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Street Smarts: Opelika, Ala., Targets Smart Technology That Benefits Its Citizens

The city is more concerned with tangible results than bleeding-edge technology.

by **Erin Brereton**

Erin Brereton has written about technology, business and other topics for more than 50 magazines, newspapers and online publications.

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During the past decade, the city of Opelika, Ala., has approached incorporating smart technology in a proactive and personal way, with a [continued focus on the effect tech upgrades could have on residents](#).

In 2013, for instance, Opelika started to build its own fiber network, a massive undertaking that extended fiber to essentially every building and was completed in 2021.

"At the beginning of the last decade, one of the major problems was a lack of bandwidth in the city," Opelika CTO Stephen Dawe says. "We're in a rural area that's not particularly well served by any internet provider. From a growth point of view, you need bandwidth."

The driving force behind the installation — enhancing residents' quality of life — has been a consistent theme in Opelika's smart city efforts.

"We don't measure projects in terms of profit and loss, but in terms of the added value for the citizens of Opelika," Dawe says. "Are we making their lives easier or better?"

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Greater Connectivity Leads to Increased Accessibility and Safety

The city's infrastructure work has allowed it to explore other tech implementations, including providing public Wi-Fi for residents.

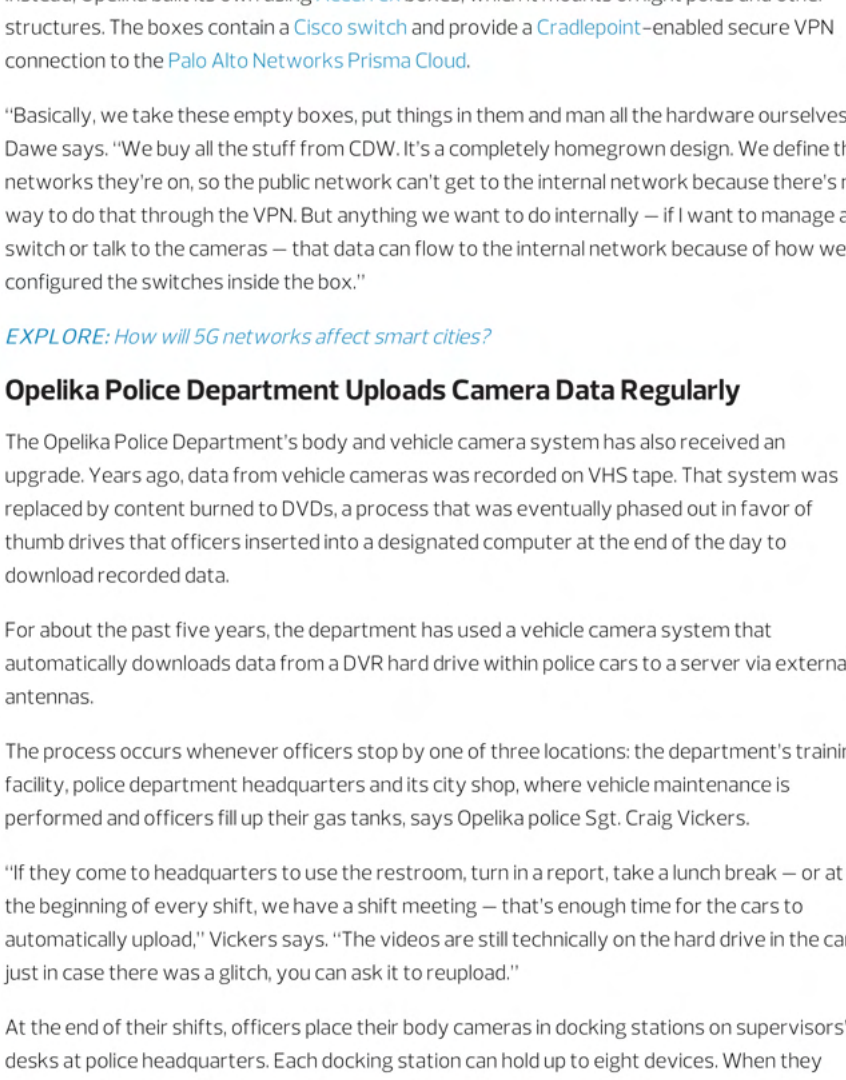
"We basically started out in the beginning with city buildings — particularly the recreation department and sports facilities, rec centers, things like that," Dawe says. "People want to watch Netflix when they're working out; they want to listen to Spotify. We wanted to extend that to the downtown area, so we did. Then we said, 'Let's extend that to parks.'"

The city has outfitted close to 10 of its public parks with readily available Wi-Fi, enabled by [Cisco Meraki access points](#).

Until last year, the system transmitted data to Opelika City Hall, and it was then boomeranged back out via the same connection to the internet, Dawe says.

Since beginning to use a [secure access service edge](#) model, the city has been able to take the data off City Hall's network and push it directly to the cloud. This frees up bandwidth at that location and allows Opelika to filter the data to make sure anti-virus, intrusion protection and other safety measures are being taken into account.

"We now have free Wi-Fi in every park and rec facility, including our ballpark, soccer and tennis center, that can support about 3,000 people per event," Opelika Mayor Gary Fuller says. "More and more people, especially younger people, expect that and assume it's just going to be available. By and large, folks are pleased with it."



Opelika has expanded free public Wi-Fi across the city to its parks and other areas. Source: City of Opelika, Ala.

[Meraki cameras](#) are used in parks to assist in vandalism-related cases, in part because they're compatible with the city's access points, Dawe says.

"They record and process all the video at the edge, which means we don't have to pass that video over the Wi-Fi," he says. "And there's a small management connection. If you're in a park, and you've got six or seven cameras, that's six or seven HD or 4K video streams. Meraki doesn't push those streams over the network, which saves that bandwidth on the Wi-Fi side — which is a huge deal when you're doing outdoor Wi-Fi."

The city initially looked at several companies' prebuilt boxes containing connectivity components but found they were "crazy expensive," Dawe says.

Instead, Opelika built its own using [AccelTex](#) boxes, which it mounts on light poles and other structures. The boxes contain a [Cisco switch](#) and provide a [Cradlepoint](#)-enabled secure VPN connection to the [Palo Alto Networks Prisma Cloud](#).

"Basically, we take these empty boxes, put things in them and man all the hardware ourselves," Dawe says. "We buy all the stuff from CDW. It's a completely homegrown design. We define the networks they're on, so the public network can't get to the internal network because there's no way to do that through the VPN. But anything we want to do internally — if I want to manage a switch or talk to the cameras — that data can flow to the internal network because of how we configured the switches inside the box."

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Opelika Police Department Uploads Camera Data Regularly

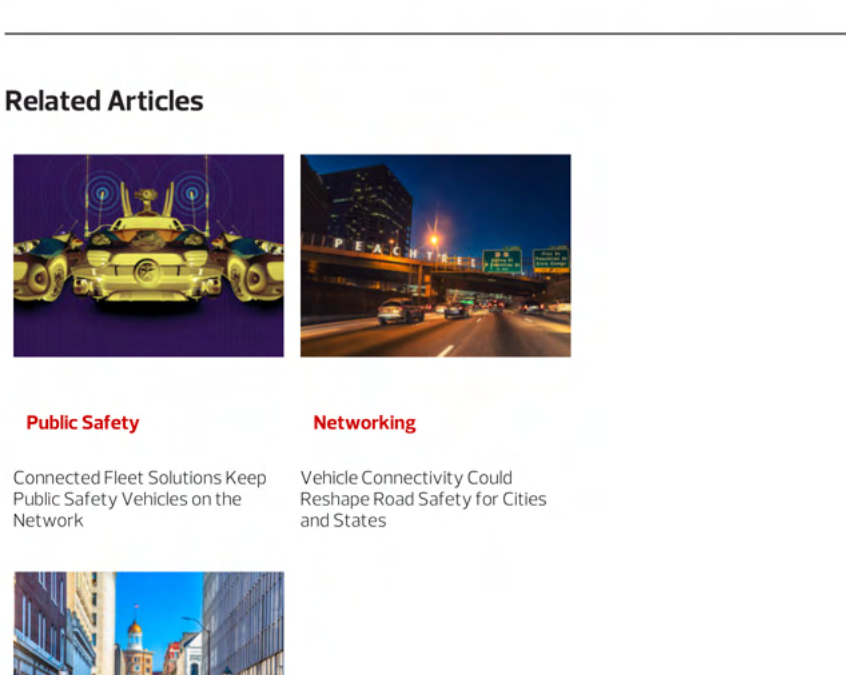
The Opelika Police Department's body and vehicle camera system has also received an upgrade. Years ago, data from vehicle cameras was recorded on VHS tape. That system was replaced by content burned to DVDs, a process that was eventually phased out in favor of thumb drives that officers inserted into a designated computer at the end of the day to download recorded data.

For about the past five years, the department has used a vehicle camera system that automatically downloads data from a DVR hard drive within police cars to a server via external antennas.

The process occurs whenever officers stop by one of three locations: the department's training facility, police department headquarters and its city shop, where vehicle maintenance is performed and officers fill up their gas tanks, says Opelika police Sgt. Craig Vickers.

"If they come to headquarters to use the restroom, turn in a report, take a lunch break — or at the beginning of every shift, we have a shift meeting — that's enough time for the cars to automatically upload," Vickers says. "The videos are still technically on the hard drive in the car; just in case there was a glitch, you can ask it to reupload."

At the end of their shifts, officers place their body cameras in docking stations on supervisors' desks at police headquarters. Each docking station can hold up to eight devices. When they start the next day, Vickers says, the body cameras are data-free and fully charged.



Opelika's police department uses docking stations to download officers' body camera footage. Source: City of Opelika, Ala.

While police are happy with the system, Dawe notes that it creates a considerable amount of data, which the city houses internally.

"We have about 500 terabytes worth of data," he says. "For a city of our size, that's a lot of data. Everyone says, 'Just put it in the cloud; it's cheap to store' — but particularly with the public safety data, we watch so much data that the egress charges were actually pretty expensive, so we host a lot on-premises. That may change in the future."

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Public Projects Are Designed to Provide Realistic, Effective Results

Opelika has also explored other city initiatives. Building inspectors, for instance, now submit materials using iPad devices when in the field, which Fuller says has helped increase productivity.

"The volume of our homebuilding has probably tripled in the past three to four years," he says. "If we were still doing inspections manually, then we'd have to have two to three more inspectors. Some of this, over a period of time, helps us maintain a smaller universe of people to provide needed services and will be a financial benefit for our citizens."

In 2018, the city implemented its first group of connected streetlights, which operate on their own network and can be dimmed or otherwise controlled remotely. The lights communicate via a [low-bandwidth wireless system](#) that involves two base stations. Eventually there will be eight; the original design called for seven, Dawe says, but the remaining station will provide redundancy.

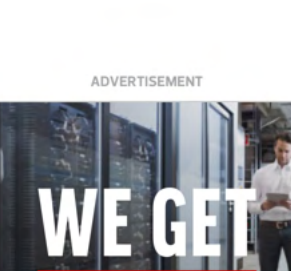
"Before 2018, we literally had a police officer drive around and report streetlights to the power company to replace a bulb," he says. "Now it's reported automatically. If there's a problem with a light, the system tells us. From a maintenance perspective, there's a huge reduction in cost."

To date, the city's budget has allowed a couple of square miles of streetlights to be converted to smart versions, which Dawe says is a key example of Opelika's commitment to carefully balancing tech updates with realistic spending goals and outcomes.

"It's sufficient to say, 'Hey, 8,000 streetlights we have are costing us 50 percent of what they were before — those lights don't necessarily have to be smart,'" Dawe says. "The fact is we just reduced the bill for the lights by 50 percent. That's how technology is going to help citizens. Ultimately, technology is a tool; how you use it is a matter of policy."

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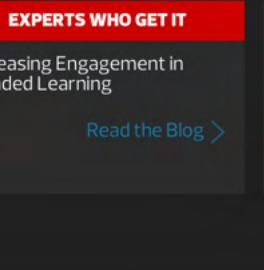


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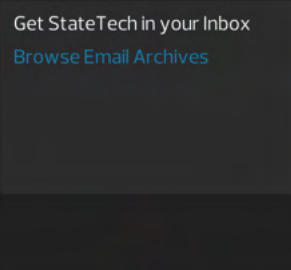
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