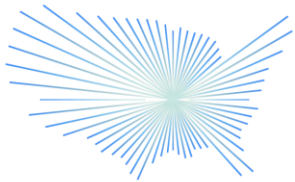BroadbandOhio

THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

CONNECTING THE HEARTLAND

BENTON INSTITUTE for BROADBAND & SOCIETY

Defiance County Broadband Plan

Team Members

David Kern, County Commissioner

Stephanie Metz, Commissioners' Clerk

Ryan Mack, City of Defiance Administrator

Erika Willitzer, Defiance County Economic Development Director

Kirstie Mack, Defiance Development & Visitors Bureau Director

Cara Potter, Defiance Public Library Director

Bruce Clevenger, OSU Extension Ag Agent

Jeff Owens and Scott Buddelmeyer, Mercy Health Systems

Jessica West, Defiance Area Chamber of Commerce

Key Terms

Community Anchor Institution (CAI) – Important local organizations that provide public interest resources to the community. Examples: schools, health care facilities, libraries, first responders, and government buildings)

Middle Mile – The network connection between the last mile and the rest of the internet.

Last Mile – The final leg of connection between the service provider and the customer.

Fixed Wireless – A rural internet option that connects one location, like a farm or a house, to the internet via radio waves.

ISP – Internet Service Provider

**FTTH/FTTP** – Fiber to the Home/Premises

P3'S – Public Private Partnerships

Defiance County knew that the existing broadband mapping used for funding applications was inaccurate. They also knew that speed test results would be needed to correct the mapping.

DEFIANCE COUNTY *broadband profile*

0-9 Mbps **10-24 Mbps** **25-49 Mbps** **50-100 Mbps** **100+ Mbps**

∿ State Route   ● ∿ bodies of water
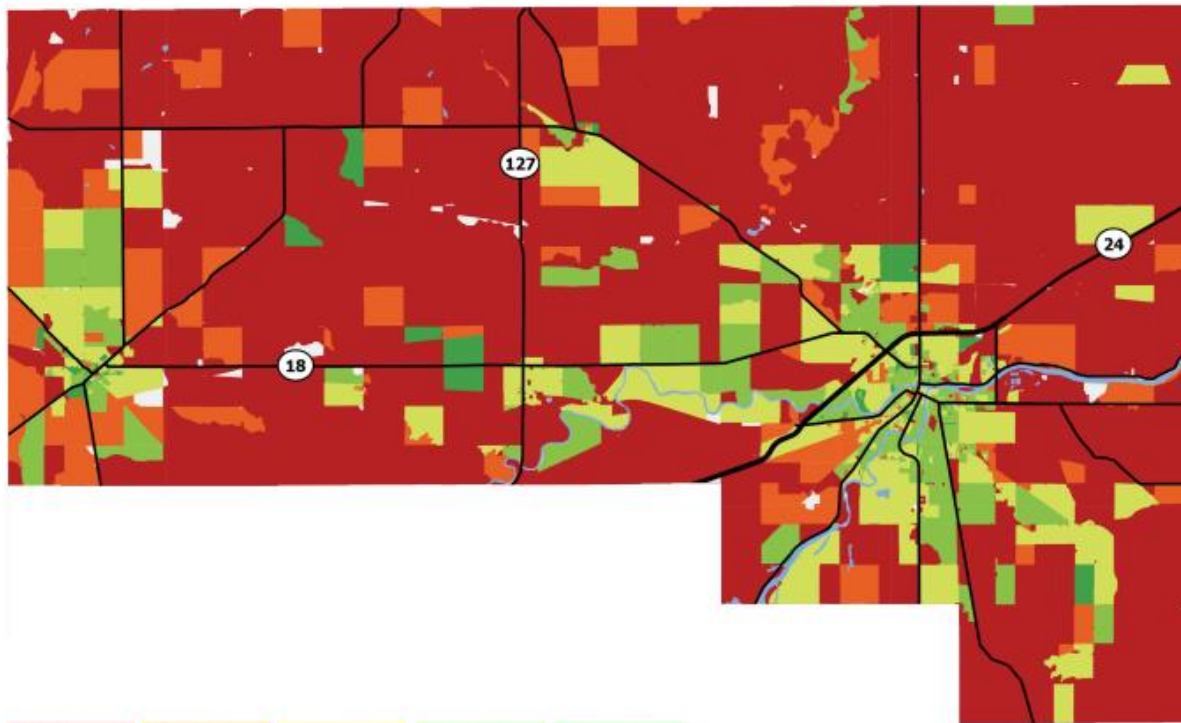
This map is based on a rating system developed by Reid Consulting Group, LLC. Data sources include Ookla Speedtest Intelligence® data licensed by InnovateOhio from the State of Ohio for the months of February 2020 through August 2021, carrier filings of available speeds with the FCC (Form 477), carrier reports of actual broadband deployments to USAC (HUBB), RDOF Phase 1 eligibility and E-911/LBRS household locations.[1]

81%
of the populated area

& 34%
of households
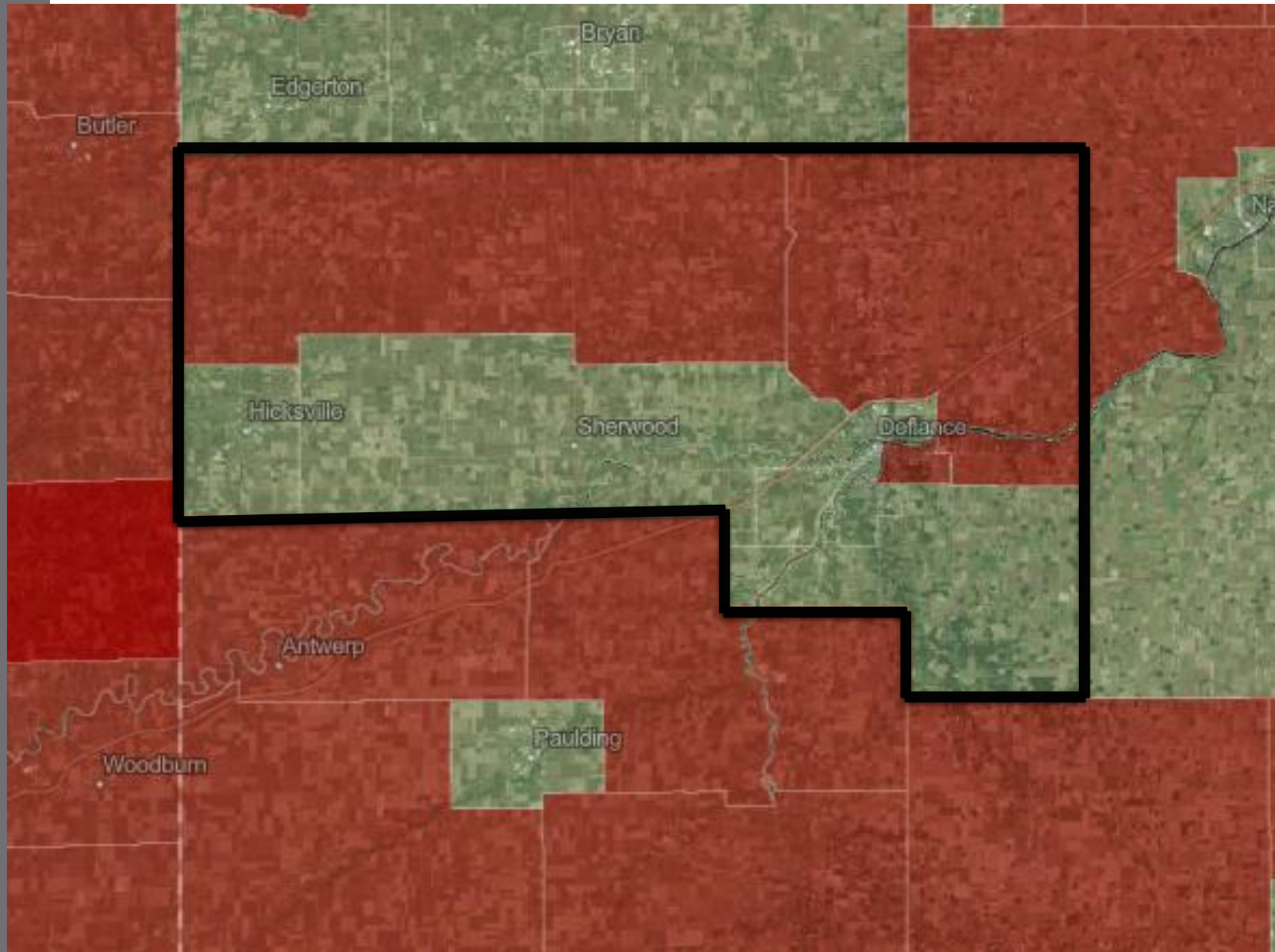
DO NOT HAVE ACCESS TO MINIMUM 25/3 Mbps

the county has ··········

408 mi²
of populated area

▶ 330 mi² are unserved

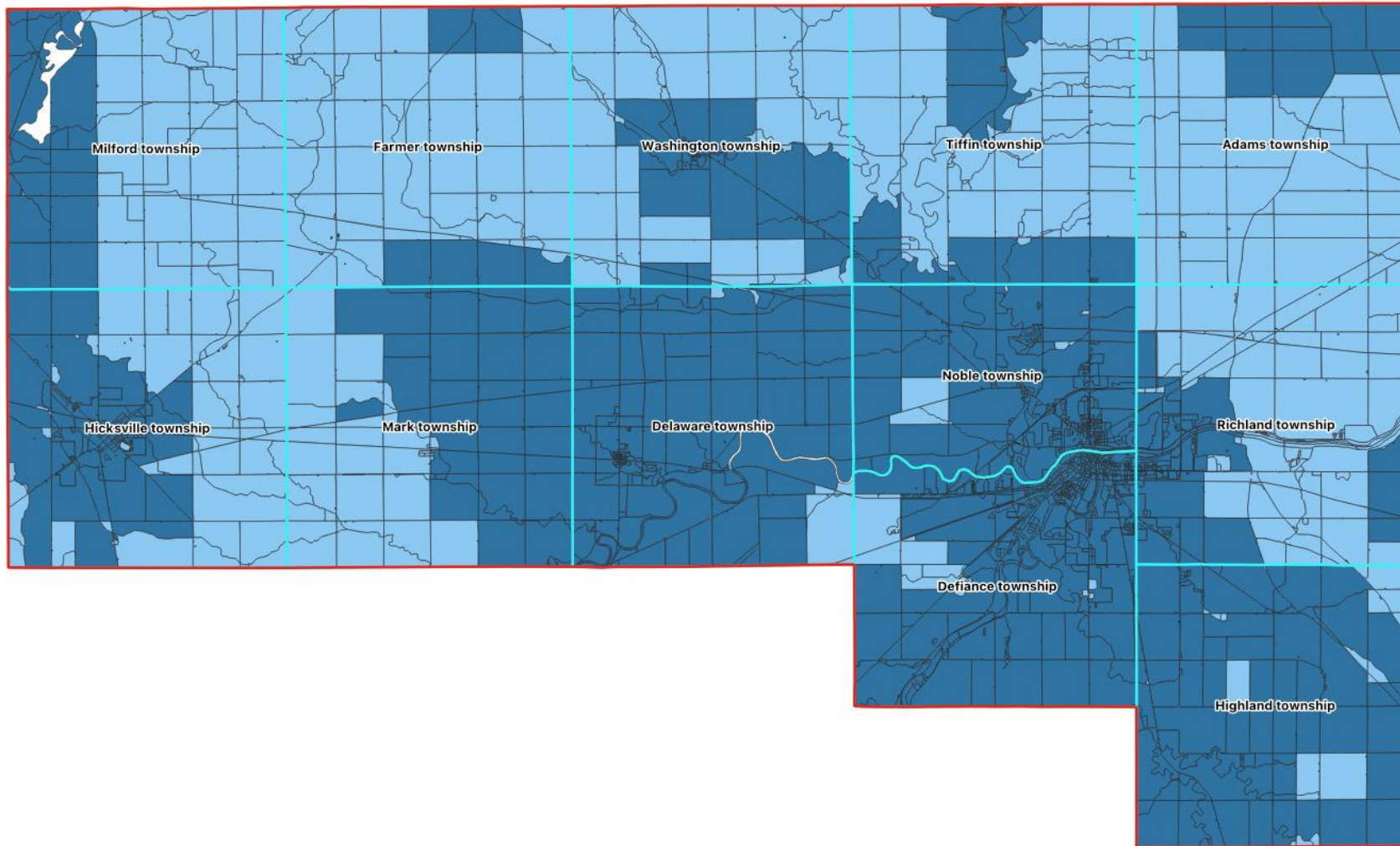### 18,398 households
▶ 6,307 are below 25/3

75%
below 10/1 Mbps
= 4,706 households

Per NTIA, Areas of red have less than 25/3 fixed broadband availability

NTIA – FCC Map

RESIDENTIAL & BUSINESS SPEED

Underserved Blocks: 25 Mbps ≤ Download Speed < 100 Mbps and 3 Mbps ≤ Upload Speed < 20 Mbps

Served Blocks: Download Speed ≥ 100 Mbps and Upload Speed ≥ 20 Mbps

Vision/Mission Statement

Mission:

To get high speed connectivity via fiber to the door or temporary high-speed fixed wireless to every home and business in Defiance County, to support the growing needs of our societal advancements.

Vision:

❖ Reliable fiber connection available to every anchor institution within 2 years 1 gig symmetrical

❖ High-speed fixed wireless projects implemented within 3 years 100mbps symmetrical (capable of 1g symmetrical within 2 additional years)

❖ Fiber to every door within 10 years 1 gig symmetrical

Priority Strategy Overview

1 – Obtain necessary data to prove broadband availability mapping inaccurate

2 – Develop plan for middle mile fiber construction to support last mile expansion for all Defiance County residents

3 – Develop plan for last mile fiber construction and high-speed wireless technology construction for all Defiance County residents

4 – Develop plan to partner with a private partner to obtain grants and other funding sources to implement middle mile and last mile plans

5 – Implementation of plans to provide high-speed internet to all Defiance County residents

2021 Consultant RFP and Contract with Lit Communities and PNe

2023 Broadband Buildout RFP with IceMiller

- At the end of 2021, Defiance County Commissioners release a Request for Proposals for an experienced firm to conduct a study and/or survey of existing connectivity capabilities within Defiance County, as well as demand aggregate information for the municipalities and outlying township areas of Defiance County.

- Lit Communities was chosen with a negotiated contract price of $84,697.00.

- April 2022, PNe was brought on board as a consultant to include a wireless assessment for the project.

- Spring 2023 IceMiller was brought on for legal counsel and Buildout RFP creation

Survey Results
*To date

County Population: 38,807

Statistical Confidence:

  90% confidence, 5% MOE = 271 results

  99% confidence, 3% MOE = 1,765 results

To date (9-14-2022) 402 surveys completed, so survey meets statistical accuracy.

*Note: Survey results are understated for unserved/underserved. Many residents had no internet, or they utilized cell service to complete survey and/or speed tests. Some residents were unable to take the survey at their residence, so they completed it at a public Wi-Fi location.

How important is it to you that Defiance County is working to bring better broadband to your community?

- Extremely important
- Important
- Somewhat important
- Not important
- The County should not be involved in a broadband project

68.3%
22.2%
6.7%
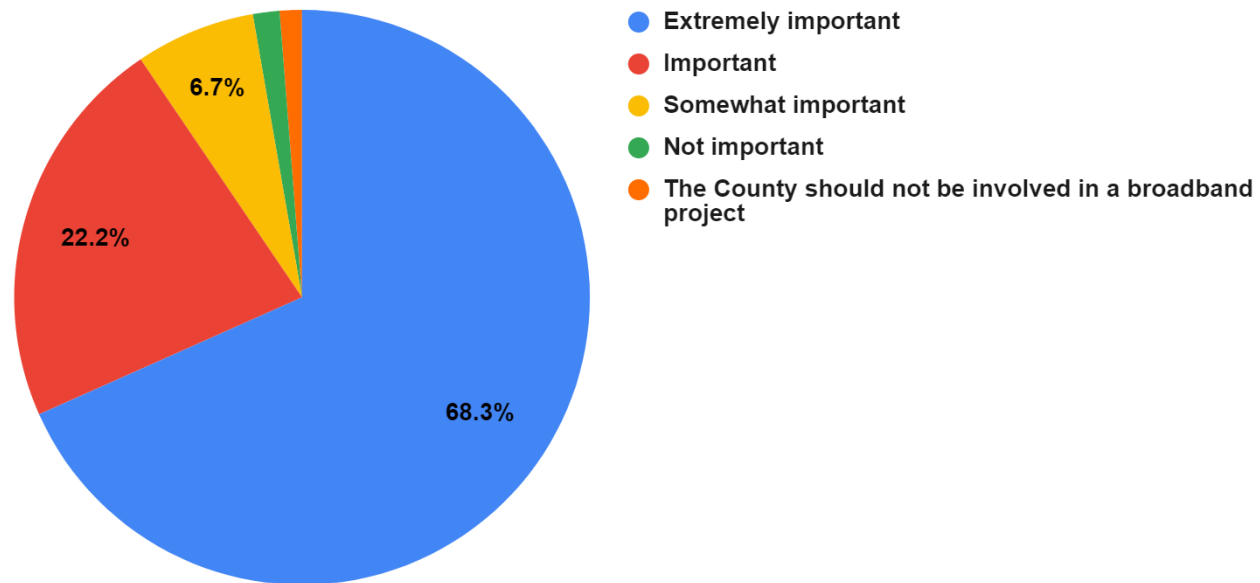
Defiance County Residents feel the County should be working towards better broadband.

- "We are living in the STONE AGE in our area. Every thing is do this or that on line. But on line here would be on the clothes line. Or power lines going past our house."

- "All roads should have internet access we do not even have access to reliable land lines. They put fiber down roads running north and south and skipped our road completely even though we have 7 houses in this same condition."

- "All the homes in the rural areas of the county should be able to get good Internet service. The address I gave you has nothing. And I am not going to set up a contract with a company I do not want to do business with. Nor can I move out to this location until good high speed Internet is available.   My parents live there now and have only a landline."

- "Ask about upload speed, we're lucky to get .7mps. That's less than 1. It's not enough for cameras or ring doorbell to work right"

- "Be able to surf the web, watch internet TV or stuff like Netflix without interruption or not connecting."

Not meeting FCC BB Definition	Number	%
Adams Township	4	40%
City of Defiance	33	26%
Defiance Township	4	44%
Delaware Township	4	33%
Farmer Township	6	100%
Hicksville Township	4	33%
Highland Township	7	44%
Mark Township	4	44%
Milford Township	6	60%
Noble Township	18	64%
Richland Township	10	67%
Tiffin Township	29	83%
Village of Hicksville	1	14%
Village of Sherwood	1	50%
Washington Township	18	78%

Surveys Completed that do not meet FCC's Broadband definition of at least 25/3 by Location

Subscribes to high download speeds	No home internet	Under 51 Mbps	51-100 Mbps	More than 100 Mbps
Adams Township	0%	100%	0%	0%
City of Defiance	2%	20%	30%	51%
Defiance Township	15%	50%	0%	50%
Delaware Township	0%	58%	42%	0%
Farmer Township	14%	80%	20%	0%
Hicksville Township	7%	80%	20%	0%
Highland Township	5%	50%	29%	21%
Mark Township	0%	60%	20%	20%
Milford Township	9%	60%	40%	0%
Noble Township	0%	61%	17%	22%
Richland Township	0%	67%	33%	0%
Tiffin Township	13%	85%	15%	0%
Village of Hicksville	0%	0%	17%	83%
Village of Sherwood	50%	100%	0%	0%
Washington Township	16%	75%	17%	8%

Survey Speed Test Results by Location

25/3 Mbps - Defiance County	Number	%
Over 25/3 Mbps	169	53%
Under 25 Mbps download but over 3 Mbps upload	44	14%
Over 25 Mbps download but under 3 Mbps upload	12	4%
Under on both	93	29%
Not meeting FCC broadband definition	**149**	**47%**

47% of Surveys completed do NOT meet FCC's Broadband Definition

Does the availability of internet service impact decisions on where you choose to operate and/or expansion plans for your business?		
Answers	Number of surveys	%
Yes	13	65%
No	3	15%
I am not the business owner	4	20%
Total number	**20**	**100%**

Does the availability of internet service impact decisions on what equipment or technology your business invests in?		
Answers	Number of surveys	%
Yes	15	75%
No	1	5%
I do not make decisions on this matter	4	20%
Total number	**20**	**100%**

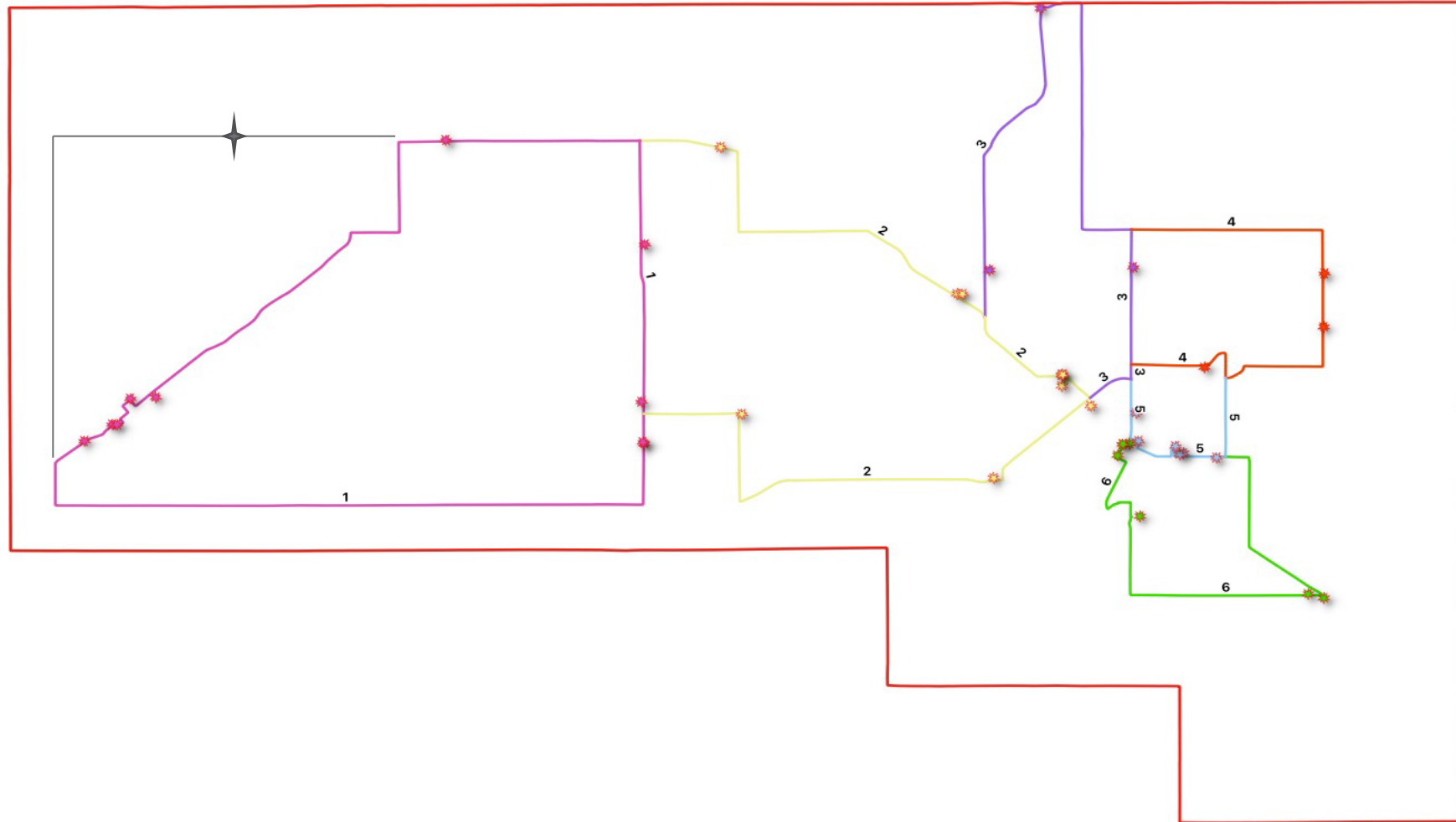# Broadband Effects Local Economic Development Decisions

What are we going to do?

Break barriers and Let our Communities Thrive!!

Design of Middle Mile Rings for Defiance County

- To provide secure service to all Community Anchor Institutions and a backbone fiber ring available to provide last mile fiber service to every resident in the County

Middle Mile Design – Not Utilizing Existing Assets

All Rings (6)							
Capital Expenditures							
Assessment	$0						
Engineering (Low Level Design)	$1,239,976						
Construction	$10,278,026						
Operational Carry during Construction	641,875						
Total Capital Expenditures and Investment Required to Complete	$12,159,877						
Recurring Expenses							
Operatons and Maintenance-20 years	$2,040,961						
Subtotal	$2,040,961						
Potential Revenue							
FTTH Partner- 20 years	$14,118,490						
Services- 20 years	$10,139,625						
Dark Fiber Leases- 20 years	$2,374,833						
Total Revenue	$26,632,948						
Total # of Residential Units	18,903						
Total # of Anchor Institutions	0						
Capital Expenditures		Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6
Assessment		$0	$0	$0	$0	$0	$0
Engineering (Low Level Design)		$252,189	$214,215	$194,367	$170,863	$155,637	$177,388
Construction		$2,898,976	$1,978,678	$1,497,663	$928,059	$559,061	$1,086,201
Total Assessment, Engineering and Construction		$3,151,166	$2,192,893	$1,692,029	$1,098,922	$714,698	$1,263,589
Dark Fiber Leases-20 years		$823,878	$543,585	$397,320	$226,840	$118,294	$264,916
# of Residential Units		4275	2422	1155	834	3033	7184
# of Anchor Institutions		10	10	3	3	6	7

Cost - $12,159,877 *As if 100% new fiber, not utilizing existing assets

Commissioner's Role in Broadband Development

Organize and mobilize community members

Consider public-private partnerships

Allocate resources (easements/relationships)

Support and stimulate investment in our communities

Steps by Commissioners

Finalize middle mile and last mile fiber designs both on own and utilizing existing assets

Finalize dedicated wireless service to areas that will take the longest for fiber to the door to be constructed

RFP for Buildout and P3's with IceMiller

GRANT FUNDS!! GRANT FUNDS!!!

Funding Opportunities

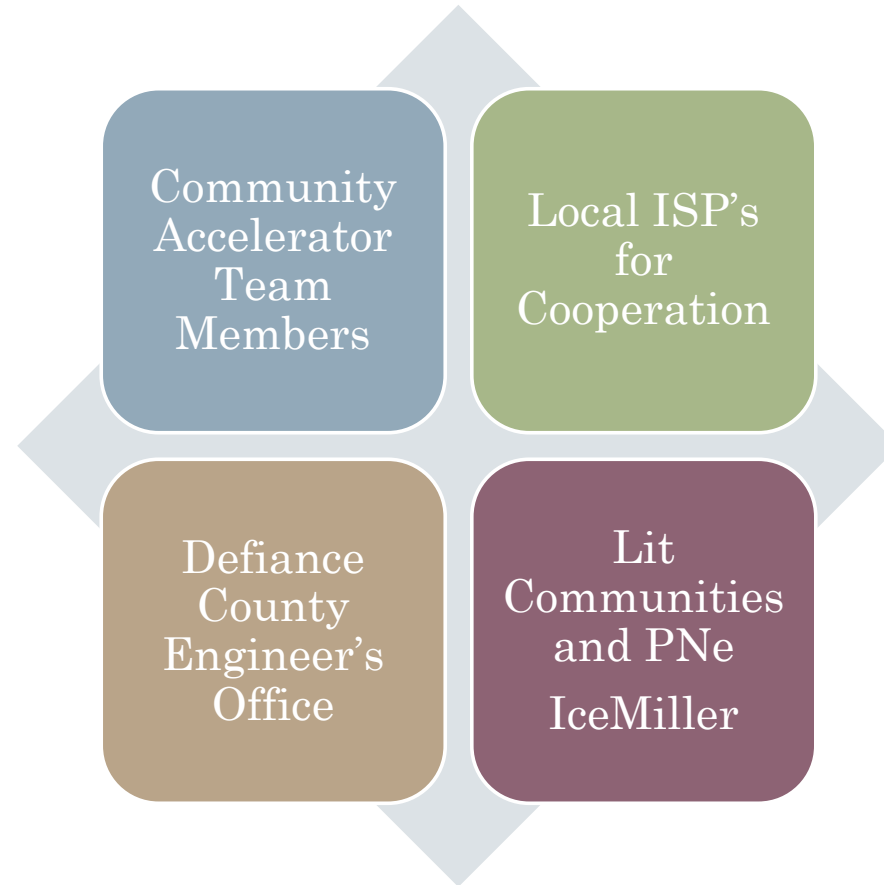| Local	State	Federal
• American Rescue Plan funds – Commissioners allocated $2 million to connectivity • Local funding • Revenue Bond Options • Private Partnership	• Broadband Ohio • All Ohio Fund	• American Rescue Plan • NTIA – Department of Commerce • USDA • EDA • Rural Reconnect

Thank You

Community Accelerator Team Members

Local ISP's for Cooperation

Defiance County Engineer's Office

Lit Communities and PNe

IceMiller

Questions?????