and power-hungry tools for raster creation, kriging, inverse distance weighting, contour rendering, predictions and other functions. Ned Cake, GIS project manager at Tallahassee-Leon County GIS, says, "I can have three ArcGIS Pro sessions open on my Precision workstation as I'm working on web development. This kind of multitasking wasn't possible before."

Because GIS workloads now run 50% faster on the Dell Precision workstations, TLCGIS is improving its employee experience and making the most of its resources by saving time and money. Cake explains, "I convert mosaic file sets to tiles twice as fast with a Dell Precision 7865 Tower Workstation — in about four minutes versus the eight minutes it took on a server — and I can work on other things at the same time. These kinds of advanced technologies enable us to deliver more value to the community while operating within a fixed budget."

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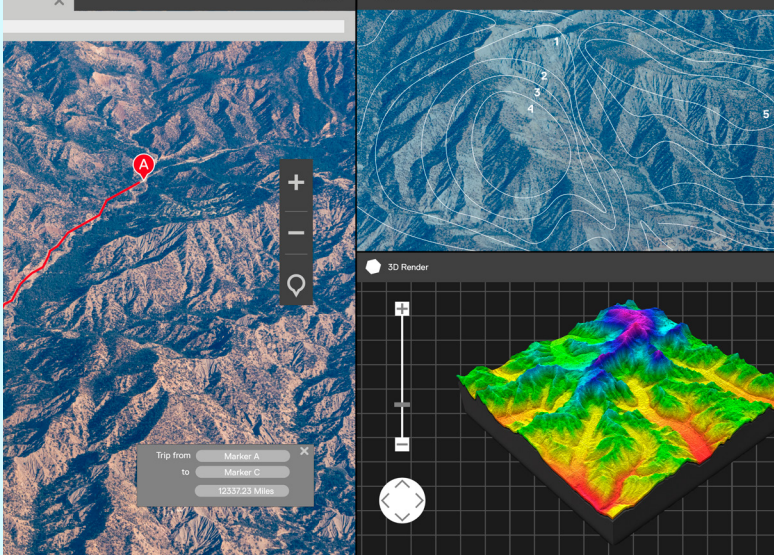

Empowered employees turn ideas into innovation

With its new Dell Precision workstations, TLCGIS is accelerating and expanding development, including the 83% faster delivery of a map layer that identifies and classifies unnamed roadways such as alleys, service roads, and driving lanes within parking lots and apartment complexes. Providing a map layer that includes unnamed roadways is especially critical for first responders, who need it to pinpoint the fastest route to emergencies. "With our Dell workstations and AI, we added driving lanes to our maps in one month," Weisman says. "It would have taken at least six months to do that manually." For its work on this map layer, the department earned a Best of Florida Award in 2023 for Innovative Use of Data Analytics.

The team at TLCGIS is now driving an internal culture shift by empowering individuals to turn their ideas into impactful services. "Anyone in our office can now work on AI, ML and other R&D projects at their desks," says Weisman. "These projects are no longer limited to a few people who have access to a machine with special processing powers. This is important because our goal is to help staff and citizens create efficiencies and make better decisions with GIS. We do that by being more resourceful with technology."

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