



Connecticut Broadband Internet Coordinating Council

March 11, 2010

Sen. John W. Fonfara, Co-Chair
Rep. Vickie Orsini Nardello, Co-Chair
Sen. Kevin Witkos, Ranking Member
Rep. Sean Williams, Ranking Member

The Connecticut Broadband Internet Coordinating Council (CBICC) provides this report for the Energy & Technology Committee's information and consideration. The Council requests an opportunity to present the findings and recommendations of this report at a meeting of the Committee.

The Council submits this report to update the Committee on CBICC activities since our first quarterly meeting in July, 2008 through December, 2009.

The report summarizes the Council's findings through meetings with expert guest speakers, discussions among members, and research by CBICC subcommittees.

The Council is in agreement that the deployment and adoption of broadband service is crucial to Connecticut's economic success. While the State of Connecticut is well situated in terms of broadband infrastructure, there is still work to be done in unserved and underserved areas of the state.

Thus, the Council recommends the creation of a statewide, comprehensive, high-speed broadband plan to guide future state action to promote broadband capacity and usage. Such a plan will aim to increase broadband infrastructure, expand digital literacy and adoption rates, improve access to online government services, encourage public private partnerships and foster overall economic development.

Sincerely,

Louis Manzione, PhD
Chairman, Connecticut Broadband Internet Coordinating Council



Connecticut Broadband Internet Coordinating Council

STATE OF CONNECTICUT

Connecticut Broadband Internet Coordinating Council

**Interim Report and Recommendations
Submitted to the
Energy & Technology Committee
of the Connecticut General Assembly**

March 10, 2010

CONNECTICUT BROADBAND INTERNET COORDINATING COUNCIL (CBICC)

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CONNECTICUT BROADBAND INTERNET COORDINATING COUNCIL (CBICC)

Interim Report and Recommendations

Submitted to the Energy & Technology Committee of the Connecticut General Assembly

Executive Summary and List of Recommendations for Consideration

The deployment and adoption of broadband service is crucial to Connecticut's economic success as it has become a necessary resource for our state and nation to provide world class educational opportunities, to create jobs, to facilitate improved and more cost efficient government services, and to deliver vital healthcare services to all citizens. The CBICC intends to continue to fulfill its statutory mission in monitoring and reporting on trends and developments at both the state and federal levels to help assure that Connecticut remains a leader in deployment and adoption of broadband and related technologies. This leadership translates into a competitive advantage for the State's businesses and political and legal institutions, as well as benefiting the citizenry as a whole.

As set forth in this Interim Report and based on the CBICC's evaluation, broadband is essential for this state to continue to compete effectively both in the United States and on the world stage. According to a recent study, a 10 percent increase in broadband penetration corresponds to a 1.2-1.5 point increase in GDP.¹ Moreover, particularly in the current challenging job market, broadband has also become an essential tool for finding employment: for example, as of 2005, 77 percent of Fortune 500 companies did not accept paper applications for jobs posted online. Finally, broadband enables citizens to stay informed on important news and information and to actively engage their government officials more effectively, thus enhancing civic participation and driving more responsive and effective government services.

High-speed, ubiquitous broadband connectivity will therefore ensure that government and private industry services are deployed more efficiently. It is consequently essential that the state must promptly adopt a comprehensive public policy framework in order to encourage continued deployment of broadband technologies and greater broadband usage that will strengthen Connecticut's economic and societal opportunities. The General Assembly has long realized that Connecticut needs to develop a broad strategy for enhancing the deployment and adoption of broadband to all homes and businesses in the state. Having recognized that broadband has an essential leadership role in the state's economy, investments, and job creation, in 2007 the General Assembly created the Connecticut Broadband Internet Coordinating Council (CBICC) to serve as an important state entity well positioned and with a diverse group of experts in the field to advance initiatives that would promote universal access and address obstacles to digital literacy in the state.

¹ FCC Chairman Genachowski's Remarks, "*Connecting the Nation: A National Broadband Plan*," The Clinton Presidential Library, Little Rock, Arkansas, November 24, 2009.
http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-294847A1.doc

Among other duties, the CBICC was charged with regularly keeping the General Assembly informed as to the status of broadband issues in the state. Hence, the CBICC has created this report of its activities, and has also provided the General Assembly with a list of recommendations for consideration in order to accelerate the rollout and usage of broadband in the state. As a first step, in furtherance of these objectives, the CBICC in early 2009 adopted a set of overarching principles that we believe should serve as the foundation under which the state should evaluate and prioritize various broadband initiatives (see Appendix E).

The CBICC website address is www.ct.gov/cbicc. The site contains the Council's enabling legislation, the list of members, information on upcoming meetings and meeting archives (i.e. agendas, minutes and guest presentations if available). The site also includes the CBICC's Statement of Principles and accompanying submittal letter to the governor from April, 2009. In addition, links to the state's broadband providers, relevant state and federal agencies and broadband oriented non-profits and news organizations are included. In terms of future uses for the CBICC website, the CBICC's website should reach out into the state's communities in order to provide access to valuable information and links to developing issues and solutions. The Joint Center Media and Technology Institute and other organizations released a 2009 report on *Policy Recommendations to Increase Digital Adoption for Minorities and their Communities* which stressed the importance of broadband access to achievement and success. The CBICC, through community outreach organizations for instance, could help assure that Internet and PC utilization will include the educational component needed to lift broadband-use to the priority level it should have in many lives and businesses in order to encourage socio-economic success. The CBICC might also offer for consideration legislative proposals, if necessary in the Council's collective judgment.

In addition to the federally-funded broadband stimulus mapping effort to identify served, underserved, and unserved areas of the state with regard to broadband, the state should itself allocate funds to allow for the construction of broadband service to unserved areas where broadband via wireline or wireless technologies is not already available. For instance, one way to accomplish this goal may be through tax credits and other incentives offered to private entities willing to shoulder the burden of developing infrastructure or community-based usage enhancing opportunities in unserved areas of the state. While much great work has already been accomplished in Connecticut, making it one of the more successful states in terms of infrastructure rollout and adoption of broadband services, we must not rest on our laurels. Goals the CBICC sees for further action include both the encouragement of broadband service adoption as well as continuing to advance infrastructure rollout to assure Connecticut continues to extend its leading position in deployment and adoption as a competitive advantage for the State's businesses and citizens.

Such efforts will have the effect of amplifying the investment, as such infrastructure will long exist to serve future consumers. Such investments should be utilized for projects that would not otherwise have been built by private companies and should be accomplished in accordance with public policy goals of accountability, transparency in detailing jobs created, network infrastructure built, and services rendered.

Concurrent with moving these goals forward, the CBICC members believe that additional

investments in educational networking, public service/safety, public television and general government network activities will further enhance broadband usage. Targeted municipal projects that can model new technologies, business models and services to Connecticut's residents may be created to serve as "tip of the spear" pilots to stimulate investment of assets by private sector companies in order to best deliver the broadband services required for Connecticut consumers and businesses. On the basis of the revelations obtained by its year-long investigations, the CBICC intends to take a more proactive and central role in helping the General Assembly to develop a public policy vision to provide universal broadband access for all Connecticut residents and businesses. Based upon our discussions and deliberations, the Council intends to use its existing statutory authority to lead and coordinate both new and ongoing efforts that positively advance broadband capacity and usage in our state.

Finally, the CBICC believes that two years of modest funding for organizational administration and plan development will serve to jumpstart the Council's broadband coordination effort. The CBICC members are keenly aware that the Council is not an agent of implementation, having no funds to disperse (though modest funds for administrative purposes remains a goal), and thus the BICC activities will always be geared toward an advisory, policy-making capacity. For instance, it is evident that the state already spends millions of dollars on projects related to education and transportation issues, and it is entirely likely that the BICC could effectively surface ideas to direct some of that existing funding toward more effective utilization by leveraging access to broadband services.

After its enabling legislation passed in 2007, the CBICC has met on a quarterly basis since July 2008 and its membership hopes that the General Assembly will continue look to the CBICC as a valuable resource for information and direction regarding broadband issues. Representing as it does a cross section of government, industry providers, municipalities, and private entities, the CBICC has focused its members' energies on addressing how governments and providers at all levels promoting broadband deployment and adoption can improve civic engagement, educational opportunities, access to government services, all to the benefit of the lives and welfare of residents and the prosperity of Connecticut businesses.

After over a year of investigations and testimony, the CBICC has determined that our state has work to do on deployment to ensure that high-speed broadband connectivity is universally available, especially in the more rural portions of Northwest and Northeast Connecticut. The CBICC membership is well positioned with the expertise necessary to also focus on the fundamental issues of adoption and affordability -- ensuring that everyone has a real chance to seize the potential benefits of broadband. For these reasons, the CBICC hopes to be involved in the effort to create a state-wide, comprehensive, broadband plan that will serve to guide state action to promote broadband capacity and usage.

For instance, the federal government has recently acknowledged the need for states to develop high speed Internet access to support economic development and educational opportunities and included a \$7.2 billion appropriation for those activities in the American Recovery and Reinvestment Act. That said, it is apparent to the members of the Council that a large number of excellent projects proposed by Connecticut-based entities will be challenged to obtain funding during the two rounds of federal stimulus funding now being proposed. A complete list of

proposed CT-based broadband projects that have sought federal stimulus funding is provided in Appendix G. In order to assist these entities in getting off the ground, the CBICC hopes to use the expertise of its members to assist such applicants in finding funding and partners to support their projects.

Also, as a general guiding principle, the CBICC believes that its statutory role includes the job of encouraging and enabling public/private partnerships that will invest in the creation of world-class, high-capacity and high-speed broadband networks. In addition, the CBICC believes that it can reach out to its governmental partners in order to hasten and expand the use of state government services that are offered over broadband connections and, to the extent possible, leverage existing state-owned and privately held assets in a successful win-win for the state.

Most importantly, the CBICC believes that it should have a role in harnessing the power of the public/private partnerships to increase availability of computers and broadband access in schools, libraries, and other community-based programs that will serve to close the digital divide. The CBICC intends to focus on developing a work plan of projects/goals, subject to a level of involvement qualified by its ability to obtain funding for administrative support, with projects including: 1) offering responses to the FCC's National Broadband Plan, 2) evaluating outstanding CT-based applications submitted to the NTIA for ARRA funding consideration which failed to obtain federal grants, 3) synthesizing conclusions from the evolving DPUC mapping data project to be issued on a rolling basis by the state, and 4) examining potential broadband projects that would positively impact education and transportation issues, in particular.

Specifically, the CBICC should further investigate and plan for in greater detail the following broad areas:

- **Digital Literacy & Adoption**, which will address affordability, computer ownership and adoption, digital literacy and training and consumer education;
- **E-Government Expansion**, which will improve and increase access to government services offered online and promote the development of open, simple and secure online applications with measurable outcomes;
- **Economic Development Workforce Training**, which will focus on identifying and implementing public/private partnerships and strategies that create and maintain a skilled and professional workforce; and
- **Planning & Policy**, which will focus on recommending and advocating for broadband policies at the state and federal levels to address impediments to broadband usage and serve to encourage greater adoption.

Consequently, the Council has tasked itself with developing strategies to increase broadband infrastructure, expand digital literacy and adoption rates, improve access to online government services, foster economic development and leverage federal stimulus funds and public private partnerships to meet the state's broadband goals. In order to achieve the goals that face the CBICC and for which it brings a healthy cross-section of interested and experience parties, a minimal amount of budgeting for administrative support and possibly consulting for planning will be necessary. Similarly, the CBICC should be authorized to apply for and accept any grant funding that may become available related to its statutory authorization.

I. A Statewide, Comprehensive, High-Speed Broadband Plan To Guide Future State Action To Promote Broadband Capacity And Usage Should Be Created.

The CBICC believes that it is well positioned, populated as it is by members of industry, government, and user groups, to have a cooperative role in the state's effort to rapidly drive Connecticut into a more vibrant level of broadband access and usage by all of its inhabitants. Since the CBICC is essentially a state-sponsored association of public and private entities, the Council has an exceptional opportunity to make possible technology-based economic development by tying together the efforts of public and private entities involved in broadband development in the state.

Accordingly, the CBICC would like to commence work on developing a Connecticut Broadband Implementation Plan to provide a strategic framework to realize the full potential possible in this state. That plan would be based on an inclusive and evenhanded blend of broadband infrastructure expansion together with efficient community outreach programs to stimulate demand. In order to promote broadband usage among the underserved populations that characterize the largest problem facing Connecticut, the CBICC needs to develop creative results to increase broadband availability in unserved areas and adoption rates in underserved areas with a focus on long term sustainability of all programs.

By developing a detailed and comprehensive Connecticut Broadband Implementation Plan, the CBICC can encourage the increased adoption of broadband technology across the entire state and by the full spectrum of Connecticut citizens. The CBICC's Connecticut Broadband Implementation Plan should include, but not be limited to, the following components:

1. Steps needed to expand and deploy broadband infrastructure in unserved areas and increasing broadband adoption throughout the state to ensure that all state residents and businesses unserved by high-speed broadband service have access to affordable and reliable service.
2. To develop and provide a baseline assessment of broadband deployment in Connecticut;
3. To identify and track the areas with low levels of deployment, the rate at which residential and business users adopt broadband service and other related information technology services, and possible suppliers of such services;
4. To identify barriers to the adoption of broadband service and information technology services;
5. To promote shared services, technologies and expertise across municipalities and school districts enabled by interconnected municipal fiber-optic and wireless networks.
6. To collaborate and coordinate with broadband service providers and information technology companies to encourage deployment and use, to achieve improved technology literacy, increased computer ownership and home high-speed Internet use among state residents and businesses; and
7. To facilitate information exchange regarding use and demand for broadband services between public and private sector users.

Thus, the CBICC's Connecticut Broadband Implementation Plan shall outline a comprehensive,

state-wide high-speed Internet deployment strategy and adoption strategy initiative that fully examines existing relationships and proposed collaborations with necessary parties, including broadband service providers, information technology companies, mapping companies, state and local governments, geographic information agencies and councils, Community Anchor Institutions, consumer and public interest groups, Indian tribes, minority and vulnerable populations, industry, and other such parties and institutions with pertinent experience or involvement with broadband technology and usage.

II. Conclusion

The CBICC contains a balanced cross section of experienced and knowledgeable players in the broadband field capable of developing and executing a strategy to encourage public/private partnerships to execute sound fiscal management practices in the pursuit of rapidly expanding broadband availability and usage. Indeed, due to the diversity of its members, the CBICC is also conscious of the need to promote economic development, create jobs, and build stronger public/private partnerships to reach the concrete goals the Council believes are central to enhancing Connecticut's broadband opportunities.

The CBICC will be reviewing and evaluating the federal National Broadband Plan, once released, for opportunities to continue to improve our State's future broadband capabilities. Accordingly, the Council has tasked itself with developing strategies by creating a Connecticut Broadband Implementation Plan to increase broadband infrastructure, expand digital literacy and adoption rates, improve access to online government services, foster economic development and leverage federal stimulus funds and public private partnerships to meet the state's broadband goals.

Appendix A – Background And Report Of CBICC Activities Since Its First Meeting On July 15, 2008

Purpose of the CBICC

Pursuant to Public Act No. 07-254, effective July 1, 2007, codified at Conn. Gen. Stat. § 4d-100 (see Appendix A), the Connecticut Broadband Internet Coordinating Council (the “CBICC”) is empowered by the General Assembly to:

1. Monitor trends and developments in the state's efforts to develop a state-wide world-class communications infrastructure and to
2. Issue any reports it deems necessary to the joint standing committee of the Connecticut General Assembly having cognizance of matters relating to technology.

Accordingly, the CBICC hereby issues this report to the Committee on Energy & Technology of the General Assembly which details the activities of the CBICC for the period of July 15, 2008 to December 31, 2009.

CBICC Membership

According to C.C.S. 4d-100, the council shall consist of ten (10) members, two appointed by the Governor, two appointed by the president pro tempore of the Senate, two appointed by the speaker of the House of Representatives, one appointed by the majority leader of the Senate, one appointed by the majority leader of the House of Representatives, one appointed by the minority leader of the Senate and one appointed by the minority leader of the House of Representatives. Designees of the chairperson of the Public Utilities Control Authority, and the Secretary of the Office of Policy and Management serve as non-voting ex-officio members of the council.

Members of the council shall serve without compensation, except for necessary expenses incurred in the performance of their duties. Members serve on the council for terms of two years each and no member may serve for more than two consecutive terms.

Any member failing to attend three consecutive meetings or fifty per cent of all meetings during any calendar year is deemed to have resigned.

The CBICC is chaired by Louis Manzione, University of Hartford, with Robert Vietzke, Internet 2, serving as Council Vice Chair, (approved December 2009 by Speaker Amann and Senate President Williams).

The CBICC is administratively supported the Connecticut Academy of Science and Engineering (Rick Strauss, Executive Director, and Ann Bertini, Assistant Director for Programs).

The CBICC membership list can be found in Appendix C of this document.

CBICC Activities – July 2008 – December 2009

Public Meetings – Between July 2008 and December 2009, the CBICC held seven public meetings and has been advised by various experts and industry representatives, and developed operating principles in order to monitor broadband services in Connecticut.

The CBICC held its first meeting on July 15, 2008. State Representative Chris Perone (Norwalk - District 137) gave the Charge to the Council. Representative Perone authored the broadband bill that founded the CBICC and he emphasized that he envisioned the Council helping the legislature and the municipalities to ensure that Connecticut remains at the forefront of broadband technology.

It was also noted at the first meeting that the CBICC should build on the work performed in the January 2007 CASE Study Report to the Legislature on Advanced Communications Infrastructure for Connecticut, a public/private investigation and report on behalf of the Energy & Technology Committee.

The CBICC primarily meets in the Legislative Office Building, but has also met at the Connecticut Economic Resource Center in Rocky Hill. Agendas and minutes of the Council's public meetings can be found online at www.ct.gov/cbicc under Meeting Archives. A list of the Council's guest speakers to date can be found in Appendix D of this document.

Creation of the CBICC Website – The CBICC has established a website detailing its meetings and various activities. The CBICC website can be found at www.ct.gov/cbicc/

Statement of Principles – In April 2009, and in response to the proposed stimulus funding offered by the United States government to states and various entities engaged in broadband activities, the CBICC developed a set of principles that it submitted to the Governor's Office.

The intent of the Statement of Principles was to act as guidance in preparing and evaluating applications for the federal funding. Those principles included:

1. Promote Investment in Broadband Mapping
2. Promote Broadband Construction to Unserved Areas
3. Promote Broadband Demand-Side Initiatives
4. Obtain Funding of the CBICC

A copy of the Statement of Principles and transmittal letter to the Governor can be found in Appendix E of this document.

Identification of Areas of Importance – The CBICC has recognized that there are four (4) areas impacting the study of broadband services in Connecticut that will primarily require the Council's attention:

1. Current Landscape – Identify and track the current broadband landscape (CT, other states, nations, and the FCC).
2. Demand Side – Uses (Education enabling in unserved vs. underserved areas) and Telecommuting and Users (industry, citizens, municipalities).

3. Supply Side (public companies, municipalities, providing/allowing connectivity).
4. Technology Terminals, Next Generation Internet, Infrastructure – Wireline and Wireless.

Assistance with American Renewal and Recovery Act

The CBICC played a role in the state's administration of the proposals for the ARRA. The Council and sub-committees of the Council met with state officials on the process that would be applied to encourage, prepare and judge Connecticut-based proposals. The Council provided three reviewers (Council Chair Manzione, Robert Mundy, DPUC, and William Vallée, OCC) to a small review team led by Governor Rell's office (Matt Fritz) to judge and prioritize Connecticut and national proposals for the Broadband funds in the ARRA (\$7.2B).

Appendix B – CBICC Empowering Statute Language

Sec. 4d-100. Broadband Internet Coordinating Council. Membership. Duties.

(a) There shall be a Broadband Internet Coordinating Council, which shall include representatives from both the private and public sectors. The council shall consist of ten members, two of whom shall be appointed by the Governor, two of whom shall be appointed by the president pro tempore of the Senate, two of whom shall be appointed by the speaker of the House of Representatives, one of whom shall be appointed by the majority leader of the Senate, one of whom shall be appointed by the majority leader of the House of Representatives, one of whom shall be appointed by the minority leader of the Senate and one of whom shall be appointed by the minority leader of the House of Representatives. One of each of the two members appointed by the Governor, the president pro tempore of the Senate and the speaker of the House of Representatives shall have specific expertise in the area of telecommunications. Members of the council shall serve without compensation, except for necessary expenses incurred in the performance of their duties. Members shall serve on the council for terms of two years each and no member shall serve for more than two consecutive terms. The chairperson of the Public Utilities Control Authority, or the chairperson's designee, and the Secretary of the Office of Policy and Management, or the secretary's designee, shall be ex-officio members of the council without vote and shall attend its meetings. Any member who fails to attend three consecutive meetings or fifty per cent of all meetings during any calendar year shall be deemed to have resigned. The president pro tempore of the Senate and the speaker of the House of Representatives shall jointly choose a chairperson and a vice-chairperson to act in the chairperson's absence.

(b) The council shall meet at least quarterly, commencing on or before September 1, 2008. A majority of the members in office shall constitute a quorum.

(c) The duties of the council shall be to: (1) Monitor trends and developments in the state's efforts to develop a state-wide world-class communications infrastructure; and (2) issue any reports it deems necessary to the joint standing committee of the General Assembly having cognizance of matters relating to technology.

Appendix C – CBICC membership

STATE OF CONNECTICUT CONNECTICUT BROADBAND INTERNET COORDINATING COUNCIL

Lou Manzione, Chairman

Appointed by the Speaker of the House
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John R. Emra

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Jack McCoy

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Anthony M. Santino

Appointed by the Governor
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Appendix D – Council guest speakers list

1) CBICC Guest Speakers

Rich Mavrogeanes, Founder, V-Brick Technologies. V-Brick works to send high quality TV over networks. Their core product is an industry leading networked video appliance.

Sharon Gillett, Commissioner, Department of Telecommunications and Cable, Commonwealth of Massachusetts, now bureau chief of the FCC Wireline Competition Bureau.

Gillett's advice: *Quantify as much as possible. There is a role for government here. It's a market failure, and it's hard to live without broadband these days.* Gillett cited the fact that it is costing the Commonwealth of Massachusetts money to maintain dual processes for dial-up vs. broadband users. States do not have regulatory authority over broadband: *"We never set the price and wouldn't want to."* However, Gillett believes where states do have authority, they should exercise it.

Matt Fritz (overview delivered by Rob Vietzke), Governor's office re: Federal stimulus package

Peter Gioia, CBIA Economist and state business expert: Is Connecticut a state that is looked at for continued investment?

Curtis Hill, Concepts for Adaptive Learning, a Connecticut based non-profit organization that exists to help public school children improve their education using technology to achieve organization's Mission. The organization aims to help bridge the "Digital Divide," by Increasing Technology Access and Skills to Improve Learning and Vocational Opportunities for Low-Income Students and Their Families. A project launched in October 2008 gives 600 families: computer training; a refurbished computer; 1 year of tech support; and 1 year of high speed internet service.

Howie Hodges, Senior Vice President of Government Affairs and External Partnership, One Economy Corporation. One Economy and a diverse team of partners propose to increase adoption rates among the unserved and underserved through a comprehensive and integrated program that includes digital literacy, online content, affordable connectivity and public education that will overcome barriers to adoption and will maximize the opportunities inherent in the technology itself.

2) Public speakers at CBICC Meetings:

Dale Bruckhart, Digital BackOffice in Milford, CT – a datacenter company.

Pua Ford, League of Women Voters of CT

Lee Samowitz, former state representative from Bridgeport, now an investor with a company called Broadband Associates, based out of California, which links all the education institutions in California with a broadband backbone owned by the state.

Appendix E – Statement of Principles and Transmittal Letter to the Governor’s Office

BICC Stimulus Principles

The CBICC declares these principles for consideration by the State in determining which projects should be submitted to the NTIA for possible funding under ARRA.

As legislatively-mandated coordinating council, the broad spectrum of representatives on the CBICC includes not only governmental entities with public policy goals, but also commercial enterprises that will compete for the limited stimulus resources.

Thus, in order to create a set of principles unifying the diverse interests of the CBICC members, the Council has agreed to these high-level principles by which we believe the State should prioritize its submission and funding allocations.

It is agreed that:

➤ **Invest in Broadband Mapping**

The State's first priority should be to invest in a broadband mapping effort to measure and map the availability of broadband across the state in order to support Connecticut's economic development and competitiveness activities. The effort should result in documentation that is available to the public and policy makers acquired according to the best practices of disclosure and confidentiality that have already been achieved in other states.

➤ **Promote Broadband Construction to Unserved Areas**

The State should promote the construction of broadband service to unserved areas where broadband via wireline or wireless technologies is not already available. Appropriate stimulation of private sector investment in these unserved areas should be the preferred process to provide broadband in unserved areas, but other projects could also be considered if the private sector cannot meet the needs of the unserved Connecticut citizens.

➤ **Promote Broadband Demand-Side Initiatives**

Coordination of investments in enhancing demand-side initiatives involving both public and private entities on a state-wide basis, including educational and government networks in communities that would benefit from greater broadband usage.

➤ **Obtain Funding of CBICC**

The CBICC members believe that the State should seek ARRA funding for two years for the operations of the CBICC as this will serve to properly address and support the state's overall broadband coordination.

Transmittal Letter To The Governor Of The CBICC Statement of Principles

April 9, 2009

The Hon. M. Jodi Rell
Office of the Governor
State Capitol
210 Capitol Avenue
Hartford, CT 06106

In accordance with Public Act No. 07-254, the Connecticut Broadband Internet Coordinating Council (CBICC) offers these principles for consideration by the State in determining which projects should be submitted to the National Telecommunications and Information Administration (NTIA) for possible funding under the American Reinvestment and Recovery Act (ARRA).

As a legislatively-mandated coordinating council, the broad spectrum of representatives on the CBICC includes not only governmental entities with public policy goals, but also commercial enterprises that will compete for the limited stimulus resources. (See attached list of council membership.)

Thus, in order to create a set of principles unifying the diverse interests of the CBICC members, the Council has agreed to the attached high-level principles that we believe the State should use to prioritize its submission and funding allocations.

Sincerely,



Louis Manzione, *Chairman*
Dean, University of Hartford
College of Engineering, Technology
& Architecture

Appendix F - CBICC Municipal Subcommittee Report (November 23, 2009)

The full BICC has not discussed or reached consensus on this subcommittee report, and accordingly has not voted on the issues contained herein.

BICC Municipal Subcommittee Report

Municipal Demand

Survey

The Connecticut Conference of Municipalities (CCM) surveyed 169 towns and cities. The resulting return of 106 towns and cities counted 2600+ buildings and all 106 respondents indicated some use of Broadband. This exemplifies the physical government and education buildings infrastructure in Connecticut to benefit from digital network connectivity and an experience base with broadband technology sufficient to understand its benefits.

Collaboration

Nine Cities recently collaborated in a Broadband Internet Coordinating Council initiated application for the Recovery Act's Broadband Technologies Opportunities Program (BTOP). These participants represented cities that had built or were in the process of building fiber-optic networks interconnecting their municipal and education buildings. As such they represented model efforts, within their boundaries, to meet a wide and diverse demand for connected programs depending on networked technologies and beyond their boundaries for mutual interest in interconnecting the cities to further develop opportunities in shared services, mutually deployed technologies, public safety, education, and in particular economic development.

Design Principle

These cities collaborated on a model design that would serve their purposes but would also be extensible as other communities developed their communications networks and considered the value of connecting to the Ct-Muni-Net, as it came to be called. In the design discussions what became needed was a design principle that was well understood and had established national (Federal) support. A guiding principle, and a requirement of the BTOP grant as defined by the Federal Communication Commission (FCC), was that of "nondiscriminatory and interconnected" use.

This seemed to serve the interests of the three clusters of cities that span the state because it called for a design that would be shared and open – a principle characteristic of the Internet itself. This Ct-Muni-Net would be built with BTOP public funds by private sourced contract (jobs) and private and public entities would have access – municipalities, schools, Physician / hospital networks, and other innovations developing in the marketplace and being encouraged by the Recovery Act. The design principle is ambitious and leads to two other considerations: adoption of technical standards and a clear need for massive new bandwidth (see "Exaflood" by Economist Bret Swenson) a need that is hurtling towards the industry and our economy.

Standards and Broadband Bandwidth

Connecting the nine initial cities inside the three clusters (see map) with the Ct-Muni-Net fiber optic spans (300 miles of fiber optic cable) meant agreeing on some important details. The design detail that could be easily agreed to was the IEEE Ethernet Standard – a standard relied upon and well understood in every city building network. The need for a specification that would provide “massive new bandwidth” was the other consideration. The new IEEE 802.3ba standard for 10Gbps, 40Gbps and 100Gbps met both the National Standard and Bandwidth growth needs (see three Category BTOP Ct-Muni-Net application <http://www.ntia.doc.gov/broadbandgrants/applications/search.cfm>).

Connecticut Internet Supply to Municipal Demand

Connecticut is a state with many sources of Broadband Supply: cable companies, wire line telecommunications companies, wireless companies and municipalities building municipal “gain” connectivity. The state is, except in a few locations, covered with available internet access at conventional US speeds. Other notes in the BICC report comment on the conventional speed and capacity issue compared with our global competitors (see Jeff Blodgett “**Broadband: An Economic Development Perspective**” and BICC paper and expert discussion positioning US Broadband in the middle of the list of industrialized societies).

Supplying the Digital Divide

The Connecticut supply to municipalities have two issues: Bandwidth as noted above for Nondiscriminatory Interconnect and, a more subtle issue – lack of adoption by those in the population characterized as being on the wrong side of the Digital Divide – the “underserved.” In the Ct-Muni-Net BTOP grant application, a population that has broadband available but which has 60% or more not subscribing to Internet access is considered “underserved.”

Internet Access To The Underserved Population of Connecticut

The BICC received a presentation (Curtis Hill, “Concepts for Adaptive Learning”) on an innovative program supported by AT&T in New Haven to bring its Internet access to this population through a carefully resourced and professionally managed service effort. The Ct-Muni-Net BTOP application also has an example of approaching this “underserved” population through the Manchester school district’s portion of the BTOP grant application. This Manchester model approaches the underserved with similar elements but in the form of the Manchester FiberNet’s wireless Internet access, School District net-books and professional educators and technical staffs in place in the School District and Municipal government.

Both private and public supply of Internet use in these two programs succeed in using the same elements: reliable sustainable Internet access coupled with committed human expertise to support the supply’s use by the underserved. AT&T and Connecticut State commitment guarantee success in the first example and the in-place Manchester FiberNet and ongoing school district expertise recapitulate the AT&T private model in public form. The results: Use of the available Internet access by a formally “underserved” population with all the concomitant derived benefits to a first world community population.

Recommendations

1 Standards and Broadband Bandwidth

The BICC, as proposed by the Municipal Subcommittee Members of the BICC, recommend that all extensions to the Connecticut Education Network (CEN) and the proposed Ct-Muni-Net of the ARRA BTOP grant when supported by State of Connecticut funding be compliant with IEEE 802.3ba National Standards and be made capable of supporting 10Gbps, 40Gbps and 100Gbps speeds that enable nondiscriminatory interconnected use by the populations (“all educational institutions in the state, including public and independent institutions of higher education, the state’s libraries and all elementary, middle and secondary schools, ***and other institutions including businesses, job centers and community organizations***) called for in the Connecticut Legislature’s Act establishing the CEN (see February Session, 2000 – Substitute Senate Bill No. 610).

2 Municipal Demand

The BICC, as proposed by the Municipal Subcommittee Members of the BICC, recommend the funding support of the expansion of Ct-Muni-Net application in the ARRA BTOP grant application to support attachment of “pass-through cities” to the Ct-Muni-Net beyond the funding of the BTOP Grant application.

3 Collaboration on Publically Funded Networks

The BICC, as proposed by the Municipal Subcommittee Members of the BICC, recommend to the Connecticut Legislature the consideration of promoting the model for Nondiscriminatory Interconnect of Connecticut Municipalities defined in the BTOP grant applications in all Connecticut publicly funded networks. This is consistent with the “Value of a Network Law” by Metcalf which says that the value of a network is a function of the number of its users. Connecticut should be encouraging maximum use of its publically funded networks and thus maximum value from its funding.

4 Collaboration on Shared Services Enabled by Broadband

The BICC, as proposed by the Municipal Subcommittee Members of the BICC, recommend that the Connecticut Legislature support the promotion of shared services, technologies and expertise across Municipalities and School Districts enabled by interconnected Municipality fiber-optic and wireless networks in the form of funding for a depository of Connecticut-municipal and Connecticut-education developed software open to all for download and use or for access and use via the Ct-Muni-Net and CEN or other publically funded interconnected networks.



Number of Municipal Buildings and Extent of Broadband Access, (CCM Survey, 12/5/2008)					
Municipality	Total # General Municipal Buildings	GM Buildings with BB Access	Educational Buildings with BB Access	Total	# Educational Bldgs that are part of a Regional District
Andover	4	Some	1	5	1
Ansonia					
Ashford	9	Some	2	11	
Avon	23	Yes	6	29	
Barkhamsted	3	Some	1	4	
Beacon Falls					
Berlin					
Bethany	4		3		
Bethel					
Bethlehem	8	Some	1	9	1
Bloomfield					
Bolton	9	Some	2	11	
Bozrah	3	Some	1	4	
Branford	38	Yes	9	47	
Bridgeport	57	Some	52	109	5
Bridgewater					
Bristol	20	Some	16	36	
Brookfield					
Brooklyn	3	Yes	2	5	
Burlington	10	Yes	2	12	2
Canaan	5	Some	1	6	1
Canterbury	2	Yes	2	4	
Canton	12	Some	4	16	
Chaplin	7	Some	2	9	
Cheshire					
Chester	3	Yes	1	4	
Clinton					
Colchester	8	Yes	4	12	
Colebrook					
Columbia					
Cornwall	6	Some	1	7	
Coventry	10	Some	6	16	
Cromwell	9	Yes	4	13	
Danbury	46	Yes	21	57	
Darien	3		7	10	
Deep River	8	Yes	3	11	
Derby					
Durham					
East Granby	8	Yes	3	11	
East Haddam					
East Hampton					
East Hartford					
East Haven	5	Some	11	16	
East Lyme	82	Some	6	88	
East Windsor	4	Yes	3	7	
Eastford	5	Some	1	6	
Easton	5	Yes	4	9	

Municipality	Total # General Municipal Buildings	GM Buildings with BB Access	Educational Buildings with BB Access	Total	# Educational Bldgs that are part of a Regional District
Ellington	25	Yes	7	32	
Enfield	13	Some	13	26	
Essex					
Fairfield	48	Most	16	64	
Farmington	28	Yes	7	35	
Franklin	4	Yes	1	5	
Glastonbury	46	Some	11	57	
Goshen					
Granby	25	Some	10	35	
Greenwich	140	Yes	16	156	
Griswold					
Groton (city)	11	Yes	0	11	
Guilford					
Haddam	10	Some	0	10	5
Hamden	17	Some	13	30	
Hampton	2	Some	3	5	1
Hartford					
Hartland					
Harwinton	8	Some	1	9	1
Hebron	8	Some	4	12	
Kent					
Killingly					
Killingworth	8	some	2	10	2
Lebanon	9	Yes	6	15	1
Ledyard	5	Yes	6	11	
Lisbon	7	Some	1	8	
Litchfield					
Lyme					
Madison	21	Some	9	30	
Manchester	20	Yes	15	35	
Mansfield	23	Yes	4	27	
Marlborough	5	Yes	1	6	
Meriden	29	Some	14	43	
Middlebury					
Middlefield					
Middletown					
Milford	14	Yes	15	29	
Monroe	5	Yes	6	11	
Montville					
Morris					
Naugatuck					
New Britain					
New Canaan	10	Most	22	32	
New Fairfield					
New Hartford					
New Haven	35	Some	63	98	3
New London					
New Milford					

Municipality	Total # General Municipal Buildings	GM Buildings with BB Access	Educational Buildings with BB Access	Total	# Educational Bldgs that are part of a Regional District
Newtown	12	Some	7	19	
Newington	31	Some	11	42	
Norfolk	6	Yes	1	7	
North Branford	8	Yes	5	13	
North Canaan	9	Yes	1	10	
North Haven	22	Some	6	28	
North Stonington	8	Some	3	11	
Norwalk	25	Some	20	45	
Norwich	23	Yes	15	38	1
Old Lyme	8	Some	5	13	
Old Saybrook	8	No	4	12	
Orange	9	Yes	5	1	
Oxford	8	Some	5	13	
Plainfield	6	Some	6	12	1
Plainville	13	Some	7	20	
Plymouth	13	Yes	5	18	
Pomfret					
Portland	12	Yes	5	17	
Preston					
Prospect	10	Some	3	13	1
Putnam	8	No	4	12	
Redding	12	Yes	3	15	1
Ridgefield					
Rocky Hill	15	Some	5	20	
Roxbury	6	Some	1	7	1
Salem	11	Some	1	12	
Salisbury	4	Yes	1	5	
Scotland	7	Some	1	8	
Seymour	9	Yes	5	14	
Sharon	7	Some	1	8	
Shelton					
Sherman	9	Some	1	10	
Simsbury					
Somers	12	Some	3	15	
South Windsor	9			9	
Southbury					
Southington					
Sprague	3	Yes	1	4	
Stafford	9	Yes	3	12	
Stamford	72	Some	21	93	
Sterling	4	Some	1	5	1
Stonington	6	Some	6	12	
Stratford	75	Some	15	90	
Suffield	17		4	21	
Thomaston					
Thompson					
Tolland	26	Some	5	31	
Torrington	20	Some	8	28	

Municipality	Total # General Municipal Buildings	GM Buildings with BB Access	Educational Buildings with BB Access	Total	# Educational Bldgs that are part of a Regional District
Trumbull					
Union	5	Yes	1	6	
Vernon	97	Some	19	116	
Voluntown	1	Yes	1	2	
Wallingford					
Warren					
Washington	11	Some	1	12	
Waterbury					
Waterford	62	Some	8	70	8
Watertown	14	Some	8	22	
West Hartford	17	Some	16	33	
West Haven					
Westbrook	2	Yes	3	5	
Weston	5	Yes	5	10	
Westport					
Wethersfield	22	Some	8	30	
Willington	7	Yes	2	9	
Wilton					
Winchester	9	Yes	3	12	
Windham	29	Some	14	43	
Windsor	63	Some	8	71	
Windsor Locks					
Wolcott	5	Yes	6	11	
Woodbridge	7	Some	2	9	1
Woodbury	14	Most	3	17	3
Woodstock					
	1937		760		
169					
Total				2667	41

NOTE: Number of towns that have at least some municipal buildings with broadband = 107

Appendix G - List Of Proposed CT-Based Broadband Projects That Have Sought Federal Stimulus Funding

State Broadband Data and Development Grant Program

In response to the Notice of Funds Availability (NOFA) published in the Federal Register on July 8, 2009, the State of Connecticut Department of Public Utility Control (DPUC) submitted a grant application for consideration under the National Telecommunications and Information Agency's (NTIA) State Broadband Data and Development Grant Program, for both the broadband mapping and planning functions. The Department of Public Utility Control, pursuant to Executive Order 32 of Governor M. Jodi Rell, has been designated as the single state entity eligible to apply for funds under this program and evidence of this designation is included within this application package.

Currently the State does not possess a comprehensive data set related to broadband service, availability, or infrastructure that can readily support the requirements of the Broadband Data and Development grant program. The acquisition of a master address point file is a critical piece for the State to be able to comply with the requirements set forth by the NTIA to obtain availability data by address. Once the service area polygons are constructed and address point file is obtained, the availability of broadband service can be determined for each address based on its location either within or outside of the service area polygon. A consultant retained by the State will perform the bulk of the data collection and analysis.

The DPUC is being awarded \$1.8 M in the federal stimulus funding for statewide broadband mapping, which includes approximately \$500,000 for planning.

Broadband Technology Opportunities Program

Applicant Information: Technology, Department of East Hartford, CT

Contact: Diane Wallace 860-622-2419 diane.wallace@ct.gov

Project title: Access Connecticut: Expanding the State's Education and Public Safety Network

Program: BTOP

Proposed Project Area: CT

Project type: Middle Mile Funding Round Round 1 - Summer 2009

Grant request: \$109,750,451

Status: Application Not Funded

Description: This proposal's projects will expand the State's investment in both educational and public safety communications technology by serving additional schools, community anchor institutions, public media and public safety sites. This project adds additional broadband capacity that will be available to other providers to enhance the accessibility of high quality services throughout Connecticut.

Applicant Housing Authority of the City of New Haven New Haven, CT

Contact Karen DuBois-Walton 203-498-8800 kdwalton@newhavenhousing.org

Project title Eastview Public Computer Lab

Program BTOP

Proposed Project Area CT

Project type Public Computer Center

Funding Round Round 1 - Summer 2009

Grant request \$ 379,117

Status Application Not Funded

Description The Housing Authority of the City of New Haven is requesting funding for the purchase of hardware, software, furniture and equipment associated with creating a public computer center at the newly constructed Community Center at its Eastview Terrace housing development. This equipment will enable the Authority to provide broadband access and deliver necessary supportive services to residents.

Applicant Housing Authority of the City of New Haven New Haven, CT

Contact Karen DuBois-Walton 203-498-8800 kdwalton@newhavenhousing.org

Project title West Rock Learning Center

Program BTOP

Proposed Project Area CT

Project type Public Computer Center

Funding Round Round 1 - Summer 2009

Grant request\$ 2,539,425

Status Application Not Funded

Description The West Rock Learning Center is an existing public computer center that provides computer and other training regarding many of the support services provided by neighboring Southern Connecticut State University. This project will expand upon existing broadband access, as well as make the facility fully accessible to the disabled.

Applicant City of Hartford Hartford, CT

Contact Eric Jackson 860-757-9474 eljackson@hartford.gov

Project title Connect Hartford

Program BTOP

Proposed Project Area CT

Project type Middle Mile

Funding Round Round 1 - Summer 2009

Grant request\$ 6,529,756

Status Application Not Funded

Description The City of Hartford, CT seeks to provide public access to on-line information and software applications at a reduced cost by extending its broadband fiber optic and Wi-Fi networks to community organizations and businesses located within and around the city of Hartford and serving the greater Hartford area.

Applicant West Hartford Public Library West Hartford, CT

Contact Patricia Holloway 860-561-6970 holloway@westhartford.org

Project title Public Computer Center - Bishops Corner Branch Library

Program BTOP

Proposed Project Area CT

Project type Public Computer Center

Funding Round Round 1 - Summer 2009

Grant request\$ 102,906

Status Application Not Funded

Description The Bishops Corner Branch Library will connect to the Town's fiber network, add computers and peripherals, and upgrade software to expand the services and training available to the public with this grant award. A state-funded renovation grant has been awarded to provide for energy conservation, and improved accessibility for the branch; adding this technology will complete the transformation.

Applicant: Yale New Haven Health Services Corporation New Haven, CT

Contact Elaine Chapman 203-688-2658 elaine.chapman@ynhh.org

Project title Remote Emergency Access for Children in Community Hospitals (REACCH)

Program BTOP

Proposed Project Area CT

Project type Sustainable Broadband Adoption

Funding Round Round 1 - Summer 2009

Grant request \$ 998,107

Status Application Not Funded

Description REACCH will extend broadband utilization to give emergency department (ED) clinicians in four community hospitals or clinics without pediatric ED staff real time access to ED pediatric specialists at Yale-New Haven Children's Hospital. Project tasks include: enhance broadband capability, install telemedicine equipment, provide technical and clinical education to launch and sustain the project.

Applicant Town of Manchester Manchester, CT

Contact Jack McCoy 860-647-3071 jack80@ci.manchester.ct.us

Project title Connecticut Municipal Net

Program BTOP

Proposed Project Area CT

Project type Public Computer Center

Funding Round Round 1 - Summer 2009

Grant request \$ 409,200

Status Application Not Funded

Description Broadband "Public Computer Center" Makes use of Connecticut's Municipal Broadband Network architecture to enable programs serving underserved low income and elderly populations, support Broadband education technology, regional public safety and economic and Jobs development.

Applicant Town Of Manchester Manchester, CT

Contact Jack McCoy 860-647-3071 jack80@ci.manchester.ct.us

Project title Ct Muni Net

Program BTOP

Proposed Project Area CT

Project type Middle Mile

Funding Round Round 1 - Summer 2009

Grant request\$ 18,936,896

Status Application Not Funded

Description Broadband "Architecture": Enables an array of services in the areas of Public Computer Centers, Sustainable Broadband Adoption in UNDERSERVED populations, support

Broadband education technology, regional public safety and economic and Jobs development through use of the Connecticut "Municipal Gain" space in the broadband physical architecture of interconnected Connecticut cities.

Applicant Town of Manchester Manchester, CT

Contact Jack McCoy 860-647-3071 jack80@ci.manchester.ct.us

Project title Connecticut Municipal Net

Program BTOP

Proposed Project Area CT

Project type Sustainable Broadband Adoption

Funding Round Round 1 - Summer 2009

Grant request \$ 125,000

Status Application Not Funded

Description Broadband "Sustainable Broadband Adoption "Makes use of Connecticut's Municipal Broadband Network architecture and associated "Public Computer Center" initiatives to enable programs serving UNDERSERVED populations, support Broadband education technology, regional public safety and economic and Jobs development.

Applicant AlphaStar America, LLC, GREENWICH, CT

Contact Jeneba Ghatt240-235-5028, jeneba@ghattlawgroup.com

Project title AlphaStar America Middle Mile Hybrid Broadband Access Solution

Program BIP/BTOP

Proposed Project Area AZ, CT, DE, FL, IA, ID, IL, IN, MS, ND, NE, NM, OH, PA, TN, TX, WA

Project type Middle Mile

Funding Round Round 1 - Summer 2009

Grant request* \$ 25,500,234

Status Application Not Funded by BTOP

Description Within months of funding, AlphaStar America will hire hundreds of workers to help it build a low-cost hybrid middle mile network that will not require terrestrial construction or launching of satellites. It will connect local ISPs, schools & municipalities in unserved areas of 20 states to the Internet backbone, giving these rural markets with no legacy systems immediate broadband access.