

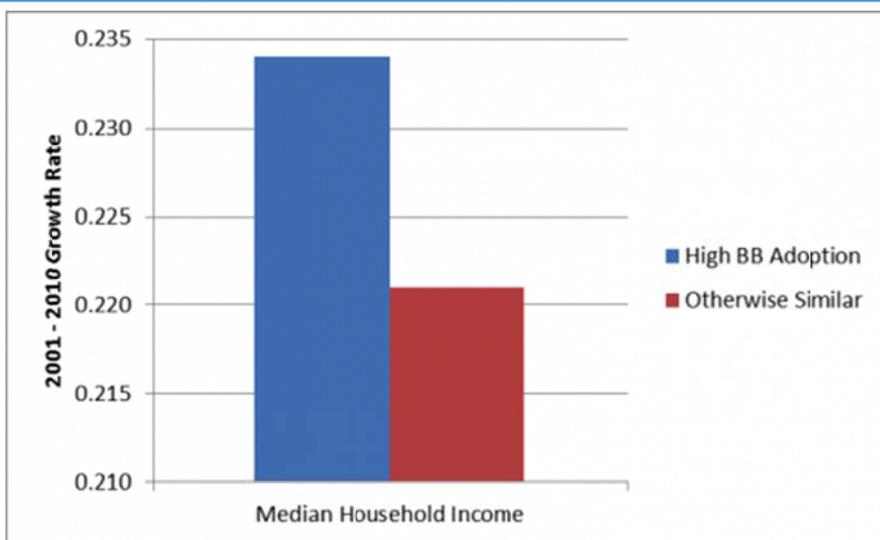
Internet access has become a key factor for full participation in modern society. Educational and professional opportunities, workforce participation, access to health information, public safety and regional economic development are increasingly dependent upon an individual's access to a high-speed broadband connection. The digital divide is the gap between those who have access to computers and the internet and those who do not. It is estimated that 96 percent of urban residents live in areas with broadband infrastructure, while only 61 percent of rural households and 32 percent of households on tribal lands are in areas where broadband speeds are available.

Presence of broadband infrastructure, however, does not mean that households have access. Not all household have adopted the technology, adoption meaning that the household has an internet subscription that allows them to use high-speed broadband at home. Consumers report affordability, lack of skills and concerns for security as barriers to adoption. Nationally, according to the American Community Survey (ACS), the residential broadband adoption rate (2016, the most recent ACS data available <http://bit.ly/2jfiCMU>) is about 81 percent; Wisconsin's adoption rate is similar. National data (NTIA, 2016) shows a consistent 6 to 9 percent gap between rural and urban internet use over time.

# What is the Digital Divide?



## GETTING ONLINE / DELINEATING THE DIGITAL DIVIDE



Research reported by Whitacre, Gallardo and Strover suggests that broadband's contribution to economic health in non-metro counties is associated mostly with high levels of broadband *adoption* (as opposed to levels of *infrastructure*) ([http://www.nardep.info/Broadband\\_2.html](http://www.nardep.info/Broadband_2.html), 2013). In particular, non-metro counties that demonstrated high levels of broadband adoption (defined as county-level adoption rates >60 percent) had significantly higher levels of growth in median household income, and significantly reduced levels of poverty and unemployment.

They conclude, "Given that availability gaps alone do not explain the digital divides illustrated by the data, programs addressing adoption and utilization would be the next logical steps in a comprehensive effort to improve our national statistics."

The **Purdue Center for Regional Development** has created a Digital Divide Index (DDI), reflecting the factors affecting the digital divide. An index is a descriptive tool that serves as a measure of progress or a comparison to peers. The DDI is comprised of an infrastructure score and a socioeconomic score. The *infrastructure score* reflects the region's

- percentage of 2010 population with fixed broadband of a speed at least 25 Mbps download/3 Mbps upload,
- number of residential connections of at least 10/1 Mbps,
- average maximum advertised download speeds, and
- average maximum advertised upload speeds.

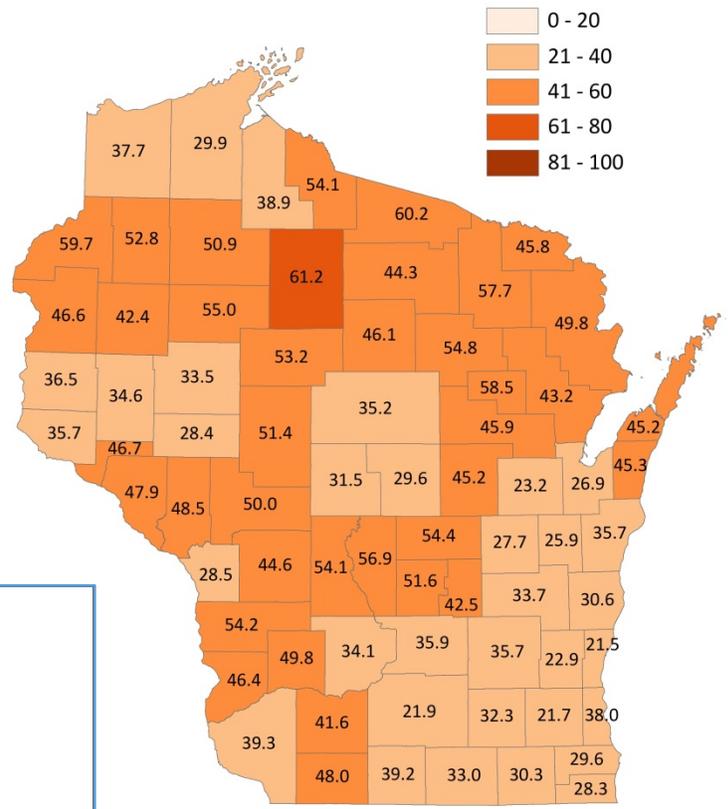
The *socioeconomic score* reflects factors which tend to predict lagging adoption, including

- percentage of population over age 65,
- percentage of population over age 25 with less than a high school education,
- individual poverty rate, and
- percentage of the noninstitutionalized civilian population with a disability.

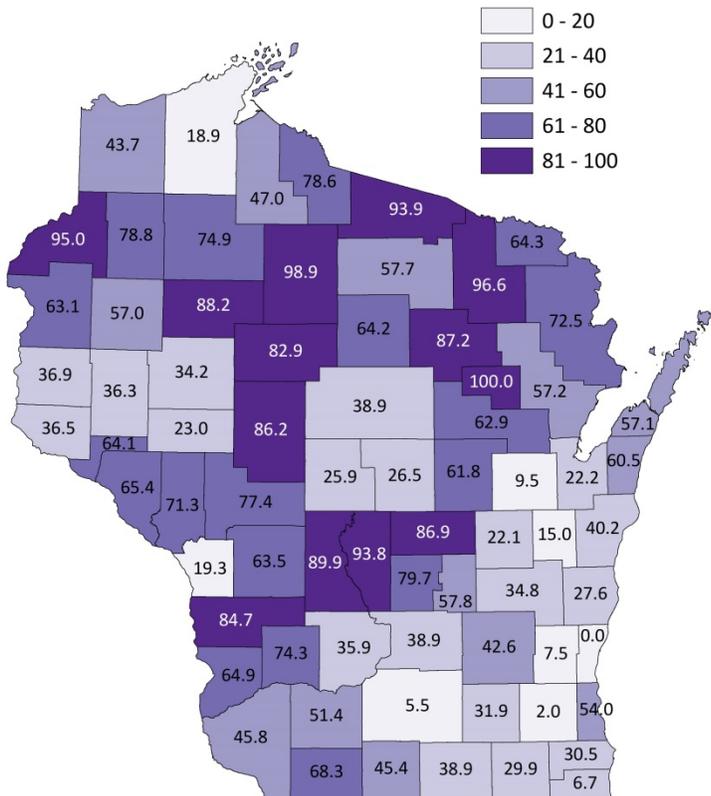
### What do the numbers mean?

An index is used here as a way to gauge a county's relative standing compared to peers. Factors likely to affect residents' capability to access the internet, which include household income, age, education level, and as well as access to infrastructure, are used to approximate the digital divide for each county. Index values are pulled from a continuum, with the high value (largest digital divide) set at 100, and the low value (smallest digital divide) set at 0. The values between are calculated based on the similarity of a county's data to the counties on the ends of the continuum. The larger the digital divide, the higher the index value. **A larger digital divide implies that a larger portion of the population is not able to participate through use of the internet.**

### National Digital Divide Index



### State Digital Divide Index



### Why are the state and national maps different?

For the national map (above), counties *across the nation* were ordered along a continuum; the value 100 was assigned to the county with the data indicating the largest digital divide in the nation and the county with the smallest divide was assigned a zero index value. This map implies that the state overall is 'middle of the road' when compared to counties across the nation. No Wisconsin counties are in the highest tier, and none are in the lowest.

For the state index map (left), only counties within the state were compared to each other. This indexing highlights the differences within the state in the factors contributing to the digital divide. **Discussion around differences is a starting point for understanding how to lessen the digital divide.**