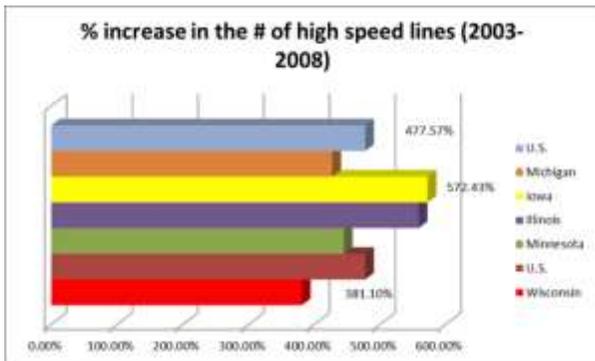


Center for Community and Economic Development

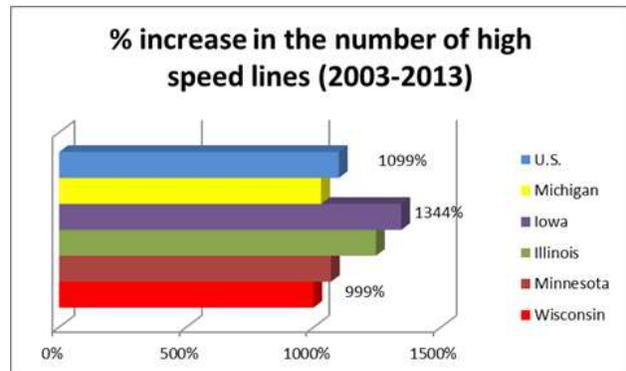


Increases in bandwidth demand and high costs for broadband still problematic in Wisconsin

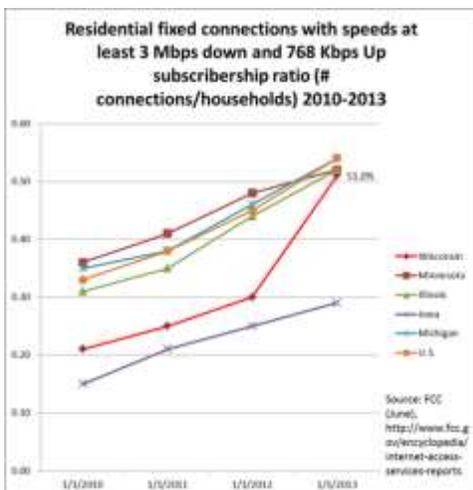
Prior to the UWEX broadband ARRA application, there was very little data on broadband, and the data we had showed that Wisconsin lagged behind all of the surrounding states and the nation. While we had tremendous growth (381%) in the number of “high speed lines” (defined as slightly better than dial-up – 200 kbps download) between 2003-2008, that rate of growth was exceeded by the nation (477%) and state’s like Iowa (572%).



Recently Andy Lewis re-examined the same data reported by broadband providers to the FCC. While the gap is closing, and we have had dramatic increases in the number of lines that are better than dial-up, we still lag behind the surrounding states and nation.



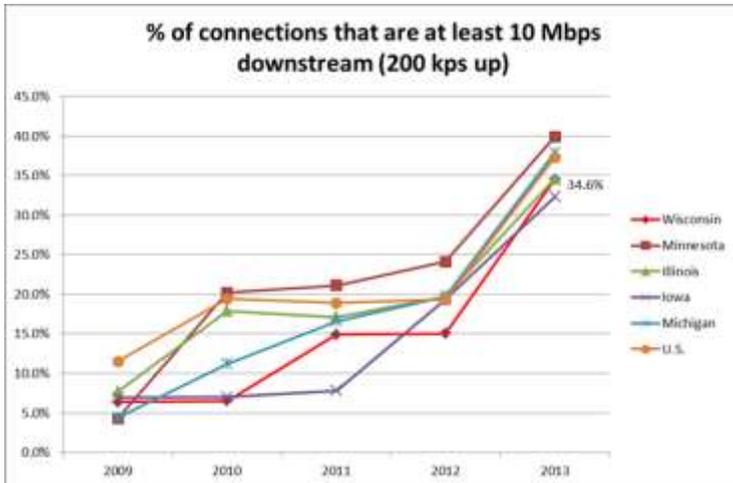
Interestingly, although the growth in the number of “high speed” lines has increased, we have shown some recent progress in the growth of lines delivering 3 Mbps download/768 Kbps upload. This is important because this speed approximates the current minimum standard that the FCC has established for residential broadband (4 Mbps/1 Mbps). In particular, Wisconsin has made some real progress between 2012 and 2013 (the most recent data). This is likely due to investments in broadband but is also impacted by the outreach and education efforts of U.W. Extension, the PSC, and others that are geared towards increasing broadband subscribership:



So we are now delivering broadband that approximates “broadband” to a little over half our households (51%). Here is the problem. While the number of lines that exceed dial-up speeds has increased ten-fold in Wisconsin between 2003-2013, we are not keeping up with consumer demand for bandwidth. People are needing increased bandwidth or faster broadband, in part because of bandwidth consuming applications but also because of the increase in devices. Some households might have 5-6 devices (computers, laptops, tablets, smart phones) using one connection that used to be accessed by one computer.

The National Broadband plan calls for the minimum residential standard to be updated this year. Most people think the new standard will be something closer to 10 Mbps download/3 Mbps upload. Currently, only about 1/3 of the “high speed lines” are at 10 mbps or greater download speeds and even

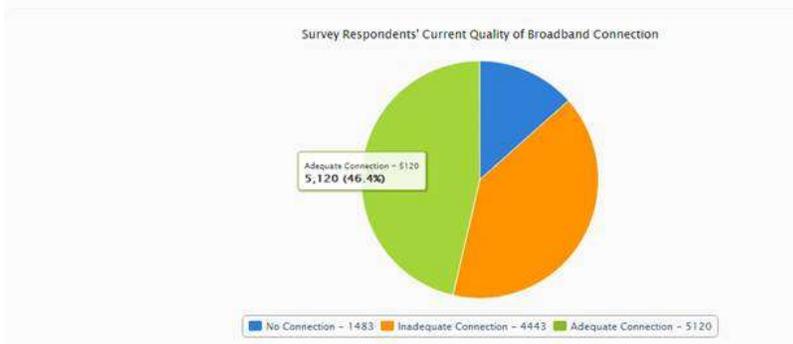
fewer offer 3 Mbps upload speeds (please note that there has been significant progress in Wisconsin in the last year):



The real issue isn't how many people have "the broadband". It's about whether they are getting the bandwidth that they need. The current PSC consumer demand survey indicates that less than half of the

Wisconsin consumers that responded to the survey are satisfied with their connection (46.4%). These percentages go down in many of our rural counties of the state:

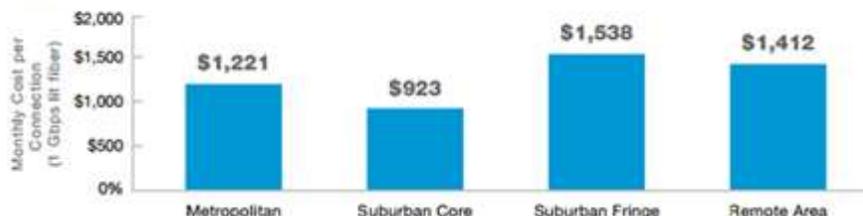
Residential Broadband Demand Survey Results: Statewide



Source: <http://wisconsindashboard.org/console/infograph/state/residential/55>

The second problem we have besides not building out next generation broadband networks fast enough is cost. E-rate data analyzed by the Education Superhighway examined the cost of a 1 Gbps circuits across the country in 11,000 school districts in 45 states. The Wisconsin Department of Administration contract with the consortium of telephone companies (AT&T and Access Wisconsin), has a published rate for 1 Gbps that is approximately ten times the national average (\$11,652 per month). In fact the rate that taxpayers pay to connect our Wisconsin schools and libraries with a 10 Mbps (\$1,600.50) is higher than the national average paid by schools for a 1 Gbps circuit (~ 100 times faster). The President's ConnectEd plan calls for all schools to get a minimum of 1 Gbps circuits by 2018.

Chart 18: District WAN economies of scale can be achieved in all types of locales



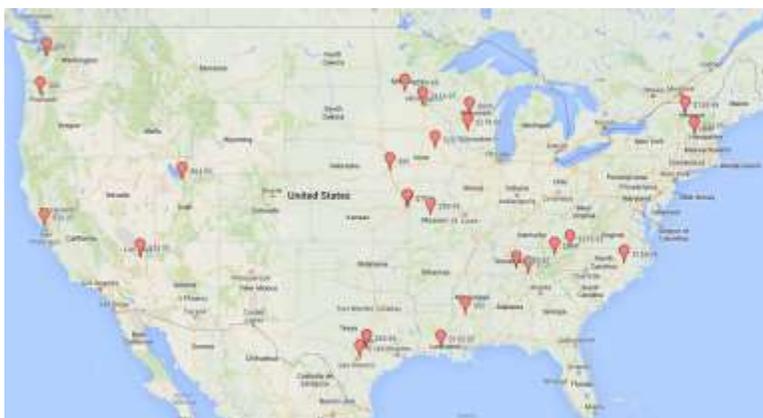
Source: Educational Superhighway, Connecting America's Students: Opportunities for Action - An Analysis of E-rate Spending Offers Key Insights for Expanding Educational Opportunity, April, 2014, http://www.educationsuperhighway.org/uploads/1/0/9/4/10946543/esh_k12_e-rate_spending_report_april_2014.pdf, pages 18 & 48

BadgerNet Converged Network (BCN) Services			
WAN or MPLS Service for State Agencies or WAN, MPLS or Internet Transport Service for Authorized Users per month			
256 Kbps	\$326	0%	Vendor
384 Kbps and 512Kbps	\$376	0%	Vendor
768 Kbps	\$452	0%	Vendor
1.5 Mbps	\$502	0%	Vendor
3 Mbps	\$904	0%	Vendor
5 Mbps	\$1,206	0%	Vendor
10 Mbps	\$1,746	0%	Vendor
15 Mbps	\$1,998	0%	Vendor
20 Mbps	\$2,262	0%	Vendor
30 Mbps	\$2,328	0%	Vendor
40 Mbps	\$2,430	0%	Vendor
50 Mbps	\$2,532	0%	Vendor
60 Mbps	\$2,586	0%	Vendor
70 Mbps	\$2,601	0%	Vendor
80 Mbps	\$2,636	0%	Vendor
90 Mbps	\$2,671	0%	Vendor
100 Mbps	\$2,706	0%	Vendor
200 Mbps	\$3,732	0%	Vendor
300 Mbps	\$4,812	0%	Vendor
400 Mbps	\$5,772	0%	Vendor
500 Mbps	\$6,732	0%	Vendor
1000 Mbps	\$11,652	0%	Vendor
1000 Mbps (ONL Y in Madison Area)	\$6,300	0%	Vendor

Source: Wisconsin Department of Administration BCN rate sheet:
http://www.doa.state.wi.us/Documents/DET/Services%20and%20Rates/FY14_03.pdf

Note that the average cost nationally for remote areas (\$1,412) is not that much higher than the national average but less than what Wisconsin taxpayers pay for a 10 Mbps BadgerNet circuit.

Of the communities that have built out 1 Gbps networks for their businesses and residents, the average rate for that service is about \$210 per month.



Source: https://mapsengine.google.com/map/u/0/edit?hl=en&authuser=0&mid=zzhHqWZPOgBk.kNy7I_LAWakl

There are only a handful of communities with that level of service in Wisconsin and most, with the exception of the Reedsburg municipal utility, charge significantly higher rates than that. Most don't even publish a rate.

The PSC broadband grant program is a step in the right direction but it is woefully underfunded (\$500,000 per year). The State of Minnesota has a similar program funded at \$20 million. Based on Wisconsin Department of Revenue estimates, we collect about \$117 million annually from the 5% sales tax on broadband access (Wisconsin is one of 7 states to charge this service and the exemption might end in November). That means Wisconsin businesses and consumers are spending over \$2 billion annually for Internet access. One public policy option would be to earmark a percentage of those tax collections to go towards getting Wisconsin better Internet access. Increased access would also yield higher tax collections (If the federal exemption is extended). The current gap in providing broadband to everyone in Wisconsin is a multi-billion dollar problem, but one which also could yield significant benefits.

A recent study conducted for the Wisconsin Public Service Commission estimated that it would cost approximately \$1.4 billion dollars over 5 years (construction and operating costs) to connect unserved residents in Wisconsin with a wired broadband connection. However, the annual impact from that investment would result in an additional 1,900 jobs and \$290 million in business sales. (Source: <http://wisconsindashboard.org/broadband-investment-impact>)