# Closing Baltimore's Digital Broadband Divide: Hollins House

Baltimore's Hollins House is working with nonprofit organization Project Waves to close the digital divide, which has disproportionately disadvantaged seniors and low-income residents during the COVID-19 pandemic. **BROADBAND COMMUNITIES** thanks Samantha Musgraves, director of Project Waves; Devin Weaver, director of engineering for Project Waves; and Jason D. Hardebeck, director of broadband and digital equity for the city of Baltimore, for helping complete this profile.

By Sean Buckley / *Broadband Communities*

**T**he Hollins Market neighborhood in Baltimore, Maryland, is a desirable place to live and work. It takes its name from Hollins Market, the oldest public market building still in use in Baltimore, which is in the heart of the neighborhood.

Hollins Market is also the location of Hollins House, a high-rise apartment building that houses seniors and people with disabilities. Most Hollins House residents qualify for Section 8 public housing vouchers, which help people with low incomes rent homes on the private market. A large number of residents are refugees or military veterans.

Recently restored after an extensive renovation, the property provides secure entry, a spacious community room with a kitchen, a gym, onsite laundry, a library with computers and free internet access, and a covered patio. It also offers easy access to public transportation and medical facilities.

Thanks to Project Waves, a nonprofit organization that operates as an internet service provider (ISP), residents of the multifamily housing development have access to up to 1 Gbps broadband – free.

Project Waves works to bridge the digital divide in Baltimore and beyond by "creating, advocating for, and implementing equitable solutions that connect the under-connected and help individuals, families and communities thrive." The organization envisions a world in which everyone can participate fully in society through equitable and affordable internet access.

In May, mid-Atlantic nonprofit housing provider Enterprise Community Development secured a five-year partnership with Project Waves to provide $1 million in high-speed internet, computer literacy training and computer equipment to more than 200 residents at Hollins House and at Ashland Commons, another Baltimore multifamily housing community serving all ages.

Project Waves is one of the only nonprofit ISPs in the country. A fiscally sponsored program of the Digital Harbor Foundation,

Hollins House in Baltimore, Maryland, provides housing for low-income seniors and people with disabilities. Project Waves, one of the only nonprofit ISPs in the country, offers free 1 Gbps internet service to Hollins House residents.

it works directly with philanthropic partners, grassroots community organizations and public partners whose goals include bringing free internet service to their constituents.

Unlike traditional ISPs, whose priority is to drive profits, Project Waves is dedicated to ensuring network members have continuous access to quality service, regardless of socioeconomic status.

## CITYWIDE DIGITAL EQUITY

Historically, Hollins House residents and people in other parts of Baltimore have lacked access to affordable broadband services. Today, more than 96,000 Baltimore households can't get a home internet connection; the city has one of the highest rates of disconnectivity in the U.S. The digital divide limits opportunities for education, health care and employment.

Devin Weaver, director of engineering for Project Waves, says the organization hopes to help close the digital divide in the city. "We're seeing that about 20 percent of the entire city either lacks internet access or is simply underserved," he says.

Digital equity is a significant priority for the city. Baltimore Mayor

Brandon Scott's administration created the Office of Broadband and Digital Equity during the first year of his tenure as mayor. Jason D. Hardebeck, Baltimore's director of broadband and digital equity, is leading a citywide digital equity initiative. He says cities need to view broadband as they view roads and sewer and water systems.

"Our charter is to close Baltimore's digital divide by the end of the decade," Hardebeck says. "One primary tenet is recognizing that broadband access is critical public infrastructure."

Having broadband at Hollins House and other similar properties is not just about providing connectivity for entertainment – it also enables older residents to get necessary health care through telehealth applications.

"Telehealth has been a big thing because most of the users and residents of the apartments we serve have been the elderly," Weaver says. "Being able to do health checkups via the internet without going to a county hospital has been helpful."

## LEVERAGING, EXTENDING EXISTING WIRING

Initially, Project Waves installed point-to-multipoint wireless connections in single-family homes. It found that model was tough to scale, however, so it pivoted to providing service to apartment buildings.

The first task Project Waves took on was at Johnston Square apartments in East Baltimore. For that deployment, the service provider deployed wireless

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**PROPERTY OF THE MONTH HIGHLIGHTS**
**~ Hollins House, Baltimore, Maryland ~**

- Free 1 Gbps internet access
- Library with computers
- Gym and onsite laundry

Hollins House residents can enjoy a covered patio.

access points and built a daisy-chained network of switches in a wiring closet.

However, Weaver and his team found that this configuration wasn't suitable. "That's when I came across the Positron G.hn access multiplexer (GAM) device," he says. "I was blown away by how simple the GAM device made reusing existing wiring."

After conducting a successful test of the Positron equipment at his own house, Weaver says, "Project Waves used it at its first deployment at Chase House Apartments, and it's working beautifully."

Many of the buildings Project Waves serves are old, so they were already equipped with a mix of copper wiring and coax. "One of the challenges that we found at Hollins House was that because the wiring is so old, we came across a handful of rooms where the wiring coming into a port was dead," Weaver says. Project Waves decided to go with the coax model and reconfigured the wiring in each unit.

Weaver adds that the other challenge in the building is that some coax goes to a splitter box that was installed and is owned by Comcast. "A lot of cables that go to the rooms are unlabeled, and it can be difficult to tell what cable is what without having to use more analog methods to figure it out," Weaver says. "Luckily, Comcast has always been helpful, providing us with new techniques and tools."

By leveraging the Positron G.hn equipment, Project Waves can deliver up to 1 Gbps service speeds over the existing coax network inside each MDU it serves. It is getting these speeds in each room of the Hollins House development. "What surprised me about Positron was that it can push up to a gigabit worth of traffic through the existing coax cables," Weaver says.

Positron's view extends far beyond delivering 1 Gbps. The Canadian vendor is currently developing a product that can handle 10 Gbps. Weaver is impressed: "It seems insane to me to be able to push 10 Gbps over coax," he says.

Because the Positron technology is centered around not disrupting an existing property, "the landlords have been very accommodating," Weaver says. "They have also helped us get to know the residents and special cases we need to be aware of."

### TARGETING MULTIPLE PROJECTS

Besides Hollins House, which is its third project, Project Waves is currently in talks with Enterprise Community Development for partnering on other Baltimore-area properties. "We just finished Hollins House, and we hope

to serve a few more properties over the next few years," Weaver says.

Like other providers, Project Waves is trying to leverage new forms of broadband funding. It applied for American Rescue Plan Act (ARPA) grants, but its application was denied.

However, it successfully applied for an up to $5 million grant from the state of Maryland. "We're hoping the grant will help us add more staff members and do multiple buildings at once while developing a more consistent workflow," Weaver says.

### A PARTNERSHIP APPROACH

For Project Waves to reach its broadband goals, its focus is on working with a diverse set of partners, including local fiber providers. To bring broadband to each target building, Project Waves is leveraging lit fiber–based transport services from LiteCloud Transport Services. "What makes LiteCloud a good partner is that it can expand fiber and get more businesses as customers of its cloud and managed services," Weaver says.

The city of Baltimore could eventually become a Project Waves partner. Maryland's mandate to close the digital divide guides many Office of Broadband and Digital Equity efforts. The city received $641 million in ARPA funding, including $35 million dedicated for broadband. Baltimore plans to build a citywide, fiber-to-the-premises, open-access network. The city will leverage its existing conduit system and its fiber.

"We have a pretty good start to the network," Hardebeck says. "In addition, we have a lot of fiber in the ground for municipal services, so the goal is to expand on that and push it into neighborhoods and residential addresses."

The city plans to work with nonprofit organizations, including Project Waves, to extend fiber broadband to city residents. "We recognize there are several steps between where we are today and getting municipal fiber to every premises," Hardebeck says. "Part of our strategy includes partnering with

nonprofit organizations and potential commercial providers that may have a last-mile solution complementary to the city's strategy."

Although it did not establish a partnership with Project Waves for the Hollins House deployment, the city could support other projects in the future. "We will be creating a digital equity fund to provide grants for these types of community projects, so there's potential financial assistance," Hardebeck says. "We are contemplating the idea of providing additional resources to our community partners in the form of lit fiber services on the city network or access to city buildings for antenna placement."

## VITAL STATISTICS

*Property Description:* Hollins House is a high-rise, affordable housing building located in the Hollins Market neighborhood of Baltimore. It has easy access to public transportation and medical facilities. The property was beautifully restored in an extensive renovation and offers secured entry, a spacious community room with a kitchen, a gym, onsite laundry, a library with computers and free internet access, and a covered patio. Residents have access to 1 Gbps internet provided by Baltimore nonprofit organization Project Waves.

*Demographics:* Low-income senior citizens and people with disabilities

*Property Type:* Retrofit

*Number of units:* 130

*Style:* High-rise (nine stories)

*Build Time:* Three weeks

*Service Delivery Date:* Free service launched in May 2022. Service will remain accessible to all residents for a minimum of five years.

## LESSONS LEARNED

*What was the biggest challenge?* Because the deployment leverages existing in-building coaxial infrastructure to deliver service, mislabeled and unlabeled cables at splitter boxes within the property extended the length of the build.

*What was the most significant success?* Hollins House was the third Baltimore multiple-dwelling-unit building serviced by Project Waves, so deployment was significantly streamlined relative to previous projects. More than 50 residential connections were established over five days, representing more than double the efficiency of prior deployments.

*How was disruption limited for existing tenants?* Although the deployment limited overall disruption to tenants during the pre-connectivity build, minor troubles were further reduced by limiting construction to a single floor at a time and by working with property management to ensure elevator and stairway areas remained clear during high-need times.

*What should others consider before conducting similar deployments?* The Positron G.hn solution provides a wealth of opportunities for property owners to deliver premium-speed internet service to tenants in brownfield properties without the cost, disruption or labor needed to retrofit internal cabling. For property owners considering a G.hn deployment, efforts should be taken to ensure each unit has available coaxial access and that cabling is labeled at splitter boxes wherever possible.

## SERVICES

*Services offered or planned on the network:* High-speed internet access (1 Gbps), common-area wireless, access control

*Provider Choice:* The property owner does not regulate provider access within the building. Currently, in addition to Project Waves internet service, Comcast Xfinity and Verizon Fios services are also available to tenants.

*Technical Support:* Project Waves provides comprehensive technical support to all connected customers within the building. Customer support is offered in Spanish and English via phone, text and email.

## BUSINESS

*Network Ownership:* Project Waves owns the fiber to the premises, the equipment housed in the APC enclosure in the third-floor maintenance room, the splitter boxes distributed across the property, and the splitters housed in them. The property owner owns the coaxial wiring running to each unit.

*Marketing:* No formal marketing agreement exists between Enterprise Community Development and Project Waves. However, as part of its resident services portfolio, on-site staff provide information about the availability of free internet service through Project Waves to all residents.

*Bulk Services?* No

## TECHNOLOGY

*Broadband Architecture:* Fiber to the building/floor

*Fiber Termination Point:* Third-floor maintenance room

*Technology used:* Coax, G.hn and Wi-Fi

*Cabling Methodology:* Project Waves has vertically stacked closets/storage areas with identifiable and available cable ducts or access. It also has horizontal cable tracks.

*Vendors*

• LiteCloud Transport Services and Bluestar Networks (fiber)
• Positron (G.hn equipment)
• TP-Link, Ciena and Cisco (networking equipment) ❖

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