

Region 7 Broadband Investment Plan

Final - October 25, 2011

Background

[1] The Region 7 area has strong regional leadership and experience with bringing communities together to achieve shared goals. One of the emerging priorities for the region is improved broadband availability and use. This was apparent when area community and organizational leaders participating at an April, 2010 "Connecting Southwest Wisconsin Broadband Summit (<http://connectingwi.org/events.html>) identified multiple benefits improved access to broadband services can bring to the region. Specifically, better connectivity can:

- Improve local access to education and training resources;
- Enable seniors to access social security and Medicare information on-line;
- Improve on-farm efficiencies and profitability;
- Support new business formation, telecommuting and job development;
- Reduce the need to travel long distances for medical care;
- Speed response and improve coordination of emergency services;
- Facilitate marketing of the region to visitors; or
- Enable government to more efficiently deliver services to local residents.

[2] The Region 7 Broadband Planning Team proposes to build upon the existing regional organizational strength of BEST Wisconsin to facilitate additional regional partnerships to advance broadband development and utilization. In addition, the proposal builds on existing broadband infrastructure improvements and adoption education efforts being implemented through a UW Extension Demonstration Project in the Platteville area.

[3] Providing an organizational framework that brings together broadband service providers and diverse leadership within a region is one of the most effective approaches to addressing broadband service gaps as well as creating more economic and social opportunities as a result of broadband that is available. This planning document outlines a set of tasks that lead to the formation of stronger region-wide collaboration and the implementation of initiatives to improve both the availability and adoption of broadband. The document begins with a brief background overview of the need and opportunity.

Priority Need

[1] Region 7 has large areas of rural population evidenced by average population density being less than half the state average in all five Counties in the region. The availability of broadband options is closely associated with population density.

[2] The number of broadband providers available in a given Census Block increases dramatically with population density. In Wisconsin the population density for Census Blocks with more than 2 broadband provider options is approximately 500 people per square mile. It is much more costly for providers to extend service to more sparsely populated areas and there is less provider economic incentive to deploy broadband services in more rural areas because there are fewer revenue opportunities. For rural areas with more dispersed population, it is much more typical to have only 1, 2 or no broadband provider options. In most cases at least one of those options is a mobile broadband provider.

[3] The chart below illustrates the distribution of wireline broadband provider options in the Region 7 area. In general areas in and around population centers in the region have at least one provider offering broadband service of 3 Mbps or greater. However in outlying areas there remain significant gaps in wireline service. While in many cases there are mobile providers that offer a broadband service, that service is usually a slower download speed and can be spotty or nonexistent in many more isolated locations.

[4] The Region 7 broadband planning team recognizes that certain population groups are less served by broadband even in places where broadband service may be available. In particular, older residents are less likely to access broadband than younger residents.

[5] While the potential benefits of broadband access for older residents can be substantial, they tend to be less interested and less knowledgeable of on-line opportunities than younger residents. For example, many within the aging population lack the skills to find basic information about Medicare, Social Security, hobbies or Facebook on the Internet.

[6] Another critical population group identified for Region 7 are those involved with agriculture. In 2007, the region had nearly 9000 farms producing over 850 million dollars in total sales. Access to broadband is recognized as essential for this important part of the local economy to continue to prosper moving into the future. Broadband enables farm operators to tap into market information, cost effectively locate the best prices for farm inputs and efficiently manage their operations. Farms within the region are more often in low population density areas with more limited broadband service options. Where broadband is available, older farm operators need assistance in understanding on-line tools that can be leveraged to support their farm operations.

[7] As an initial action step forward to address broadband development needs in the region, the priority is to organize a "Broadband Partnership" organization sponsored through BEST Wisconsin. This diverse partnership will bring together regional leadership as a focal point to implement priority broadband development projects in the region including outreach to help establish a business case for investment by the region's providers of broadband service.

Overview of Regional Opportunity

[1] Region 7 has core cohesive leadership already established that could be leveraged to form a new Broadband Partnership. Examples of organizations likely to be a part of this “partnership” include, but are not limited to:

- CESA 3 and member K-12 school districts
- Southwest WI Library System and member libraries
- Southwest WI Regional Planning Commission
- UW-Platteville, administrators, faculty and students
- Southwest WI Technical College, administrators, faculty and students
- Southwest WI Workforce Development Board
- Internet Service Providers at the local, corporate and foundation levels
- County-UW Extension Offices (Crawford, Richland, Grant, Iowa, Lafayette)
- BEST Wisconsin (Regional Economic Development Group)
- Prosperity Southwest WI (Regional Economic Development Group)
- Southwest WI Community Action Program
- Community Chambers of Commerce and their members
- Wisconsin Rural Partners - Government offices at municipal, county and state level
- Community civic group members - Motivated citizens (especially those ‘stuck with dial-up’)
- Farmer organizations
- Media organizations
- Hospitals and clinic administrators, boards of directors and foundations
- Internet Service Providers

[2] The Region has already demonstrated the ability to successfully leverage partnerships with the successful application for broadband planning and broadband infrastructure funding led by the UW Extension in Grant County. BEST Wisconsin along with other regional sponsors organized a well- attended Broadband Summit in 2010 and has strong Board leadership for expanded broadband initiative engagement. The Public Library System and the Southwest Wisconsin Technical College have demonstrated outreach experience to improve skills of seniors, farmers and others in utilizing on-line technologies. These are just several examples of on-going leadership in the region.

[3] Especially for the outlying smaller towns and villages, partnerships are the only means to gain enough capacity to successfully advocate with ISP’s, government programs and others to invest in the region’s broadband infrastructure and programs to improve adoption. The formation of a Broadband Partnership is an important first step forward towards providing a meaningful focal point in the region to encourage investment.

Proposed Broadband Investment

[1] The Region 7 planning team agreed that initially the investment plan will focus on facilitating BEST Wisconsin in forming and staffing a Broadband Partnership group; supporting continued implementation of already established initiatives such as the

Southwest Public Library System/Wisconsin Technical College outreach and training; and working with local ISPs to fill broadband gaps where needed.

[2] The following table provides an overview of key planned investments:

Type of Investment	Activities	Responsibility
Leadership to form SW Wisconsin Broadband Partnership	<ul style="list-style-type: none"> • Facilitate BEST WISCONSIN to form partnership committee • Solicit and manage regional partnerships. • Coordinate with UW Extension demonstration project in Grant County • Apply for and manage grants as needed. • On-going communication. 	BEST Wisconsin together with libraries, k12 education, CESA 3, higher education, regional planning commissions, local governments, farm organizations, and others.
Financial support for promising computer and Internet skills training programs	<ul style="list-style-type: none"> • Research funding potential funding sources. • Apply and manage grants as appropriate. 	<ul style="list-style-type: none"> • SW Wisconsin Library System • SW Wisconsin Technical College • Others
Address Broadband Service Gaps	<ul style="list-style-type: none"> • Prioritize broadband service deficiencies. • Engage providers to find solutions critical broadband service gaps. • Apply for broadband infrastructure grants if appropriate. 	Best Wisconsin and other regional partners.

Key Tasks and Timeline

Phase 1: Implement Collaborative Broadband Partnership with BEST Wisconsin Leadership

Summer 2011 and On-Going

Task 1.1

BEST Wisconsin will host initial meeting to organize a working committee of broadband providers, business, education, libraries, regional planning organizations, local governments, health care, farm organizations and others for successful collaboration to advance broadband availability and use. The BEST Wisconsin Broadband Partnership Committee will initially be staffed by volunteers, but include a high priority of seeking and obtaining base operations funding to staff within BEST Wisconsin to manage this partnership. This partnership will be integrated with other community related developments.

Especially in Grant County, the new Best Wisconsin Partnership will build on and seek synergies with the UW Extension demonstration project.

Task 1.2

A campaign will be launched to secure approximately \$75,000 base operational funding and in-kind contributions from local sources. Volunteers will be engaged to create a set of basic set of promotional materials that highlight the benefits the region can gain with the formation of an organized Broadband Partnership. Local broadband providers, ISPs businesses and other with the potential to donate funding to support expanded staffing within BEST Wisconsin for this purpose. To minimize cash needs, the fund raising campaign will include opportunities for in-kind contributions such as office space, loaned computers, loaned executives and so forth.

Task 1.3

The Best Wisconsin Broadband Partnership will leverage data on broadband availability, consumer survey results and other information assembled by the LinkWISCONSIN broadband planning process. Data profiled will include a mapping of broadband demand including such things as locations of farmers, professionals with high broadband demand, students, businesses and seniors. This could be facilitated with an on-line web portal enabling consumers to identify areas of broadband demand. This information in addition to priorities identified in regional forums will be used to build consensus on target projects. Those projects may in part be addressed in Task 2 and Task 3 of this plan.

Task 1.4

The Best Wisconsin Broadband Partnership will create avenues for on-going communication with the public and broadband providers throughout the region. This may include the preparation of fact sheets on broadband availability and use; periodic public meetings; and on-line media such as Facebook and twitter. The Partnership will serve as a vehicle to identify broadband development needs and potential projects important to the region. Those needs will be communicated on going to industry representatives, elected officials and others as appropriate.

Task 1.5

The Partnership will also implement on-going outreach to help mobilize area communities to successfully market themselves to broadband providers. This will include an early focus on engaging County and city engineers and planners to understand how broadband planning can fit within other comprehensive planning and infrastructure initiatives. For example when a trench is open, there can be coordinated communication so the all utilities can take advantage of the opportunity to bury broadband. Local government and providers can work on right-of-way issues in advance of the need to lay fiber or construct a tower. By openly sharing construction plans, area health care, education, government, business and other sectors can reduce their cost of completing infrastructure projects.

Phase 2: Computer and Internet Skills Training Programs

Application Summer 2011 / Implementation 2012 and After

Task 2.1

The Southwest Wisconsin Library System will seek funding to continue to provide a series of classes on computer and Internet basic skills, targeted especially to seniors who are not presently using on-line technologies. Initially a grant application for the Library System Technology Grant will be developed. Other funding sources will be considered as appropriate. The initiative will be implemented in partnership with the Southwest Wisconsin Technical College and local Senior Centers, to continue to provide teachers, library and other computer centers, and curriculum for classes in basic computer and Internet searches. The project would create awareness and education outreach to expand broadband adoption and use among the region's five counties in Region 7. The Best Wisconsin Broadband Partnership Committee will provide a forum to engage and demonstrate wide support for this initiative.

Task 2.2

The Southwest Wisconsin Technical College will explore an appropriate future program direction and funding to continue training for farm producers on broadband applications. Training could include such things as on-line financial management tools, updating producer nutrient management plans, farm business plans, market research and other topic areas. Offering courses on a fee basis for credit will minimize the need for grant resources. Details including funding needs will be developed during 2011.

Phase 3: Address Broadband Service Gaps

Spring to Summer, 2012

Task 3.1

Broadband providers will be engaged from the inception of the Best Wisconsin Broadband Partnership initiative. The research tasks described in Phase 1 will develop a better database and consensus on broadband service gaps in the region. After available data is refined, a "service gap" team including but not limited to local providers representing multiple technologies will be convened to review identified broadband service gaps and recommend solutions. The team will include representation from the UW Extension demonstration project to ensure coordination with backbone infrastructure deployed as a part of that project.

Task 3.2

The broadband service gap team will review available data including broadband service availability, demographic data, business survey results and other information to prioritize unserved areas for potential expansion of broadband service. Assess options and solutions.

Focus priority on areas where a business case for at least one provider for expansion can be identified.

Task 3.3

The Best Wisconsin Broadband Partnership Committee will organize regional support for provider, municipal or other organizational loan/grant applications as may be needed to advance solutions to broadband gaps in areas where there is business interest.

Budget

Infrastructure Funding

- TBD in 2012 after careful research

Paid Staff

- A half-time paid professional based within BEST Wisconsin is needed to ensure project tasks are well organized, volunteers are coordinated, grant applications are submitted as needed, communication with all stakeholders are clear and consistent. This position could be contributed in-kind by an existing organization or funded as a new position subject to available funding.

Contributed In-Kind Staff

- TBD

Funded Paid Staff

- TBD

Volunteer Time

- Given limited resources, most of the key tasks are expected to be accomplished by regional volunteers.

Number of Volunteer Hours

- TBD

Value of Volunteer Hours

- TBD

Other Investment

- Grants will be prepared and submitted for continued funding of library and Southwest Technical College Outreach.

Anticipated Impacts & Three-Year Objectives

Anticipated Outcomes and Impacts

[1] The proposed broadband investments are anticipated to result in several important positive outcomes and impacts for the region including but not limited to:

- Greater organized regional capacity to identify, prioritize and implement actions to improve availability and adoption of broadband services, especially in underserved rural areas.
- Expand adoption and use of broadband services among aging population.
- Expand adoption and use of broadband services by area farm producers.
- Improve access to vital basic services such as health care, government, and educational services.
- Strengthen tax base in rural areas associated with new business formation and better access to jobs and critical public services.
- Expansion of broadband service investment in rural locations.

Three-Year Objectives

[2] The following objectives are targeted for the five Counties in Region 7 by 2014:

- A Broadband Partnership organized under the leadership of BEST Wisconsin will be fully operational with adequate staffing and resources for continued leadership needed to advance identified priority broadband investment projects.
- Affordable broadband access will be available to more residents compared to levels at the beginning of 2012.
- Among farms and rural businesses that do not adopt broadband by the beginning of 2012, at least 50 percent will adopt and use broadband within their business by 2014.
- Among seniors participating in Library outreach, 25% will indicate they feel more skilled in using a computer including for accessing health information, social security, employment and volunteer information.
- Among Southwest District Libraries at least 50% will report increase use of the libraries computers by class participants and observe an improvement in skill levels.
- All anchor institutions in the region will access a broadband connection of 3 Mbps download or greater and 75% will access a broadband connection of 10 Mbps or greater.

NOTE: These target objectives may be modified after completion of a baseline research.

Monitoring and Evaluation

[1] Subject to available funding, the LinkWISCONSIN/Public Service Commission Team will support Region 7 to design and implement a comprehensive monitoring and evaluation effort. The monitoring process will focus initially on collecting data on inputs, activities and processes. The evaluation process focuses on outputs, outcomes and impacts.

[2] Examples of inputs include such things as number of volunteer hours, hours of paid staff time, number of local partners engaged or time spent in planning meetings. Activities and Processes are such things as progress towards completing a comprehensive database on business Internet usage, development of a memorandum of understanding with local university campus to help with a business survey, formation of local task groups, collection of baseline data on business broadband access and adoption, and so forth. The linkWISCONSIN/PSC Team will create on-line tools to support this necessary data collection.

[3] The evaluation process will focus initially on outputs and outcomes defined by the above objectives. For example identifying expanded awareness of broadband opportunities among residents, businesses and governmental organizations. Impact data will go beyond outputs and outcomes to determine such things as the economic impact of expanded telecommuting; energy savings and household savings from reduced commuting, tax base improvements from new business formation, etc.

[4] Subject to available funding, a detailed monitoring and evaluation plan will be designed and implemented early in 2012.

Sustainability Plan

[1] Success in attracting the targeted broadband investments will depend significantly on an upfront project design that assures the initiative will be sustainable into the future. This sustainability will be achieved through the strategic engagement and leveraging of existing organized efforts in the region that include but are not limited to:

- Integration of this priority broadband investment initiative within the emerging structure and plans for the BEST Wisconsin.
- Collaboration with the UW Extension Broadband Demonstration Project.
- Engagement and partnership with area broadband service providers.
- Strong partnerships with area County-level economic development corporations and business associations.
- Engagement of CESA 3, k-12 education, farm organizations, health care providers and others.
- Strong partnerships with area Regional Planning Commissions.
- Outreach and engagement to appropriate state government entities and legislative audiences.

[2] In short, the strength and sustainability of the project to expand broadband investment targeted to rural businesses will depend on the effective partnership of multiple existing organizations. The goal is to minimize the need to obtain funding for new operational

revenues and contracts. Similarly, to the extent current broadband gaps can be filled through helping to build a business case for existing providers to extend service to fill those gaps rather than the need to find grant or load resources for infrastructure, the chances of success will be enhanced.

[3] It is recognized however that volunteer leadership in the region is stretched. Sustainability will be enhanced by successful efforts to obtain funding for at least a half-time paid staff position within an existing organization to provide the on-going leadership and organization to manage these important partnerships.

Appendix A: Regional Description

Counties and Communities

Crawford, Grant, Iowa, Lafayette and Richland Counties make up the Southwest Region (Region 7). Platteville in Grant County is the largest community in the Region with more than 10,500 people. Prairie du Chien is the second largest city in the region with a population over 6,000 people followed by Dodgeville with over 4,500 people. Three other communities in the Region including Jamestown, Mineral Point and Darlington have a population larger than 2000. The majority of communities in the Southwest region are smaller than 1000 in population.

Population

Based on 2009 Census estimates, 122,779 people live in the five county Southwest Region. Grant County is the largest with an estimated 48,965 people. Iowa County has a total population over 23,000 people. The remaining three counties have populations under 20,000.

Of the five counties, only Iowa County experienced population growth over the past decade, increasing by 718 people (3.2%). Other counties in the region experienced a modest population loss: Crawford (-3.0%). Grant (-1.3%), Lafayette (-2.5%) and Richland (-0.4%). Overall the Southwest Wisconsin region's population declined 0.8 % between 2000 and 2009 while growing 5.4% statewide.

Population in the Southwest region is more widely dispersed than the average for state. On average, about 31 people per square mile live in Southwest Wisconsin compared to an average of 86.3 people per square mile for the state. Population density is highest in Grant County at 41.4 people per square mile and lowest in Crawford County at 27.9 people per square mile.

Demography

16.1 percent of the population living in Southwest Wisconsin are 65 years or older compared to 13.3 percent for the state in 2008. Richland County has the highest percentage of the population older than 65 at 17.4 percent. Iowa County has the lowest percentage older than 65 at 13.4 percent.

Overall, the proportion of people older than 25 with a High School diploma for Wisconsin is higher than the national average (85.1% versus 80.4%). This general statewide trend is also the case for the Southwest Region. In all five Counties the percentage of the population older than 25 with a High School diploma higher is over 81 percent. In Iowa County 88.5% of adults have a High School diploma or better. However, the percentage of people over the age of 25 with a Bachelor's degree or higher in the Southwest Wisconsin region is only 15.3% compared to an average of 22.4% for the state. In Iowa County 18.5% of adults have a Bachelor's Degree or better, which is the highest for the Southwest Region.

Demographically, the Southwest Wisconsin Region is less racially diverse than the average for the state. 97.8 percent of the population living in the region are white compared to 89.7 percent for the state.

Median Household Income

On average, 2008 median household income is \$46,959 for the region compared to \$52,103 for the state. Only Iowa County has a higher median household income than the state at \$56,063. Crawford County has the lowest median income at \$41,646.

Based on 2008 income statistics, the percentage of the population living below the poverty level is somewhat less in the Southwest region than the statewide average (10.8% versus 11.0%). Crawford, Grant and Richland Counties all have 2008 poverty rates higher than the statewide average, while Iowa and Lafayette have rates lower than the statewide average.

Appendix B: Regional Economy

Economic Engines

The U.S. Bureau of Labor Statistics organizes data into ten sectors reflected key economic drivers in the modern economy. March 2010 employment along with recent employment change in each of these sectors for the Southwest Region is depicted in the following table.

2010 Region 7 Employment by Major Sector

Economic Sector	Q1 2010 Regional Employment	Employment Change 2007 - 2010	Sector % of Regional Total (2010)	Sector % of State Total (2010)
Natural Resource and Mining	993	6	2.3%	0.8%
Construction	1,168	-1,214	2.72%	3.2%
Manufacturing	6,464	-665	15.0%	16.3%
Trade/Transportation & Utilities	12,263	-1,144	28.5%	19.0%

Information Services	403	-42	0.9%	1.8%
Financial Activities	1,523	-106	3.5%	5.9%
Professional/Business Services	2,026	160	4.7%	10.0%
Educ./Health Services	5,114	-4	11.9%	15.0%
Leisure & Hospitality	3,174	-700	7.4%	9.0%
Government	8,945	209	20.8%	15.4%
Other Services	836	-173	1.9%	3.2%
Regional Total	43,020	-3,162	100%	100%

Source: US Bureau of Labor and Statistics, 2007 - 2010

Overall, economic drivers for Region 7 include education; manufacturing, trade/transportation/utilities, and education and health services. Approximately 28.51% of employment in all five counties is attributed to trade, transportation services and utilities. This represents a larger sector share than is the case for the state as a whole at 18.97%. The region is host to large retail and wholesale trade operations in several products including: Mexican Cheese Producer, Cabela's Wholesale, 3M Company, and Land's End. The combined sector of trade, transportation and utilities has, however, lost over 1,000 jobs since 2007.

The government sector, which includes all federal, state and local government jobs is a major contributor to the local economy. Approximately one-fifth of the Regions employment is from government. The total government employment level has been relatively stable for the past several years.

Over 6,000 jobs in the region are attributed to manufacturing, another sector that has faced employment decline nationally, within the state and locally.

The sector, education and health services, represent just over 13% of all regional employment compared to about 15% of the total state share for this sector. Medical Centers and educational institutions are among the top five employers in Region 7. However, to note, public school and higher education employees are included within the "government sector".

Between 2007 and 2010 Q1, the largest job losses occurred in construction. Overall employment for the region declined by 3,162 jobs between 2007 and 2010.

Economic Forecast

The Wisconsin Department of Workforce Development models projected non-farm employment growth by industry for each of the state's eleven workforce development regions. The Southwest Region is a part of the Southwest Workforce Development Region

including Grant, Green, Iowa, Lafayette, Richland, and Rock Counties. The following table identifies the projected employment change by major sector for the Southwest Workforce Development Region.

In general, the projected future growth prospects are positive for most of the economic drivers in the region. Education and Health Services in particular are expected to add significant jobs over the ten-year period beginning in 2006 and ending in 2016. Notably the Information/Prof. Services/Other Services Sector is expected to continue to also add net jobs over this same ten-year period.

In contrast, the national and statewide trend of declining manufacturing employment is project to continue to impact Southwest Region employment. Between 2006 and 2016, manufacturing employment is projected to decline -5.6% for the Southwest Region of that transportation manufacturing is expected to decline -13.2%.

Workforce Trends

The following occupational categories are projected to result in the ten largest net job growth between 2006 and 2016 within the Southwest Workforce Development Region of which the Southwest Broadband Planning Region is a part.

- Total, All Occupations net new jobs 7,940
- Healthcare Practitioners and Technical Occupations net new jobs 1,300
- Food Preparation and Serving Related Occupations net new jobs 1,160
- Healthcare Support Occupations net new jobs 770
- Office and Administrative Support Occupations net new jobs 730
- Personal Care and Service Occupations net new jobs 620
- Registered Nurses net new jobs 610
- Education, Training, and Library Occupations net new jobs 520
- Combined Food Preparation and Serving Workers, Including Fast Food net new jobs 440
- Business and Financial Operations Occupations net new jobs 430

These projects emphasize job growth is projected to grow across a wide spectrum of occupational skill categories, but with a particular emphasis in health and education related fields. Some fields such as Health Care Practitioners, Registered Nurses or Business & Financial Occupations will require workers with higher levels of education. Others such as food preparation and serving occupations may require less formal post high school education.

Overall the occupational and industry trends framing economic development in the Southwest Region point to the need for effective education and training networks including the continued leveraging of distance delivery technologies supporting access at home and at places of work.

Appendix C: Broadband Availability

Gaps in Broadband Service

A review of the LinkWISCONSIN interactive broadband map (<http://wi.linkamericadata.org/>) highlights gaps in broadband service within Region 7 Counties. At a high level, broadband availability follows higher population density where there is a larger customer base and the average cost of deployment is less (because there are more customers to spread the fixed costs). In more isolated areas it is less likely that there will be a wireline broadband service provider, however, increasingly wireless broadband options are emerging.

Population density alone does not fully explain gaps in broadband availability. Other factors such as demographics of an area (demand drivers), land use patterns, economic growth potential, university proximity, physical land features, provider access to federal universal service funds and simply local leadership can also play important roles in availability

Notable Service Differences

Defining “broadband” is not simple, and many different definitions exist. The Federal Communications Commission (FCC) defines broadband in terms of data transmission speed. The FCC definitions include several ranges, with the minimum tier of “broadband” services starting at a speed of 768 Kilobits per second (Kbps) or data traveling from the Internet to your computer (downloading.) and at least 200 Kbps for data from your computer to the Internet (upload.) For purposes of this project, the FCC definition is a minimum standard to define a “broadband provider”. However, the ultimate minimum “broadband capability” for any given customer or market segment must be defined by the services for which broadband is being used. Services which are totally adequate for some purposes (e.g. uploading YouTube videos) will not support others (e.g. tele-radiology.) With greater speeds, there is greater capability.

Existing technologies have various technical limitations on the speeds that they can provide. Mixed fiber / twisted pair copper services, as typically deployed by traditional telephone companies as well as fixed wireless broadband services range from 1.5-25 Mbps or more. Fiber-to-the-home services are generally faster, while mobile wireless technology is generally slower. Defining services by technology does not tie directly to services, but it is useful in identifying what services are available, and where.

Regional Differences in Broadband Service

The tables appearing below illustrate the disparity of broadband access across the Region:

	Percent Population in Census Blocks With Advertised Maximum Download Speeds Available At:				
County	> 10 Mbps	3 to 10 Mbps	< 3 Mbps	Mobile Option Only	No Option Greater than

					768 kbps
Crawford	71.36	27.37	1.14	1.14	0.14
Grant	84.4	10.4	5.21	4.68	0.0
Iowa	69.27	23.67	7.07	5.58	0.0
Lafayette	74.88	17.97	7.15	6.34	0.0
Richland	44.69	30.03	25.28	24.92	0.0

Source: LinkWISCONSIN Broadband Provider Survey, 2010 data

To interpret the above table, it is important to emphasize a couple of qualifications. First the data reflect the maximum advertised broadband speed of service available in a Census Block. Not everyone in a given Census Block necessarily has access. Especially in rural areas, the geographic size of a Census Block is often substantial and there will be service differences locally. Also the data reflects the maximum download speed advertised in each area. For an individual customer, the actual speeds can vary depending on location. With these qualifications in mind, the data does provide a picture of differences in broadband service across the region. It is also important to recognize in less densely populated areas, there is often a substantial land area involved even when only a relatively few people may live in underserved Census Blocks.

All five counties have a significant population living in Census Blocks with 10Mbps download or greater. In Grant County approximately 84% of the population live in Census Blocks where a provider advertises a download speed of 10 Mbps or greater. In Crawford and Lafayette Counties, over 70 percent of the population live in Census Blocks where at least one provider advertises a maximum download speed of 10 Mbps or higher.

On the other end of the spectrum, in Richland County, a quarter of the population live in Census Blocks where there is no advertised service greater than 3 Mbps download, and in most cases that is a mobile wireless provider.

Appendix D: Broadband Adoption

Percentage of Subscribers

The US Department of Commerce NTIA conducted a national consumer broadband adoption survey in October of 2010. The findings are summarized in its February 2011 Digital Nation report. National broadband adoption data reported by NTIA indicate that Wisconsin ranks 22nd in the country in broadband adoption, with an estimated 70.5% the state's residents accessing the Internet using broadband in 2010. A statewide consumer survey conducted by LinkWISCONSIN in 2010 found a somewhat lower, but still very substantial rate of broadband subscription of 64% for the state.

The LinkWISCONSIN survey also compared the rate of broadband and Internet adoption across different regions of the state. Among nine regions, broadband adoption in Region 7 ranks 6th with 55% of the area population adopting broadband at home. .

Barriers to Adoption

One factor impacting adoption in Region t is availability of broadband supply. As noted in Appendix C, availability differs substantially among counties in the Region. However, there are a number of reasons in addition to availability that are barriers to adoption.

Among people living in Region 7 who do not presently use the Internet, the most frequently cited reason is they do not have a computer. The affordability of a computer is more difficult for lower income households and factors such as age enter into decisions to buy a computer. Of particular note in Region 7 is that nearly three times as many people as the average for the state view accessing the Internet as difficult and frustrating. Other major reasons for not accessing the Internet are a lack of perceived value and overall affordability.

Impact of Demographics

Recognizing these typical barriers to accessing the Internet with any technology, it is not surprising that the demographic make-up of an area is closely associated with the rate of Broadband Adoption. For example in areas with lower median income, people are less able to afford to pay for a computer and broadband subscription. Specific data is not yet available for Wisconsin, but the following table from the recent NTIA Digital Nation report illustrates the strong relationship between income and Broadband Adoption.

Educational attainment is associated with both consumer purchasing power and perceived value of Broadband. Adults with at least a Bachelor's degree are nearly three times as likely to use Broadband than adults lacking a High School diploma.

Finally, age is an intuitive and real variable that impacts perceived value of the Internet. Also seniors are more likely to live on a fixed income impacting affordability. While perceived value is changing, as more older people recognize the Internet as a valuable tool to access health information, stay in touch with family, avoid trips out of the house in poor weather and so forth, still age matters in Broadband Adoption.

These driving demographic forces help to explain why Broadband adoption is likely to differ among different areas and populations within the Region (See demographics in Appendix A).

How People Access the Internet

Broadband adoption is also impact by people access to devices used to access the Internet.

A lack of computer at home is one of the most significant reasons cited for not using the Internet. Approximately three-quarters of people responding to the LinkWISCONSIN consumer survey access the Internet with a home computer. Computers at work or at

school are also an important means of access. Presently mobile devices are not as widely utilized for Internet access, but looking to the future mobile access is projected to be much more important. As the capabilities of mobile technologies continue to improve, there are more customers that rely on air cards, smart phones and other Internet enabled mobile devices as their primary connection to the Internet. According the Cisco Global Visual Data Mobile Data Forecast, more than 400 million of the world's Internet users could access the network solely through a mobile connection by 2014.