

# Region 3 Broadband Investment Plan

Approved by Region 3 Broadband Investment Planning Team on November 3, 2011.

## Background

[1] Region 3 has a positive history with organized efforts that bring communities and providers together to advance broadband. Most notably the Chippewa Valley Internetworking Consortium (CINC) provides a model of multiple community stakeholders working together successfully with providers to improve broadband availability and use; especially to industrial parks, schools, hospitals, major businesses, libraries and local governments. Recently the University of Wisconsin received a federal grant to expand broadband infrastructure, and additional adoption programs (for example, awareness education and technology skills training), throughout the Chippewa Valley. This broadband investment plan also builds on the existing CINC success story to encourage additional broadband investment and use in surrounding communities included within Region 3.

[2] With more available and utilized broadband communications in the region:

- Business formation, telecommuting, and job development is more possible;
- Area residents can reduce travel for medical care;
- Hospitals, schools, government and others can more easily access specialty skills that improve their effectiveness and efficiency;
- Local residential, business and governmental organizations can better access to education and training resources;
- Seniors can access Social Security and Medicare information on-line;
- Farms can better access program information, markets and inputs;
- Emergency service response can be better coordinated and faster;
- Marketing of the region to visitors as well as to existing residents/businesses can be enhanced;
- and
- Government can more efficiently deliver services to local residents.

[3] The Region 3 Broadband Planning Team proposes to build upon existing successes in the region to extend connectivity and adoption of broadband services to all ten counties. The proposed initiative would initially focus on business/industrial parks, schools, libraries, hospitals and major government offices. However, the proposal emphasizes that the purpose is not solely to improve connectivity to these “anchor” institutions. The purpose is to extend the benefits of broadband connectivity to all communities in the region, including residential and smaller business customers. The model supports community-based awareness education and organization for broadband advocacy leveraging anchor institutions as the core. As communities become more organized, they are better able to work effectively with area providers of broadband service to create new options.

[4] This document begins with a description of the regional need and opportunity, followed by an outline of a specific action initiative leveraging connectivity to anchor institutions and creating a "tool kit" helping communities to put themselves into a market that is sufficient to attract investment from providers. The proposed plan is careful to build on and complement other existing related broadband development initiatives happening in the region at the same time.

## Priority Need

[1] Among 21 potential uses of the Internet, Region 3 ranked first in the state in percent of the population using the Internet on 10 different types of uses. This finding is somewhat surprising based on regional demographic data, summarized below:

	Percent Older Than 65 Years of age	Median Income, 2008	Percent Adults with HS Diploma or Greater
Region 3 Average	14.2%	\$50,847	84.6%
Statewide Average	13.3%	\$52,103	85.1%
U.S. Average	12.8%	\$52,029	80.4%

*US Census of Population Estimates, 2009*

[2] In general, consumer research results find those that are younger age, with more disposable income and/or with higher educational attainment, are more likely to use the Internet and purchase broadband, everything else equal. While substantial differences exist across counties, on average the population in Region 3 is slightly older, with lower median income and with a slightly lower educational attainment level compared to the average for the state.

[3] Another alternative explanation may be an enhanced awareness of the value of the Internet among the region's population. Several factors unique to the region may contribute to this awareness. First is the established Chippewa Valley Internetworking Consortium (CINC). The region also has an active library network in all 10 counties and two active Cooperative Educational Service Agency (CESA) units that have been strong advocates for broadband deployment and use. Another important factor is a strong university and technical college system, as well as health service agencies, actively engaged with communities throughout the area. Finally, the proximity of several counties in the region to

the Minneapolis metropolitan area may also the importance of broadband connections between the region and that metropolitan area.

[4] Yet another contributing factor may be broadband availability. Like all regions, there are gaps, especially in rural areas of Region 3, but overall there is substantial broadband availability. The highest speed options tend to be in the more populated areas of the Chippewa Valley and significant communities on the Minnesota border.

[5] 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. Yet as the following table illustrates, population density by itself does not explain broadband service availability. As explained in Appendix D of this report, many demographic and economic factors impact the demand for broadband in an area and as a result the incentive for broadband deployment.

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

		Percent Population in Census Blocks With Advertised Available:			
County	Average Population Per Square Mile	> 10 Mbps	3 to 10 Mbps	< 3 Mbps	Mobile Option Only
Barron	51	86.9	8.9	4.2	1.3
Chippewa	58	85.0	8.8	6.2	1.9
Clark	27	58.4	15.5	26.0	23.2
Dunn	49	87.0	7.0	5.9	2.2
Eau Claire	154	93.0	5.0	1.9	1.6
Pepin	29	87.8	11.4	0.9	0.00
Pierce	67	58.0	30.5	11.5	11.4

Polk	46	35.0	62.7	2.3	0.2
Rusk	15	40.7	51.0	8.3	1.0
St. Croix	113	43.3	53.3	3.4	3.3

Source: LinkWISCONSIN Broadband Provider Survey

[7] All 10 Counties in Region 3 have multiple broadband providers with a number of Counties served by a fiber provider. The table below displays the number of providers profiled by several different types of technologies offered to at least a portion of each County in the region. Multiple wireline providers and multiple wireless providers serve every County. This observation is qualified by recognition that many of the providers do not serve all communities in each County.

[8] In summary, overall broadband availability in Region 3 extends significantly into all Counties, and the consumer data indicates that Internet connectivity is of value to regional consumers. However, there remain disparities in the level of broadband service in the region, and many opportunities to utilize broadband to expand economic and social opportunity across the region.

## Overview of Regional Opportunity

[1] 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. The Community Area Network Model implemented in the Chippewa Valley is a good example of how coordinated regional leadership can make a difference in broadband availability and use. The recently funded University of Wisconsin Demonstration Project will build on this success story with expanded broadband investments and broadband adoption assistance. The Region has demonstrated an understanding of the value of coordination across multiple counties and sectors.

[2] Late last year (2010) Momentum West hosted a well-attended workshop to engage leadership throughout the Region 3 area to begin a coordinated effort involving all ten counties to assess broadband development needs and work together to achieve solutions. The Region has many assets to build on, many already referenced above. In particular:

- A rich base of existing broadband providers serving the region.
- The on-going Chippewa Valley demonstration initiative coordinated through the University of Wisconsin;
- Strong schools, libraries and health care leadership;
- Economic development leadership priority for broadband development in the region;

- Supportive Regional Planning Councils and local governments; and

[3] The LinkWISCONSIN/PSCW Region 3 Broadband Planning team has identified ensuring adequate broadband connectivity is extended to anchor institutions (schools, libraries, hospitals, emergency service providers, local government offices) is a good starting place for expanded regional collaboration.

- Industrial parks and business centers throughout the region require high speed connection to promote economic competitiveness and profitability necessary for economic growth.
- Within the Region there are over 180 schools and 9 university or technical college campuses (confirm numbers). Both CESA 10 and CESA 11 have well-established initiatives encouraging availability and adoption of broadband by area schools.
- Region 3 has one of the stronger local library networks in the state with a total 64 libraries. Libraries are at the forefront of public broadband access and community awareness education.
- Every County in the Region, with the exception of Pierce, has at least one hospital or medical center. Hospitals are also a leading edge of broadband adoption as evidenced by a federal and state priority of introducing expanded electronic medical records and telehealth applications.
- The need for improved efficiencies in government, emergency service provision and business are driving demand for innovation in the adoption of broadband in those sectors.

[4] In short, the importance of encouraging broadband access and use by anchor institutions is shared by all communities in the region and provides a good focal point for initial regional collaboration. Because connecting anchor institutions is both a federal and state priority, there may be more feasible opportunities to obtain funding to fill gaps if needed. Finally, because anchor institutions are located throughout the region, a focus on extending connections to underserved anchor institutions helps to extend the business model for also providing additional broadband connections to area residents and businesses.

[5] This “Regional Opportunity” is enhanced by two on-going initiatives that are already collecting data on the current status of broadband connections to anchor institutions within the region. The UW-Extension Project is collecting data on broadband connectivity to anchor institutions within the Chippewa Valley. The LinkWISCONSIN/PSCW broadband initiative is collecting data on connectivity to anchor institutions in all ten counties of Region 3. The active participation of the Region 3 Broadband Planning team can play a critical role to ensure these two efforts are well coordinated and the data obtained is complete as possible. Once data is collected to fully assess regional needs, the team will be well positioned to establish a priority direction for implementation of region wide projects to address gaps and improve use of broadband to meet the needs of anchor institutions and their communities.

## Proposed Broadband Investment

[1] The Region 3 planning team agreed that initially the investment plan should focus on ensuring adequate broadband connectivity extends to anchor institutions throughout the ten county area and that those institutions have the capacity to utilize broadband to address the region’s economic and social needs. Initially, the focus will be on Industrial/business parks, schools, libraries, medical institutions, and larger local government facilities. Over time the initiative may expand to include emergency services, law enforcement, smaller businesses, farms and residential customers. Ultimately the objective is to ensure all communities in the region are prepared to work effectively with broadband providers to extend connectivity to consumers of every size.

[2] As an initial step, Momentum West will convene a meeting of regional stakeholders such as business leaders, area broadband service providers, area Regional Planning Commissions; CESA 10 and CESA 11; Chippewa Valley Internetworking Consortium (CINC); UW-Extension; area library systems; area medical systems and others. Particular care will be taken to ensure the Region 3 broadband investment initiative builds on and does not duplicate activities of other related initiatives. Momentum West will provide important interim leadership in convening key stakeholders to form a West Central Wisconsin Broadband Development Committee. An initial step after key stakeholders are convened will be to determine more specifically how this committee will be managed and operated.

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

<b>Type of Investment</b>	<b>Activities</b>	<b>Responsibility</b>
Leadership	<ul style="list-style-type: none"> <li>• Establish commitment from appropriate leadership organizations.</li> <li>• Solicit and manage regional partnerships business, public entities, broadband providers and others.</li> <li>• Oversee network research and on-going planning process.</li> <li>• Coordinate with other regional initiatives.</li> <li>• Apply for and manage grants as needed.</li> <li>• On-going communication.</li> </ul>	Subject to Board approval, Momentum West will convene diverse stakeholders including business and economic development leaders, broadband service providers, Regional Planning Commissions, CINC, UW-Extension, CESA 10 and CESA 11, area library systems, area medical systems and others. These stakeholders will form into an regional leadership organization.
Research	<ul style="list-style-type: none"> <li>• Inventory existing research on public and private sector anchor institution broadband connectivity.</li> <li>• Enhance existing data on broadband connectivity and use.</li> </ul>	<ul style="list-style-type: none"> <li>• West Central Wisconsin Broadband Development Committee to be formed.</li> <li>• LinkWISCONSIN/PSCW</li> <li>• Team to provide draft survey tools.</li> </ul>

Type of Investment	Activities	Responsibility
	<ul style="list-style-type: none"> <li>Identify and document broadband service gaps.</li> </ul>	<ul style="list-style-type: none"> <li>Higher education partner to be identified to support research, data base management, and analysis.</li> </ul>
Address Broadband Service Gaps	<ul style="list-style-type: none"> <li>Prioritize broadband service deficiencies.</li> <li>Facilate provider and community communication to identify workable solutions to fill critical broadband service gaps.</li> <li>Create a "tool kit" to help local communities throughout the region organize and communicate needs to local providers.</li> <li>Apply for broadband infrastructure grants if appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>West Central Wisconsin Broadband Development Committee, to be formed, will convene community stakeholders and providers to support implementation.</li> </ul>

## Key Tasks and Timeline

### Phase 1: Project Organization

#### Task 1.1

Momentum West will provide interim leadership to get the process started including the hosting of an initial "kickoff" meeting of regional partners in the fall of 2011. Specifically the purpose of this meeting is to charter the mission and define initial organizational tasks for a sustainable West Central Wisconsin Broadband Development Committee (WCWBDC). Among topics the organizing group will consider are such things as:

- What are detailed workplans for initial activities?
- Who should be included on membership of committees or work teams assigned to specific activities?
- How will work of committees or work teams be coordinated (who will be responsible)?
- What resources will be required to support work? What are potential sources for those resources? How will resources be shared and managed? Should there be a "designated fiscal agent"?
- How will communication be managed and who will be responsible?
- How will decisions regarding implementation of regional broadband plan be managed going forward?

The Committee will initially be staffed with "in-kind" time provided by area organizations, businesses and community members. However, the plan includes a high priority of seeking and obtaining funds as necessary for base operations needed to staff Committee work, research and other activities described below. The West Central Broadband Development Committee will build on and seek synergies with the UW-Extension Demonstration Project and CINC in the Chippewa Valley as well as other on-going initiatives. Specifically the roles and responsibilities of the various stakeholders in managing the Committee work will be determined as a part of the agenda of the first kickoff meeting.

### Task 1.2

It is recognized certain tasks in this plan will be difficult to achieve without funding. A campaign will be launched to secure approximately \$75,000 of base operational funding and in-kind contributions from local sources. A more precise definition of funding required and for what purposes will be defined in the organizing meeting described as Task 1.1. However, the funds are anticipated to be needed to supplement salaries for staff that will coordinate the project, creating educational resources, implementing research and other tasks. Sources of funds could include contributions from area providers and businesses. It also may include exploring governmental and potentially private foundation sources of funding. The Public Service Commission of Wisconsin will help in identifying potential funding sources. In-kind personnel and organizational capacity identified in Task 1.1 will be engaged to create a basic set of promotional materials that highlight the benefits the region can gain with the formation of an organized Broadband Partnership. Finally while funding is recognized to be important, every effort will be made to continue to leverage in-kind time and resources rather than relying on outside funding. Successful regional efforts such as CINC have been sustainable in part because they have relied on in-kind resources.

### Task 1.3

The newly formed WCWBDC 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 use of on-line media such as Facebook and Twitter. The UW-Extension community-based broadband development materials and experience of other regional initiatives will provide a foundation for the model. LinkWISCONSIN will also created a library of resources on best practice approaches. The Committee will serve as a vehicle to identify broadband development needs and potential projects important to the region, initially emphasizing anchor institution connections. Those needs will be communicated on an on-going basis to industry representatives, elected officials and others as appropriate. Special efforts will be made to incorporate broadband objectives into regional and local comprehensive planning documents.

## **Phase 2: Research**

### Task 2.1

Partnerships within the WCWBDC will be leveraged to complete an inventory of existing surveys of anchor institution connectivity and broadband adoption. This will include the anchor institution survey conducted by the LinkWISCONSIN/PSCW project, the UW-Extension Demonstration Project, as well as research that may be available from area schools, libraries and medical institutions. Also recent sector specific studies such as the Department of Public Instruction Survey of school connectivity will be identified. This inventory will be reviewed to identify gaps in research data, especially for industrial parks, schools, libraries, medical institutions and major local government offices.

#### Task 2.2

The LinkWISCONSIN/PSCW Team will supply the West Central Wisconsin Broadband Development Committee with on-line survey and data collection tools to address research data gaps. The survey tools will address information on current broadband connectivity to anchor institutions as well as profiling current and desired future applications of broadband to assess overall broadband connectivity goals for schools, libraries, medical institutions, industrial parks and major government offices throughout the region. The network represented by the WCWBDC will ensure targeted anchor institutions respond to survey requests. Faculty and student interns from area Technical Colleges and universities will be recruited to lead implementation of on-line surveys and provide an analysis of the data.

#### Task 2.3

The WCWBDC will evaluate stakeholder input to establish consensus on minimum broadband speed and affordability objectives for the region. The target objectives will recognize differences in service needs among different communities and sectors.

#### Task 2.4

The research data collected along with service objectives established in Task 2.3 will be utilized to assess current deficiencies in connectivity to industrial parks, schools, libraries, medical institutions and major local government offices throughout Region 3. The WCWBDC will implement an appropriate public process to establish priorities for addressing the identified gaps in anchor institution broadband connectivity. This may include delineation of targeted broadband speed requirements for anchor institutions both near term and five years into the future. Based on identified targets, a refined plan for addressing broadband connectivity gaps to anchor institutions will be developed. This plan will include opportunities to leverage anchor institution connectivity to extend high-speed Internet options to underserved households and small businesses.

### **Phase 3: Address Broadband Service Gaps**

#### Task 3.1

The WCWBDC will form at least one service gap team including but not limited to representatives from key anchor institution networks as well as local providers. This team will utilize the community-based broadband organizing model implemented by CINC and the

UW-Extension. A "tool-kit" will be created and communicated including best practices for how communities can effectively engage providers, business, government and others to expand both the availability and beneficial use of broadband. In Region 3, the approach is anticipated to begin first with major public and private anchor institutions. Research will be undertaken to identify additional community based models and opportunities for synergies with other Wisconsin Regions. The PSCW will facilitate information exchange among regional leaders across the state working on similar initiatives. Providers in particular will be engaged to identify solutions that address broadband service gaps in underserved communities. Experience in Region 3 demonstrates that when stakeholders come together around a shared purpose of advance broadband, providers are interested to engage in finding solutions.

Task 3.2

The service gap team will organize regional support for provider, municipal or other entities applying for loans/grants as may be needed to advance solutions to broadband gaps in areas where there is business interest. The community "tool kit" developed in Task 3.1 will include appropriate resources to support the identification of gaps, support community collaboration to address those gaps, strategies to improve the business case for investment and potential infrastructure grant sources if required.

## Budget

<b>Budget Category</b>	<b>Project 2011 Budget</b>	<b>Project 2012 Budget</b>
Infrastructure	None	TBD after careful study
Equipment	None	None
Paid staff: <ul style="list-style-type: none"> <li>Funded paid staff time</li> </ul>	<ul style="list-style-type: none"> <li>None anticipated for 2011</li> </ul>	<ul style="list-style-type: none"> <li>\$75,000 annually. Specific amount and uses as well as designated fiscal entity will be determined by WCWBDC after formation fall of 2011.</li> </ul>
Contributed Time:	Estimated to be an average aggregate	Estimated to be an average aggregate

Budget Category	Project 2011 Budget	Project 2012 Budget
<ul style="list-style-type: none"> <li>• in-kind staff time from businesses, providers, and other organizations;</li> <li>• Community members</li> </ul>	<p>total of 40 hours per month.</p> <p>Contributed time may include:</p> <ul style="list-style-type: none"> <li>• Attend meetings</li> <li>• Support initial research</li> <li>• Develop materials</li> <li>• Manage Committee activities</li> </ul>	<p>total of 60 hours per month</p> <p>Contributed time may include:</p> <ul style="list-style-type: none"> <li>• Attend meetings</li> <li>• Support research</li> <li>• Develop materials</li> <li>• Conduct community education</li> <li>• Manage Committee activities</li> </ul>

**Infrastructure Funding**

- TBD in 2012 after careful research

**Equipment and Supplies**

- Equipment and supply expenses are expected to be minimal and provided in-kind by participating organizations.

**Paid Staff**

- Initially the initiative will be staffed by in-kind contributions of time from local providers, businesses, and organizations as well as community members. However, a part-time paid professional is needed to ensure project tasks are well organized, in-kind personnel are coordinated, grant applications are submitted as needed, communication with all stakeholders are clear and consistent. This position would be based within an appropriate regional leadership organization agreeable to all stakeholders. The managing organization will be determined by the WCWBDC in the initial kickoff meeting. This position could be contributed in-kind by an existing organization or funded as a new position subject to available funding. In addition to personnel, the WCWBDC will determine other resource needs.

**Contributed In-Kind Staff**

Resources are limited, and to the extent possible, the initiative will be run and managed through in-kind contributions from local businesses, providers and other organizations as

well as community members. In-kind time will support activities such as attending meetings, conducting research or training, managing Committee activities and so forth.

## 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 for anchor institutions in underserved rural areas.
- Reduction of the gap between information access “haves and have-nots” (elimination of “information ghettos”).
- Improved business case for broadband investment in underserved areas.
- Improved access to education, information, health care, and government services as a result of more delivery over broadband.
- Expansion of broadband service investment in rural locations.

### Three-Year Objectives

[2] The following objectives are targeted for the West Central Wisconsin Region by 2014:

- Ninety-five percent of regional public and private sector anchor institutions will have access to broadband service meeting targeted objectives (TBD, Task 2.3) for broadband speeds and affordability.
- More communities will have multiple broadband provider options available for purchase compared to what are available at the beginning of 2012.
- Broadband adoption among targeted anchor facilities in presently underserved areas will expand significantly over 2012 levels.
- Broadband development capacity and knowledge of local governments will increase as evidenced by additional comprehensive plans including specific broadband objectives.

*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 3 with design and implementation of 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 in-kind contributed time, 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 of anchor institution connectivity, development of a memorandum of understanding with local university campuses to help with an anchor institution survey, formation of local task groups, collection of baseline data on anchor institution access and adoption, and so forth. The linkWISCONSIN/PSCW 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 shared target broadband speed objectives and setting priorities for filling connectivity gaps for targeted anchor institutions. Impact data will go beyond outputs and outcomes to determine such things as the economic impact of new rural business formation; energy savings and household savings from reduced commuting, tax base improvements from new rural business development, 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 existing organizations such as the West Central Comprehensive Economic Development Strategy and the UW Extension Chippewa Valley Demonstration Project.
- Engagement and partnership with area broadband service providers.
- Strong partnerships with area County-level economic development corporations, CESAs 10 and 11, area library and health care networks and other organizations or individuals.
- 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 underserved areas 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 loan 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

Ten counties, Barron, Chippewa, Clark, Dunn, Eau Claire, Pepin, Pierce, Polk, Rusk, St. Croix make up Region 3.

Eau Claire and St. Croix are the largest communities in the region with estimated populations over 65,000 people in 2010. Several municipalities including Chippewa Falls, Menomonie, River Falls and Hudson have a total population between 10,000 and 20,000. Communities such as Rice Lake, LaFayette, Washington and Altoona have a total population between 5,000 and 10,000. However, the vast majority of towns, villages, and cities in the region are substantially smaller, with many having a population smaller than 300 people.

### Population

The region's total population in 2009 is estimated to be 471,347 people. Eau Claire is the largest County with an estimated 99,409 people, followed by St. Croix (83,351) and Chippewa (60,609). Pepin is the smallest county with 7,293 people.

Overall, population in the region has grown slightly faster than the average for the state over the past decade. Population in the West Central Region grew 6.8% between 2000 and 2009 compared an average of 5.4% for the state. However, there are substantial differences in population growth across the region. The population of St. Croix County expanded by 32% (over 20,000 people) between 2000 and 2009. Two counties Rusk and Clark experience a population decline during this same time period.

On average the population density of the region is somewhat less than for the state. Based on the 2000 Census, the average density is 61.3 people per square mile compared to 86.3 people per square mile for the state. Again however, there is substantial variation across the region. For example in Eau Claire County there is an estimated 154.1 people per square mile and in St. Croix an estimated 113.2 people per square mile. On the other end there is an estimated 15.4 people per square mile in Rusk County.

(Source US Census dataset based on 2009 estimates)

### Demography

On average, the population of the region is somewhat older and less racially diverse than the state as a whole, but with significant regional variation.

14.2 percent of the region's population are 65 years or older compared to an average of 13.3% for the state of Wisconsin. Four counties, Dunn (11.6%), Eau Claire (12.6%), Pierce (9.9%) and St. Croix (9.6%) have a population with a smaller proportion 65 or older than is the average for the state. On the other end of the spectrum the proportion over the age of 65 is 18.6% in Rusk County and 17.4% in Barron County. As noted in the chart appearing below, the population over 65 years of age by far is expected to be the fastest growing segment of the West Central Wisconsin Region.

The proportion of the population identified as "white" in the US Census is substantially higher than the state average in all 10 counties of the region. Overall, 97.2% of the region's population are white compared to 89.7% for the state.

In general, the proportion of the region's adult population with a High School diploma or higher is approximately the same or greater than the state average. 84.6% of the region's population older than 25 have a High School diploma or higher compared with 85.1% for the state. The proportion of the adult population with a High School diploma or better is near or above 90% in St. Croix, Pierce and Eau Claire Counties. In Clark County, only about 75% of the adult population have a High School diploma or better.

17.9% of the region's population older than 25 have a Bachelor's degree or higher compared to 22.4% for the state. Three counties, Eau Claire, Pierce and St. Croix have a higher proportion of the population with a Bachelor's degree or better than the average for the state. In Rusk County only 11.2% of the adult population have achieved this level of education.

### **Median Household Income**

2007 estimated per capita income is lower than the statewide average of \$36,272 in all counties, with the exception of St. Croix with an estimated per capita income of \$36,543. Rusk County has the lowest per capita income in the region with an estimated 2007 per capita income of \$23,843. 2008 estimated median household income in both St. Croix and Pierce County is higher than the state average. \$69,682 and \$65,596 respectively compared to a statewide median household income average of \$50,847. 2008 median household income in Rusk County is \$37,732, which is lowest in the region.

11.1% of the total Wisconsin's population was estimated to be living below the poverty level in 2008. Five counties, Rusk, Barron, Clark, Dunn and Eau Claire had 2008 poverty levels higher than the state average. Counties with the lowest percentage of population living below the poverty level were St. Croix (5%) and Pierce (9%).

## **Appendix B: Regional Economy**

### **Economic Engines**

Region 3 benefits from a balanced and diversified economic base. The U.S. Bureau of Labor Statistics organizes data into ten major non-agricultural sectors reflected by key

economic drivers. March 2010 employment in each of these sectors for Region 3 is depicted in the following table.

### 2010 Region 3 Employment by Major Sector

<b>Economic Sector</b>	<b>Q1 2010 Regional Employment</b>	<b>Employment Change 2007 - 2010</b>	<b>Sector % of Regional Total (2010)</b>	<b>Sector % of State Total (2010)</b>
Natural Resource and Mining	2,130	84	1.2%	0.8%
Construction	4,496	-3,778	2.6%	3.2%
Manufacturing	30,203	-5,394	17.4%	16.3%
Trade/Transportation & Utilities	34,250	-3,879	19.8%	19.0%
Information Services	1,892	-499	1.1%	1.8%
Financial Activities	7,562	-123	4.4%	5.9%
Professional/Business Services	13,550	-727	7.8%	10.0%
Educ./Health Services	26,607	2,041	15.4%	15.0%
Leisure & Hospitality	15,963	-2,372	9.21%	9.0%
Government	31,700	1,242	18.3%	15.4%
Other Services	4,628	128	2.7%	3.2%
<b>Regional Total</b>	<b>173,380</b>	<b>-13,131</b>	<b>100%</b>	<b>100%</b>

*Source: US Bureau of Labor and Statistics, 2007 - 2011*

Overall, economic drivers for Region 3 include manufacturing, government, trade/transportation, and education/health care. Trade, transportation and utilities combined represent nearly one-fifth of the areas employment. Manufacturing 17.4% and Education and health care, 15.4%. The share of total employment for these sectors is greater for the region than for the state.

Over 18% of the Region's workforce is employed by federal, state or local government. However, it is recognized the government employment sector includes many who work in specific sectors such as education, health care or natural resource management.

Wisconsin is recognized nationally for its strength in manufacturing employment and the Region 3 is a strong manufacturing center within Wisconsin. The region is host to large manufacturing operations in food, wood and other products. Like the nation, manufacturing jobs have declined substantially as a result of the recent economic recession. Nearly 5,400 jobs were lost in the region between 2007 and 2010.

Education and health services, represent 15.4% of all regional employment compared to about 15% of the total state share for this sector. Medical facilities and local school districts are among the major employers in all 10 counties. This was one of the few sectors with economic growth over the last three years, a total of 2,041 new jobs.

Trade and transportation is a major economic driver. Overall, this sectors represents approximately 19.8% of the region's employment compared to about a 19% share for the state as a whole.

### **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 West Central Region is a part of the West Central Workforce development region including Barron, Chippewa, Clark, Dunn, Eau Claire, Pepin, Pierce, Polk and St. Croix Counties. Rusk County is part of the Northwest workforce development region. The following table identifies the projected employment change by major sector for the West Central 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 10 year period beginning in 2008 and ending in 2018. Notably Information/Professional Services/Other Services is expected to continue to also add net jobs over this same 10 year period. In contrast, the national and statewide trend of declining manufacturing employment is project to continue to impact West Central Region employment. Between 2008 and 2018, manufacturing employment is projected to decline 9.5% for the West Central Workforce Development Region.

### **Workforce Challenges**

The following occupational categories are projected to result in the 10 largest net job growth between 2006 and 2016 within the West Central Workforce Development Region of which Region 3 is a part.

- Business and Financial Operations Occupations: 730 net new jobs
- Education, Training, and Library Occupations: 720 net new jobs
- Healthcare Practitioners and Technical Occupations: 1,910 net new jobs
- Registered Nurses: 860 net new jobs
- Healthcare Support Occupations: 1,350 net new jobs
- Food Preparation and Serving Related Occupations: 1,910 net new jobs
- Combined Food Preparation and Serving Workers, Including Fast Food: 680 net new jobs
- Personal Care and Service Occupations: 800 net new jobs
- Office and Administrative Support Occupations: 1,110 net new jobs
- Construction and Extraction Occupations: 680 net new jobs

These projections emphasize job growth is likely to grow across a wide spectrum of occupational skill categories, but with a particular emphasis in health related fields and food preparation occupations. 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 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 substantial wireline broadband coverage in the Region 3 vicinity, but that also there remain significant gaps in coverage. 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. In the case of Region 3, it is likely that proximity to the Minneapolis metropolitan area also contributes to demand for broadband services.

### **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) for 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 table below illustrates the disparity of broadband access across the Region:

County	Average Population Per Square Mile	Percent Population in Census Blocks With Advertised Available:				
		> 10 Mbps	3 to 10 Mbps	< 3 Mbps	Mobile Option Only	No Option Greater than 768 kbps.
Barron	51.2	87.0	8.8	4.2	1.3	0.0
Chippewa	58.1	84.9	8.8	6.3	1.9	0.0
Clark	27.4	58.4	15.5	26.0	23.2	0.0
Dunn	49.0	87.0	7.0	5.9	2.2	0.09
Eau Claire	154.1	93.0	5.1	1.9	1.6	0.02
Pepin	29.3	87.8	11.4	0.8	0.03	0.00
Pierce	67.7	58.0	30.5	11.5	11.8	0.03
Polk	46.0	35.0	62.7	2.3	0.2	0.00
Rusk	15.4	40.7	51.0	8.3	1.1	0.00
St. Croix	113.2	43.3	53.3	3.4	3.3	0.00

Source: LinkWISCONSIN Broadband Provider Survey

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.

All ten Counties in Region 3 have significant population living in Census Blocks with 10 Mbps download or greater. In Eau Claire, Barron and Pepin counties more than 80 % of the population live in Census Blocks with greater than 10 Mbps download speeds. On the other end in Clark County more than a quarter of the population live in Census Blocks with less than 3 Mbps download speeds advertised.

## 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% of 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, Region 3 has the second highest broadband adoption rate in the state at 74%. Only the highly urbanized Milwaukee area (Region 9) has a higher rate.

### Barriers to Adoption

One factor impacting adoption in Region 3 is availability of broadband supply. As noted in Appendix C, the availability of broadband service in Region 3 is relatively high compared with much of the rest of the state. However, there are a number of reasons in addition to availability that are barriers to adoption.

Among people living in Region 3 who do not presently use the Internet, the most frequently cited reason is they do not have a computer and the second most frequently cited reason is that they see it as a waste of time. It is significant the affordability in general is a less frequently cited as a barrier to Internet access that for the state as a whole. This in part may be linked to availability of more affordable service options in the region.

### Impact of Demographics

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.

	<b>Percent Older Than 65 Years of age</b>	<b>Median Income, 2008</b>	<b>Percent Adults with HS Diploma or Greater</b>
Region 3 Average	14.2%	\$50,847	84.6%
Statewide Average	13.3%	\$52,103	85.1%
U.S. Average	12.8%	\$52,029	80.4%

*Source: US Census of Population Estimates, 2009*

While substantial differences exist across counties, on average the population in Region 3 is slightly older, with lower median income and with a slightly lower educational attainment level compared to the average for the state. Consequently demographics alone would not seem to explain the relatively high rate of broadband adoption.

Another alternative explanation may be an enhanced awareness of the value of the Internet among the region's population. Several factors unique to the region may contribute to this awareness. First is the established Chippewa Valley Internetworking Consortium (CINC). The region also has an active library network in all 10 counties and two active Cooperative Educational Service Agency (CESA) units that have been strong advocates for broadband deployment and use. Another factor may be the proximity of several counties in the region to the Minneapolis metropolitan area, expanding the importance of broadband connections between the region and that metropolitan area.

### **How People Access the Internet**

Broadband adoption is also impacted by people's 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. Nearly 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 to 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.