

Closing the Digital Divide for Low-Income and Special-Needs Residents: Main Street Connect

Main Street Connect is a new apartment complex in Montgomery County, Maryland, that offers symmetrical 50 Mbps internet services and digital training for low-income and special-needs residents via a partnership with the county government's Department of Technology Services. **BROADBAND COMMUNITIES** thanks Joseph Webster, the department's chief broadband officer in the Office of Broadband Programs; Marjorie Williams, the department's broadband, cable and franchise division manager; and Pierre Trudeau, CTO of Positron, for helping compile this profile.

By Sean Buckley / *Broadband Communities*

When Jillian and Scott Copeland began looking for long-term housing where their son, Nicolas, who has developmental disabilities, could thrive, they found very few options. Hoping to help other families facing a similar challenge, the Copelands founded Main Street Connect in 2017. Their mission: to create affordable, inclusive housing that offers residents of all abilities dynamic opportunities and community engagement.

The Rockville, Maryland, apartment complex opened in August 2020. Today, 25 percent of the building's 70 units are allocated for adults with disabilities, and the remaining 75 percent offer affordable housing options for all.

The Montgomery County Department of Technology Services provides symmetrical speeds of 50 Mbps and internet bandwidth to support Wi-Fi service in all public areas in the building via its internet service network, MoCoNet. The service includes Wi-Fi coverage, online security, parental and access controls, and 24/7 customer service.

By providing MoCoNet's service at low or no cost to Main Street Connect community members, the county aims to promote digital equity. Digital equity means everyone has equal access to the technology necessary to participate in all aspects of society. For low-income households especially, access to the internet can be a burden when added to the costs of rent, child care, food and other necessary expenses.

Qualifying residents of Main Street Connect apartments may choose between MoCoNet, Comcast or Verizon for internet service. MoCoNet is free for eligible residents; Comcast and Verizon charge for their services.

"When we contacted the developers about providing robust internet access for residents in their units, they were very interested," says Joseph Webster, chief broadband officer in the Office of Broadband Programs at the Montgomery County Department of Technology Services.



Main Street Connect is a 70-unit apartment building in Rockville, Maryland, that houses special-needs and low-income residents. The Montgomery County department of technology services provides 50 Mbps internet via MoCoNet as part of its commitment to digital equity.

COUNTY NETWORK TIE-IN

The idea of establishing MoCoNet to extend affordable broadband to Main Street Connect is rooted in Montgomery County’s FiberNet network.

FiberNet enables the county to provide voice, data, video and Wi-Fi services to county departments, offices and agencies. The network also serves the county’s 911 center and connects 220 K–12 public schools, the schools’ data center, FiberNet’s data center and several other commercial data centers. It also serves agencies not directly tied to county government, including planning, sewer control and others.

The 600-route-mile fiber network enables Montgomery County to modernize communications services, including expanding broadband capacity necessary to support increased usage of wireless devices within workplaces and public spaces and the transition to IP-based public safety communication services.

Having built a Cisco-based

MPLS network that serves the greater Montgomery County suburban community and metro over the past 20 years, the county is in the process of upgrading to what it calls its “third-generation network.”

About a year ago, Montgomery County appointed Gail Roper as chief information officer. She shares a passion for bringing internet services to more

people and educating them about how to leverage internet and digital services.

“Gail, our Department of Technology Services, and my team in the Office of Broadband Programs all have an interest in digital equity,” says Webster. “The county has been doing a number of things, including providing free Wi-Fi in our 22 libraries, county buildings and senior centers.”

PROPERTY OF THE MONTH HIGHLIGHTS

~ Main Street Connect ~

- 70-unit property for low-income and special-needs residents
- 50 Mbps symmetrical services for all units
- Digital literacy training
- Choice of three providers: MoCoNet, Verizon Fios and Comcast
- Wi-Fi motion detection
- Online security
- Parental and access controls
- 24/7 customer service



The common areas of the apartment building have Wi-Fi courtesy of MoCoNet.



The floorplan of Main Street Connect apartments

EXTENDING BROADBAND TO LIVING SPACES

Providing free Wi-Fi in public spaces is just one element of Montgomery County's desire to help people access the internet. With the advent of COVID-19, the Department of Technology Services started looking for projects to extend internet services into people's living spaces.

Today, FiberNet has fiber connected to several affordable housing developments through Montgomery

County's Housing Opportunity Commission (HOC).

"Historically, we have only provided Wi-Fi in common areas or meeting rooms at HOC properties. While it is better than nothing, it is not ideal," Webster says. "The goal was to find a proof-of-concept project where we could extend internet directly into people's living spaces."

But carrying out this mission is easier said than done. FiberNet had to wade through myriad laws that in many cases prohibit municipal broadband.

"More than half of states have restrictions or outright prohibitions on community broadband or municipal broadband," Webster says. "Fortunately, we don't have that issue in Maryland, so there are no state regulations or restrictions on a city's or locality's ability to provide internet directly."

ENHANCING BROADBAND OPTIONS

In Montgomery County, residents and businesses can access broadband services from Verizon Fios and Comcast. RCN also offers services in some pockets of the county.

Comcast and Verizon previously installed facilities to provide internet services and video to Main Street Connect apartments. The walls were up and the building's wiring was already in place by the time Montgomery County got involved in the project in early 2020, so the Department of Technology Services could not install its own wiring, which it does in county buildings.

"The situation left us a little bit challenged because typically we would use Cat 6 wiring and provide Active Ethernet service," Webster says. "Fortunately, I came across Positron at **BROADBAND COMMUNITIES'** economic development conference in October 2019."

Leveraging the coax network and the equipment from these vendors, Montgomery County developed MoCoNet, which offers 50 symmetrical to all residents who want it.

"The criteria to get the service is very easy: it could be a special-needs apartment and/or an affordable unit," Webster says. "There are about 10 apartments at Main Street that are market rate, which means they would not qualify, but the rest do. We're providing only internet access."

Residents can choose to use MoCoNet and Verizon, but they can't use Comcast and MoCoNet because the two providers can't use the coax simultaneously.

Positron provides the broadband access equipment necessary for residents to connect to Montgomery County's free internet.

The vendor's G.hn access multiplexer (GAM) family can deliver near-symmetrical gigabit internet access to subscribers in multiple-dwelling-unit (MDU) buildings over existing telephone or coaxial infrastructure.

"Positron's GAM is perfectly suited for this situation," Webster says. "The fiber was installed by Verizon, and the coax was paid for and controlled by the developer, so Positron's equipment allowed us to leverage the existing coax."

The two other key partners were Plume and Cisco. Plume provides its Wi-Fi software, HomePass, which is

delivered through the Plume Cloud, the Plume app and SuperPods.

“Plume was an important partner, and Cisco provided free routing and switching equipment as part of this digital equity project,” Webster says. “We had three important technology partners.”

Though MoCoNet is not using Plume for IoT and building management applications, such as monitoring leaks and heating, it has tapped into Plume Motion, a Wi-Fi sensing application. Plume Motion detects disturbances in Wi-Fi signals between its pods or between a pod and a motion-capable device. These disturbances in the signal are translated into Plume Motion events, which residents can use to detect activity in their homes.

“Residents can download the app on their phones, and if there’s a human walking around in their apartments, it sends a phone notification,” Webster says. “For some residents, family members who are not in the building with them could say ‘My family member is up and walking around, and I know they are OK.’”

Main Street Connect is the first complex where MoCoNet is piloting its symmetrical service, but it won’t be the last.

“Main Street was our first foray into providing service inside people’s living spaces,” Webster says. “We refer to it as a proof of concept, where we are trialing vendors like Positron to maintain and operate it.” He adds the agency is looking for other MDU opportunities in Montgomery County.

“The goal is now to extend it to other affordable living units in the county,” Webster says. “MDUs make the most sense because they bring the biggest bang for the buck.”

FOCUS ON DIGITAL INCLUSION

Providing broadband access is just one benefit MoCoNet provides. MoCoNet also will offer training on how to access the internet and use devices through a partnership with Main Street.

Marjorie Williams, the broadband, cable and franchise division manager

The Montgomery County Department of Technology Services provides free internet service to eligible residents via its network, MoCoNet. Residents can get video and data from Comcast and Verizon Fios for a fee.

in the Department of Technology Services, says that although COVID-19 puts a damper on implementing a training program for residents, it’s a necessary service.

“We are hoping to partner with Main Street to provide training on how to use devices and find some partners to provide devices such as laptop computers and tablets,” Williams says. “Many residents are using just smartphones, but we want to help them get out into the community.”

Many of Main Street’s residents are around 22 years old, so the agency would also provide training on how to look for jobs online and write résumés.

“Main Street Connect wants to work with us to provide that training,” Williams says. “We just feel like in an environment like this, it would be hard to train them remotely. They really need hands-on support.”

The agency plans to offer similar digital literacy education at the next apartment complex it plans to serve, which is a senior living facility.

“We will be providing digital literacy education, but it will be a different angle,” Williams says. “We’ll help residents learn how to get food delivered, order prescriptions, and conduct videoconferencing with their doctors. We’ll be tailoring our program based on each community that we’re considering.”

VITAL STATISTICS

Property Description: Main Street Connect offers a unique model of affordable, inclusive community living and engagement for residents and non-resident members so people of all abilities can live their best lives.

Demographics: Low-income and special-needs residents

Greenfield or retrofit? Greenfield

Number of units: 70

Style (High-rise/mid-rise/garden): Mid-rise

Time to deploy: 90 days

Date services started being delivered: September 2020

Special property requirements:

Providing symmetrical data rates of 50 Mbps-plus (upload and download) to support Wi-Fi service in all eligible living units in the building. The ability to increase the user bandwidth profile on demand.

LESSONS LEARNED

What was the biggest challenge?

Although the developers always planned to offer commercial/paid internet services to residents of Main Street Connect apartments, by the time Montgomery County was aware of the development, the walls and ceilings were already up, and the painting had already begun, so it was too late to run Ethernet cable for traditional commercial access points. This left wireless mesh as the only realistic option for high-quality, in-apartment Wi-Fi in all units. Although the county had also been providing free or low-cost internet service to residents in libraries and other public spaces for some time, significant challenges existed with this project from a timing, technology and support perspective.

What was the biggest success?

The ability to use the existing coax

PROPERTY OF THE MONTH

cabling to offer a fiber-like user experience to residents. The Plume HomePass Wi-Fi service suite also provides a valuable set of features and capabilities that go well beyond traditional Wi-Fi routers and access-point equipment.

What feedback does the leasing/sales office get from residents/guests? What has the experience taught them about marketing, installing or supporting these services? Residents love having high-speed internet. Main Street Connect likes it because it's a selling point to attract residents. The part of the building that houses disabled residents is already fully occupied. The parents of young-adult, special-needs residents are grateful and can't wait for training on how to use the internet and devices to start because they want their kids to be independent. The other part of the

complex, for low-income residents, is not fully occupied, but the property manager says free 50 Mbps internet access is a big selling point.

SERVICES

Services: The network offers symmetrical 50 Mbps internet access to all apartment units.

Provider choice: Eligible residents have the option to purchase MoCoNet, Comcast Xfinity or Verizon Fios services. MoCoNet provides internet access, but residents can get video and data from Comcast and Verizon Fios.

Do additional service providers operate separate broadband networks on the same property? Yes, Comcast Xfinity and Verizon Fios are also available to all units in the building.

On the network described, can residents choose among multiple

service providers? Yes, residents can choose their network service provider.

Is the point of contact for resident technical support the property manager, the service provider or a third party? The community technology team in the Montgomery County government's Office of Broadband Programs helps residents with initial installation and set-up of the service and downloading/activation of the Plume app. Once the service is up and running, all resident technical support is handled by Plume and its 24/7 support center. Residents who subscribe to MoCoNet service are given a refrigerator magnet with Plume's 24/7 toll-free customer-support number at initial installation and service set-up.

BUSINESS

Which parts of the network are owned by the service provider, and which parts are owned by the property owner? Internal wiring to the units is owned by the developer; the rest is owned by the service provider.

Is there a marketing agreement with the property owner? No.

TECHNOLOGY

Broadband architecture: The building has fiber and coax. MoCoNet uses the existing coax wiring.

Technology/medium used to deliver signals to each unit: The network leverages Ethernet over the existing coax wiring. MoCoNet provides Wi-Fi in the living units and in common areas.

Vendors/products

- Positron (G.hn broadband access equipment)
- Plume (Wi-Fi software, access points)
- Cisco (routers and switches) ❖

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