

Walsh: A New Community Built Around Fiber

A master-planned community in Fort Worth aims to be a center of innovation.

By Masha Zager / *Broadband Communities*

Twelve miles from downtown Fort Worth, Texas, a new community is rising from the ground. Walsh, named for the family that owned the land, is inside the Fort Worth city limits, but at 7,200 acres (about half the size of Manhattan), it is large enough to be a town. In fact, it is the largest residential community being built close to a U.S. downtown area.

Home builders broke ground at Walsh in fall 2016, presales began in early 2017, and the first homeowners moved in during July. A market, a fitness center, a co-working space and the park across from an elementary school are in various stages of construction.

More than a master-planned community, Walsh is intended to be a functioning, thriving neighborhood that will eventually attract 50,000 residents across a range of ages and income levels. It will include office and retail space, medical facilities, restaurants and entertainment within walking distance of residents' homes. The plans include all the amenities one would expect – pools, parks, athletic facilities, food trucks, nature trails – as well as some unexpected ones, such as baseline 2 Gbps internet access included in the homeowners association fees and an upgrade to 10 Gbps for less than \$200 per month. (The developer has already had at least one inquiry about the 10 Gbps service.)

THE FOURTH UTILITY

“Our goal is for Walsh to become a new center of innovation for Texas and the nation,”

explains Tony Ruggeri, co-CEO of Republic Property Group (RPG), the developer. He regards internet connectivity as “a fourth utility, requiring the same weight as a community’s need for reliable water, gas and electricity.”

Technology has been central to the developer’s vision from the get-go. Nearly two years before the first shovel hit the ground, RPG met with a technology solutions provider, Florida-based Frog, to brainstorm about how technology could enhance the new community. “We started with whiteboarding sessions,” explains Michael Voll, CEO of Frog. “We made a list of half a dozen to a dozen core initiatives, such as health care, education, entertainment, sports, technology. ... Then we took technology out of the list, wrote it across the bottom of the list and layered the other things on top.”

Voll adds, “There’s a very small audience that really values technology for itself. Other people want such things as a great environment for their kids. If it’s built right, the technology will be seamless and invisible, the great community assets will be even better and the community will be the best place for people to live.”

Technology is an afterthought in many new communities, Voll points out. Often, connectivity providers are brought in late in the game, and “they bring whatever they bring.” But in the case of Walsh, the Walsh family and RPG were planning for the long term, and they had the foresight to recognize that technology would be critical to any future plans. “Decades



Architect's rendering of the co-working space in Walsh

of innovations need to be supported,” Voll says. “Broadband and the internet should not be limiting factors.”

INTEGRATING TECHNOLOGY INTO LIFE

Trying to envision Walsh as a “city within a city,” the technology team focused on the value that technology could deliver right away for multiple demographic groups. In the village center, they decided to install a maker space with a 3D printer, robotics, and computer numerical controlled woodworking machinery, where residents could “learn how to make anything they can dream up.” Along the extensive trail system, technology will bring the outdoor built environment to life with “digital cattails” – LED-enabled vegetation that lights up when joggers run past. The children’s playground has been digitally transformed into a giant musical instrument. Children generate harp music as they slide down the slide and drum music when they play on the seesaw.

The first of eight elementary schools to be built in Walsh opens in fall 2017 and will benefit from 10 Gbps connectivity. The school district intends to use the connectivity to support a science, technology, engineering, arts and math (STEAM) curriculum. Schoolchildren will take virtual-reality

field trips and meet experts from local Texas Christian University via videoconferencing. RPG is pursuing integrating pediatric care from Cook Children’s Medical Center in Fort Worth into the school nurse’s office. The 10 gig connection could even allow hospitalized children to participate in classes via real-time video.

In June, RPG announced that all residents will have access to an unusual telemedicine service: For only \$8 a month, they will be able to consult a Texas board-certified physician through online video or phone 24 hours a day, seven days a week. Waiting times are expected to be less than 10 minutes. This gives users instant, non-emergency treatment at any time and diminishes the need for emergency room visits. Physicians can diagnose short-term or acute illnesses, recommend treatment and call in prescriptions.

“Curating amenities that support a small-town experience is critically

important to our vision for residents’ life at Walsh,” says Ruggeri. “Telehealth is the modern-day house call: friendly, inexpensive and convenient.”

Residents can sign up for telemedicine through a dedicated HOA portal, and services are administered by New Benefits, a provider of noninsured benefit programs. Residents also receive health advocacy benefits to help them navigate complex health care and insurance systems.

PREPARING HOMES FOR BROADBAND

Frog works with individual home buyers to learn their technology requirements and make sure the wiring in each home can support residents’ needs. “Overwhelmingly, the most talked-about topic is a reliable in-home network,” Voll says. “People have had good and bad experiences with routers and extenders, so we want to ensure good wireless coverage. ... People are

Because every home in Walsh has at least 2 Gbps internet access, every homeowner will have access to a low-cost, high-quality telemedicine service.



The sales center at Walsh offers a virtual- and augmented-reality tour of the community.

also interested in home automation for security, thermostats, door locks, and so forth. They may not put it in on day one – it’s more a question of making sure the right infrastructure is in place to support it.” Frog is developing apps to help residents monitor their appliances and lighting via the home network.

Technology is central to constructing and marketing the community as well. For example, to ensure that the community has a distinct, unique architectural style and consistent high quality, RPG built an app to streamline its architectural review of builders’ home designs. Voll explains, “Instead of needing a 150-page book, they can simply click through all the requirements and make sure it follows all the standards.” Similar apps will be used to facilitate the review of community buildings.

At the sales center for Walsh, instead of seeing a tabletop topographic model of the community, potential homebuyers are wowed by a 800-square-foot digital rendering they can walk through. A mobile app, using virtual and augmented reality, guides them through a tour of the community.

“The response from potential residents has been amazing,” Voll says – and the visitors are left with no doubt about the community’s support for technology.

Frog is the network operator and service provider. In addition to internet access, it will offer voice service and several over-the-top video packages, such as DIRECTV NOW and Sling TV. In addition, it will provide “high-touch” technical support to residents and is opening a local storefront for in-person support. “We all have that friend who is a little more technically apt – well, the Frog representative will be that knowledgeable tech friend,” Voll says.

THE NEXT GENERATION

Voll hopes residents won’t need much technical support because the network is designed to be as robust and reliable as possible. Frog is using ADTRAN’s XGS-PON solution with 10 Gbps optics to offer symmetrical multigigabit speeds from day one. More important even than speed (given the fact that construction will be ongoing for years) is the physical diversity of fiber routes. Voll explains, “If any ring were cut, we could reverse direction so that services would be seamless to the customer.”

Barry Derrick, product manager for ADTRAN, says the Walsh project represents the first ADTRAN customer beyond the large incumbent carriers that has come to his company with requirements for multi-gigabit service. (ADTRAN has worked with Verizon on NG-PON2 interoperability testing and with CenturyLink on 10G-PON.) Derrick says XGS-PON – one of several standards for 10 Gbps fiber service – was the most cost-effective choice for Walsh. After putting the fiber in the ground, Derrick says, the major expense of a fiber network is the optics, and XGS-PON uses fixed optics rather than the tunable optics NG-PON2 calls for. In fact, XGS-PON utilizes the same spectrum as 10G-EPON, so it can take advantage of the low-cost optics developed for 10G-EPON, which is widely used in Asia. XGS-PON doesn’t support bandwidth higher than 10 Gbps, but because most Walsh customers will be residential, 10 Gbps should be adequate for the foreseeable future. Eventually, Derrick says, some institutional customers will need to upgrade to NG-PON2 for higher speeds, but the optics can easily be upgraded for customers that need it.

“ADTRAN is bullish on both XGS-PON and NG-PON2,” Derrick says. “We’ve been heavy participants in standards development on both fronts. That puts us in a unique position to offer a migration path if they need it.”

Putting fiber in the ground at the outset was a wise move for Walsh, Derrick says. The cost to install fiber in a greenfield setting, along with all the other utilities, is far less than the cost of retrofitting fiber later on. He adds, “This is one of the first communities I’ve seen where the main underpinning – the fourth utility – is high-speed broadband services. They really believe that it is a differentiator and that bandwidth is always going to grow. They work under the assumption that the applications will be coming.” ❖

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