

Ocala Fiber Network Finds Its Residential Service Identity

Ocala adds residential internet-only FTTH services to a multipurpose fiber network that will help it become a smart city.

By Sean Buckley / *Broadband Communities*

Ocala, Florida, is famous for its thoroughbred horse farms and artesian springs, and now the city has added residential FTTH and business services to its roster of attractions.

As in other communities that now offer their own fiber-based broadband networks, Ocala Fiber Network grew out of the city electric department's efforts to use fiber to fulfill internal electric monitoring needs.

"Around 1995, Ocala Electric Utility (OEU) was looking at the connectivity from the substations, and at the time they were using copper but said 'let's take a look at fiber,'" says Mel Poole, network director of Ocala Fiber Network. "The utility then used fiber to connect the substations for supervisory control and data acquisition (SCADA)."

Later, the city found the fiber could be applied to other parts of the electric business. Poole says, "It morphed into 'We have this fiber, so what is its capability?'"

Ocala found that in addition to enabling more efficient SCADA connections, fiber could make its office locations more efficient. It replaced the collection of copper-based T-1 circuits it leased from local incumbent telcos that supported its office connections.

Taking into consideration inflation, the fiber network helped the city save more than \$1 million annually over the past 25 years. In all, the city may have saved a total of \$25 million

in networking costs by putting its enterprise network on fiber.

A NEW MODEL

As it looked at other uses, the city decided to carve out a specific department to house the fiber operations.

To support the fiber buildout, Ocala dedicated \$4 million to create an enterprise fund. The telecom department later repaid that loan to the electric division.

"At that time, telecom was another division of the electric department," Poole says. "It was doing its own thing and making its own money."

The provider's network has grown to include 700 to 800 miles of fiber, including aerial and underground facilities. Ocala Fiber Network uses this fiber to connect local schools, libraries and residential customers. Complementing the fiber network is a network operations center (NOC) to monitor the network.

Though Ocala Fiber Network had been getting good traction in the community, the Ocala City Council asked the network to halt the residential build in 2010.

"There was some back and forth between the city and the incumbent carriers that said the city should not be in the business of selling internet, so we stopped," Poole says.

But with the fiber already in the ground, Ocala looked at its FTTH network options. It employed CTC Technology & Energy to conduct a feasibility study.

“CTC provided the city council an overview of what we had and how we can move it forward,” Poole says.

After Ocala Fiber Network invited CTC a second time and hired Poole in 2014, the city built a business plan. CTC estimated it would take \$88 to \$90 million for the city to build out a fiber network, which included 56,000 electric meters.

“We based everything off our meters because that’s the way the fiber followed the electric grid, so it made sense to use those meters as a good starting point to homes connected to FTTH,” Poole says.

SCHOOLS BECOME CATALYST

The county school district and hospitals have been important customers of Ocala Fiber Network. Like other school districts, Ocala had been served by CenturyLink, which offered high-priced, low-speed services.

But a big school district contract changed everything. The Ocala City Council gave Ocala Fiber Network the option to bid on a \$1.3 million school district contract that would provide connectivity to 49 schools.

“The city council allowed us to bid on the contract,” Poole says. “We ended up winning that bid to connect the schools, and that became the catalyst for us to start moving.”

The process required Ocala Fiber Network to adjust its network to provide connectivity. It had to put in an additional 48 miles of fiber to support the school district contract.

Today, Ocala Fiber Network offers schools, hospitals and other local businesses a mix of shared business internet, dedicated internet access, gigabit connections and dark fiber. Its NOC provides co-location services for business customers, where they can access physical security, climate control, rack space and power for their off-site network equipment. The NOC is badge-coded with a business’ credentials for 24-7 access.

Every school has a 10 Gbps connection and a dark fiber link to the disaster recovery site, where Ocala Fiber

Network provides 40 Gbps service. By comparison, CenturyLink only offered the district 1 Gbps.

REALIGNING NEIGHBORHOOD BUILDS

After it won the large school district contract, Ocala Fiber Network received the city council’s permission to reinvigorate its residential FTTH business.

Taking what it calls a “shotgun” approach, Ocala Fiber Network’s move back into the residential business meant it first had to deal with a 250-customer backlog. Initially, the network built out FTTH in an on-demand fashion – if a customer wanted services, the provider would build it out in that neighborhood.

The provider wanted to accommodate anyone who wanted service, but connecting each home was time consuming. To address the backlog of FTTH service requests, the city council imposed a temporary moratorium on new residential connections.

But Ocala Fiber Network later found that it needed to create a more

organized buildout method. It settled on using a GPON architecture.

“After getting the 250 customers who were on a waiting list online, we slowly got into GPON mode,” Poole says. “We completed the school board contract ahead of schedule, close to \$1 million under budget.”

Because GPON was still a new FTTH architecture for Ocala Fiber Network, it had to be selective in how it started the initial builds.

After the city council lifted the moratorium in parts of Ocala, the provider initially focused on four neighborhoods. One neighborhood group uses underground infrastructure, and the other uses existing utility poles.

“There’s a huge difference between aerial and underground,” Poole says. “These projects were designed to give us some sure numbers of what it would take to build an overhead and an underground neighborhood out.”

Today, the provider is completing its third neighborhood build. Being a higher-speed service, Ocala Fiber Network is getting more demand in places where it has yet to build.

SMART TRAFFIC FOUNDATION

Having installed a fiber network in its community, Ocala wants to leverage the backbone to provide smart-city and traffic applications. Specifically, the provider is helping enable traffic management.

Nearly 100 public safety cameras have been installed throughout the city, and Ocala uses the network for smart-city apps, such as real-time parking-fee payment and enforcement.

Drivers who park downtown can pay fees via their smartphones. The network alerts city staffers when a car has been parked in a space too long.

“For a city our size, I consider us to be a very smart city,” Poole says. “We have about 130 traffic controllers that use the fiber network to connect.”

Additionally, the provider is providing free Wi-Fi throughout eight city-owned parks. It also launched an initiative to offer free Wi-Fi in downtown areas.

The network was never designed to support a host of business and smart-city services, but Poole says diverse network routes support new uses.

“We have upgraded our system and have a lot of redundancy,” Poole says. “We’re running about 30 Gbps with 10 Gbps on each pipe, so we have more than enough capacity to carry some high speeds.”

“We have a homeowners association (HOA) that keeps saying it wants service,” Poole says. “Typically, we do not advertise our services, but since the HOA request, we have advertised to the four initial neighborhoods to drum up business.”

A big issue for Ocala Fiber Network, even though it has FTTH services, is dealing with cable and telco competitors. Ocala offers 300 Mbps symmetrical FTTH broadband service for \$60 per month. How has the competition responded?

“Competition is out there, and we’re starting to see them rise up to the top,” Poole says. “We have seen some price challenges.”

THE DENSITY CHALLENGE

As it prepared to build out its FTTH network, Ocala Fiber Network set an aggressive customer acquisition target.

“If we go into an area, we want 30 percent” of an area’s customers, Poole says. The network uses this rate to prove a specific neighborhood’s ROI.

Poole adds that even though it was offering an FTTH service, Ocala

Fiber Network was not seeing many customers signing up for service in one underground neighborhood.

“We struggled to get the 30 percent,” Poole says, “and we have yet to get 100 percent in that neighborhood.”

But customer density is only one issue. Being an internet-only provider is a tough sell, particularly for older adults who traditionally have relied on landline voice and cable’s linear TV products. These consumers aren’t accustomed to using a broadband connection as a foundation to support streaming video services.

“Going forward, it’s an educational process because we have to say we don’t offer triple play,” Poole says. “We’re starting a campaign to educate people on what we offer and telling people what you can do with our fiber services.”

As part of its education initiative, Ocala Fiber Network hired a marketing firm to promote its 300 Mbps service in four neighborhoods to residential customers and businesses.

During phase two of the third FTTH neighborhood build, it looked at other ways to engage potential customers.

“We have been in the third neighborhood about three times to advertise,” Poole says. “The take rate has not been that good, but that’s because the neighborhood has mostly older-generation residents. We’re taking a different approach to show them what we have and what we can do.”

DRIVING ECONOMIC DEVELOPMENT

Ocala Fiber Network realizes its fiber network can be an investment to drive economic development.

Just as it needed to educate older customers on its offerings, Ocala Fiber Network needed to get city leaders up to speed on how fiber can help transform the community.

“I finally got our politicians to understand the value of high-speed fiber internet,” Poole says. “They are finally coming around.”

Ocala Fiber Network also is establishing partnerships with new housing developers.

One developer is not as sold on the concept of bringing fiber to each home, but another has clearly come on board.

The provider also can help attract new residents and developers and will pull more fiber to more homes.

“We have a couple of green spaces we’re looking at, but the developer is a bit old-school and is not quite sure about FTTH,” Poole says. “We have partnered with another green space provider that did not want the incumbents, so we’re the only service provider.”

Although it’s a relatively new neighborhood, the developer already sold the two model homes connected to the fiber network.

“We already had the conduit built into the neighborhood,” Poole says. “It’s starting to catch on, but it’s a matter of educating everyone.” ♦

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EYEING RURAL OPPORTUNITIES

Ocala does not focus solely on urban areas. It is the county seat of Marion County, which has about 270,000 residents outside Ocala, and is eyeing how it can extend service into rural areas across the county.

The service provider has an initiative to drive fiber-based broadband into rural areas of the county. Because its fiber lines run parallel with its electric facilities, it tries to base its subscriber reach on the location of the electric meters.

“We’re out in the rural areas of the county, so I thought it was the perfect opportunity to take advantage of the fiber that is out there to provide services,” Poole said during the **BROADBAND COMMUNITIES** Economic Development Summit.

Ocala and the broader Marion County area can get 25/3 Mbps connections but do not qualify for FCC grant funding such as CAF-II because the FCC deems any area that can get a 25/3 Mbps connection as being served by broadband.

“After meeting with the USDA, we found we were not eligible for funding because 25/3 Mbps is all around us,” Poole said. “That’s a disadvantage to those who can’t get it because 25/3 Mbps is splattered out there. As an ISP, I look at what we can do countywide. But because we’re a city entity overseen by the city council that writes the governing laws, I put a lot of focus on the city first.”