

Sterling Ranch, Lumen Make Fiber Broadband Part of 21st Century Living

The master-planned community takes a fiber-first broadband approach to support an urban/suburban lifestyle in Colorado's rapidly growing Douglas County.

By Sean Buckley / *Broadband Communities*

Sterling Ranch, a master-planned community in Douglas County, Colorado, has made fiber-based broadband the centerpiece amenity of its community. It is achieving its broadband goals through a partnership with Lumen Technologies and Lumiere Fiber, a network integrator.

Located southwest of Denver, Sterling Ranch has sold more than 17,000 homes since it opened six years ago. An additional 1,500 apartments and houses are in various phases of development. It also features 1 million square feet of commercial business space.

By expanding its relationship with Lumen, Sterling Ranch, the first all-gigabit community in Colorado, will offer its residents 8 Gbps symmetrical fiber-based internet services. The network delivers fiber to every home.

Walker Hinshaw, COO of Lumiere Fiber, says Sterling Ranch is focused on accommodating residents' desire for a work/life balance.

"Sterling Ranch is designed to be a live, work and play community that combines the best of urban and suburban living, evolving the way development was done in the late 1900s through the 21st century," he says. "We're trying to build a 21st-century community, and technology is a big part of it."

Brock Smethills, president of Sterling Ranch Development Company, says Sterling Ranch's location is becoming more attractive. "Douglas County has been one of the fastest-growing counties in the 2000s," he says. "The county grew from 7,000 people in 1975 to 370,000 people today."



Brock Smethills

BROADBAND LESSONS

When Sterling Ranch began its search for a broadband provider, it looked at how other master-planned communities built their network infrastructure. In 2014, the company talked to a developer of the master-planned community Lake Nona, outside Orlando, which advised Sterling Ranch

on best practices. "They showed us what to do and not to do," Smethills says. After Lake Nona's original owners went through bankruptcy in 2008, the new owners invested significantly in fiber and telecom infrastructure.

Smethills noted that aging hybrid-fiber coax cable networks served existing communities. "The older communities were stuck on traditional cable networks," he says. "It created this separation where there was a well-served community with fiber across from an older subdivision."

Sterling Ranch sees fiber-based internet as a critical amenity it can use to bring in more buyers. "Having good internet is key to how we live our lives," Hinshaw says. "It's so critical to have internet connectivity, and you have to have it if you are going to attract a large buying pool."

FOCUS ON FTTH

Sterling Ranch knew that it had to make fiber available to every home the day it opened. "We wanted to start our first house with fiber to the home (FTTH), knowing that fiber will be the enabling technology for fast broadband for the foreseeable future," Smethills says.

During this period, Sterling Ranch partnered with IBM, which worked with a local engineering firm. At that time, Sterling Ranch considered becoming the service provider itself because Comcast and CenturyLink (now Lumen) did not offer FTTH. CenturyLink was doing some aerial overbuilds in highly dense areas in Denver.

"The only way we could incentivize someone to come in and operate a network was to build the network ourselves and offer the operational provisioning to the ISP," Smethills says. "Lumen looks at working with us as an opportunity to provide service regardless of which network customers are on."

Sterling Ranch now has leverage to urge Lumen, the ISP, to introduce new technology, such as the transition to XGS-PON. "As part of the relationship with Lumen, we can push them to innovate and roll out new technologies," Smethills says. "It has been a strong partnership."



Sterling Ranch is the first all-gigabit planned community in Colorado.

8 GBPS TRANSITION

By incorporating XGS-PON into the development's FTTH network, Sterling Ranch can provide symmetrical internet speeds of up to 8 Gbps. The new service will be available throughout Sterling Ranch by the end of 2024. This is possible because of Sterling Ranch's commitment to have fiber in every home in the community.

The XGS-PON technology at Sterling Ranch is provided by the Lumen Technologies Quantum Fiber multi-gig service, which delivers up to 8 Gbps symmetrical internet speeds currently in select locations – with plans to add new areas throughout 2023 and 2024.

"We're excited to offer the symmetrical 8 Gbps service across the entire community," Smethills says. "It is part of the core of our original vision, which is that our first house by the end of next year will have access to the same services that the next village will have access to, which would not be possible via a traditional cable network."

The network is designed to be backward- and forward-compatible to accommodate various fiber broadband generations.

"We designed the network with a low split ratio," Smethills says. "We're going to XGS-PON now, and we're able to do that transition on our network easily."

When Lumen started offering 1 Gbps, residents could subscribe for \$89 a month. This is far less than the \$120 Lumen charged for service in other regions. "As Lumen dropped pricing, we increased our base pricing," Smethills says. "Our base price of \$75 a month is a little higher than what Lumen's base price is for its bottom-level gigabit service, but we're going to use those additional resources for the customer services side. Given that we're a master-planned community, we

want to have a better customer service experience for our residents."

DARK FIBER OPTIONALITY

The focus of a fiber network is to enable fiber-based broadband connectivity, and the fiber network Sterling Ranch has installed has plenty of extra capacity. Dark fiber is fiber infrastructure that is not yet "lit," or put into use by a service provider. Sterling Ranch can sell dark fiber capacity to providers that might need facilities for other applications, such as wireless backhaul.

Specifically, the fiber network has been built with extra dark fiber pairs. "We're also building the network to

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Sterling Ranch's network will be able to satisfy demand for gaming, video services and teleworking.

have much dark fiber," Hinshaw says. "It gives us much optionality about what we use that for in the future."

Today, the fiber network designed by IBM and Siemens serves as the backbone of underground systems. These systems provide essential services to the community, such as managing water and energy.

Though Hinshaw could not address any specific new applications, Sterling Ranch will be ready as new applications emerge. "We keep finding new technologies and ways to use fiber and connectivity," he says. "We anticipate there's going to be additional technologies that will come along that will use more fiber."

He adds, "We're laying the foundation for a technology future we can't predict, but we'll have many options because we have so much dark fiber in the network."

In the near term, the capacity of the fiber network will be able to satisfy the growing consumer demand for gaming, video services and teleworking.

Colorado's Douglas County has a high percentage of remote workers. About 11 percent of the community telecommutes.

"We're seeing a lot of entrepreneurial opportunities being driven around the

ability to work remotely," Smethills says. "We're well-positioned to support that for homeowners in ways that are meaningful to them and their businesses."

He adds, "hybrid work will be around for a while and it helps if people don't have to worry about their internet connection inhibiting them from being able to participate in a Zoom call."

MAINTAINING SUSTAINABILITY

Along with providing residents with the best broadband speeds, Sterling

Ranch's fiber network is the backbone of systems to manage water, energy and other services. These platforms focus on helping maintain the sustainability of the community.

Every home at Sterling Ranch is equipped with the standard SMART home technology system, which allows residents to add upgrades easily.

Water management is critical for this area of Colorado. "Sterling Ranch is located in an area where the groundwater was insufficient to support development, creating a donut hole," Hinshaw says. "Outside of Denver



Designed by IBM and Siemens, Sterling Ranch's fiber network is the backbone of systems to manage water, energy and other services. These platforms focus on helping maintain the sustainability of the community.

Water, the rest of the water serving houses is small districts scattered around the front range or cities such as Fort Collins,” Hinshaw says. “In Douglas County, there is a fractured group of water providers.”

Dominion Water Sanitation District, which manages community rainwater

harvesting, provides water to Sterling Ranch. It is a member of the WISE Partnership – a regional water supply project of Colorado municipalities such as Denver Water, Aurora Water and several Douglas County systems.

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