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In Texas, Fort Worth's Public Wi‑Fi Initiative Gets People Online

The city enhanced connectivity for neighborhoods in need in partnership with Cisco.

by Erin Brereton 𝕏

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When Fort Worth, Texas, began delivering more services digitally during the COVID-19 pandemic, officials found that several neighborhoods weren't fully utilizing the resources because they lacked dependable at-home internet access.

"Some of it is infrastructure. The incumbent service providers didn't have those types of offerings in those communities," says Kevin Gunn, the city's CTO and IT solutions director. "Some of it is financial. When faced with buying food or having internet service, it's not a tough decision. We started thinking about ways that we could get internet service into those neighborhoods in short order."

The city's endeavor to supply public Wi‑Fi had its challenges. There were building-related signal transmission issues. And there was the red-tailed hawk's nest that paused equipment installation until fledglings living there decamped . (The bird is a protected species in the state.)

But by partnering with Cisco, Fort Worth was ultimately able to extend its government enterprise network to provide connectivity to 40,000 residents in the Ash Crescent, Lake Como, Northside, Rosemont and Stop Six neighborhoods via a separate, segmented network.

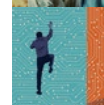*Click the banner to learn how the Internet of Things supports state and local government.*
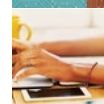
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Cisco Supports Increasing Digital Equity

The network's Cisco Ultra-Reliable Wireless Backhaul infrastructure includes Meraki MR86 outdoor access points and Catalyst switches that have been mounted on towers and streetlight poles, distributing a high-speed signal throughout the neighborhoods, says Gary DePreta, area vice president for state and local government and education at Cisco.

"For a city to dig trenches and provide fiber optics to 40,000 to 50,000 residents, that would be measured in years," DePreta says. "Because of the urgent need to provide services during the pandemic, time was of the essence. Essentially, that technology provides the data capacity and speeds of fiber-optic cabling, but you can deploy it from a wireless infrastructure."

The city anticipated that the planning for its public CFW-Neighborhood network would take six months, but the process ultimately lasted nine.

"We've got beautiful landscapes and undulating hills and lots of mature trees and other things that interfere with radio signal propagation," Gunn says. "It was a lot more of a challenge than we anticipated initially."

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How Fort Worth Is Reaching into Communities

Fort Worth worked with radio engineers to determine where to install system elements, placing items out of reach of objects that could interfere with propagation, Gunn says.

"It's picking the right location to put the two inputs so you get the best signal," he says. "Some of the facilities we identified initially were places like libraries, which are one-story buildings here in Fort Worth; so, we pivoted to those that had two or more stories."
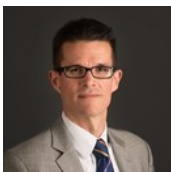
"A lot of effort went into communication, making people aware and getting them excited about this project in their neighborhoods."

Kevin Gunn, CTO and IT Solutions Director, Fort Worth, Texas

Leading up to the public network's August 2022 debut, the city sponsored an extensive community outreach effort to ensure that residents understood that their online activity wouldn't be tracked. Only aggregate usage data is being gathered, Gunn says, to monitor network performance and service quality.

IT department members gave presentations at neighborhood association meetings and other community gatherings; when trucks were sent out to install system components, technicians had postcards with a QR code leading to information about what the vehicles were doing in the area.

"A lot of effort went into communication, making people aware and getting them excited about this project in their neighborhoods," Gunn says. "That paid dividends once we were finally up and running. We saw users immediately jumping onto the network and becoming advocates for us by doing that."

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How Local Agencies Can Address Needs Now

Simplicity was a key design goal for the network; the city wanted a solution that would be reliable enough to withstand hot sun, sleet and other local conditions, and one that was easy to deploy, support and use, Gunn says.

"We really haven't had any ongoing maintenance, other than maybe a storm coming through and misaligning an antenna or having one or two pieces of equipment with a power failure," Gunn says. "Outside of that, it's been set it and forget it."

IT leaders in Fort Worth hope to eventually enable fiber optic connectivity for every address. Until that can be achieved, the current structure allows the city to offer Wi-Fi access in areas where it had been unreliable. And some system elements — such as the Cisco Catalyst switches, which contain additional ports — are helping to position the city for future tech growth.

"We knew this was deploying a significant amount of infrastructure in those neighborhoods," Gunn says. "That's now a platform for us to deploy smart streetlight technologies, smart signals at intersections, school crossing beacons and any of the other types of smart city initiatives we might want to pursue."

Cisco's Ultra-Reliable Wireless Backhaul technology had traditionally been applied in areas such as the transportation sector, DePreta says. Fort Worth's implementation was the first time the technology had been applied in a major metropolitan area.

DePreta believes the CFW-Neighborhood network could serve as a model for other cities looking to address a pressing connectivity gap before they're able to fully institute a long-term solution.
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