October 23, 2009

VIA ELECTRONIC COMMENT FILING SYSTEM (ECFS)

Ms. Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street SW
Washington, D.C. 20554

Re: Ex Parte Communication, 47 C.F.R. § 1.1206
***In re National Broadband Plan for Our Future,* GN 09-51**

Dear Ms. Dortch:

On October 23, 2009, I, on behalf of NATOA, sent the attached documents to Robert Curtis, Tom Koutsky, BJ Neal, Kevin King, and Mukul Chawla of the Federal Communications Commission. The documents were sent via email in response to a request made at a meeting between NATOA and members of the FCC Broadband Task Force on October 16, 2009.

Pursuant to Commission rules, please include a copy of this notice in the record for the proceeding noted above.

Sincerely,
/s/ Matthew R. Johnson
Matthew R. Johnson
Legal Fellow
NATOA

cc: Robert Curtis
Tom Koutsky
BJ Neal
Kevin King
Mukul Chawla

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OneCommunity and the Knight Center of Digital Excellence: An Important Model for America's Broadband Revival

Over the last 15 years, Baller Herbst has been involved in most of the leading community broadband projects in the United States. These projects have encompassed a wide range of public and private participants, technologies, services, and business models. During the last two years, we have also been deeply involved in the debate on a national broadband strategy, economic stimulus emphasizing broadband connectivity, and related issues.

Aware of our experience in these matters, OneCommunity and its Knight Center of Digital Excellence commissioned Baller Herbst to analyze their programs and suggest ways to enhance or strengthen them. In response, we met with representatives of OneCommunity and the Knight Center, read thousands of pages of pertinent materials, and asked numerous follow-up questions. We also talked to individuals outside of these organizations who are familiar with their work.

We are highly impressed with the work of OneCommunity and the Knight Center. Their vision is big enough, bold enough, and pragmatic enough to enable the communities they serve – as well as countless other communities across the United States – to survive and thrive in the increasingly competitive knowledge-based global economy. Their programs are innovative, flexible, copiously documented, and eminently replicable. Their processes guide stakeholders step-by-step through: discovering what advanced broadband connectivity can do for them; developing sound business cases and technology plans, often on a regional scale, with emphasis on the anchor institutions in the area; establishing essential training and support mechanisms; developing creative public and private partnerships that benefit all concerned and avoid or minimize strife; obtaining funding from a variety of sources; etc. In short, OneCommunity and the Knight Center strive to do everything necessary to stimulate both the supply of and demand for affordable access to advanced communications capabilities.

Most important, OneCommunity and the Knight Center have demonstrated that their programs do not merely work on the drawing board but are highly successful in the field. OneCommunity has shown that even an economy as mired in America's industrial past as Cleveland/Northern Ohio can transform itself into an epicenter of America's revival through the creative development and use of advanced communications technology. The Knight Center, though only recently established, is making rapid progress in galvanizing the initial group of communities with which it is working.

While we have some project-specific suggestions, we do not believe that the OneCommunity/Knight Center model requires any significant changes. To the contrary, we

believe that communities across the United States would benefit from considering the model when developing their own broadband initiatives and that the Federal Communications Commission and Congress should study it carefully in developing America's National Broadband Plan.

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In Section I, we begin with background information, including a brief review of OneCommunity's origins and history. In Sections II and III, we examine the philosophies, approaches, and accomplishments of OneCommunity and the Knight Center, illustrated through numerous examples. In Section IV, we offer some final observations and conclusions.

I. BACKGROUND

OneCommunity was founded on the belief that Cleveland's array of world-class institutions could serve the community better by working together. OneCommunity's goal has been to enhance services, save money, and enrich life in Northern Ohio by connecting education, health care, government, arts & culture, and other organizations to each other and to the Internet, through innovative public-private partnerships. OneCommunity is now well on its way to making Northern Ohio the Midwest's hub for technology and innovation.

OneCommunity's roots go back to 2001. At the time, Case Western Reserve University (Case) had a robust fiber-optic communications system and considerable networking expertise, but the rest of Cleveland lacked advanced communications capability. Case's president, Edward Hundert, and its chief information officer, Lev Gonick, believed that broadband connections to the Internet promised to be a major factor in the local economy's long-term health; that broadband could transform Northern Ohio from a manufacturing-based to an information-based economy; and that Case could play a profoundly beneficial role in enhancing Cleveland's broadband future. As a result, Hundert and Gonick reached out to several of Cleveland's leading government, educational, cultural, philanthropic, and other non-profit organizations and persuaded them to join Case in founding a new entity called "OneCleveland" that would provide gigabit connectivity to participating organizations and pave the way for widespread and free wireless service.

Early on though, a key element was building broad community support and a sense of ownership across both the public and private sector. From its earliest days, this was not a technology project, but a community transformation project, and adoption, usage, applications, scalability and self-sustainable business models were early considerations.

OneCleveland developed numerous creative applications to address the community-driven needs of its constituent groups. These applications included several ambitious projects for the region's health care facilities; high-definition, two-way interactive video and other services for Cleveland's libraries, museums, and other cultural institutions; and advanced video content for the educational system.

As information about OneCleveland's achievements spread, more and more communities wanted to become involved in the project. In response, the organization expanded to support a number

of communities across Northern Ohio, including the Akron area and beyond (soon to be 22 counties). In 2006, the organization changed its name to "OneCommunity," reflecting its broader geographic footprint and new emphasis on serving as a key economic asset for the entire region.

In late 2007, OneCommunity entered into a dynamic partnership with the John S. and James L. Knight Foundation to create the Knight Center of Digital Excellence in Akron, Ohio. Starting with the 26 communities across the United States that were formerly served by Knight newspapers,[1] the Knight Center's charter was (and is) to create "connected communities" by helping them develop strategies and utilize information technologies to drive civic progress and economic development. Supported by the Knight Foundation's pledge of $25 million over five years, the Knight Center team provides consultation, research, "best practices," and fundraising opportunities to the Knight Communities to help them develop and implement sustainable, collaborative broadband strategies. The Knight Center is building on the techniques developed by OneCommunity to expand broadband capacity and use and to create a platform for open dialogue, innovation, and thought leadership. It is poised to become an international resource for connected-community strategies and practices.

Timeline

2001-2003 – Lev Gonick, with support of Case Western Reserve University and other community leaders, begins roundtable meetings and creates consensus around the need for community revitalization using technology innovation to facilitate transformation.

January 2003 – Community organizations form a coalition of institutions in support of creating OneCleveland, including the City of Cleveland, Cuyahoga County Community College, Case Western Reserve University, Cleveland State University, Cleveland Municipal School District, NorTech (a regional economic development agency), Greater Cleveland Regional Transit Authority, and ideastream (local NPR/PBS).

October 2003 – OneCleveland formally incorporates as a not-for-profit Section 501(c)(3) organization.

November 2003 – OneCleveland accepts donation of 95 miles of dark fiber from City Signal Communications. Cisco Systems donates equipment to light up ring.

January 2004 – Local tech leader/entrepreneur Scot Rourke joins Case Western Reserve University as a loaned telecommunications specialist to launch OneCleveland. In May, regional economic development agency NorTech hires him as its first employee.

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[1] Known as "Knight Communities," the 26 communities are those in which the Knight family has owned, or continues to own, a newspaper. They include: Aberdeen, S.D.; Akron, Ohio;, Biloxi, Miss.; Boulder, Colo.; Bradenton, Fla.; Charlotte, N.C.; Columbia, S.C.; Columbus, Ga.; Detroit, Mich.; Duluth, Minn.; Fort Wayne, Ind.; Gary, Ind; Grand Forks, N.D, Lexington, Ky.; Long Beach, Calif.; Macon, Ga.; Miami, Fla.; Milledgeville, Ga.; Myrtle Beach, S.C., Palm Beach County, Fla.; Philadelphia, Pa.; San Jose, Calif.; St. Paul, Minn.; State College, Pa.; Tallahassee, Fla.; and Wichita, Kan.

August 2004 – Case Western Reserve University joins the OneCleveland network as its first subscriber.

November 2004 - OneCleveland awards network management RFP to IBM and hires leader of second-place finalist, Mark Ansboury, as COO/CTO.

February 2005 – OneCleveland announces the addition of eight leading health care, cultural and educational institutions as subscribers: MetroHealth Systems, Cuyahoga Community College, ideastream, The Cleveland Museum of Art, The Cleveland Institute of Art, Western Reserve Historical Society, The Cleveland Orchestra, and Cleveland Public Art.

August 2005 – Intel Corp. selects Cleveland as a top worldwide pilot community for its Digital Communities Initiative, which seeks to help communities use wireless technology and innovative applications to expand and improve services for municipal governments, businesses, and citizens.

January 2006 – The Intelligent Community Forum names Cleveland one of the top seven intelligent communities in the world, based largely on the OneCleveland initiative.

February 2006 – Reflecting its growth into a regional presence, which began in 2005, OneCleveland is renamed "OneCommunity."

January 2007 – OneCommunity launches a restructured board of directors consisting of top regional public and private leaders led by Rob Briggs and Jeanette Grasselli Brown.

August 2007 – Cleveland Clinic awards $2 million to OneCommunity over four years to support "OneClassroom" to connect region's schools via fiber & provide a Digital Resource Library, shared software, tools, & professional development for teachers.

November 2007 – The Federal Communications Commission awards $11.3 million to OneCommunity and the Northeast Ohio Health Information Organization to expand broadband access to rural health care facilities.

January 2008 – The Intelligent Community Forum names the Northeast Ohio region as one of the top seven intelligent communities in the world, based largely on OneCommunity's work.

April 2008 – OneCommunity announces a partnership with the John S. and James L. Knight Foundation to create the Knight Center of Digital Excellence (with Knight's pledge of $25 million over five years).

May 2008 – To upgrade county networking services, Cuyahoga County awards OneCommunity a five-year, $15 million dollar contract designed to enhance, expand and maintain the County's existing network and voice services.

February 2009 – With the support of local community foundations, OneCommunity establishes a Regional Tech Stimulus Office to help Northern Ohio compete for federal funding under the American Recovery and Reinvestment Act of 2009 (ARRA). The team holds regional meetings, provides research, and offers technical, business case, grant-writing, and advocacy support to foster cross-sector collaboration in pursuit of stimulus dollars.

March 2009 – OneCommunity and Knight Center collaborate on developing ARRA strategies for the Knight Center Communities and support them in applying for ARRA funds.

August 2009 - In the first round of broadband stimulus funding, OneCommunity and Knight Center lead the submission of four requests totaling more than $265 million. The requests receive more than 200 letters of support (including from more than two dozen telecommunications providers), and address markets with a populace of more than 8 million people. The team also supports 8 other proposals totaling $162 million.

The success of these efforts has resulted in many accolades for OneCommunity, including:

- Selection by Intel Corp., as one of three top "Worldwide Digital Communities," to serve as testbeds for new Wi-Fi and broadband applications. (August 2005)
- Receipt of Computerworld's Global Laureate Award for "world's best use of technology to benefit society" in 2004 and 2006.
- Being ranked twice by the Intelligent Community Forum as one of the world's top seven Intelligent Communities (2006 and 2008).
- Receiving *Last Mile Magazine*'s "Smart Community of the Year" award in 2007
- OneCommunity President & CEO Scot Rourke being named the 2008 international Intelligent Community Visionary of the Year, following the founders of Wikipedia.
- CEO Scot Rourke and CTO Mark Ansboury being named Ernst & Young Northern Ohio Entrepreneurs of the Year for 2009 in recognition of their support of entrepreneurship.

OneCommunity's efforts in Cleveland and the Northern Ohio area have been a resounding success and a model for communities in the Unites States seeking to use broadband to deliver innovative services. Some of OneCommunity's broadband success stories are detailed in Section II below. Overall, the OneCommunity network in Northern Ohio now serves numerous carriers and over 200 institutional subscriber organizations, connecting 1,500 public and nonprofit sites, including government, public safety services, urban and rural hospitals, medical clinics, K-12 schools, and institutions of higher education. The network is currently expanding to 22 counties, and stimulus funding would extend it to 58 counties.

Regional Economic Outcomes

- $50 million **in cash and in-kind investment** from foundations, government, private sector and others, most from outside Ohio

- $15 million **in cost savings** for subscribers to save tax dollars

- $18 million **for social and economic development programs leveraging technology** that went directly to community partners

- **180 jobs a year created** through direct and indirect investments in broadband expansion programs, including jobs in construction and IT-related activities

- More than **1,500 sites connected** with ultra-high speed broadband, reaching more than one million citizens

- Rich digital content and professional development available to **more than 1,000 schools**

- More than **6,000 donated computers collected for re-deployment in schools** and community centers

- About **$200 million in stimulus requests pending for Northern Ohio** through OneCommunity's Regional Technology Stimulus Office

II. ONECOMMUNITY'S APPROACH TO DEVELOPING COMMUNITY-DRIVEN BROADBAND CONNECTIVITY

At an early stage, OneCommunity's founders and community stakeholders realized two basic principles: (1) widely available and affordable high-capacity broadband infrastructure is essential to a community's present and future economic health, global competitiveness, and quality of life; and (2) developing such infrastructure requires a coordinated approach involving both demand-side and supply-side strategies. In response, OneCommunity has developed a four-step approach.

A. Inspire Digital Vision

OneCommunity helps communities to visualize the opportunities and the impact that high-capacity networks can have, not just within their own organizations, but also for communities as a whole. It then helps them to turn these visions into realities, emphasizing the need to simultaneously address both availability and the adoption/use of broadband connectivity. OneCommunity encourages communities to consider broadband infrastructure and facilities as regional assets, in which participating entities from both the public and private sectors can co-invest to their mutual advantage. Such cooperation produces significantly greater availability and capacity at a lower cost than any participating entity could obtain on its own. This model replaces the often-maligned "build-it-and-they-will-come" approach to broadband deployment with the more realistic and promising "get-them-to-invest-and-they-will-use-it" approach.

B. Promote and Enable Local Leadership

In Baller Herbst's long experience with community broadband projects, we have never seen one succeed without strong local "champions" who are totally committed to the success of the project and have the skills and resources to make it work. OneCommunity shares this view and devotes substantial resources to building effective local leadership. While some communities are blessed

with strong digital leadership, communities more often than not need support in identifying, educating, and supporting local leaders to enable them to develop and articulate their own plans. OneCommunity calls this support "Leadership from Behind." In providing it, OneCommunity tailors its support to the community's particular circumstances, doing whatever may be necessary to enable the local leaders to be successful.

At the same time, OneCommunity recognizes that there are some roles for which local leaders may not have the resources, experience, or interest in playing. For example, a large number of communities and public interest organizations in Northern Ohio do not have, and cannot afford, chief information officers, chief technology officers, or other senior technology staff. In such circumstances, OneCommunity can step in and play these roles, in effect acting as a regional technology authority that offers the technology consulting, subject matter expertise, and analytical tools that communities need to develop programs, applications and shared resources. For example, with support from the George Gund Foundation, OneCommunity has hired a Community Technology Executive to serve the Cleveland schools. OneCommunity supports local leadership, or steps in itself, to ensure that communities will have the ability to take maximum advantage of high-capacity broadband in the following areas: economic development; education; health care; workforce development; safety and emergency response; e-government, community engagement and democratic process; arts and culture; and social services and community-based organizations. Particularly for Knight Communities, this list also includes journalism and news media.

C. Fill Gaps with Public-Private Partnerships

OneCommunity assists communities in identifying and designing strategies to overcome obstacles to availability of high-capacity broadband connectivity (supply-side) and adoption and use of such connectivity (demand side). In doing so, OneCommunity strives for strategies that are collaborative, inclusive, and beneficial to all concerned, including public- and private-sector carriers. By aligning supply and demand, OneCommunity has been able to help communities understand how and where investments in broadband infrastructure will be of most benefit to public-sector and private-sector investors. This enhances market efficiencies and accelerates returns on private-sector investments and the fulfillment of public-sector goals. OneCommunity is effective in large part because it has carefully cultivated the role of a neutral, honest broker, building public-private partnerships with the best interests of the whole region always in mind.

D. Serve in a dedicated, neutral capacity for innovation and transformation

As indicated, OneCommunity does not merely act as a matchmaker, but it also plays whatever active role the circumstances may require. We have previously discussed examples of OneCommunity's activities in a supportive role. Here we discuss OneCommunity's role as a direct participant in broadband projects.

On the supply side, OneCommunity has, in some cases, obtained necessary infrastructure extensions or upgrades from public or private suppliers, creating an open exchange for services that leverage local providers' assets where available. In other cases, OneCommunity has made the extensions or upgrades itself, serving as a community-wide, cross-boundary, asset-holder for network infrastructure. On the demand side, with its wealth of experience in dealing with a

wide range of users of high-capacity broadband connectivity, OneCommunity has often demonstrated the benefits of such connectivity to prospective educational, health care, and public safety users, among others.

While OneCommunity works closely with many government entities and seeks to fulfill the community-driven goals of these entities, it is not itself a government entity. Rather, OneCommunity acts as a bridge between public and private network providers, high-demand stakeholders (including education, health care, and large businesses), and local governments. As a non-governmental entity, OneCommunity is not subject to the same legal or political constraints that sometimes burden local governments.

These general principles are explored further in the following sections, using examples from OneCommunity's efforts in Northern Ohio.[2] We start with some of OneCommunity's supply-side activities and then turn to various demand-side projects in the health care, education, and government service sectors, as well as economic development generally.

1. Coordinating Broadband Infrastructure and Services

When network connectivity has been unavailable or insufficient to meet identified or anticipated community requirements, OneCommunity has often done whatever the circumstances required to obtain the necessary connectivity, using a variety of sources and models of ownership and control. OneCommunity and its partners, including many government entities, believe that a high-capacity regional network operated under OneCommunity's direction, and in accordance with the principles summarized in this paper, is a tremendous asset to the entire region, regardless of who may hold title to particular portions of the network.

a. Broadband service offerings

In the Northern Ohio region, OneCommunity facilitated public and private arrangements for the deployment of a gigabit-capacity fiber-optic community network, soon spanning 22 counties and now serving over 200 subscriber entities and 1,500 schools, hospitals, clinics, government, and public safety locations. Over one million citizens are affected by the organizations that OneCommunity serves through the network.

Over this network, OneCommunity offers subscribers four distinct categories of network services, including, but not limited to:

- Transport services (regional transport, local and long-haul transport with partners, connection to partner networks);
- Managed services (Internet, metro Ethernet, wireless, VoIP, data center services, and disaster recovery center services);
- Facility-based services (dark fiber, dim fiber); and

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[2] This document provides only an overview of OneCommunity's extensive projects. For a more complete overview, please visit www.onecommunity.org.

- Wireless (local and regional WiFi and WiMAX, wireless backhaul, diverse connections to primary fiber connection). OneCommunity operates free public Wi-Fi zones in Cleveland, its suburbs, and in Akron.

b. Cooperation with other providers

OneCommunity will build its own broadband facilities if necessary, but it would prefer not to do so. It typically tries to work cooperatively with the providers that own or control facilities that OneCommunity can incorporate into its regional network. For example, in Northern Ohio, OneCommunity has received donations of fiber from private-sector providers such as Cavalier Telecom, First Telecommunications, and CityNet. OneCommunity has also acquired abandoned or underutilized assets that could be repurposed to facilitate revitalization of distressed communities and serve the needs of public interest institutions. OneCommunity has worked cooperatively with private-sector entities such as AT&T, Cavalier Telecommunications, CityNet, Cox Cable, First Telecommunications, Level 3, Global Crossing, Qwest, XO Communications and Time Warner Cable. OneCommunity has also worked closely with public-sector and community providers such as the Department of Education and Instructional Technology Centers that serve the needs of the region's schools, colleges, municipal wireless projects, county and municipal fiber networks, the statewide academic and research network (OARNet), and various other university and health networks.

c. "Beyond ownership"

OneCommunity is not attached to any particular ownership model for broadband infrastructure, believing that the more important questions are whether the broadband infrastructure is available and whether it is being used most effectively. As long as broadband infrastructure is available on reasonable terms and conditions, broadband infrastructure is an asset to every community in the region, regardless of who owns it. When the value of the asset is increased (through effective and efficient use), it is increased for all concerned, including the community as well as the public or private asset owner. As a result, for OneCommunity and its partners, whether the network is "public" or "private" has little, if any, practical significance. OneCommunity's experience in Northern Ohio proves that, under the right conditions, public-sector and private-sector network assets can creatively be made to work for the community, to the benefit of all concerned.

d. Open, facilities-based, neutral network

In Northern Ohio, OneCommunity has developed an open, carrier-neutral, multi-stakeholder community network. The network serves as a gateway for all network and service providers, for both physical and logical network services. OneCommunity acknowledges that establishing and operating an open and neutral network has not always been easy. The team describes the experience as a "journey." But, somehow, it has found ways to navigate successfully between the requirements of the public and private sectors, developing strategies that benefit all concerned.

OneCommunity's experience illustrates that an open network can be successful. By eliminating traditional barriers and offering everyone access to a single, high-capacity network, OneCommunity has opened the lines of communication among a wide range of people and organizations. OneCommunity's concept of an open network and multi-stakeholder investment

creates opportunities for both public and private investment. This, in turn, spurs economic development and job growth, transforms the ways in which citizens interact with their local institutions, and enhances the quality of their lives at home, at work, and at play within the community.

OneCommunity is enabling local governments to share infrastructure, resources, and services without increasing their burden and costs. It is creating a safer and more secure environment by enabling police forces and fire departments to develop new ways to collaborate and communicate with people in distress. It is enabling doctors throughout the region – in both rural and urban settings – to communicate with each other and access specialists and medical support facilities around the world, in real time, transmitting and receiving complex, bandwidth-rich medical images and improving the quality of health care. OneCommunity is also enabling students of all ages to learn through virtual experiences.

2. Coordinating Demand and Maximizing Network Benefits

Demand-side approaches to broadband development and adoption are crucially important to communities that seek to realize the full economic, cultural, and social benefits broadband may provide. OneCommunity participates actively in visualizing and creating a market for advanced broadband infrastructure, and it maximizes value to major stakeholders by identifying opportunities and tailoring the network to meet them. The more effectively the community uses the network, the more sustainable the project will be. As a result, OneCommunity works closely with the community's institutional stakeholders to ensure that the network infrastructure and services will be of most benefit to current and potential network users. In this section, we focus on health care, education, and government services – three important areas in which OneCommunity is expanding adoption and use of high-capacity broadband connectivity.

a. Health Care

The health care sector has proven to be a particularly strong investor in, and beneficiary of, OneCommunity's efforts, with multiple hospitals and medical clinics actively involved from the nonprofit's inception. The health care community is moving toward an integrated, technology-based health information system. For this to succeed, health care providers and facilities must be able to exchange complete and accurate information instantaneously, including X-rays, CAT scans, MRIs, and other high-bandwidth records. This, in turn, requires affordable access to advanced broadband connectivity. Assisting health care organizations to obtain such connectivity is one of OneCommunity's core competencies.

For example, to encourage collaboration among regional hospitals and clinics, OneCommunity has helped the local health care community form the Northeast Ohio Regional Health Information Organization (NEO RHIO) and the Health Information Exchange, groups committed to the responsible and effective use of telemedicine to enhance patient care. To enable urban hospitals to communicate with their affiliates, rural hospitals, clinics, and underserved health care facilities in distressed communities, OneCommunity has also established "HealthNet," an advanced broadband network that connects health care facilities throughout the region.[3]

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[3] *See* http://www.onecommunity.org/programs/programs.aspx?id=44.

While many urban health care facilities have been utilizing the OneCommunity network for years, extending broadband access to rural hospitals and clinics required substantial planning and additional resources. In November 2007, OneCommunity and NEO RHIO obtained an $11.3 million grant from the Federal Communications Commission's Rural Health Care Pilot Program (RHCPP) to cover 85% of the costs of connecting 19 rural hospitals to OneCommunity's network. These facilities will join the Cleveland Clinic, University Hospitals, and the more than 60 hospitals already connected to HealthNet. When phase I of the project is completed in the first quarter of 2010, HealthNet will reach nearly 80 hospitals and clinics in 22 counties across Northern Ohio.

HealthNet will enable health care providers to:

- Accelerate research by enabling the sharing of large data files among researchers working at disparate locations;
- Increase access to current research for approved patient protocols;
- Share medical records to improve quality and speed of patient care;
- Direct and secure video access to physicians and specialists;
- Improve care resulting from increased physician collaboration;
- Expand access to public health information through collaborations with community organizations and institutions.

Working with the organizations comprising the Regional Health Information Technology Extension Centers, OneCommunity is also heavily involved in the planning, deployment, training, and support of a state-of the-art e-medical records program for rural hospitals, clinics and private practices. The program will enable doctors throughout the region to communicate remotely with, and manage the care of, patients in managed care facilities, senior citizen centers, and at home, taking advantage of OneCommunity's open wired and wireless network.

b. Education

Improving education in Northern Ohio is essential for the region's success in the emerging knowledge-based global economy. OneCommunity grew out of a university environment, and it remains heavily involved with the education sector, supporting the state and regional Instructional Technology Centers, K-12 schools, and institutions of higher education.

OneCommunity's experience in Northern Ohio has proven the benefits of aggregation of demand on behalf of the region's Instructional Technology Centers (ITCs) and K-12 schools. Without OneCommunity's support, most ITCs and K-12 schools would only have access to high-cost, low-bandwidth capabilities and services. OneCommunity is providing them far more attractive options. Working with OneCommunity, ITCs and K-12 school districts can now obtain dark fiber (with OneCommunity providing end-to-end physical maintenance), wave services (Dense Wave Division Multiplexing), or managed services, including Ethernet. All services are available on a point-to-point or ring configuration. This increased capacity is enabling schools to access shared infrastructure and new curriculum resources, to conduct virtual field trips, to access rich media resources, to conduct virtual classrooms through high-definition video conferencing, and to create classrooms without walls that enable students to participate in classes from wherever they are in the community, even from their homes.

In addition to offering connectivity, OneCommunity also participates in the development of innovative applications and supports programs serving the region's educational institutions. For example, OneCommunity's OneClassroom initiative,[4] funded in part by the Cleveland Clinic, offers up to 700,000 students in 1,500 schools the digital skills they need to compete successfully. Among other things, the program provides:

- Teacher training using highly innovative techniques and technologies
- Professional development resources for teachers and technical support
- Distance learning opportunities, including live surgeries transmitted into classrooms so students can interact with doctors during the procedure;
- A Digital Resource Library that allows students and teachers to conduct a "safe search" to quickly find and view state-aligned content, including educational videos and other rich digital media from local and national providers;
- Shared infrastructure resourcing, (e.g., virtual desktop services, shared application servers, storage and network services);
- Refurbished computers and other cost-effective technology equipment for classrooms.

OneClassroom can expand students' horizons and prepare them to excel in the 21st century. With access to technology tools and training, and the comprehensive support needed to make a sustainable impact, students can become motivated to explore new career paths and participate in the digital economy.

For higher education, OneCommunity is fostering community connectivity and outreach programs connecting the colleges and universities to their community partners in health care, education, workforce development, and government. In addition, OneCommunity is working with colleges and universities to address the needs of their surrounding underserved communities by creating partnerships among them and providing free broadband access to residents there. These efforts continue to expand as new programs are created to address community needs. OneCommunity has developed the high-capacity data connections needed to conduct data-intensive research, supporting the efforts of Internet2 and the National Lambda Rail.

OneCommunity is also involved in a number of university projects that support community development. The organization is collaborating with Case Western Reserve University to provide gigabit connectivity and multiple services to low-income households using fiber-optic technologies. Partnering with Cleveland's municipal electric utility to deploy "smart house" and "smart grid" infrastructure will facilitate substantial energy management and conservation in these homes. Through an unprecedented health and wellness initiative in conjunction with the Cleveland Clinic, Metro Health, University Hospitals, and the research faculty at Case, data collected in real time in the smart homes will support early detection, intervention, monitoring, and prevention. Finally, OneCommunity is part of a coalition of science educators, gaming and software engineers, libraries and STEM (Science, Technology, Engineering and Math) high schools that is delivering peer-to-peer connectivity, peer mentoring, and at-home problem-

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[4] *See* http://www.onecommunity.org/programs/programs.aspx?id=38.

solving education to high school students, with the aim of improving graduation rates in STEM subjects.

c. Government Services

Improving efficiencies and providing enhanced services to citizens is a key objective of government entities. OneCommunity enables local governments to benefit from coordinated and centralized control of network connectivity, services, and support.

More specifically, OneCommunity has partnered with dozens of municipalities to leverage proven technologies, expand and enhance connectivity, lower costs through demand aggregation and increased regional efficiencies, improve productivity, and spur and enable innovation. OneCommunity has also assembled a diverse consortium of technology vendors to address specific government needs and to deliver best-in-class services.

For example, in May 2008, Cuyahoga County announced that it had selected OneCommunity to lead a $15 million initiative to upgrade the County's networking services and address the County's needs for connectivity, security, public safety, and county-wide shared municipal services. OneCommunity responded by developing a partnership with a number of "best-of-breed" technology and broadband providers to facilitate delivery of a range of high-quality broadband capabilities and services. The project provides high-bandwidth connectivity and secure video conferencing to more than 60 county offices and public safety locations; will provide wireless service to the Justice Center, Courthouse, and Administration Building; and will equip County employees with mobile wireless access. This project is not only enhancing the capabilities of municipalities across the County, but will also save the County $10 million over 5 years.

One of the key trends in Northern Ohio is that local governments are increasingly sharing communications infrastructure and services, including GIS, 211, 311, video surveillance, meter reading, and other services that require access to pervasive broadband facilities. OneCommunity is helping local governments to develop strategies that will enable them to benefit collectively from these services to the maximum extent possible.

d. Public Safety and Emergency Response

OneCommunity has collaborated with the City of Akron and education, health care, community foundations and private-sector partners for a 10-square-mile wireless project that will enhance public safety while providing the public with Internet access. OneCommunity did this by creating a hybrid fiber/wireless network that will simultaneously support public safety (using a 4.9 GHz spectrum) and free public wireless service. As part of this program, which is governed by a community advisory board, the City will obtain enhanced video surveillance for public safety and enhancements to its emergency communications.

Akron's public safety network will:

- Coordinate more effective responses to emergencies across departments and geographies
- Reduce crime with monitoring systems that deter unlawful activity and allow law enforcement officials to react faster

- Enable mobile safety forces to stay in constant communication with control centers, facilitating immediate commands and updates that get responders to the scene quicker
- Allow paramedics to communicate with doctors en route to hospitals.

Meanwhile, the University of Akron is working on a community services program, including help desk services, computer training, and workforce development, in conjunction with the City's community revitalization programs. In Cleveland, OneCommunity is supporting the University Circle Police Department's neighborhood public safety efforts by deploying state-of-the-art fixed and mobile public safety solutions.

e. Economic Development

Economic development does not simply happen on its own. It requires careful planning and community-wide support of strategies that attract and retain desirable businesses. Over the last few years, broadband connectivity has become one of the most important components of an economic development strategy. While the presence of robust broadband connectivity will not necessarily guarantee a community's or region's economic success, the absence of such connectivity will surely impair the community's or region's ability to compete in the emerging global economy. Like roads, electricity and water, robust broadband connectivity has become essential to economic vitality and growth.

At the same time, many communities have come to realize that the interests of private-sector providers of communications services do not always align with interests of the communities they serve. To satisfy the expectations of their shareholders and investors, private entities must generally be able to earn substantial profits (30-40%) on their investments in communications infrastructure within relatively short periods of time (3-5 years). If providers cannot meet these targets in a particular community, they will delay making new investments and continue to rely as long as possible on their aging, existing infrastructure, or they will look for other communities that offer a more favorable investment climate. As a result, communities that want to attract private-sector investments must establish policies that make themselves more attractive than the communities with which they compete in the United States and abroad. OneCommunity has developed strategies that enable communities to do so without sacrificing their own priorities.

More specifically, OneCommunity has reconciled the needs of the public and private sectors concerning the deployment of high-capacity broadband. Rather than create competition among multiple networks, OneCommunity has focused on developing an integrated, open network that is available to multiple stakeholders on a non-discriminatory basis. By creating and aggregating demand, OneCommunity also ensures that its stakeholders will collectively have sufficient "clout" to control network design and to obtain reasonable prices, terms, and conditions from vendors of all kinds, including private-sector communications providers.

Applying these strategies, OneCommunity has, since 2004, raised more than $51 million from foundations, stakeholders, and partners. It has obtained another $18 million to support community programs and initiatives that leverage broadband. It has also produced greater than $15 million in cost savings.

Examples of OneCommunity's efforts to enhance the region's broadband capacity include its partnership with local community providers, public institutions, and private-sector companies. One specific example includes a partnership with Conneaut Telephone Company (CTC), a small regional provider serving rural eastern Ohio that was greatly constrained by the cost of middle-mile access and upstream Internet access. OneCommunity collaborated with CTC to build middle-mile facilities, reducing middle-mile and Internet costs by as much as 70% and enabling CTC to reinvest its net savings in fiber-to-the-home infrastructure and facilities. In addition, CTC and OneCommunity have created a cooperative marketing relationship that enables them to offer low-cost gigabit access to government entities, health care providers, educational institutions, libraries, and non-profit organizations throughout CTC's service area.

As another example, OneCommunity recognized a need to run fiber to 107 public schools in Greater Cleveland. With the schools in financial distress, OneCommunity worked with community leaders to identify sources of funding. The Cleveland Clinic committed $10 million to the project, which served as matching dollars for $8.7 million in federal funds to build out the 18 fiber rings necessary to support the school district. OneCommunity then worked with a local cable company (Adelphia, now Time Warner) to build out the fiber, and OneCommunity purchased the equipment necessary to provide gigabit access to all 107 schools in the district. The schools now routinely conduct high-definition classes, support rich media access, and leverage advanced computer utility programs using virtual desktop strategies. All this greatly increases the quality and reduces the costs of the services available to the schools.

In yet another example, WilTel, Case Western Reserve University, and OneCommunity built much-needed fiber connecting two significant segments of the City of Cleveland in support of programs providing health care, education, and other services to underserved communities in the City. These types of investments have also attracted the interest of private-sector technology vendors that have used OneCommunity programs as test beds to develop new technologies, programs and services. This has brought in tens of millions of dollars in new investments and attracted multiple high-tech and manufacturing businesses to the community.

The passage of the American Recovery and Reinvestment Act of 2009 (ARRA) has spurred many communities in the region to request OneCommunity's support in developing proposals for federal funding of broadband initiatives. In response, OneCommunity has partnered with more than 50 communities, as well as numerous landline and wireless providers in the region, to develop a middle-mile proposal that would bring 21st century broadband into the rural communities of Northern Ohio. If the proposal is funded, this collaboration of public and private partners will improve the lives of more than 2 million rural Ohioans and will enhance the region's economic viability, affecting over 8 million people.

III. THE KNIGHT CENTER OF DIGITAL EXCELLENCE: CREATING CONNECTED COMMUNITIES

In 2007, the John S. and James L. Knight Foundation and OneCommunity launched a partnership to expand community-driven broadband access in the United States. With initial funding of $15 million from the Knight Foundation, OneCommunity helped create, and will continue to staff and operate, the Knight Center of Digital Excellence, which is supporting high-impact universal broadband access projects in communities across the Unites States. Another $10 million is available to fund these projects in the Knight Communities.

OneCommunity has built one of the largest portfolios of relationships, vendor lists, financing models, funding sources, research, best practices, successful case studies and technology profiles on universal broadband access in the country. Through the Knight Center, it is making this knowledge base readily available to communities, together with guidance materials and other resources that will assist communities to work through the challenging process of identifying and meeting community broadband objectives.

The Knight Center's program has three components:

> (1) The Connected Community Team provides communities on-site assistance in assessing their readiness, defining their needs and interests, developing their strategies, and building local capacity and ownership of the project.
>
> (2) The Resource Center, based in Akron, Ohio, serves as a central knowledge repository; develops and distributes best-practice tools, templates, and processes; develops and documents processes that aid in the management of Knight community projects; and serves as a hub for convening thought leaders on a periodic basis to focus on key issues and challenges confronting communities engaging in transformation via universal access.
>
> (3) The Digital Opportunities Challenge Fund provides a $10 million seed fund to motivate, guide, and sustain communities' efforts to develop progressive, innovative and collaborative broadband access strategies. These funds leverage local resources and reward sound local planning, as communities must demonstrate their commitment by providing their own investments with a minimum of 2:1 matching and develop a long-term sustainability plan that includes local champions for governance and plans for adoption.

Over the course of five years, the Knight Center and OneCommunity will facilitate community-driven broadband projects in "Knight Communities" across the country. Several projects are already in various stages of development in areas such as Miami-Dade, Florida; Akron, Ohio; Gary, Indiana; Milledgeville, Georgia; and Detroit, Michigan.

A typical Knight Center "Connected Community" project begins with an evaluation of the community's most pressing needs, its digital assets and deficits, and its opportunities for rapid improvement through increased broadband availability, adoption and use. These evaluations are performed by the community itself, under the guidance and with the support of the Knight Center

Connected Community Team. Because local buy-in is critical for success, the Team identifies and encourages local champions and stakeholders to come to the forefront during this stage. Ideally, a broad-based group of champions will emerge from as many community groups as possible. The Team also typically encourages the community to focus on both its current and future needs in several target areas, including economic and workforce development, education, health care, government and social services, public safety, and homeland security.

Next, the Team helps the community to develop an inclusive information and communication technology (ICT) strategy that will benefit as many community groups as possible. This includes the local government, private industry, nonprofits, education and health care institutions, and individual citizens.

The Team then helps the community to turn its ICT strategy into a concrete implementation plan. The plan must meet the community's current and future needs, and it must reflect the community's key goals and priorities. To ensure that the plan will effectively address all relevant technological, financial, legal, and other challenges, the Team makes a wealth of information, templates, and expertise available to the community, from the Knight Center's own in-house resources and outside resources.

The Knight Center Team also offers communities assistance in developing sustainable business models and in seeking funding from a variety of resources. For example, in response to the recent NTIA/RUS Notice of Funding Availability under the American Recovery and Reinvestment Act, OneCommunity and the Knight Center Team created the Knight Center Stimulus Office to assist Knight Communities to develop applications. The Center assisted Aberdeen, Detroit, Miami, Milledgeville, Northern Ohio, Philadelphia and St. Paul, and in some cases, the Knight Center targeted the Digital Opportunities Challenge Fund to provide matching funds.

Similarly, drawing on its own expertise and that of outside experts, if necessary, the Team offers communities assistance in obtaining or developing the physical infrastructure that their plans require. This includes guidance on the technologies (broadband, fiber, WiFi, WiMAX, etc.) and potential vendors.

Throughout the Knight Center's involvement with a community, it also provides access to a wealth of online resources, including an online collaborative workspace where stakeholders share ideas and update each other on their initiatives. In addition, the Knight Center's Resource Center contains an extensive collection of research, tools, daily news feeds, and other resources to help guide and support the community's efforts.

V. SOME FINAL OBSERVATIONS AND CONCLUSIONS

OneCommunity continues to make great strides toward building and deepening its collaborative efforts and initiatives within Northern Ohio. It has won numerous awards, and its well-considered and well-executed programs, coupled with its strong record of success in the field, have begun to attract widespread national and international attention. Interest in OneCommunity has mounted with its expansion into new geographic and substantive territory through the Knight Center.

We have seen many examples of technology-driven broadband projects in the United States and around the world. These projects often focus on the abstract benefits of high-bandwidth capacity and fail to do what is necessary to enable potential stakeholders to understand and take advantage of these benefits. At the same time, we have also seen a number of broadband projects that emphasize demand-side strategies, albeit at relatively low – some would say obsolete – levels of bandwidth capacity. What sets the OneCommunity/Knight Center model apart is that it combines the best features of both kinds of projects. What's more, the OneCommunity/Knight Center model also replaces traditional involvement models and distinctions (such as the distinction between public and private networks), with creative new vehicles of collaboration that have opened the door to remarkable progress.

The OneCommunity/Knight Center model not only recognizes the intimate interrelationship between supply-side and demand-side issues, but it also promotes aggressive action to address both sides simultaneously. Even more important, the model encourages communities to develop and realize visions of broadband connectivity that are big enough and bold enough to enable them to reap the full benefits of the emerging digital age.

While the OneCommunity/Knight Center model pre-dated the American Recovery and Reinvestment Act by many years, the model's underlying rationale and implementing programs are strikingly congruent with the blueprint for progress that the Obama Administration and Congress set forth in the Act. For example, the Act encourages communities to view broadband connectivity as an increasingly important component of everything that Americans will be doing at work, at home and at play in the years ahead. So does the OneCommunity/Knight Center model. The Act encourages communities to develop trans-sector strategies to use the same broadband infrastructure for as many purposes as possible – particularly for health care, educational, governmental, energy, environmental, and other critical applications – thereby obtaining the greatest value for every dollar of investment, making high-capacity networks affordable, and enhancing long-term sustainability. The OneCommunity/Knight Center model does that too. The Act also emphasizes job creation, economic development, and support for community anchor institutions, public safety, and programs that serve young people, disabled Americans, and populations that have traditionally failed to take advantage of broadband connectivity. The OneCommunity/Knight Center model advances all of these and more.

In short, OneCommunity/Knight Center's experience provides an impressive example of what communities and entire regions can do to be successful in the 21st Century. This is not to say that the model will work in all communities or even that the model will continue to be as successful as it has been in current OneCommunity/Knight Center communities. Many things could go wrong. For example, as OneCommunity/Knight Center grow and expand, they will have to overcome new management and other challenges. Building consensus among key regional and local players may sometimes prove difficult and time consuming. In some communities, the incumbents may be less enlightened and cooperative than the ones with which OneCommunity/Knight Center have been working with so far. Conversely, it is quite possible that the model will work even better in the future, as valuable lessons are learned and incorporated. The one thing we can safely say today is that OneCommunity/Knight Center model is so well designed that it has a good chance of working in many other communities, and it is certainly worthy of their attention and consideration. Furthermore, as the Federal Communications Commission and Congress develop a comprehensive national broadband

strategy, we believe that they should carefully analyze the OneCommunity/Knight Center model as a potential “best practice” for America.

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FTTH council | fiber to the home

Municipal FTTH Systems

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Municipal Fiber to the Home Deployments: Next Generation Broadband as a Municipal Utility

Updated-October 2009

The market penetration of fiber-to-the-home in North America is increasing, with connections now reaching five and one quarter million U.S. households. Fiber to the home (FTTH) is quickly becoming the broadband service of choice for consumers looking to keep pace with high-bandwidth Internet applications and home entertainment options such as high definition video on demand. What's more, this ongoing transformation to fiber-driven, next-generation networks is now a matter of strategic national importance, particularly as other countries in Asia and Europe proceed toward wiring up their communities with high-bandwidth fiber. Few people understand this better than civic leaders in many of America's outlying cities and towns, where access to the information highway can mean the difference between a future of robust economic development and one of community decline.

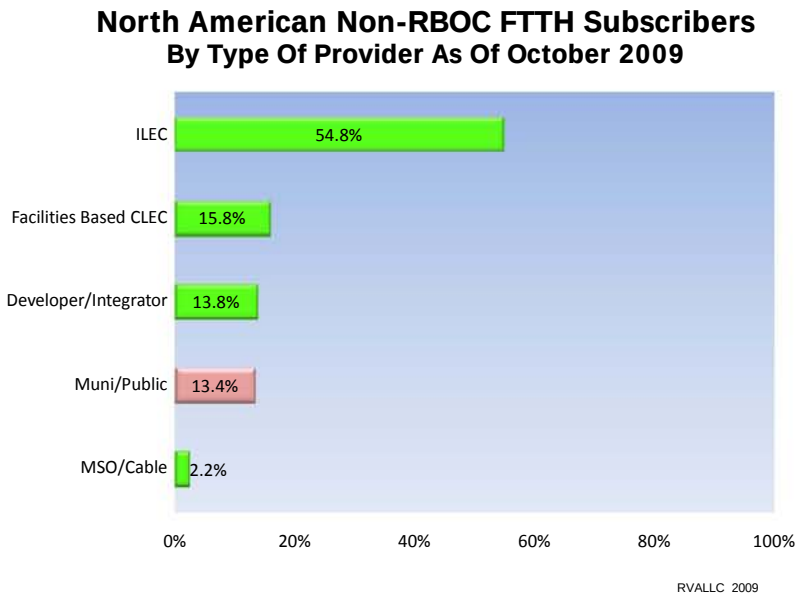
Accordingly, a growing number of municipal governments are taking it upon themselves to build FTTH networks – much in the way that they have previously built roads, sewers and/or electrical systems – as a means of ensuring that local residents have access to necessary services, in this case, the Internet connectivity for the 21st Century. These municipal deployments are usually undertaken after private service providers have declined to upgrade their networks or build such systems.

Deployments by municipalities were among the first FTTH systems operating in the United States. Though, in aggregate, they do not approach the number of FTTH subscribers of a Verizon – which currently accounts for nearly three quarters of all FTTH deployments in the U.S. – municipal systems do have a significant percentage of all non-RBOC subscribers. Further, they represent an important aspect of national FTTH deployment, namely, the option and opportunity for local elected officials and civic leaders to upgrade local connectivity - when private enterprise will not take on the job.

It is in the national interest that higher-speed networks proliferate quickly and to the greatest extent possible – and that special measures be taken to ensure that these networks can be accessed by people who live beyond the major metropolitan areas. Accordingly, it is the position of the FTTH Council that anyone who has the means and the desire to build an FTTH network should be allowed and encouraged to do so – especially when it is an elected local government that is taking the decision

to build when the private sector will not. Clearing the way for further municipal deployments of FTTH will help ensure that America is wired up for the global competition in technology and information.

Given all the above, what is the current state of municipal FTTH deployments? How are these systems faring, and what is their future? To find out more, the FTTH Council commissioned RVA LLC[1] – the leading market research firm specializing in FTTH – to survey municipal systems for the purpose of gathering first-hand status information from network operators. Its conclusions are summarized below.



1. Municipal FTTH systems are continuing to proliferate where allowed.

By definition, municipal FTTH systems are broadband communications systems run by public entities such as municipalities, counties, municipally-owned electric utilities or public utility districts, and which deliver services such as voice, television and Internet over direct fiber connections to residences. In addition, these systems typically offer reliable broadband connections to businesses, government locations and schools and libraries.

As of October, 2009, there are 57 public providers operating FTTH systems in North America. (These providers represent over 85 individual cities. A few cities have banded together to form consortiums and others are part of larger public utility districts.) In addition, to this list there are at least another 15 municipalities offering just fiber to the business.

Altogether, they serve 3.4 percent of the FTTH subscribers in North America. More importantly, they represent 13.4 percent of the non- RBOC FTTH deployments, with most of the remainder being served by small and medium-size telephone companies. The chart on this page lists FTTH subscribers by type of service provider.[2]

Systems operated by municipal and public electric utilities were among the first FTTH networks deployed in North America. Systems like Bristol, VA, Dalton, GA, Chelan County, WA, Grant County, WA, Jackson, TN, Kutztown, PA, and Reedsburg, WI all were started between 1999 and 2003. The average size of the first municipal FTTH systems was comparatively small – under 5,000 subscribers. Today, many new or expanded municipal FTTH systems are considerably larger,

[1] www.RVALLC.com

[2] It should be noted that not all municipal communications systems delivering television or Internet to area premises are FTTH. Hybrid Fiber Coax (HFC) or fiber to the business only (FTTB) systems are sometimes mischaracterized as municipal FTTH systems. (Examples of municipal networks sometimes mistakenly called FTTH systems include those networks deployed in Tacoma, WA and Marietta, GA. While these systems are generally successful, the FTTH Council does not have in-depth information on their financial performance.

and the average size of municipal deployment continues to grow. Larger cities – including Seattle, WA, San Francisco, CA, Portland, OR and St. Paul, MN – are considering building municipal FTTH systems.

A list of all municipally-operated FTTH systems in North America currently serving customers is included at the conclusion of this report.

2. More, and larger, municipal FTTH systems are under development for 2010

The success of municipal FTTH deployments in improving local economies and attracting new business has led other local governments to pursue this option. Recent FTTH bond referendums have been highly successful. The number of municipal FTTH systems will likely grow in the next two years as there appears to be a resurgence of interest in deployment by municipalities and a number of applications for stimulus funds where incumbent telephone company's are reluctant to invest in upgrading their networks. Older FTTH systems, such as that operated by the Grant County Public Utility District in Washington State, are now expanding again to cover more of the citizens in their service areas. Additional muni systems are in various stages of study, funding and development.

3. The "success" of municipal FTTH systems is substantiated by high subscriber take rates.

Based on interviews with municipal system operators and managers conducted by RVA, municipal FTTH systems have generally been undertaken in areas where it was perceived that there was little chance that private providers would initiate a fiber to the residence program in a reasonable amount of time – and where local leaders felt that having next-generation broadband connectivity was essential to the welfare of the community. (If private parties are willing to participate, municipalities have often sought to partner with these companies to help speed the introduction of FTTH to the community. One example of such a partnership has been the City of Fort Wayne, Indiana, which launched such an effort in partnership with Verizon rather than build its own city-run system.)

Municipal FTTH systems have generally been successful to date. In some cases, as expected, projects have had to deviate from their original business plans in order to respond to realities and ensure success in the field. A number of systems have far exceeded original expectations, while a few others are behind early expectations. One, Provo Utah was sold to a private company. This transaction allowed the city to retain its FTTH network, and the operator to sidestep the Utah restrictions on muni's operating communications systems. As of this printing, not a single muni FTTH system has failed.

In the case of muni systems, of which many are not-for-profit enterprises, one measure of "success" is defined as the level of their "take rate" – that is, the percentage of potential subscribers who are offered the service that actually do subscribe. Nationwide, the take rates for retail municipal systems after one to four years of operation averages 54 percent. This is much higher than larger incumbent service provider take rates, and is also well above the typical FTTH business plan. Deployments usually require a 30-40 percent take rate to "break even" within planned payback periods.

4. The effect of municipal FTTH systems on local economic development is significant

There is evidence that municipal FTTH systems positively impact local economic growth. Many FTTH cities attribute the success of efforts to retain and/or facilitate the expansion of businesses at least in part to the lure of their local FTTH communication infrastructure. Examples include information-intensive companies such as Google, MSN and Yahoo. Specific examples of large employers moving to communities in part because of the local FTTH system have been noted by many FTTH cities. The chart on the next page lists new business relocations that were attributed in part or in full to availability of FTTH as the community communication infrastructure.

According to community leaders interviewed, the attracted companies believe that local fiber to the premise systems allow them to do business more efficiently online with less cost. The availability of redundant fiber services from local providers is often also mentioned as a plus, as is the prospect of being able to expand quickly to non-adjacent buildings while still being tied to together via a virtual private network. The ease of employees working from home is often mentioned by relocation decision makers as a positive factor. RVA consumer research has shown that FTTH subscribers work from home significantly more often than those with DSL, wireless or cable modem connections, because of the speed and reliability of their connections.

Municipalities Reporting Plants Locating – in Part Because of FTTH

Auburn IN	Cooper Tire Expansion
Bristol TN	Media General
Bristol VA	Northup Grumman CGI
Chelan County WA	Yahoo
Douglas County WA	Sabey Corporation
Grant County WA	MSN (Microsoft) Ask Jeeves Intuit
Independence OR	Metal fabrication companies
Kutztown PA	Film production companies
LENOSIWSCO VA	Data Centers
Mason County WA	Louisville Slugger Sims Technology companies Online engineering firms
Morristown TN	Colgate Palmolive
Powell WY	Alpine Access Virtual Call Center
Windom MN	Trucking companies

(There are even documented cases of important employees having dedicated fiber lines between home and office in municipal FTTH cities.) Finally, interviewees noted the importance of improved quality of life for employees thanks to the availability of high bandwidth video and Internet services to nearby homes and schools.

Many municipalities also report an increase in home-based businesses because of FTTH – with many of these businesses bringing in revenue from outside the region. Specifically mentioned were examples of businesses requiring very high bandwidths for tasks such as scientific consulting and video editing.

Several municipalities also noted increased efficiency in city government because of the municipal fiber system.

Examples of such productivity improvements have included: systems to monitor remote inventories more efficiently and systems to reduce physical transport costs such as having prisoners face judges via video conferencing from detention facilities (especially for "first appearances"). Productivity enhancement has also included automated meter reading and the ability to remotely turn on or off the utility for non payment such as the system currently being implemented by Clarksville, TN.

Though more difficult to quantify, the "green" advantages of reduced costs from more telework have also been cited by those interviewed, including the anticipation of less road and bridge maintenance, and lower automobile pollution for the community.

5. Municipal FTTH systems have a positive impact on overall FTTH and broadband use.

One important early result of municipal FTTH systems was to help prove and incubate the technology of direct fiber optic access. From 2000-2004, municipal providers represented some of the largest FTTH trials at the time, and some RVA has interviewed feel that FTTH could not have been implemented as quickly by private providers without this in-the-field experience.

Municipal FTTH systems may influence overall FTTH and broadband penetration. Though the difference does not rise to the level of statistical significance at 95 percent confidence, states that do not restrict public involvement in broadband and telecommunications services generally have higher overall FTTH and broadband penetration than do states with prohibitions of or restrictions on municipal broadband.

It should also be noted that restrictions on municipal broadband are correlated with lower take rates for these systems. As mentioned above, states that mandate open access systems (i.e. Utah, Washington) currently have lower take rates for FTTH systems because of the mandated two-tier operation method.

6. CONCLUSION: Municipal FTTH Systems are an important element of national FTTH deployment and should be encouraged.

Municipal FTTH deployments are alive and well – and expanding on early pioneer success stories. Current deployments can point to local economy improvements as well as profitable operation and early pay-back of bonds.

States with regulatory barriers tend to trail in overall broadband penetration. Removal of legal and regulatory restrictions on municipal operation of communications networks will accelerate broadband investment, improve subscriber penetration rates and enable local governments in many outlying areas to ensure that their citizens can be part of the high-bandwidth future.

While municipal systems are beneficial and, in general are profitable, there still are restrictions in 14 states limiting or prohibiting such systems. Legislation has been introduced in both Houses of Congress to preempt state and local laws which currently ban the provision of broadband services by public entities. The Council encourages the passage of the Community Broadband Act or similar legislation, which frees municipalities in those 14 states to invest in next-generation networks.

North American Municipal Systems Currently Serving Customers with Fiber to the Home – October 2009

SYSTEMS SERVING LARGE PERCENTAGE OF SERVICE AREA (41)

Auburn IN
Barnesville MN
Bellevue, IA
Bristol TN
Bristol VA
Brookings, SD
Burlington VT
Chattanooga TN
Chelan PUD WA
Churchill County, NV
Clarksville TN
Crawfordsville IN
Dalton GA
Douglas County PUD WA
Gainesville FL
Grant County PUD WA
Jackson TN
Kutztown PA
Lafayette LA
LENOWISCKO VA
Lenox IA
Loma Linda CA
Marshall MO
Mason County PUD WA
Mi-Conection NC
MINET OR
Morristown TN
North Kansas City MO
Phillipi WV
Powell WY
Pulaski TN
Quincy FL
Radium Hot Springs BC
Reedsburg WI
Rochelle, IL
Sallisaw OK
Shawano WI
Spencer IA
Tullahoma TN
UTOPIA UT
Wilson NC
Windom MN

SYSTEMS SERVING LIMITED FTTH AREAS, OR JUST STARTING (16)

Abbington, VA
Ashland, OR
Baldwin, WI
Cedar Falls IA
Clallum PUD WA
CMON BC
Crosslake MN
Danville VA
Glasgow KY
Holland MI
Ketchikan AK
Monticello MN
Pend Oreille PUD WA
Sylacauga AL
Taunton MA
Tifton GA