

# Stimulus Funds Begin to Flow

The effect of the ARRA program on fiber-to-the-home deployments remains to be seen, but the tap has now officially been turned on.

By Masha Zager ■ *Broadband Properties*



*The latest research on fiber-to-the-home deployments in the United States will be presented exclusively at the Broadband Properties Summit in Dallas, April 26 – 28.*

Reading tea leaves is always difficult, especially when there are few leaves to read. Of the \$7.2 billion included in the broadband stimulus package, only \$183 million has been awarded (not including broadband mapping grants). In selecting the first batch of 18 projects, the Departments of Commerce and Agriculture seem to have carefully included as many states, project types and technologies as they could, presumably so no one would feel left out. The result, of course, is that everyone except the actual recipients will have something to complain about. That includes us – we think there should have been more fiber-to-the-home projects.

The good news is that at least two fiber-to-the-home projects were among the grantees. (Some other projects were rumored to include FTTH, but we couldn't confirm that.) The middle-mile project list also included fiber backbone lines that will eventually be useful for bringing FTTH to remote regions. (See this issue's Bandwidth Hawk column.)

The bad news is that the total number of homes passed by fiber will be about 1,200 – fewer than Verizon adds to its FiOS network in a single day. So far, we're not finding the stimulus program very inspiring. We hope we'll have better news for the next issue.

– MZ

## INDEPENDENT TELCOS

### Two Independent Telcos Win ARRA Grants

In December, Vice President Joe Biden announced the first batch of broadband grants (other than mapping grants) to be made under the American Recovery and Reinvestment Act. In addition to some middle-mile fiber, the long-awaited grants included two small fiber-to-the-home projects:

- **Bretton Woods Telephone Company**, a subsidiary of LICT Corporation that provides service to the Bretton Woods resort in New Hampshire's White Mountain National Forest, was awarded a BIP

remote-area grant to bring fiber to more than 400 premises. The upgraded network, which the company expects to stimulate tourism in its area, will provide up to 20 Mbps symmetrical broadband service.

- **Slic Network Solutions**, the CLEC arm of Nicholville Telephone Company in Franklin County, N.Y., was awarded a \$4.3 million grant and a \$1.1 million loan to construct 136 miles of middle-mile fiber and connect 726 households, 29 businesses and 10 anchor institutions with fiber. Slic will provide triple-play services

using Occam GPON equipment, MetaSwitch equipment for voice, and an IPTV solution from Falcon Communications. In partnership with the not-for-profit organization CBN Connect, Slic will also connect the Alice Hyde Hospital in Malone with two outlying affiliated clinics.

**Scott County Telephone Cooperative**, a Virginia ILEC that began building fiber to the home in 2004, has opened a new FTTH network in the community of Yuma, funded in part by an RUS Community Connect Grant. As many

as 291 homes and businesses in Yuma are gaining access to affordable high-speed Internet services, and the Yuma Fire and Rescue Department and Yuma Elementary School are receiving service at no charge. High-speed Internet services are also available at 10 computers in a new community access center, where Mountain Empire Community College will teach introductory computer and Internet courses to interested residents. Scott County Telephone Cooperative will hire a computer lab technician to assist residents at the center.

**Cambridge Telephone Company**, an ILEC in Cambridge, Neb., may be the first independent telephone company whose fiber-to-the-home project has its own Facebook page (with 28 fans). The company just finished replacing aging copper wires with fiber in the town of Cambridge, with the help of an RUS loan, and will upgrade the infrastructure in the nearby town of Bartley next summer. It will provide voice and

data services over fiber and is considering adding video services in the future.

**GVTC Communications** has launched 40 Mbps Internet service, the fastest broadband speed available in South Texas. The service is available to any of the 31,000 residences and businesses connected to GVTC's FTTH network for prices as low as \$89.95 monthly as part of a bundled package. The company is spending \$35 million to extend its next-generation fiber infrastructure to 80 percent of its customers across Far North San Antonio, Boerne, Bulverde and other Hill Country and Southeast Texas communities.

"We're providing the Internet speeds that users are demanding right now, and we have positioned ourselves to deliver the speeds they'll be demanding well into the future," says Tom Zanolini, product manager for Internet services. GVTC customers are increasingly using broadband connections for high-bandwidth applications, such as accessing high-

definition video, playing online games and working remotely from home. Many connect multiple home computers and media devices to a single network connection, sharing it between users.

**Optimum Lightpath**, a fiber-to-the-business CLEC in the New York tristate area, has chosen Tellabs as a strategic partner in the rollout of its next-generation optical network. Tellabs equipment will allow Optimum Lightpath to provide flexible and high-bandwidth solutions for businesses, offer features ranging from aggregated Ethernet services to optical wavelength services, and turn up new services and new locations quickly. Mark Pashan, vice president and general manager, transport products, for Tellabs, says, "Businesses can save millions of dollars with low-latency services because it takes less time for a packet to get from one end of the network to the other. When you handle large financial transactions, every millisecond counts." **BBP**

## MUNICIPAL FIBER

# UTOPIA to Build User-Financed Fiber Network

**UTOPIA**, the open-access fiber optic network owned by a consortium of Utah cities, is deploying fiber in Brigham City, a member of the original consortium. To cover the \$5.5 million cost of the deployment, the Brigham City Council authorized payment of \$655,384; the remainder will be paid primarily from voluntary assessments on taxpayers in a special assessment district – an unusual financing scheme. The assessments, which are estimated to be \$3,000 for single-family homes, somewhat less than that for multifamily units, and \$12,000 for commercial properties, include money for a reserve fund as well as the estimated cost of the construction. Property owners can pay the full assessment up front or in small monthly installments over a 20-year period; of the 1,600 who have already signed up, most have elected to pay in installments. In addition to these connection charges, subscribers will also pay for services received over the network.

UTOPIA management says that using voluntary special assessments to finance expansion helps make sure the network is built out in areas where demand for it exists. However, like many other municipal fiber networks, UTOPIA has generated both enthusiasm and vocal opposition. The Utah Taxpayers Association is representing about 70 property owners who say they did not understand the terms of the assessment and now want to opt out of the network. The association says it is investigating legal options to defend the taxpayers.

The **Loma Linda (Calif.) Connected Community Program** is extending fiber optic service to businesses at a 63-acre corporate business center in downtown Loma Linda. Nine businesses have already signed on for the service, providing the city another \$60,000 in annual revenues; city government expects that the majority of the businesses in the area will switch to LLCCP service within the next three years. The city

manager notes, "Completion of the project will provide fast, low-cost connectivity to underserved commercial locations in the city. This connectivity is providing an incentive for businesses to locate or remain within the community."

The city council in **Hartsville, S.C.**, awarded a contract to Uptown Services for a fiber optic feasibility study. If Hartsville decides to build a municipal FTTH network – a course of action that the mayor strongly supports – it would be the first municipality in South Carolina to do so.

The **Coldwater Board of Public Utilities** in the town of Coldwater, Mich., which operates a municipal cable network, will wire businesses with fiber optic connections using EPON technology, according to local press. The new lines will serve the downtown business area and a community college and are positioned to serve an area the city wants to develop as a research district. **BBP**

## CABLE PROVIDERS

### No Fuss, No Muss: Buckeye Replaces Coax With Fiber

In Toledo, Ohio, **Buckeye Cablevision** selected Kabel-X USA's fiber optic conversion process for a fiber-to-the-home trial. Buckeye will transition an existing subdivision to a fiber-to-the-home solution without construction of new facilities in the easements. Buckeye is the largest cable operator in the Toledo area, providing video, voice and data services to approximately 150,000 subscribers.

Kabel-X USA's process quickly and

seamlessly removes the coax cable center conductor and dielectric material, providing operators with a conduit through which they can deploy fiber optic cable without costly new construction or excavation. The process is suited for a variety of applications, including fiber-deep network build-outs, challenging crossings or pathways, and vertical high-rises. It has been used in several European deployments, but this is the first project

announced in the United States.

"We see the Kabel-X technology as an innovative tool that will allow us to cost-effectively deploy a fiber-to-the-home architecture in areas currently served by a traditional hybrid fiber coax (HFC) network. This technology will allow us the opportunity to effectively manage our network architecture so as to best meet our overall needs," says Joe Jensen, Buckeye's chief technology officer. **BBP**

## RBOC UPDATE

### FiOS, the Next Generation: Verizon Field-Tests a 10GPON Network

**Verizon** announced a successful field test of a 10 Gbps/2.4 Gbps PON system, which it refers to as XG-PON – a next-generation technology four times as fast as the GPON technology supporting the company's FiOS network.

The test, conducted recently in southern Massachusetts, indicates that Verizon expects its customers to demand ever higher bandwidth for devices and applications such as unicast HD video streaming, ultra-high-definition video, 3D video, user-generated content distribution, videoconferencing and new high-speed data services for medium- and large-business customers.

After testing the XG-PON signal in its laboratory, Verizon tested it on a dedicated PON and also on a fiber providing FiOS to a customer. The overlay test verified there was no interference between the XG-PON signal and the regular FiOS signal using GPON.

Until now, ITU standards-based XG-PON technology has been tried only in demonstrations and lab trials. Final technical standards for global design and deployment aren't expected un-

*Verizon gave the thumbs-up to new PON technology four times faster than GPON.*

til mid-2010. Verizon, however, is testing and validating the next generation of fiber-to-the-premises technologies from several vendors to help accelerate standards activities.

"This trial is a first for the industry and sets the stage for Verizon to offer increased speeds on the same network currently being used by our GPON customers," says Brian Whitton, executive director of access and video technologies. "This further validates our strategic choice of fiber to the premises as the best

way to build a future-proof network." The trial was conducted with XG-PON equipment from Huawei; future trials with other suppliers' systems are expected over the coming months.

Bryant Park, the New York City park with perhaps the highest Wi-Fi usage in the city, is now using Verizon FiOS Internet to power its popular Wi-Fi network. The installation serves not only park patrons using their laptops and mobile devices, but also shoppers and skaters visiting the more than 160

## VENDOR SPOTLIGHT

Corning Cable Systems	www.corningcablesystems.com
Falcon Communications	www.falconipcomplete.com
Huawei Technologies	www.huawei.com
Kabel-X USA	www.kabelxusa.com
MetaSwitch	www.metaswitch.com
Occam Networks	www.occamnetworks.com
Tellabs	www.tellabs.com
Uptown Services	www.uptownservices.com

shops and ice-skating rink set up on the lawn area for the holiday season.

Bryant Park, located in midtown Manhattan, has a heavily used Wi-Fi network because thousands of people visit each day for lunch breaks, business meetings or leisurely strolls or pass through on their way to other midtown destinations. "The FiOS enhancement to our free Wi-Fi network will be welcomed by the multitudes of laptop-carrying park visitors," says Dan Biederman, executive director of the Bryant Park Corporation. "FiOS will address the demands placed on the Wi-Fi system by upgrading the most crucial aspect of Internet access – speed."

### U-VERSE REACHES 2M CUSTOMERS

AT&T announced that its U-verse TV service now has 2 million customers, double the number it had a year ago. The service is now available to millions of homes across 22 states. AT&T also announced the launch of U-verse High

Speed Internet Max Turbo, its fastest Internet package, which offers speeds of up to 24 Mbps downstream and up to 3 Mbps upstream to residential and small-business customers in the Austin, San Antonio and St. Louis markets. AT&T plans to roll out Max Turbo to additional markets in the future.

Summing up its U-verse achievements for 2009, AT&T said it had:

- Launched 13 U-verse TV apps, bringing the total number of TV apps to 21. Two recent additions include Multiview, which lets viewers watch up to four channels at one time, and Santa Tracker, a Christmas-oriented app.
- Added more than 25 high-definition channels, bringing the HD channel lineup to more than 110.
- Enhanced the Total Home DVR experience to include mobile remote access for the iPhone.
- Launched Max Turbo and increased speeds for High Speed Internet Max customers from 10 Mbps to 12 Mbps

at no extra charge.

- Expanded U-verse availability in the Southeast. U-verse TV is now available in all 22 states of AT&T's traditional footprint, and the network passes more than 20 million living units.
- Made U-verse Voice available in all 120 TV markets.
- Ranked "Highest in Customer Satisfaction in the South and West Regions Two Years in a Row," according to the J.D. Power and Associates 2008 and 2009 Residential Television Service Provider Satisfaction Studies.

AT&T announced that as of the end of the third quarter, more than 90 percent of U-verse TV customers bundled High Speed Internet, more than 60 percent of new U-verse TV customers bundled U-verse Voice and more than 75 percent of U-verse TV customers had a triple or quad play. **BBP**



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## CAN FTTH IMPROVE LIVES IN BLIGHTED URBAN NEIGHBORHOODS?

In some Cleveland neighborhoods today, only about a quarter of households have access to the Internet – and only a fraction of that quarter have broadband connectivity. In the same neighborhoods, malnutrition and diabetes are rampant, the educational system is failing children, as many as a third of the homes are in foreclosure and crime is a constant and terrifying presence.

These neighborhoods don't fit the business model of any commercial FTTH deployer. Residents are unlikely to sign up for triple-play bundles, download movies from Netflix or spend time on Facebook. But researchers at Case Western Reserve University, which is located in the midst of some of Cleveland's hardest-hit neighborhoods, think broadband may be a critical factor in improving these residents' lives. "We believe that access to the Internet at the international gold standard of 1 Gbps, coupled with integrated training and support, can change people's lives for the better," says University Vice President for Information Technology Services Lev Gonick.

### BROADBAND AND BASIC NEEDS

To demonstrate that broadband can be relevant to meeting its neighbors' basic human needs, Case Western launched a research project that aims to connect as many as 25,000 residents in five Cleveland neighborhoods with fiber to the home and study the impact on their lives. The university has applied for National Telecommunications and Information Administration (NTIA) stimulus-fund grants to cover some of the project expenses; as BBP went to press, these funding applications were still pending.

In the meantime, the university is going forward with several privately funded pilot projects. The first of these, announced in December, will offer fiber-to-the-home connections to 104 households in two city blocks. This pilot is funded by the university along with Corning Cable Systems, which will supply product and design assistance. Corning Cable Systems' FlexNAP Terminal Distribution System, a rapid-deployment



*Lev Gonick of Case Western Reserve will discuss this project in a keynote address at the Broadband Properties Summit in Dallas.*

solution making use of fiber cables with preinstalled network access points, will be used in the deployment.

The study, which will follow the strict research protocols mandated by the university, will recruit residents of the area and require consent from all who participate. Although no consent forms have yet been formally extended, Gonick says there is already a "very nice buzz" in the two-block study area. As most of the housing is multifamily, landlords, too, will have to agree to have their properties wired, but Gonick doesn't expect that to be a problem – "They'll be sure of having 100-percent occupancy," he points out.

In exchange for participation, residents will receive Internet connectivity, along with computers and training, at no charge for 18 months. Also included are health monitoring equipment, "smart home" sensors, surveillance cameras and other devices, as well as access to an Internet services portal that will be designed by university students.

### A COMMUNITYWIDE EFFORT

As many as 40 community partners are involved in the project, including University Hospitals, the Cleveland Clinic, Metro-Health Hospital System, the City of Cleveland, OneCommunity (which will serve as the Internet service provider), the Great Lakes Science Center and a coalition of public safety forces. Some of these organizations will also receive equipment, such as videoconferencing systems, as part of the project.

The community partners identified four major concerns – health, science education, energy use and public safety – and set long-term and interim goals, such as reduction in type 2 diabetes rates, increased graduation rates for high-school students, reduction in energy consumption and improvements in neighborhood public safety. Residents will have opportunities to identify additional issues during the course of the study.

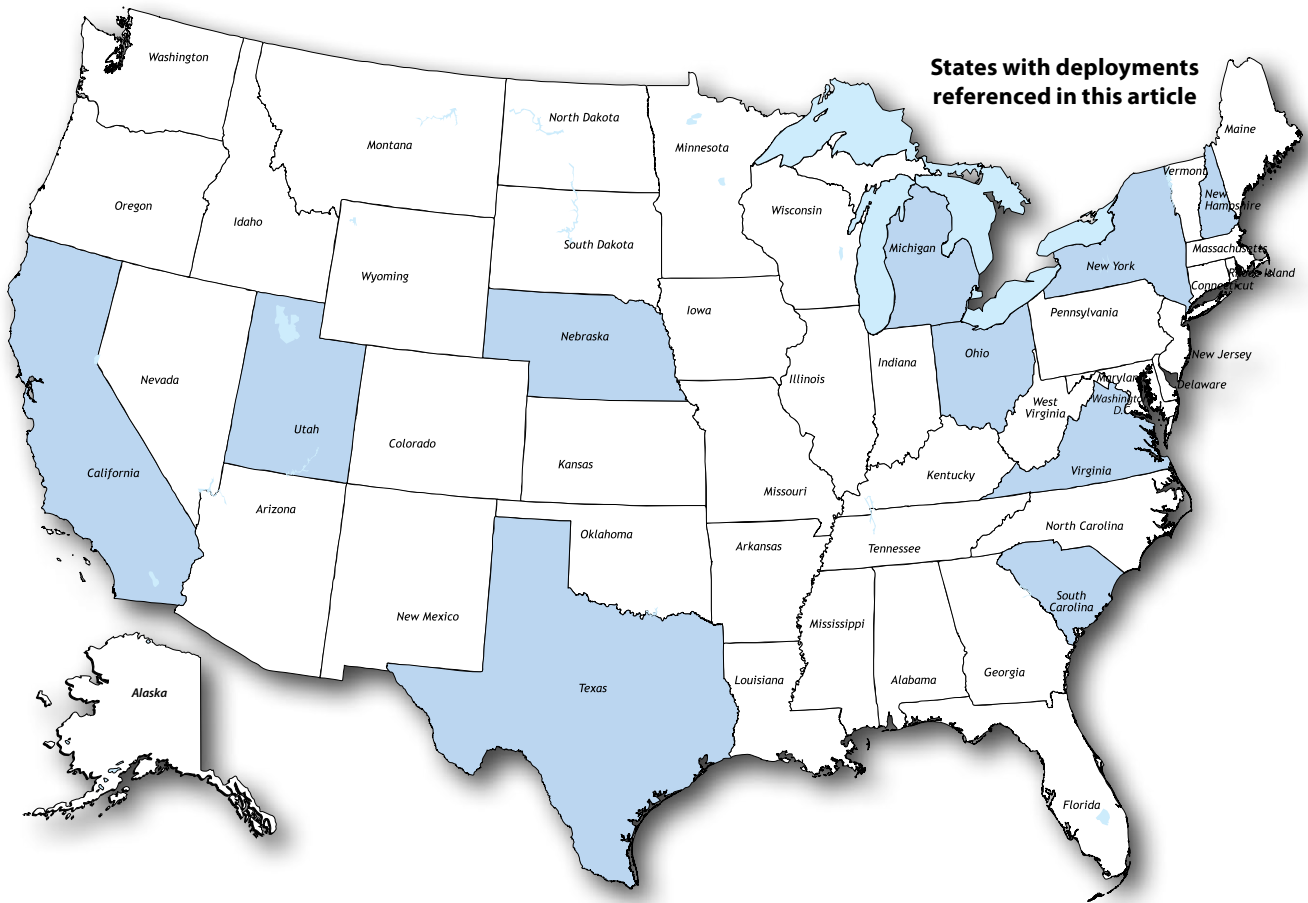
The partner organizations will work with the participants to achieve these goals, making use of the broadband connectivity and broadband-enabled devices. For example, hospitals may offer home-based health care through videoconferencing. University researchers assigned to the project will measure outcomes against goals and assess the impact of broadband in meeting the goals.

The network is not reserved entirely for the research study. Residents will have unfettered access to the Internet, and local service providers will also have opportunities to offer commercial services on the network, both during and after the research project. In fact, the organizers hope the open-access network will stimulate new service offerings.

Gonick says, "Our explicit goal is to create a living proof point that fiber to the home is viable in an American urban setting."



## DEPLOYER SPOTLIGHT



### NORTH AMERICAN TELCOS

AT&T	<a href="http://www.att.com">www.att.com</a>
Bretton Woods Telephone Company	<a href="http://www.lictcorp.com">www.lictcorp.com</a>
Cambridge Telephone Company	<a href="http://www.cambtel.com">www.cambtel.com</a>
GVTC Communications	<a href="http://www.gvtc.com">www.gvtc.com</a>
Optimum Lightpath	<a href="http://www.optimumlightpath.com">www.optimumlightpath.com</a>
Scott County Telephone Cooperative	<a href="http://www.sctc.org">www.sctc.org</a>
Slic Network Solutions	<a href="http://www.slic.com">www.slic.com</a>
Verizon Communications	<a href="http://www.verizon.com">www.verizon.com</a>

### OTHER NORTH AMERICAN DEPLOYERS

Buckeye Cablevision	<a href="http://www.buckeyecablesystem.com">www.buckeyecablesystem.com</a>
Case Western Reserve University	<a href="http://www.case.edu">www.case.edu</a>
Coldwater (Mich.) Board of Public Utilities	<a href="http://www.cbpu.com">www.cbpu.com</a>
Hartsville, S.C. (city)	<a href="http://www.hartsvillesc.com">www.hartsvillesc.com</a>
Loma Linda Connected Community Program	<a href="http://www.ci.loma-linda.ca.us">www.ci.loma-linda.ca.us</a>
UTOPIA	<a href="http://www.utopianet.org">www.utopianet.org</a>

## INTERNATIONAL DEPLOYMENTS

Australia moves forward with national broadband project ... Electric utility prepares to build out FTTH network in Israel ... Abu Dhabi fiber network goes live ... First GPON network in Vietnam

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