

**STATEMENT OF THE**  
**SCHOOLS, HEALTH AND LIBRARIES BROADBAND COALITION**  
**HEARING ON “STIMULATING HAWAII’S ECONOMY: IMPACT OF THE AMERICAN RECOVERY**  
**AND REINVESTMENT ACT OF 2009”**  
**SENATE APPROPRIATIONS COMMITTEE**  
**Monday, August 24, 2009**

The Schools, Health and Libraries Broadband (SHLB) Coalition<sup>1</sup> respectfully submits this statement for the Hearing on “Stimulating Hawaii’s Economy: Impact of the American Recovery and Reinvestment Act of 2009.” The mission of the Schools, Health and Libraries Broadband Coalition is to improve the broadband capabilities of schools, libraries and health care providers so that they can enhance the quality and availability of the essential services they provide to the public and serve underserved and unserved populations more effectively.

**I. Building high-capacity broadband to community anchor Institutions is critically important to America’s education, health and learning.**

The Internet has become a fundamental cornerstone of modern education, learning, health care delivery, economic growth, social interaction, job training, government services, and the dissemination of information and free speech. High-capacity broadband is the key infrastructure that K-12 schools, universities and colleges, libraries, hospitals, clinics and other health care providers need to provide 21<sup>st</sup> century education, information and health services.

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<sup>1</sup> The Schools, Health and Libraries Broadband Coalition consists of 48 members representing the K-12 schools, community colleges, universities, hospitals, health care providers, libraries and private companies. A complete list of members is contained at the end of this document.

These institutions serve the most vulnerable segments of our population – rural, low-income, disabled, elderly consumers, students, immigrants and many others.

The SHLB Coalition is dedicated to ensuring that each and every school (including K-12 schools, colleges and universities), library and health care provider has robust, affordable, high-capacity, broadband connections. These anchor institutions use broadband services to provide essential services to millions of people every day. Providing high-capacity broadband to these institutions is a way to bring the benefits of broadband to the general public. For example,

- Health care providers can use high-capacity broadband to exchange detailed medical records, provide out-patient medical monitoring (telemedicine), and many other health-related services. Broadband capabilities can enhance the doctor-patient relationship, provide immediate access to health information, reduce the costs of health care, and save lives.
- Libraries provide Internet access at no charge to millions of people every day, including those who cannot afford to purchase computers or broadband access at home and others who need assistance, training or education about on-line services. Library patrons use public access computers to do homework, apply for jobs and e-government benefits, conduct research, and engage in all that the Internet has to offer.
- Schools use broadband connections to provide distance learning and offer multimedia teaching programs that address many learning styles and capabilities. In the 21st century, educators and students require more access to information, people, tools and resources. Broadband connections are redefining the education model for administrators, teachers, students and parents alike. "Networked education" makes education personalized, equitable, relevant and cost-efficient, enabling improved 21st century outcomes for students.

Furthermore, building broadband to these institutions promotes jobs and economic recovery. Whether it is laying fiber optic cable, constructing antennas to provide high-bandwidth wireless capabilities, stimulating the development of content rich applications, or providing access to e-learning, e-health, or e-jobs, these investments in our future will provide

thousands of American workers with high-tech employment. Building broadband networks to these anchor institutions will have the additional benefit of promoting economic growth in the region. The E-rate program has helped many schools and libraries obtain basic broadband connections to the Internet. The BTOP program can complement the E-rate program by funding the up-front deployment costs of high-capacity broadband.

**II. The ARRA gives a high priority to providing broadband to anchor institutions, but unfortunately, the NOFA does not.**

The SHLB Coalition is quite pleased that the American Recovery and Reinvestment Act (ARRA) specifically prioritizes broadband service for anchor institutions. Section 6001(b) states that one of the five purposes of the Broadband Technologies Opportunities Program is to:

(3) provide broadband education, awareness, training, access, equipment, and support to—  
(A) schools, libraries, medical and healthcare providers, community colleges and other institutions of higher education, and other community support organizations and entities to facilitate greater use of broadband service by or through these organizations;

This statutory language correctly encourages the construction of high-capacity broadband facilities to promote learning, health care and economic growth across America.

Unfortunately, the grant rules issued in the Notice of Funds Availability (NOFA) on July 1 fall far short of the goal set forth in the legislation. By focusing almost exclusively on serving residential consumers, the application process does not give priority to the construction of high-capacity broadband to these critical institutions as is called for by the statutory language. In fact, it is almost impossible for an anchor institution to file an application that satisfies all of the requirements as now set forth in the NOFA. The grant process has discouraged many

schools, libraries and health care entities from applying for funding, and raised concern that many worthwhile broadband funding projects will not be funded.

To be clear, the SHLB Coalition supports the objective of getting broadband to every residential and business consumer. We respectfully suggest, however, that the NOFA may “put the cart before the horse.” It will do little good to build additional “Last Mile” broadband networks if there is no high capacity “pipe” that can carry the collective traffic from all the residential consumers back to the Internet backbone. There is a severe shortage of high-capacity broadband facilities in operation today, and the lack of these high-capacity links to the Internet (often called “backhaul” facilities) creates a barrier to the widespread availability of greater broadband to the home. Building bigger broadband “pipes” into every anchor institution can help to solve the backhaul problem. High-capacity broadband connections to anchor institutions can serve as “stepping stones” or “jumping off” points that make it easier to provide Last Mile connections in the future. The SHLB Coalition strongly supports the notion that high-capacity broadband facilities should be open to interconnection by Last Mile providers so that residential consumers will ultimately benefit from the construction of the high-capacity broadband network. But *requiring* all applicants to serve residential service at the front end of the process simply discourages the build-out of facilities to anchor institutions.

Furthermore, there is simply not enough funding available to build Last Mile broadband facilities in every community. Focusing efforts on funding Last Mile connectivity, while beneficial for those communities that receive funding, will inevitably mean that many communities obtain no benefit from this broadband stimulus programs. We suggest that a

much more efficient approach (creating more “bang for the buck”) is to build high-capacity broadband networks to every anchor institution. Our analysis suggests that there is close to enough funding to build such a broadband “pipe” to every single hospital, library and school in the U.S. In other words, **every single community in the country could obtain the benefit of the BTOP stimulus program.** This would provide a significant boost to economic development across the entire country.

**III. The NOFA should be changed to give greater priority to providing broadband funding for community anchor institutions.**

NTIA and RUS have indicated that they plan to make changes to the application rules for the second and third rounds of funding. The SHLB Coalition respectfully presents its analysis of the problems with the current rules and suggests the following recommendations for changes to the rules for the second and third rounds of funding so that anchor institutions receive the priority that is set forth in the statutory language:

**A. The NOFA should be revised to establish a separate application category for networks dedicated to serving anchor institutions as a way to give greater priority to providing anchor institutions.**

The NOFA rules were not designed to accommodate the broadband networks dedicated to serve anchor institutions. The NOFA rules for Infrastructure grants create two different categories of applicants: “Last Mile” applicants and “Middle Mile” applicants. Both of these categories are designed for networks providing service to residential consumers. Anchor institutions, however, do not directly provide broadband service residential consumers and

usually obtain their own dedicated broadband networks. As a result, anchor institution networks found it difficult or sometimes impossible even to comply with the application requirements.

Libraries, schools and health care institutions generally try to obtain their own dedicated broadband networks because that is the most efficient and least costly way to obtain broadband connectivity. These networks, for instance, allow individual schools, libraries and hospitals both to share (non-Internet) information among themselves in addition connecting onto the public Internet. These types of networks provide efficiencies, cost savings, reduced maintenance expenses, upgradable capacity specifically for high-capacity entities.

Attached to this statement are two network diagrams of anchor institution networks in different states. As can be seen, a high-capacity broadband connection connects each individual branch location to a central hub. The hub then uses an even higher capacity connection to the Internet. These networks do not provide service directly to residential consumers. (However, by allowing for interconnection with residential networks, community anchor institution networks can help facilitate greater residential access.)

Unfortunately, the NOFA rules for Infrastructure projects do not contemplate this type of anchor institution network. “Last Mile” networks are those that provide service to residential consumers. “Middle Mile” projects are defined as those that do not serve end users/consumers and connect a limited number of point-to-point locations. Anchor institution networks, however, include elements of both categories. They include both last mile facilities directly connecting end users (the school, library or health care provider) AND they contain high-capacity point-to-point facilities that connect to the Internet backbone.

The NOFA directs anchor institutions to apply under the Middle Mile category. Many of the BTOP application questions for Middle Mile applicants, however, are designed to elicit information concerning the services they will provide to residential and business consumers. The questions asked of “Middle Mile” applicants are inherently difficult or impossible for an anchor institution to answer. For instance, question 14 asks for the demographic information of the *households and businesses* of the contiguous census block traversed by each Middle Mile “span” and for each “last mile service area” associated with the Middle Mile project. Question 18 asks Middle Mile applicants to identify the Last Mile “service providers with whom the proposed network proposes to interconnect,” and “the projected *end users* that will be served by these proposed connections.” Since anchor institution networks do not serve residences and businesses, these questions are simply not applicable. Unfortunately, the BTOP Application Guidelines state specifically that this information “must be presented” or “the Application is deemed incomplete.” This confusion is quite discouraging, especially considering that the statutory language gives clear priority to building broadband networks serving anchor institutions.

The SHLB Coalition respectfully suggests that NTIA can rectify this situation and carry out the legislative intent by creating a separate category specifically for anchor institution networks. Designing a category of questions that are more applicable to these networks will encourage more anchor institutions to apply for funding. Applicants who sat on the sidelines in the first round will be able to consider applying in the next round, which would improve both the number and the overall quality of applications that are submitted and increase the opportunities for anchor institutions to receive broadband funding.

In creating this new category, NTIA should design criteria for evaluating applications from anchor institutions that give greater priority to applications proposing high-capacity broadband networks to serve the needs of libraries, health care providers and schools. As discussed above, schools, health care providers and libraries provide essential services to millions of people. Furthermore, they are often the “hub” of their communities, and providing high-capacity broadband to them will enrich the economic and social environment around them. Therefore, NTIA should design criteria for evaluating applications from these entities that reward those applications that offer the greatest benefits to the general population. For instance, NTIA should give greater weight to anchor institution network applications that propose to provide a significant increase in the level of educational, medical and learning services to residents and businesses in the community. To be truly “stimulative”, NTIA should encourage applicants both to build broadband and to demonstrate the beneficial uses of that broadband capability for the population they serve.

**RECOMMENDATION #1: NTIA should create a separate category for networks dedicated to serving anchor institutions because these networks do not fit within either the Last Mile or Middle Mile categories. NTIA should give greater priority to funding anchor institutions and encourage anchor institution applicants to demonstrate how the additional broadband will benefit their constituents or the community at large.**

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**B. The NOFA must give greater weight to broadband applications that seek to connect community anchor institutions with truly high-capacity, “future-proof” broadband networks.**

The NOFA does not recognize that community anchor institutions often require very high-capacity bandwidth. Anchor institutions need enough capacity to handle multiple

computers at the same time. Yet the NOFA sets forth a very low-speed and insufficient definition of broadband (768 kilobits per second download). This anemic definition does not send the right signals to applicants about the need to build high-capacity broadband networks needed for the future.

The SHLB Coalition firmly believes that health care providers, libraries and schools need affordable access to “future-proof” high-capacity, broadband technologies, especially in rural and low-income areas. Federal policy should encourage the deployment of high-capacity broadband networks that can provide a minimum of 100 Mbps to small entities and 1 Gbps or more to larger entities. Moreover, these broadband networks should be easily upgradable to meet the enormous growth in demand that is expected from high-definition video, distance learning, telemedicine, job-training and other societally-beneficial applications.

We recognize that the definition of broadband at 768 Kbps is a floor and that the NOFA encourages applicants to offer greater capacity than this minimum amount. Nevertheless, for anchor institutions, this minimum threshold is not “in the ballpark”. Small rural libraries, schools, and health clinics find that a T1 (1.5 Mbps) is a minimum necessity, and even this level of capacity is often inadequate. We respectfully suggest that the BTOP program should not be used to fund incremental increases in broadband connectivity. Rather, the BTOP program should build for the future. Given the size of the federal deficit, the BTOP program is not likely to provide an ongoing source of funding beyond the life of this particular program. Rather than invest in interim technologies that will be overcome by demand in a short period of time, the BTOP program should invest once in long-lasting facilities that are scalable to serve the nation’s

broadband needs for decades. In fact, the statutory language specifically says that funds should only be awarded to projects that would not have been built without federal funding, which is an indication that Congress sought to fund high-capacity broadband projects that are too expensive to build from existing revenues. The legislation also emphasizes the need to create jobs by building new infrastructure, and to restore America’s leadership in broadband capabilities. Using BTOP funds to allow entities simply to order additional broadband circuits using existing technologies or build incremental networks that barely meet the 768 kbps threshold would not be consistent with the purposes of creating the BTOP program and the needs of America’s economy and consumers.

Thus, the SHLB Coalition respectfully suggests that NTIA adopt a definition of broadband for anchor institutions that is more consistent with their needs and that establishes a goal of delivering 100 Mbps, scalable up to 1 Gbps, to every one of these organizations.

**RECOMMENDATION #2: NTIA should create a separate definition of high-capacity broadband for anchor institutions with the goal of delivering 100 Mbps to 1 Gbps to these organizations.**

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**C. The NOFA must allow funding for all anchor institutions, not just those in unserved and underserved areas.**

The NOFA prevents many deserving anchor institutions from applying for funding by applying limits on anchor institutions that are not contained in the statutory language. For instance, the NOFA says that all applicants must provide service to “unserved” or “underserved” areas. While this is an understandable requirement for residential service, these limitations should not be applied to community anchor institutions.

The statutory language in section 6001(b)(3) of the ARRA does not apply the “unserved”/“underserved” restrictions to broadband services to anchor institutions. Congress wisely chose not to employ this “unserved”/“underserved” restriction to health care providers, educational institutions and libraries because it recognized that these critical institutions provide essential services to the community no matter where they are located (whether urban, suburban or rural).

The limitation to “unserved/underserved” areas is even more limiting because of the way these terms are defined. The rules measure whether an area is unserved/underserved based on whether or not *residential* consumers have access to 768 kbps bandwidth (download). But the bandwidth available to residential consumers should be irrelevant to whether the anchor institution can obtain broadband funding. If a hospital needs broadband funding for a fiber connection to improve the quality of the health care it provides to patients, it should be able to do so. If a community college needs broadband funding for a 100 Mbps connection to provide job training instruction it should be able to do so. If a library needs broadband funding for a wireless connection that will allow its patrons to obtain unemployment benefits or apply for jobs, it should be able to do so. Under the current rules, however, if this hospital, school or library happens to be located in area where the residences can purchase broadband service, the hospital, school or library is not allowed to receive funding. The eligibility of these institutions to receive broadband funding should not be dictated by the definitions and geographic boundaries that might apply to households. Even in areas where residential consumers may have broadband as currently defined by NTIA, the library, school or health care provider may need much greater bandwidth to support multiple users and more complex

applications. In other words, ALL libraries, health care providers and schools that can demonstrate a lack of broadband capabilities or a need for greater broadband to serve their mission should be eligible to apply for funding.

Further, the 768 kbps definition is so slow that almost every area of the country has that level of service from cellular service alone. Many anchor institution applicants have found that there are extremely few unserved/underserved geographic areas in their states, and some states may have no unserved/underserved areas at all. Thus, this narrow definition of broadband makes it difficult or impossible for many deserving anchor institutions to acquire funding to improve their broadband connections.

**RECOMMENDATION #3: All community anchor institutions including those in urban, suburban and rural areas should be eligible to apply for broadband funds, because of the essential services they provide to the public. NTIA should not limit funding for anchor institutions to those institutions that are in unserved/underserved areas.**

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**D. The NOFA should be changed to award additional “points” to those Last Mile and Middle Mile applicants that connect anchor institutions.**

In addition to creating a separate category for anchor institution networks, Last Mile and Middle Mile applicants should also be given greater incentives to serve anchor institutions in their applications. There may be some areas of the country where it is not feasible to construct or provide a network dedicated to anchor institutions. In these areas, anchor institutions will need to acquire broadband service from a Last Mile or Middle Mile provider. The criteria for scoring Last Mile and Middle applicants should be adjusted to give greater weight to Last Mile and Middle Mile applicants that serve anchor institutions.

We recognize that NTIA has encouraged applicants in these categories to include service to anchor institutions in their applications. Unfortunately, however, the NOFA does not give Last Mile and Middle Mile applicants enough “points” for serving anchor institutions. The BIP process only gives applicants a maximum of 5 additional “points” for offering discounted rates to all “critical community facilities.” (NOFA, Section VII.A.1.c.iv.) The BTOP process does not identify any particular “points” for service to these entities. We do not believe that this system gives anchor institutions the priority that they deserve under the statutory language.

In order to ensure that service providers have sufficient incentives to serve anchor institutions, we suggest that the next NOFA should increase the amount of “points” available for applications that seek to connect anchor institutions. Furthermore, the amount of points awarded to an application should increase the more bandwidth that the applicant proposes to offer the anchor institution.

**RECOMMENDATION #4: NTIA should award more “points” for Last Mile and Middle Mile applications that propose to serve anchor institutions with high-capacity broadband. Furthermore, more points should be awarded for higher-bandwidth services to these institutions.**

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**E. The NOFA does not make enough funding available for expanding public computer center capacity.**

The ARRA says that “not less than \$200,000,000 shall be available for competitive grants for expanding public computer center capacity, including at community colleges and public libraries.” The NOFA makes only \$50 million available in this round of funding. Not only is this less than one-third of the minimum amount directed by the statute, this amount does not

reflect the enormous need for libraries, community colleges and other public computer centers for greater funding. Especially in these challenging economic times, the general public has a great need for expanded public access to the Internet to search for and apply for jobs, to apply for e-government benefits, to take job training classes, and to engage in distance learning. Furthermore, expanding public computer center capacity works hand-in-hand with greater broadband deployment – increasing the capacity of larger public computer centers will drive the deployment of greater broadband.

**RECOMMENDATION #5: NTIA should allocate more than the minimum amount of funding for projects to expand public computer center capacity.**

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**F. The application process is cumbersome and difficult.**

Many applicants for funding have encountered enormous obstacles in simply submitting an application. We appreciate the complexity of this process and we know that the government agencies have worked extremely hard to make the application process as smooth as possible. Nevertheless, the application process could be significantly improved in subsequent rounds of funding. The following lists some of our recommendations to improve the mechanics of the application process:

- i. Eliminate the “infection rule.” The government has declared that if there is one flaw in an application, the entire application will be rejected. This practice encourages applicants to sub-divide their applications into multiple smaller units to increase the odds that some of their proposals are adopted. The practical impact is to increase the raw numbers of applicants and to discourage large aggregated applications. It also increases the workload on both applicants and on the government reviewers.

- ii. The rules discuss the “Middle Mile span” as if the applicant were constructing one span; in fact, most anchor institution networks include multiple spans to each library, health care building or school.
- iii. The rules unnecessarily require “Middle Mile” applicants to provide details of the census blocks traversed by each “span”, even if the “span” does not terminate in the census block and provides no benefit to the residents of the census block.
- iv. The process allows Middle Mile applicants to apply for funding as long as they serve one area that is unserved/underserved. Thus a Middle Mile applicant may serve some “served” areas as well as unserved/underserved areas. However, the application process requires “Middle Mile” applicants to label each funded service area as “unserved” or “underserved”. Unlike the BIP process, there is currently no option to identify a service area as served.
- v. The rules require Middle Mile applicants to identify the “Last Mile” service providers that will interconnect with the Middle Mile facilities. But network providers that are dedicated to anchor institutions do not know in advance what “Last Mile” providers that will interconnect with their facilities.
- vi. The rules make it difficult for an applicant to determine whether or not a particular geographic region is unserved/underserved. Most of this information is held by the broadband service providers, but this information is generally not made available to the public. Furthermore, the rules allow a service provider to challenge an application with evidence that an area is “served”, and the applicant may have no opportunity to review or contest that information. NTIA should establish a process to make broadband deployment information available to the public; and applicants should be able to review and challenge data submitted by the industry that seeks to eliminate a proposed application.
- vii. The definitions of “proposed funded service area” and “service area” are quite confusing, particularly as they apply to networks that are dedicated to serving on anchor institutions and not the surrounding community.
- viii. The online application process has very low page limits for some information, such as network design and budget information. Some applicants had 35-40 pages worth of material that was requested by the NOFA, but the on-line system limited the page length to 4 or 5 pages.
- ix. There remain several open questions concerning the compatibility of these . funding programs and the E-rate. These two programs should be able to work hand-in-hand: the BTOP program provides funding for the up-front installation costs, while the E-rate supports ongoing monthly expenses. However, some of the BTOP processes (such as encouraging schools and libraries to contract with vendors prior to receiving funding, and encouraging re-selling capacity to provide

residential service) may not be fully consistent with the E-rate processes. Some schools and libraries are reluctant to apply for BTOP funding for fear of losing their E-rate support. Additional clarification of these issues would help schools and libraries benefit from the BTOP program.

**RECOMMENDATION #6: NTIA should simplify the application process and design rules that are more consistent with networks that are dedicated to serve anchor institutions as set forth above.**

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**IV. CONCLUSION: NTIA should give greater priority to building high-capacity networks to serve anchor institutions in the second and third rounds of funding.**

In conclusion, funding anchor institution networks will bring very high-capacity, future-proof facilities into **every community in the country**. Funding such capacity will have enormous economic and social benefits for the entire nation. We appreciate the opportunity to work with the Committee to address these issues as you continue your oversight over the American Recovery and Reinvestment Act.

Sincerely,



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Coordinator

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## APPENDIX A:

### MEMBERS OF THE SCHOOLS, HEALTH AND LIBRARIES BROADBAND COALITION: (48 Members - Updated as of August 21, 2009)

Sean McLaughlin  
**Access Humboldt**

Joel Kelsey  
**Consumer's Union**

George Boggs  
**American Association of Community Colleges**

Gene Wilhoit  
**Council of Chief State School Officers**

Mary Alice Baish  
**American Association of Law Libraries**

Lillian Kellogg  
**Education Networks of America**

Kristin Welsh  
**American Hospital Association**

Wendy Wigen  
**EDUCAUSE**

Lynne Bradley  
**American Library Association**

Ben Scott  
**Free Press**

Prue Adler  
**Association of Research Libraries (ARL)**

H. Stephen Lieber  
**Healthcare information and Management  
Systems Society (HIMSS)**

Shmuel Feld  
**Benton Foundation**

Rick Whitt  
**Google Inc.**

Jill Nishi  
**Bill & Melinda Gates Foundation**

Hilary Goldmann  
**International Society for Technology in  
Education**

Malkia Cyril  
**Center for Media Justice**

Dee Davis  
**Center for Rural Strategies**

Marianne Chitwood  
**Indiana's Higher Education Network (I-Light)**

Susan McVey  
**Chief Officers of State Library Agencies**

Chris Mullins  
**Instructional Telecommunications Council**

Don Means  
**Community Telestructure Initiative**

Gary Bachula  
**Internet2**

Keith Krueger  
**Consortium for School Networking**

Bob Handell  
**KeyOn Communications**

Mike Phillips  
**Lonestar Education and Research Network**

Amalia Deloney  
**Main Street Project**

Andrew J. Schwartzman  
**Media Access Project**

Beth McConnell  
**Media and Democracy Coalition**

Todd Wolfson  
**Media Mobilizing Project**

Don Welch  
**Merit Network, Inc.**

Paula Boyd  
**Microsoft**

Helen DiMichiel  
**National Alliance for Media, Arts and Culture**

Alex Nogales  
**National Hispanic Media Coalition**

Tom West  
**National Lambda Rail (NLR)**

Steve Solomon  
**National Medical Wireless Broadband Alliance, LLC.**

Alan Morgan  
**National Rural Health Association**

Michael Calabrese  
**New America Foundation**

Tim Lance  
**New York State Education and Research Network (NYSERNet)**

Joe Freddoso  
**North Carolina Research and Education Network**

George Loftus  
**Ocean State Higher Education & Administrative Network (OSHEAN)**

Harold Feld  
**Public Knowledge**

Jen Leasure  
**The Quilt**

Brian Quigley  
**Sunesys**

Deanne Cuellar  
**Texas Media Empowerment Project**

John Reynolds  
**21<sup>st</sup> Century Libraries**

Susan Benton  
**Urban Libraries Council**

Amina Fazlullah  
**U.S. Public Interest Research Group (USPIRG)**

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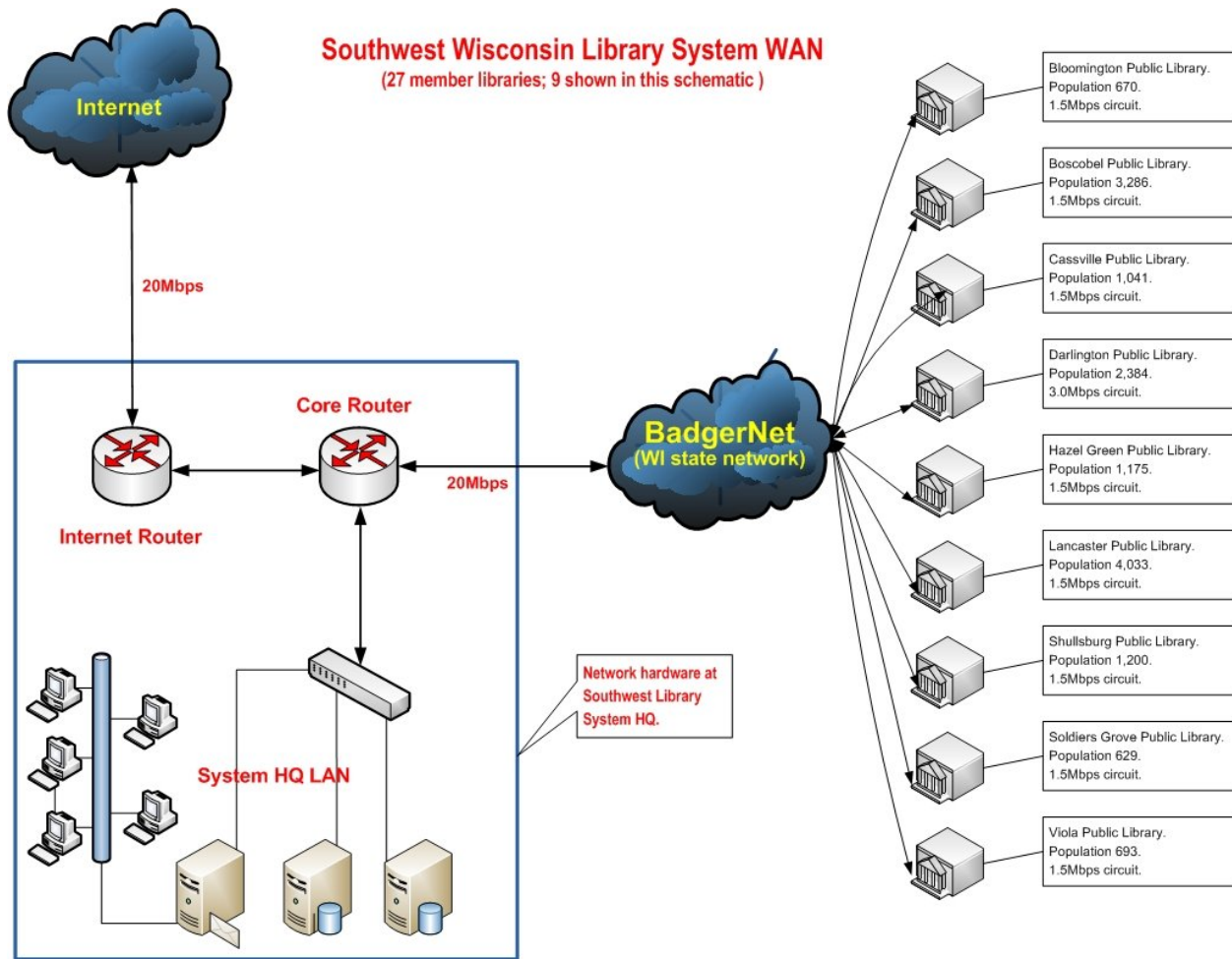
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**Appendix B:**

**Network Diagrams of the Southwestern Wisconsin Library System**

**And**

**Jackson County Michigan**



# Jackson County, Michigan

Exhibit A – Network Attachment Topology  
 Merit Network, Jackson District Library,  
 Jackson County ISD  
 Network Topology & Fiber Utilization  
 5-29-2008, updated: 4-20-2009

