

Broadband

*Where We Are Now and
Where We Can Go*

Presentation Goals

- Understanding of current status
- Focus of Governor's Task Force recommendations
- Update on County efforts
- Awareness of
 - Technology options
 - Funding opportunities
 - Examples from elsewhere

What is the State of Wisconsin doing?

PSC Broadband Office

- Broadband policies to encourage broadband investments
- Broadband Expansion Grant Program

Governor's Task Force on Broadband Access

- Created in July 2020
- Complements “2021 Year of Broadband” initiative
- Report delivered June 2021

Current Status of Wisconsin

- 394,000 Wisconsinites lack broadband access, of which 385,000 are in rural areas
- Represents 22 percent of all rural Wisconsinites compared with only 17 percent nationally

Importance of Data

- We have a problem in part due to poor quality of data
- FCC definition of who is served impacts rural areas disproportionately
- Some estimates say there are twice as many unserved or underserved as currently reported

Getting Better Data - *Department of Public Instruction Example*

- Common survey questions
- Easy to administer tools schools and parents were familiar with
- Over 335,000 students reported to date
- At least 65,000 students lack access due to one of three reasons:
 - No provider at their residence
 - Lack of affordable rates, or
 - Service quality that is so poor as to not allow for learning to occur
 - Gibraltar School District reports 7 percent of students lack access
- Data tools and maps
- Worked with partners including the ISPs to coordinate efforts to connect families during the pandemic and beyond

Access Alone is not Sufficient - *Speeds Matter*

- Bandwidth speed must match uses which require more speed
- DPI survey question - Can you use the Internet for streaming class?
 - Over 25,000 students statewide said “No,” and 165,000 said “Not always”
 - Gibraltar School District reports half of all students have internet performance issues, more than 1 of 7 students reported “No”
- [Speed test campaign](#) conducted
 - Between January and April 2021
 - 400,000 tests reported
 - [Dashboard](#) and [mapping tool](#) created for community planning

Speed Test Results - *Northern Door County* (in median Mbps)

FCC Definition of Broadband = 25 Mbps Download Speed

DOWNLOAD SPEEDS	Baileys Harbor	Egg Harbor	Ellison Bay	Ephraim	Fish Creek	Sister Bay
AT&T	4.8					
Charter Spectrum		16.2	25.2	37.4	134.5	101.6 / 67.7
Door County Broadband	2.9	5.0	2.1		4.0	6.4 / 3.4
Frontier	2.8	6.3 / 4.3	1.9		4.6	4.0
Hughes Net		2.6	1.0			18.4

Speed Test Results - *Northern Door County* (in median Mbps)

FCC Definition of Broadband = 3 Mbps Upload Speed

UPLOAD SPEEDS	Baileys Harbor	Egg Harbor	Ellison Bay	Ephraim	Fish Creek	Sister Bay
AT&T	0.5					
Charter Spectrum		6.9	10.7	9.8	10.8	11.0 / 6.7
Door County Broadband	1.4	1.9	1.6		1.6	2.2 / 1.6
Frontier	0.7	0.9 / 0.7	0.7		0.9	0.6
Hughes Net		0.7	2.1			1.9

Governor's Broadband Task Force - *Report Recommendations*

- Eliminate Digital Equity Gap
- Future-Proof Technology Public Investments
- Provide Financial Support to Solve the Problem

Recommendation - *Eliminate Digital Equity Gap*

- Ensure we close the digital equity gap for **all**. This includes three components:
 - Access - building infrastructure
 - Affordability - providing low cost options when needed, also by subsidizing rural broadband infrastructure
 - Adoption - helping people understand how to access and use the resource

Recommendation - *Future-Proof Technology*

- Fiber is the goal wherever possible, alternate technologies to fill gaps
- Only fiber can guarantee 1 Gbps down **AND** up speeds, yet only 17 percent of Wisconsinites have access to those speeds now
- Digital economy demands more; consider business uses in Northern Door
- Ever expanding uses, e.g., Internet of Things
- Impacts of population and student enrollment declines
- Pandemic's impact on remote work
- Federal funds and PSC Expansion Grants strongly support fiber strategy
- Historical context - Electricity in 1930's, telephone in 1940's/50's
- Generational value
- Once in a (many?) lifetime opportunity is **NOW**

Broadband Technology Comparison

	Download Speed	Upload Speed	Latency (ms)	Obstacles	Upgrade Costs
Fiber	1000	1000	10-20	No	No
Cable	500-1000	5-50	15-40	No	Yes
DSL	10-20	1-5	30-65	No	Yes
Fixed Wireless	50-200	1-10	30-50	Yes	Yes
Satellite (LEO)	50-100	20-40	30-90	Yes	Yes

Recommendation - *Future-Proof Technology*



Recommendation - *Provide Financial Support*

- The rural broadband problem is essentially a financial and capital issue
- Treat rural broadband issue as infrastructure just like sewer, water, roads, school buildings, fire stations and equipment
- Long-term paybacks are acceptable, e.g., 20-30 years
- Blend funding from all sources including local, state, federal, and private
- Ensure local community needs are met with public investments

So, What Funds are Available?

- A lot - but keep in mind, this is a **once in a lifetime opportunity**
- American Rescue Plan
 - State - \$2.5 billion total - \$100 million dedicated to broadband (so far)
 - Local
 - Door County - \$5.3 million
 - Municipalities and towns in the county - \$2.9 million (Baileys Harbor ~\$115,000)
 - Primary use for funds includes broadband
 - Schools
 - Door County school districts - \$4 million total (Gibraltar ~\$600,000)
 - Broadband connectivity is allowable
 - US Treasury Department - Capital Projects Fund - \$10 billion

So, What Funds are Available? *Part 2*

- Current federal broadband programs
 - US Department of Commerce - National Telecommunications and Information Agency (NTIA)
 - US Department of Agriculture - Rural Utility Services (RUS)
 - FCC e-Rate Program for schools and libraries allows for fiber construction projects
 - Rural Development Opportunities Fund (RDOF)
- State of Wisconsin - FY 2022-23 Budget
 - \$125 million in broadband bonds
 - Board of Commissioners of Public Lands (BCPL) Trust Fund Loan Program

What Funds **MAY** Become Available?

- Proposed US Infrastructure Bill
 - \$65 billion; Wisconsin share if allocated per capita would be ~\$800 million
 - When will we know? Likely before the end of 2021

What is Door County Doing?

- Door County Economic Development Corporation (DCEDC) broadband study
 - Contracted with a highly reputable, nationally recognized firm
 - Funders include DCEDC, local governments, school districts
 - Engineering analysis - *Who has what where?*
 - Market analysis - *Who wants what and what are they willing to pay?*
 - Funding models - *How do we pay for it?*
 - Business models - *Who provides service?*
 - Report due in October
 - Steering committee created to work with consultant
 - Sharing results with stakeholders and the public
 - Creating an implementation plan

What about Baileys Harbor?

- Suffers from poor service, historically under-resourced provider; similar to other areas across Wisconsin
- Entrepreneurial opportunities and stakeholders
- Must determine level of public commitment given the perceived value of service
- Ensure public goals are achieved under any agreement with a partner
- Could learn a lot from the Washington Island fiber project currently underway
- Begin exploring possible private/public partnership business models including cooperatives

How Much Would Fiber Cost in Baileys Harbor and How Long will it Take?

- Estimated FTTH costs for the entire town - \$5.25 million
 - Fiber backbone - \$3.25 million
 - Service lateral connections - \$1.5 million
 - Hardware and equipment - \$500k
 - At 40 percent local contribution monthly payments are under \$10,000; taxes on \$200,000 property are ~\$50 per year
- Timeline - implementation in phases over a span of 3 to 5 years

Are There Successful Wisconsin Examples?

- A few of the many - and growing number of - examples:
 - Town of Drammen (Eau Claire County) - 2 providers, 12 businesses, 256 residences, \$1.45 million PSC grant w/ \$1.45 million local match
 - Boulder Junction (Vilas County) Phase 2 of 3 - 1 provider, 19 businesses, 585 residences, \$2.225 million PSC grant w/ \$2.734 million local match
 - Taylor County - 74 miles, 34 public and community sites, \$9.5 million, no grant funding
 - Washington Island fiber project

Broadband

*Where We Are Now and
Where We Can Go*