TOMPKINS COUNTY LEGISLATURE

Tompkins County Broadband Committee

Interim Report

JUNE 21, 2011

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Tompkins County Broadband Committee
Interim Report

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Tompkins County Broadband Committee

Interim Report

June 21, 2011

Introduction:

In August of 2010 the Tompkins County Legislature established a broadband committee charged to, **"…advise the Tompkins County Legislature on how to best promote broadband technology countywide, to address the needs of unserved and underserved residents, foster public-private innovation, enhance existing capabilities, and support good governance."**

Pat Pryor, County Legislator, was appointed Chair of the committee. Members of the public were invited to apply and from the long list of highly qualified applicants, nineteen applicants were selected. David McKenna, TC Legislator, was appointed as Vice-Chair. Staff support has come from the County's Planning, Information Technology and Emergency Response Departments and from the County Attorney. Primary staff support has been by Andrea Gibbs, Administration Specialist and Paula Younger, Deputy County Administrator. For a complete list of committee members and staff please see Appendix I.

In addition to those on the committee, various interested individuals, including representatives from Congressman Maurice Hinchey's office and Assemblywoman Barbara Lifton's office, have attended meetings. Local service providers have shared information necessary to determine where service is currently available and where it is needed. The presence and contributions of these individuals has been greatly appreciated.

Overview:

A number of events occurred that, taken together, led to a heightened recognition locally of the need to assess our county resources for high speed access. At both the state and national level the need for universal access has received increasing recognition, with concomitant funding opportunities available to communities ready to move forward.

We in Tompkins County have watched as other upstate communities have launched major broadband initiatives. Some of these projects have demonstrated success, while others continue to demonstrate the undeniable need for more creative solutions to the expansion of broadband to rural communities. For example, Ontario County has, after three years of

construction, completed a 200-plus-mile fiber ring under the management of a public-benefit corporation.

Following the Ontario County design, in 2010 the Southern Tier Eastern Regional Planning and Development Board (STERPDB) created a plan to construct an open access fiber network, making connectivity available across the region to a variety of public and private users. With the hope of using federal stimulus dollars to support the project, STERPDB asserted that a dark fiber backbone would make the "last mile" more economically feasible and provide opportunity for more investment in last mile technology. STERPDB's plan involved the majority of its six member counties, and like Ontario County, included the concept of a Local Development Corporation (LDC) to serve as the governance structure. Unfortunately, STERPDB's application to the National Telecommunications and Information Administration (NTIA) for broadband stimulus funding was among the many proposals that were not approved. However, STERPDB intends to regroup and re-strategize a phased approach for broadband and telecommunications funding.

A project in Monroe County includes 300+ miles of fiber and will provide services for an area in excess of 750 square miles. The project is a collaboration between municipal and private entities and will eventually become the hub to integrate 8 counties in Western NY State.

To the north of us, St. Lawrence, Jefferson and Lewis Counties have moved ahead with a 3-county, 400-plus mile system under the auspices of the Development Authority of North Country (DANC). DANC also partnered with the Albany-based ION HoldCo LLC to win a major federal broadband stimulus grant of $39.7 million to build a 1,300 mile broadband fiber network for 70 underserved communities. The ION Upstate New York Rural Broadband Initiative includes construction of 10 new segments of fiber optic, middle-mile broadband infrastructure that will bring broadband access to an estimated 250,000 households and 38,000 businesses.

On the national level, initiatives such as the 2010 Google Inc.'s "Fiber to Communities" project and the Federal Communications Commission (FCC) unveiling of *Connecting America: The National Broadband Plan* for improving broadband internet access throughout the United States were a wake-up call to local officials and community partners of the need to assess present levels of broadband access and consider options for achieving universal access in Tompkins County.

Since the committee began its work a number of county residents living in rural parts of the county have contacted us to let us know of their need for access and their interest in the work of the committee. Some contacts have been from people who need to be able to work from home. Others are from parents whose children need access for educational equity. These

unsolicited communications from residents confirms for the committee the importance of its efforts.

Additionally, the importance of and interest in the topic of broadband access was clearly demonstrated at our meeting of April 25, 2011 which brought out an audience that included a broad array of representatives of local educational institutions, service providers, elected officials and members of the public.

The Broadband committee began meeting in November of 2010. Initial discussions centered on the focus areas designated in the Charge to the Committee:

- Economic Development
- Government Performance
- Public Safety/Emergency Medical services
- Telehealth
- Education Equity
- Energy & Environment
- Rural Broadband Access
- Civic Engagement.

The consensus that emerged from those discussions was that the focus areas could best be investigated by the formation of subcommittees that would address the following key subjects:

- Level and Quality of Access
- Marketing, Education and Awareness
- Funding Possibilities

Additionally, the committee set for itself the mission to: **prepare recommendations that would support the county in achieving the goal of affordable, universal FCC quality Broadband services for 100% of the county.**

Committee Work to Date:

Subsequent to the initial discussions described above, and in the interest of keeping abreast of the current status of broadband issues at the state and national levels, the Broadband committee decided to invite consultants to speak at our monthly meetings. Names were suggested and Paula Younger, Deputy County Administrator, organized the following special presentations:

Cellular Evolution and the Road to 4G. At the Committee's March meeting, Thomas D. Ball, Manager of Voice Engineering for Cornell University offered a presentation on *Cellular Evolution and the Road to 4G.* Mr. Ball focused on the progression of cellular technology, from basic analogue to digital ("3G"). He provided a briefing on industry terms, particularly as these relate to service expansion, pricing, and projecting revenue. Additionally, Mr. Ball's presentation offered a glimpse at "4G" technology in our area.

Broadband Programs at the State Level. In April, the Committee welcomed two representatives from New York State government to talk about state-specific initiatives. David Salway, Director of the Enterprise Program & Performance Management Office (EPMO) and the state's Broadband Program Management Office (BPMO) provided a summary of the programs which are underway at the state level and federal broadband initiatives that impact our state. He also gave some details on ways communities can assess local broadband needs.

William Johnson, Deputy Director for the state Office of Cyber Security, spoke about his responsibilities overseeing statewide Geographic Information Systems (GIS) coordination activities. These activities include the State's broadband mapping program being conducted under a grant from the National Telecommunications and Information Administration. Mr. Johnson gave a "live" demonstration of the Web-based mapping program, which not only shows where there are gaps in broadband availability, but also what types of broadband technology are deployed, levels of competition, and maximum speeds.
**It should be noted that it became apparent as a result of Mr. Johnson's presentation that the state's mapping program used methodology that, in the opinion of many members of the audience, led to inflated information regarding the extent of existing broadband coverage, particularly in rural parts of NY State. The implications of the inaccuracies of the state's mapping program will be addressed in greater detail at a later date.*

Broadband and Telecommunications in Rural Communities*.* In May, the Committee received a presentation by Joe Starks, President and founder of ECC technologies. Mr. Starks offered a review of broadband and telecommunications issues facing rural and underserved areas, giving attention to the roles of communities and local municipalities as they try to close the gaps. He also provided an overview of broadband expansion activities underway in the Finger Lakes and Southern Tier Regions, including the recent tri-county collaborative—known as the Southern Tier Network—along with fiber-optic cable manufacturer Corning, coming together to build an estimated $12.2 million middle-mile network that will enable access to the highest speed broadband connectivity available to local governments, businesses, and anchor institutions in Chemung, Schuyler and Steuben Counties.

At the same time that the above presentations were occurring during our regular monthly meetings, subcommittees were meeting according to their own scheduling. What follows in this interim report are status reports from each of the three subcommittees.

**In reading the interim reports from subcommittees which follow, please keep in mind that at this point in its work, the Broadband committee as a whole has not yet synthesized the work of the subcommittees, nor has it come to any agreed upon recommendations.*

First Subcommittee Report: Level and Quality of Access (technical/cost)

Scott Brim, Chair; Jon Bosak; Dave McKenna; Sid Boswell; Hurf Sheldon; Chuck Bartosch

The "Level/Quality of Access" Subcommittee is addressing the problems associated with the level and quality of access to broadband service in Tompkins County in three phases.

• The first step will be to produce a "gap map" of the County, showing with a reasonable level of confidence where in the County broadband access is not available, and to document those gaps. Once the gap map is ready, the subcommittee will be better able to move to the next step.

• The second step will be to evaluate and make recommendations as to appropriate technologies for providing broadband access in unserved areas. See list of candidate technologies below.

• The final step will be to estimate the total cost for each promising technology in those unserved areas.

At this point we have all of the raw data to produce the "gap map" and are doing so. Chuck Bartosch is preparing a progress report on the mapping effort; the next step will be costing.

Regarding the technology possibilities, here is a brief summary of our preliminary take on each:

• Fiber to the home would meet broadband requirements very well but would be expensive to deploy.

• Hybrid fiber/coax (fiber to localities and coaxial cable to residences) would work well, but (1) there are cost issues with extending it to unserved areas, and (2) current central equipment is not up to the task of providing faster upload speeds, limiting some newer applications, especially better quality video conferencing, self-broadcasting video, etc. Upgrading equipment to the next generation standard would be somewhat costly for the cable company.

• The above is also true of fiber to the locality and wireless distribution from there.

• Fixed wireless radio distribution, with local delivery by wired or wireless, would not provide as much bandwidth as a fiber buildout, but can be competitive with hybrid fiber/coax. A preliminary estimate, confirmed by our research as well as the State presentation to our group in April, suggests that fixed wireless would be the most cost-effective option for meeting current requirements. There are already four operators in the County.

• Broadband over power lines is technically incompatible with the North American power system and hence is not an option here.

• DSL cannot meet the requirements for broadband without extensive and unlikely infrastructure development.

• Cellular ("4G") can meet broadband requirements if the infrastructure is intensively deployed, but deployment by the cellular operators seems unlikely in the near future because the return on investment in 4G for rural areas is low. Also, current technology apparently has issues with delay and delay variation that make it difficult to use interactively. Some communities in other parts of the world have built their own cellular networks; this possibility could be explored, but its accomplishment would require us to hire a qualified person to develop a business case, execute the plan, and run the business, and it would be difficult to make a for-profit business case for the infrastructure needed in outlying areas.

Second Subcommittee Report: Funding (Partnerships/Collaborations)

Gary Reinbolt, Chair; Mike Pliss; Victor Rendano; Larry Berger; Dave Vernon; John Levine

Summary

At the onset, the funding committee identified several opportunities to generate necessary revenue for a broadband initiative or a collaboration that would reduce operating costs. As we investigated the options, we found there was more ambiguity than firm fact for many of these options. Some, such as those sources that require a political act, will require long-term positioning of broadband access as a social and economic necessity. Others, such as State and Federally based grants, subsidies, and incentive programs (the stimulus money as an example) suffer from issues that will be listed in detail below. There are models in existence, some very close, which may be useful to consider. However while those provide a successful process to guide us, much of the funding used to execute them is now no longer available. Complicating the issue even further, the technical parameters, scope of the project, and most appropriate technology to achieve it are in a state of constant change and will need to be decided when the actual decision for the build out is made. That decision is probably at least five years in the future, so an assessment of the most appropriate funding mechanism will need to be made much nearer to the actual event. So at the moment the committee's recommendation would have to be a firm "it depends".

Proposed methods:

1. Traditional governmental revenue options:
   Tompkins County always has available to it the traditional revenue methods which governmental units always have, those being bonding, tax increase, and tax abatement/incentive for providers. In the current economic climate, it would take a substantial amount of political will in order to utilize these options. There is the necessity of making the case that minimal broadband services (using the FCC bit rate standard) are an economic and societal necessity.

2. Formation of a municipal company or other form of corporation:

   Initially the committee thought it would be useful to investigate rural municipal utility companies as a model for an operating structure to provide broadband. Upon

subsequent investigation, particularly of the two already operating broadband projects adjacent to Tompkins County, creating an entity which will be in direct competition with current providers has been found to be counterproductive. Current thinking now is that if a corporation option is pursued, the corporation should be a not-for-profit entity providing a service that is not in competition with providers already performing that service. If this model is pursued, it is important, in the opinion of the committee, to make certain that a "level playing field" is maintained, and there is no unfair competitive advantage derived from the nonprofit status.

3. <u>Using regulatory power to compel current providers to provide service not currently economically viable:</u>
   The initial thinking focused on governmental units inducing providers to provide service which isn't economically viable utilizing licensing and other regulatory issues such as cell phone tower permits and land use restrictions. Upon a brief investigation, this concept was found to have no legal standing. However, also in this category, currently many of the franchise contracts for cable companies (who are a large segment of the current provider landscape) are up for renewal by town and village administrative bodies in Tompkins County. It has been suggested that this may be the venue in which to insert a public service clause to extend services to underserved individuals. This has precedent in the early days of cable franchises when municipalities often required public access channels, service the schools and governmental units, and other "public good" activities in exchange for granting a virtual monopoly. While renewal for many of these providers has become a pro forma matter except for adjusting prices upward, perhaps more vigorous pursuit of this "public good" concept should be entertained in the next round. Tompkins County Council of Governments will be making initial inquiries pursuant to this at its next meeting (June 23, 2011). It has been suggested that perhaps some initial funding may be derived from pooling a portion of the franchise fees remitted to the municipal units to fund a build out to underserved populations. No research has been done on this, so it is merely speculative at the point at which this report is being written.

4. <u>State and federal grants and/or economic awards:</u>
   There are several programs and methods in this category that may be useful for funding an initiative to provide service where there is no economic incentive for commercial providers to do so. Currently, each of them has substantial impediments which must be cleared before funding can be secured.

- The Rural Utilities Service grant program, administered under the Agriculture Department, may be an option. Currently, however, that granting process refers to serving areas not served as indicated by the National Broadband Map that has been issued by the National Telecommunications Infrastructure Agency. This map is based on census data, not on actual coverage performance, and therefore many of the areas in Tompkins County that are de facto underserved are listed as already having broadband available. This map is widely recognized by industry experts as being incomplete, insufficient, and erroneous. Many are laboring, including our own technical standards committee, to do field-testing and provide empirical data to correct this deficiency. However a revision of the map is probably at least a year away.
- The second program, the Universal Service Fund, was initially created to bring telephone service to rural households on the model of the Rural Electrification Act that brought electricity to the same households. There have been several hearings and proposals as to how to repurpose the ongoing revenue stream (there is a charge for this on your telephone bill that you pay every month, whether you know it or not, to underwrite the cost to the provider). However, unfamiliarity with the technologies, too broad a range of options available, a lack of definable standards as to what constitutes acceptable service, and the fact that many large and powerful players derive substantial revenue from this will probably prevent any resolution for the foreseeable future.
- The Appalachian Regional Commission, still very active as an agency that disburses federal money, has funded a consortium based in Corning. However, this agency has chosen to work through Regional Economic Planning Commissions, and Tompkins County does not participate in any of these bodies. Perhaps this position should be reconsidered.
- And finally, in the recent past there were various stimulus and incentive programs at both the state and federal level that aided with the build out of two systems adjacent Tompkins County (that are now considered to be viable models of how to accomplish comprehensive broadband outreach). As it currently stands none of these programs are currently available, and with the current economic climate and substantial revenue curtailment on the state level due to declining tax revenue, this would be best held as a target of opportunity should any of these programs be revived, not as a reliable or predictable source of revenue.

5. <u>Utilizing partnering and pre-existing networks to achieve amelioration of upfront capital expenditures and subsequent operating cost:</u>

   It was initially suggested that perhaps using the BOCES network, NYSERNet, or some of the installed dark fiber that is present in Tompkins County might provide some reduction in costs of delivering services to the unserved/underserved populations. It is

difficult to predict whether this option may prove useful or not until technical specifications are set. However, one thing is clear, the fiber project in the Southern Tier based in Corning, and Ontario County's broadband project are already funded, completed, and operating and they are not interested in acquiring partners at this time. It will be useful to make certain that we connect to these networks in the final execution, but for now the assumption should be that Tompkins County will be going this alone. There may be an opportunity for a public private partnership, such as the Google model communities initiative that was available a couple of years ago. But these are not predictable, will often require matching money, and are usually designed to serve the needs of the commercial entity rather than the public partner.

Although no concrete recommendations can be drawn from research thus far, it is clear that this initiative will require substantial funding, and a plan should be put in place, at least in a draft form, so that should an opportunity for funding present itself, the county is ready to move forward with an application.

Third Subcommittee Report: Marketing, Awareness and Education

Members: Tracy Mitrano, Ric Dietrich, Susan Currie, Marcia Lynch, Ed Swayze, Ted Crane(guest)

The Marketing, Awareness and Education subcommittee has met monthly since February, 2011. Our initial discussions included gathering information about where broadband is located so that we can plan for education including public forums about what is available. We agreed there is a need to investigate what people want to do with the technology and develop information literacy options/plans.

We have discussed creating a message to promote awareness for both the need for broadband or wireless internet access and the importance of access for quality of life issues, particularly for very rural areas of the county. For those very rural areas, we need to find out how aware residents are about connectivity issues and what they would like to have. We also need to make sure we include as part of the message the importance of access to the internet and the potential for them, particularly the effects on schoolwork. We had a discussion of the various methods of equipping people, including mobile wireless devices. One major point for focus groups is the perception of availability and affordability. Do people understand what they are not getting by not having access?

One way to educate, raise and promote awareness is to organize focus groups utilizing expertise in the community (educators including school district superintendants). Locations for focus groups included county libraries and schools. As we plan for focus groups, we need to identify questions and to identify a facilitator. Our planned focus groups and public service announcements will be distributed through the county's official announcements from the Broadband Committee.

Next steps for the MAE subcommittee:

- Invite educators and others to talk about organizing focus groups
- Invite Paula Younger, Deputy County Administrator to meet with our group to discuss the roadmap for where we are going and what we want to accomplish.
- Identify/list the information we want
- Decide how long the active discussions will be
- Develop questions to prompt discussion
- Make sure questions and discussion points are clear and understandable

Locations for focus groups included town halls, libraries, schools and community centers. We'll need to communicate by sending information about what we are doing—identify where to send the PSA about the focus groups. Some suggestions included having information about the committee and the focus groups at the list above as well as fire halls, relevant websites such as the Human Services Coalition website and others.

Next Steps:

Next steps for the Broadband committee will include:

- Completion of any unfinished subcommittee work such as the "gap map", with the understanding that some work, such as focus groups, will be ongoing.

- Synthesis of subcommittee material and discussion leading to conclusions and recommendations.

- Presentation to the Legislature of a final report that likely will include next steps for the county in moving ahead with a decision-making process leading to the committee goal of affordable, universal FCC quality Broadband services for 100% of the county.

Appendix I

Tompkins County Broadband Committee Membership

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Appendix II

Resources

Marketing, Education and Awareness Subcommittee:

1. TechSoup (technology resource website for not-for-profits) http://home.techsoup.org/pages/default.aspx

2. The Public Library Funding and Technology Access Study2009-2010 Libraries Connect Communities: Public Library Funding & Technology Access Study

3. NY State Library site for Broadband Technology Opportunity Program (BTOP) is available at http://www.nysl.nysed.gov/libdev/btop/

4. Pew Internet and American Life Project http://www.pewinternet.org/topics/Broadband.aspx

5. Visser, M. and Ball, M. A., *Information Technology and Libraries*, (December 2010), "The Middle Mile: The Role of the Public Library in Ensuring Access to Broadband" http://www.ala.org/ala/mgrps/divs/lita/ital/292010/2904dec/visser.cfm .

6. Comscore (a digital marketing company that measures the digital world) http://www.comscore.com/

7. Pew Internet & American Life Project report on how mobile devices are changing environment communications http://www.pewinternet.org/Reports/2011/Local-mobile-news.aspx

Resources on Broadband Development:

U.S. lagging in broadband adoption, speed: FCC report
http://www.reuters.com/article/2011/05/20/us-usa-broadband-adoption-idUSTRE74J7D920110520

http://www.washingtonpost.com/wp-dyn/content/article/2011/02/10/AR2011021005765.html Obama touts plan to get wireless Internet to 98 percent of U.S.

http://www.nytimes.com/2011/02/18/us/18broadband.html Digital Age Is Slow to Arrive in Rural America By KIM SEVERSON

FCC Related Resources

Seventh Broadband Progress Report http://www.fcc.gov/reports/seventh-broadband-progress-report

http://www.tmcnet.com/usubmit/2011/05/21/5526089.htm approximately one third of Americans - more than 100 million people - don't subscribe to broadband. America's broadband adoption rate is approximately 67 percent - compared with over 90 percent in South Korea and Singapore. Mobile broadband adoption has accelerated since 2009. However, Pew's Internet and American Life Project pointed out last year that home adoption of broadband Internet access service appears to have "slowed dramatically" in recent years.

Demand Congress Investigate FCC Commissioner Baker's Conflict of Interest http://act.credoaction.com/campaign/fcc_baker/index2.html?rc=fb_share1

All about the new utility pole attachment rules. http://beta.fcc.gov/rulemaking/wc-docket-07-245-gn-docket-09-51

Technical Advisory Committee: Eight easy ways the FCC can help fuel broadband deployment http://connectedplanetonline.com/IP-NGN/news/Technical-Advisory-Committee-Eight-easy-ways-the-FCC-can-help-fuel-broadband-deployment-0425/

FCC Commissioner slams N. Carolina attack on city-owned broadband http://arstechnica.com/tech-policy/news/2011/04/fcc-commish-slams-north-carolina-anti-muni-broadband-bill.ars

FCC: Mobile Future Forum recap and link to Chairman's speech, The Clock is Ticking http://bit.ly/gDjvcu

http://blog.connectedplanetonline.com/unfiltered/2011/03/11/newly-minted-law-school-grad-questions-accuracy-of-national-broadband-map/ Newly minted law school grad questions accuracy of National Broadband Map

http://blog.connectedplanetonline.com/unfiltered/2011/03/11/newly-minted-law-school-grad-questions-accuracy-of-national-broadband-map/

http://www.telecompetitor.com/usf-reform-battle-lines-being-drawn/
Universal Service Fund reform - battle lines being drawn

http://www.verizonwireless.com/b2c/CoverageLocatorController?requesttype=NEWREQUEST
Verizon's maps show near ubiquitous coverage in Tompkins County. See the map below from URL

FCC to claim some broadband regulatory power
The U.S. Federal Communications Commission will move to partially reclassify broadband as a common-carrier service in an attempt to move forward with net neutrality rules and its national broadband plan, an official there said Wednesday.

The FCC launched a rulemaking proceeding aimed at revising its long-standing Universal Service Fund (USF) with the goal of expanding the nation's wireless and wired broadband Internet network to rural America

http://broadcastengineering.com/news/fcc-net-neutrality-rules-receive-claims-of-violations-20110127/ reviews net neutrality

http://www.theglobeandmail.com/news/technology/tech-news/fcc-to-use-phone-subsidy-fund-to-pay-for-broadband/article1898998/ What would a fair Internet payment system look like?

Misc Resources

http://www.cracked.com/blog/5-reasons-internet-access-in-america-disaster/ Essential need for Internet access

http://www.un.org/apps/news/story.asp?NewsID=38623&Cr=&Cr1=
UN report shows broadband potential for economic and social development broadband

http://www.smh.com.au/technology/technology-news/internet-20-your-guide-to-the-national-broadband-network-20110603-1fj9j.html?from=smh_sb The book delves into a world in which faster broadband is ubiquitous. It gives a fascinating visualisation and overview of what an NBN-connected world will look like, from teachers videoconferencing with classrooms in other countries and patients being diagnosed from the comfort of their own homes to high-definition video embedded in a home's walls that can be streamed from the web and changed in real time.

http://www.theithacajournal.com/article/20110520/NEWS01/105200322/Gillibrand-promotes-new-emergency-network?odyssey=tab%7Ctopnews%7Ctext%7CFRONTPAGE The legislation would provide for a national broadband network to allow for all New York's police, fire and emergency medical service departments to communicate, along with national emergency personnel and organizations in a variety of ways, including voice, text and photograph sharing.

TelecomTV | News | 46 per cent of US households don't meet National Broadband goals http://www.telecomtv.com/comspace_newsDetail.aspx?n=47637&id=e9381817-0593-417a-8639-c4c53e2a2a10

Interesting policy resource for rural broadband issues http://www.ruralstrategies.org/rural-broadband-policy-group

A Guide to Broadband Funding Opportunities How to Navigate the Grant Process Compliments of U.S. Senator Kirsten E. Gillibrand http://gillibrand.senate.gov/imo/media/doc/BroadbandGuidebook2.pdf

Good info on the broadband requirements for rural halthcare. http://www.nosorh.org/policy/files/041811fcc_comments_usf_rules.pdf

Axcess Ontario Officially Complete | community broadband networks http://www.muninetworks.org/content/axcess-ontario-officially-complete

Schuyler county | community broadband networks http://www.muninetworks.org/taxonomy/term/592

Broadband Internet coming to rural parts of Southern Tier - YNN, Your News Now http://ithaca-cortland.ynn.com/content/533530/broadband-internet-coming-to-rural-parts-of-southern-tier/

In Google's announcement, it states that Google has "signed a development agreement with the city, and we'll be working closely with local organizations, businesses and universities to bring a next-generation web experience to the community." http://www.zdnet.com/blog/networking/no-broadband-for-you-you-or-you-kansas-city-wins-google-fibre/893

If the broadband network is fully built out - not an inexpensive proposition - there will still be the challenge of helping those who cannot afford it and, along with that, there will be the challenge of convincing those who aren't as interested in life online that broadband is critical to their future - the key to that national transformation President Obama has outlined. http://www.pbs.org/newshour/rundown/2011/03/broadband-access-exploring-us-connectivity-by-community-type.html

Currently there are 133 US cities that have community broadband. This map shows you where they are. The red markers on the map are FTTH (Fiber To The Home), and yes that means ridiculously fast/awesome/super-cool/super-good access is there. How good? Chattanooga, TN has a 1Gbps network in operation right now. While true it's ridiculously expensive, this point is *they have it*. http://www.pcmech.com/article/community-broadband-is-on-the-rise/

Building a Better Broadband Map, Helping Businesses Make Better Broadband Choices. “That's where Bandwidth.com has stepped in, with its own broadband map - available at Broadband.com - that offers a lot more of those missing details, including some crucial ones: how much does broadband cost and what speeds do you actually get.” http://www.readwriteweb.com/biz/2011/03/building-a-better-broadband-ma.php

Broadband Connectivity, New Jersey Leads Tri-State Region (#NTIA #FCC #Broadband) | NYConvergence.com http://t.co/sQCLJLb

http://www.pcworld.com/businesscenter/article/221974/lightsquared_signs_up_open_range_for_rural_service.html LightSquared Signs up Open Range for Rural Service - PCWorld Business Center

BROADBAND MPEG-4 Migration Should Be Spectrum Plan Broadcasters Can Get Behind - 2011-03-08 22:40:00 | Multichannel News http://t.co/zsaagw0

http://www.articlesbase.com/internet-articles/what-is-before-4g-and-what-is-after-4g-2181877.html nice entry level article explaining 1g, 2g, 3g, 4g and referencing the next big thing...5g:

http://www.theglobeandmail.com/news/technology/business-technology/duncan-stewart/what-would-a-fair-internet-payment-system-look-like/article1901503/singlepage/

"Why would you want ultra-fast broadband at home?"

<http://www.google.com/publicdata/overview?ds=z6q5492nj009fe_> has a way to look at broadband performance info for the world. There's also a video that goes with it: <http://www.youtube.com/watch?v=RbfuIyNmYiM>

www.nyspeedtest.org/testyourspeedstep1.php - to run the test and see what level of service you've actually been experiencing; it's at

Case Studies

http://www.muninetworks.org/content/axcess-ontario-middle-mile-network-wins-award Axcess Ontario is an *open access middle mile* network built without any federal loans or grants. They wanted to invest in themselves and have succeeded. The network serves multiple private sector telecom firms, including Verizon Wireless - a fact that should be recognized in an age when some would have us believe the public sector should never be involved in this essential infrastructure

http://voicendata.ciol.com/content/news1/111060604.asp Rural Australia settles for download speeds of up to 12Mbps and upload speeds reaching 1Mbp

Belarus opts for fiber to the home, a publicly-listed global provider of telecommunications equipment and network solutions, today announced it had won BelTelecom national broadband network project in Belarus. Under the contract, ZTE will use GPON technology to design and deploy a nationwide Fiber-to-the-Home (FTTH) network for BelTelecom. http://www.efytimes.com/e1/63757/fullnews.htm

http://www.baltictimes.com/news/articles/28804/ TEO has claimed the FTTH (fiber-to-the-home) installations, which will replace DSL technologies, would allow customers of the company to receive net speeds of 300 Mbps, higher than much of the technological world, at no extra cost

http://news.cnet.com/8301-30685_3-20067540-264.html**Europe gets new broadband satellite option** The lightweight plan costs 25 pounds or 30 euros ($43) per month, has download speeds of 6Mbps and upload speeds of 1Mbps, and has a 4GB limit. At the high end, costing 100 pounds or 100 euros ($144) per month, the download speed is 10Mbps, upload speed is 4Mbps, and the monthly allowance is 25GB

"Chattanooga is what the Internet will look like in 10 years. We're 10 times faster 10 years sooner than the goals established in the National Broadband Plan." Harold DePriest, President – EPB. http://gigaom.com/broadband/take-the-chattanooga-choo-choo-to-the-internets-future/

Check out the active projects page: http://www.ruralstrategies.org/projects

Interesting middle mile project http://www.muninetworks.org/content/idaho-town-builds-incremental-open-access-network

STC_BBProject_Release_FINAL_2-11-11_1.pdf LDC received an Appalachian Regional Grant to fund an in depth survey of tri-county stakeholders (Chemung, Schuyler, and Steuben

Counties, School, BOCES, Hospitals and residents) to define BROADBAND needs for the area. The Survey data has been in valuable in applying for additional funding. The survey data was extremely useful to qualify the LCD initially for ARRA Federal Recovery Funding, but later due to lack of federal funds, was declined. At this point the LDC approach Corning for $9.7 million grant (awarded) and later matched by $2.2 million in tri-county funding; enough to build over a 300 mile fiber loop that will when completed connect to both the Ontario County fiber network and the Broom County fiber network. The LDC will own all the fiber in the loop and will utilize a combination of existing dark fiber and new fiber. Almost all fiber will be on telephone poles and not be buried (too expensive).