LAPEER COUNTY

DATA COLLECTION RESULTS

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PRESENTERS

CHRIS GREENE HUTCHINGS

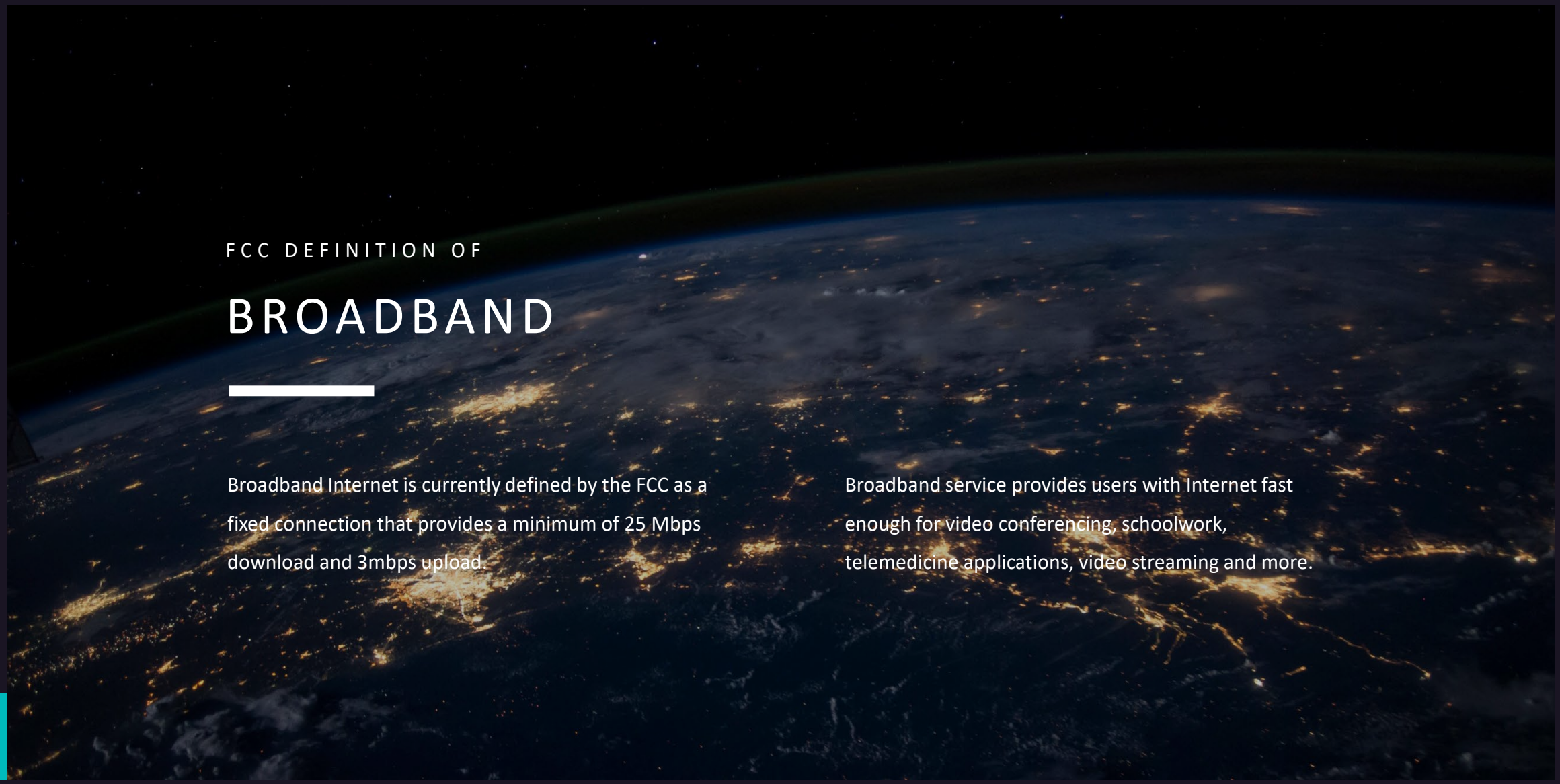
Program Manager, Michigan Moonshot

MERIT NETWORK, INC

ALEXIS SCHRUBBE

Consultant

MERIT NETWORK, INC

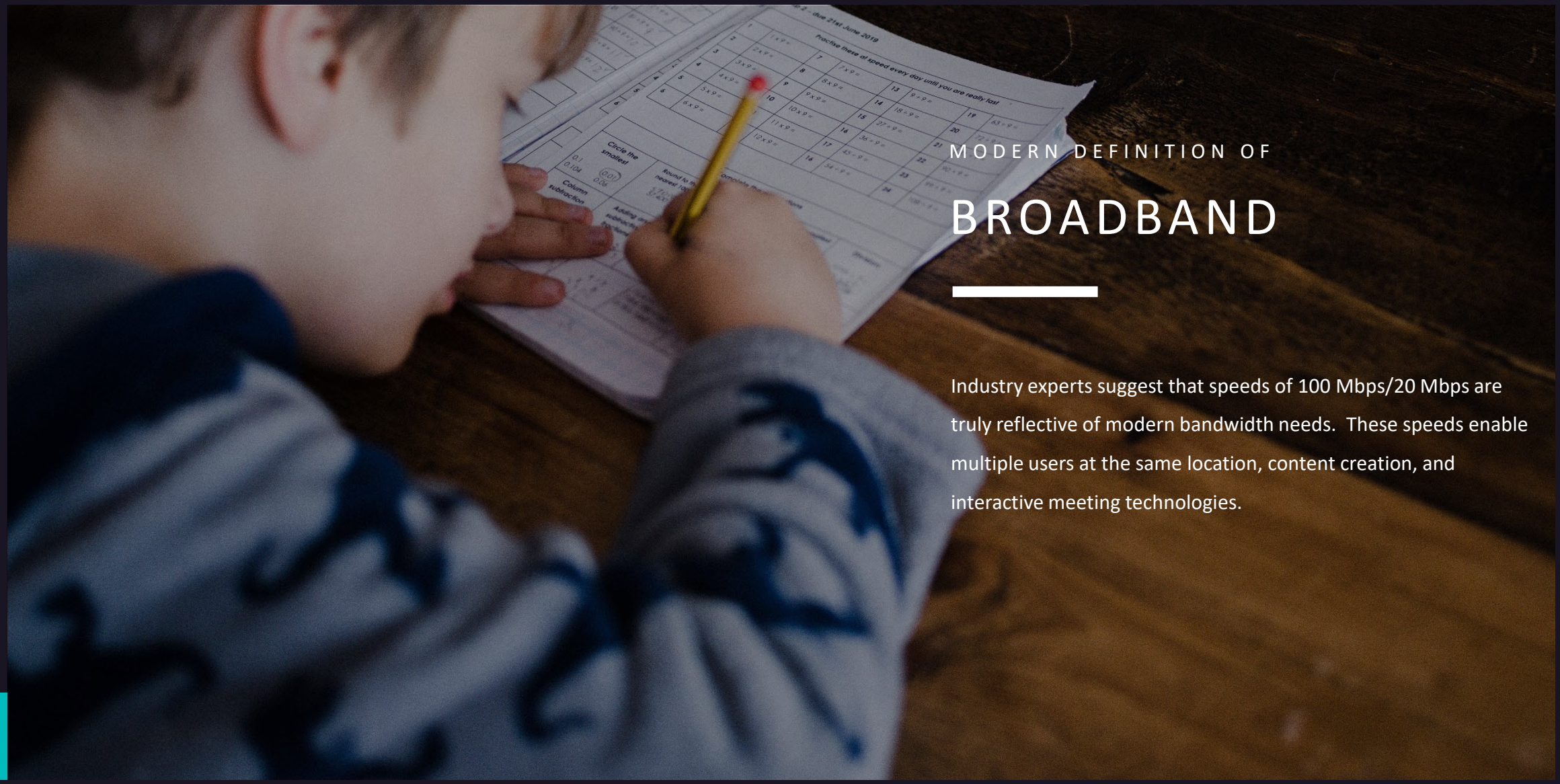


FCC DEFINITION OF

BROADBAND

Broadband Internet is currently defined by the FCC as a fixed connection that provides a minimum of 25 Mbps download and 3mbps upload.

Broadband service provides users with Internet fast enough for video conferencing, schoolwork, telemedicine applications, video streaming and more.



MODERN DEFINITION OF

BROADBAND

Industry experts suggest that speeds of 100 Mbps/20 Mbps are truly reflective of modern bandwidth needs. These speeds enable multiple users at the same location, content creation, and interactive meeting technologies.

PROJECT GOALS & DESIRED OUTCOMES

- Quantifying availability and demand
- Produce unbiased, granular and accurate household broadband access maps & visualizations including served and unserved residences and businesses
- Produce data to inform infrastructure investment and to challenge federal and state funding maps
- Gather residents' experience with broadband usage and how lack of access impacts quality of life
- Understand residents' positions regarding broadband service pricing and availability in their region
- Obtain insights regarding Internet connectivity capabilities for the county's children, college students and residents working from home

SURVEY METHODS

Survey modalities offered:

- Paper survey by mail
- Online low-bandwidth survey for cellular devices
- Online survey for connected residents
- SMS text message survey

Participants recruited through:

- Community Partner Outreach Program
- Direct mail and email
- Media advertisements and communications

Unserved residents completed a survey only

Served residents completed a survey and a speed test

SURVEY
DATA COLLECTED

- Street address
- Number of residents at address
- Number of children under 18 at address
- Number of people taking college courses at address
- Number of residents working from home
- ISP service delivery mode (fiber, DSL, etc…)
- Satisfaction with ISP’s service
- M-Lab speedtest results
- Price willingness to receive services
- Recent shopping behavior or service cancellation
- Application needs for household Internet
- Reason for lack of service at unserved households, and more

LAPEER COUNTY

PARTICIPATION OF COMMUNITY POPULATION

City/Township	Total Households	Survey Responses	Response %	Fraction without Broadband - **25/3**	Fraction without Broadband - **100/20**
COUNTYWIDE	**33,971**	**3,550**	**10**	**77.27**	**98.06**
City of Lapeer	3593	159	4.43%	56.60%	94.97%
Dryden Township	1824	173	9.48%	64.74%	95.95%
City of Imlay City	1572	56	3.56%	69.64%	96.43%
Attica Township	1790	221	12.35%	77.83%	96.83%
Hadley Township	1727	224	12.97%	84.82%	97.32%
Lapeer Township	1977	200	10.12%	80%	97.50%
Metamora Township	1637	192	11.73%	64.06%	97.92%
Oregon Township	2129	245	11.51%	74.29%	97.96%
Elba Township	2129	327	15.36%	76.15%	98.17%
Almont Township	2530	327	12.92%	81.35%	98.17%

LAPEER COUNTY

PARTICIPATION OF COMMUNITY POPULATION (Continued)

City/Township	Total Households	Survey Responses	Response %	Fraction without Broadband - **25/3**	Fraction without Broadband - **100/20**
COUNTYWIDE	**33,971**	**3,550**	**10**	**77.27**	**98.06**
Arcadia Township	1264	122	9.65%	85.25%	98.36%
Deerfield Township	2077	206	9.92%	80.10%	98.54%
Mayfield Township	3081	351	11.39%	59.54%	98.86%
Goodland Township	639	92	14.40%	92.39%	98.91%
North Branch Township	1411	113	8.01%	92.04%	99.12%
Imlay Township	1137	158	13.90%	84.81%	99.37%
Marathon Township	1736	179	10.31%	87.15%	99.44%
Burlington Township	519	67	12.91%	97.01%	100%
Burnside Township	664	82	12.35%	100%	100%
Rich Township	535	56	10.47%	100%	100%

KEY FINDINGS

LAPEER COUNTY DATA COLLECTION

- **Served locations**
- **Unserved locations**

PARTICIPANT RESPONSES

- After the data was cleaned **3,550 surveys** were eligible for analysis
- **1,366 (38%) residents** indicated they had some Internet connectivity
- **2,228 (62%) residents had no connectivity** in their homes
- **1322 households** with Internet access completed a speed test
- The project **margin of error is 1.5%**

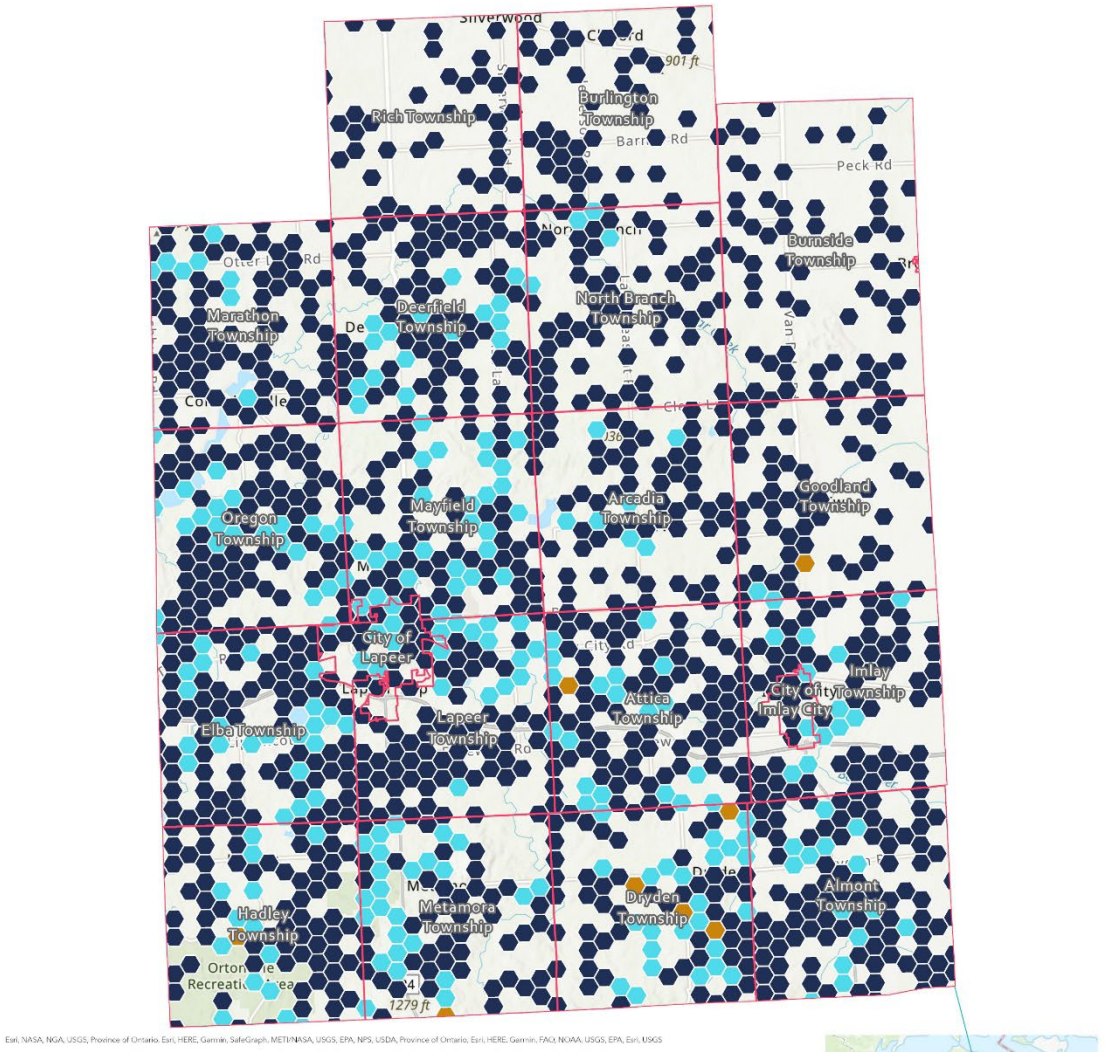
SERVED RESPONDENTS

Photo by Sveta Fedarava on Unsplash

LAPEER COUNTY

INTERNET SPEED TEST RESULTS

SERVICE THRESHOLD | A COUNTYWIDE HEATMAP



SERVICE THRESHOLD

Download/Upload (Mbps)

- At or Above 100/20
- Between 25/3 and 100/20
- Below 25/3

SUMMARY STATISTICS

TOTAL: 3,550 speed test locations

MEDIAN: Download - 0.00 Mbps
Upload - 0.00 Mbps

MIN: Download - 0.00 Mbps
Upload - 0.00 Mbps

MAX: Download 630.04 Mbps
Upload 86.15 Mbps

Each hexagonal bin represents the average speed test value for surveys conducted within that hexagonal bin.

merit

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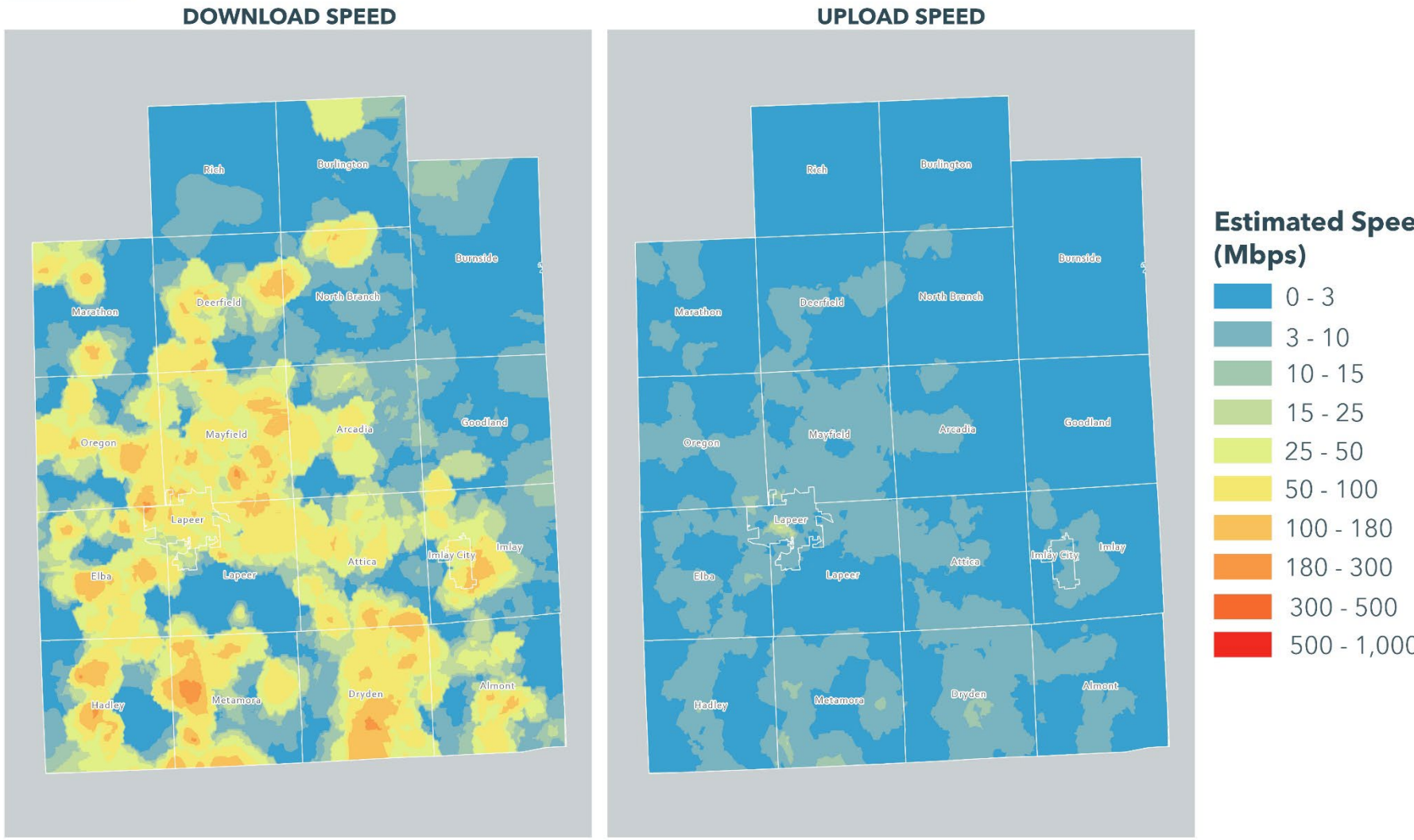
ESTIMATED INTERNET SPEE

SPEED ESTIMATION
OF LAPEER COUNTY



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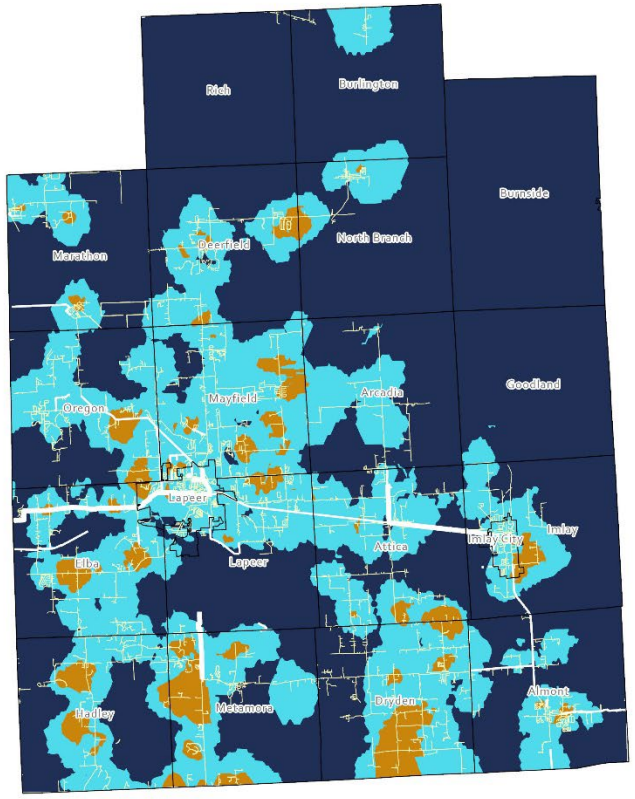
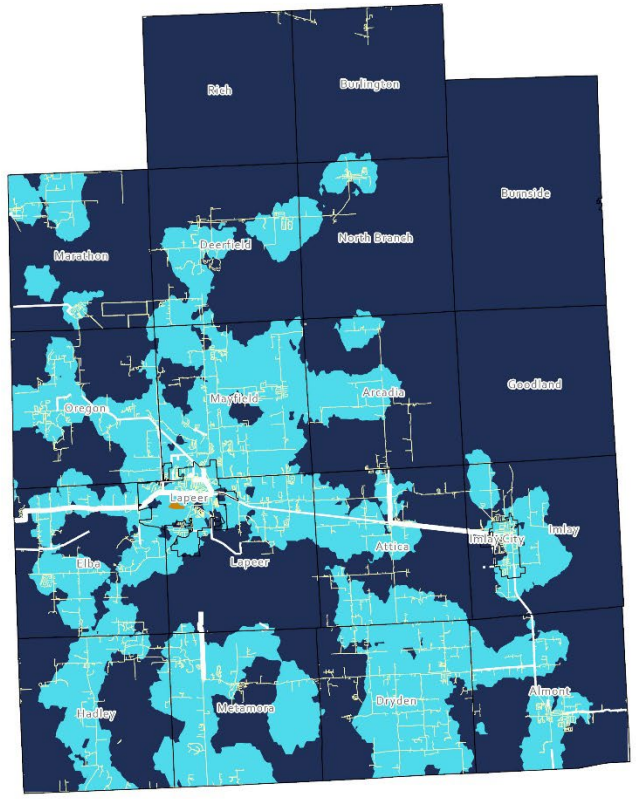
ESTIMATED INFRASTRUCTURE LOCATION

INFRASTRUCTURE ESTIMATION
OF LAPEER COUNTY

DOWNLOAD SPEED



UPLOAD SPEED



Esri, NASA, NGA, USGS, Province of Ontario, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA

Download Estimated Speed (Mbps)
- 0 - 25
- 25 - 100
- > 100

Upload Estimated Speed (Mbps)
- 0 - 3
- 3 - 20
- > 20

MIHI Audit Data

Coaxial	00.0-25.0
FTTP	25.0-100.0
Fiber	100.0-630.039092
Fiber Transport	NoData

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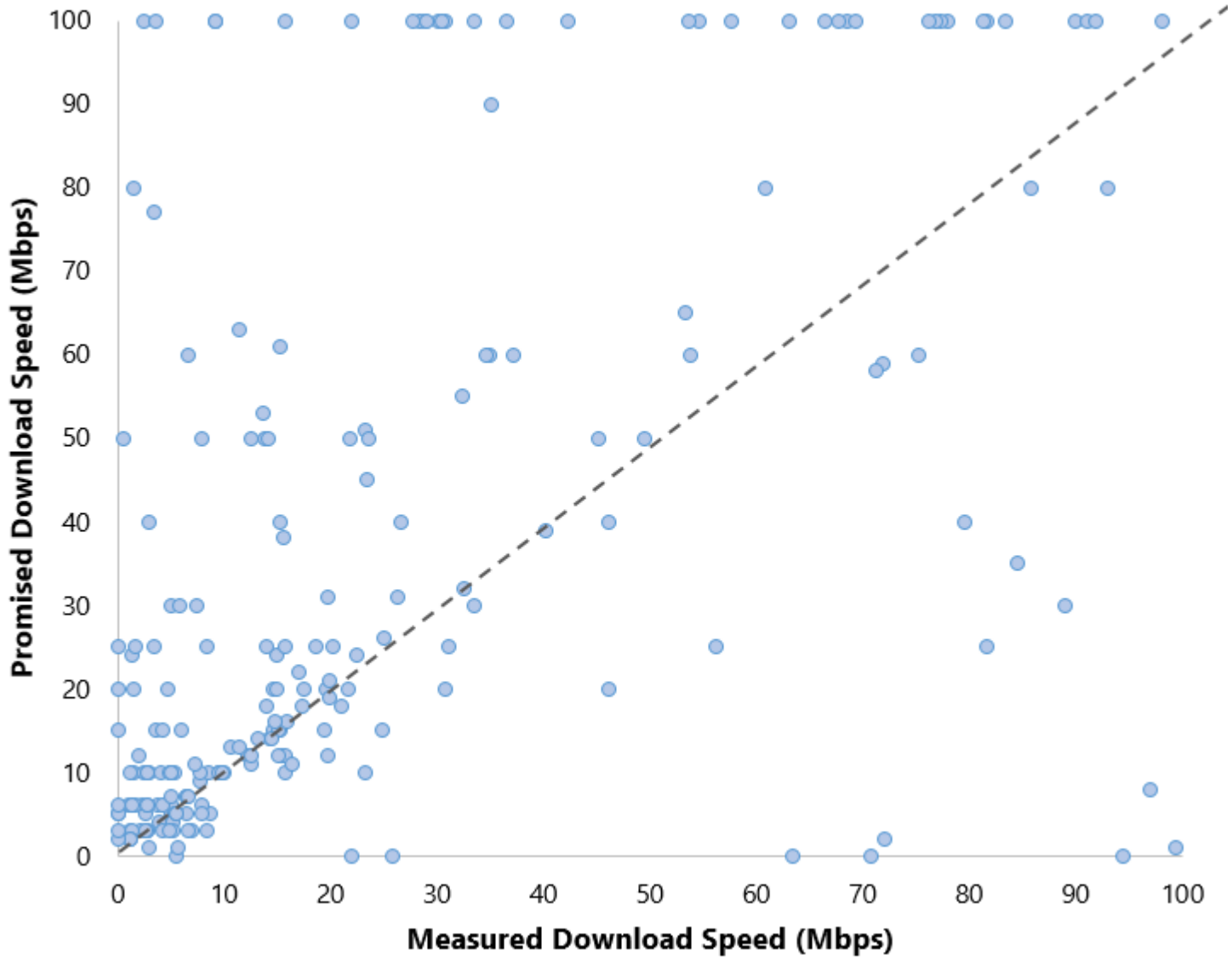
SATISFACTION BY INTERNET SPEED

n = 1,323

LAPEER COUNTY

PROMISED VS ACTUAL INTERNET SPEEDS

~~Up to~~ 100 Mbps



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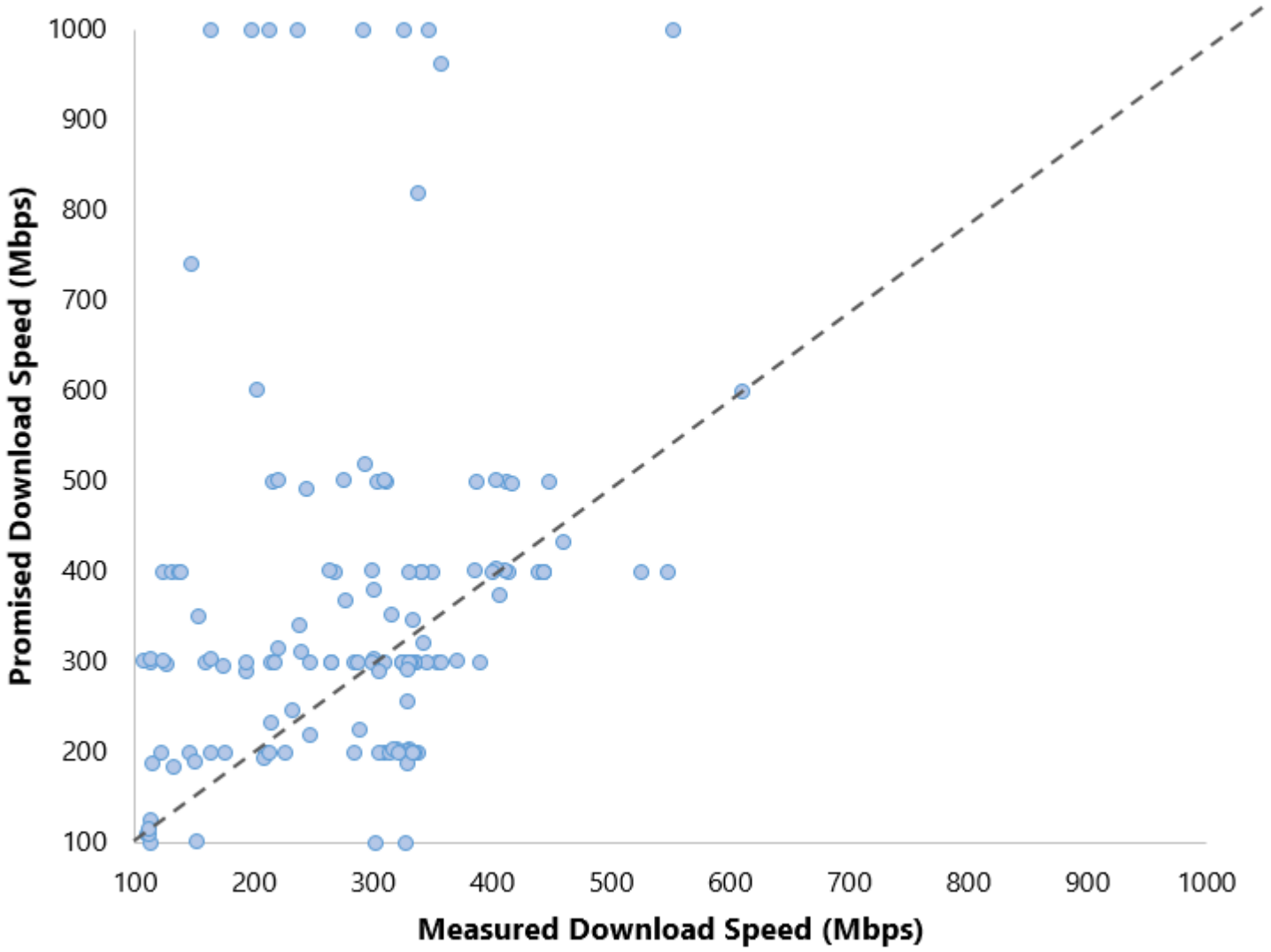
PROMISED VS ACTUAL INTERNET SPEEDS

~~100 Mbps~~ +



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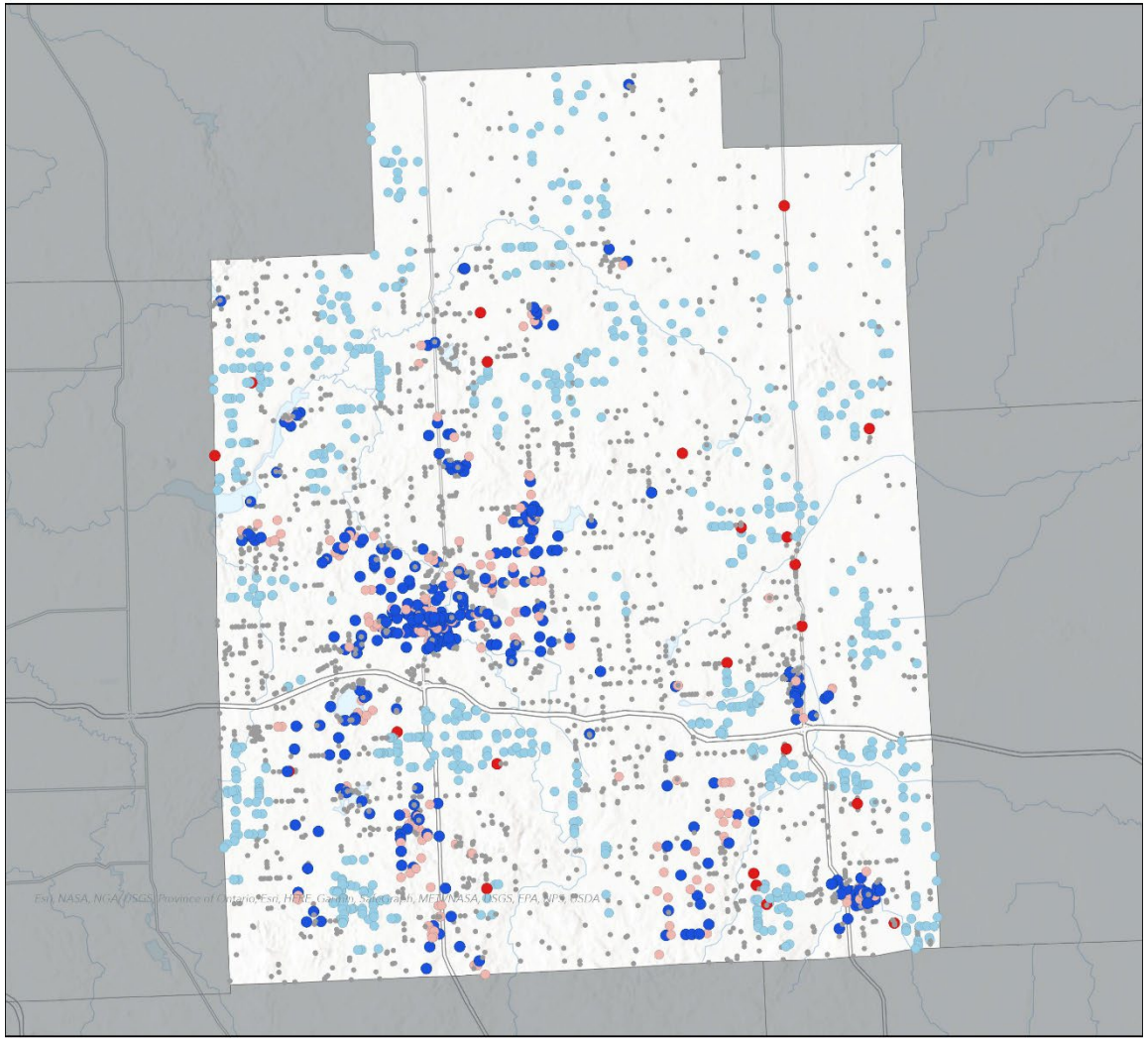
HOUSEHOLDS WITH DIFFERENT SPEEDS THAN NEIGHBORS

CLUSTERS AND OUTLIERS
OF LAPEER COUNTY



DOWNLOAD SPEED CLUSTERS AND OUTLIERS

- High-High cluster
- High-Low outlier
- Low-High outlier
- Low-Low cluster
- Not significant

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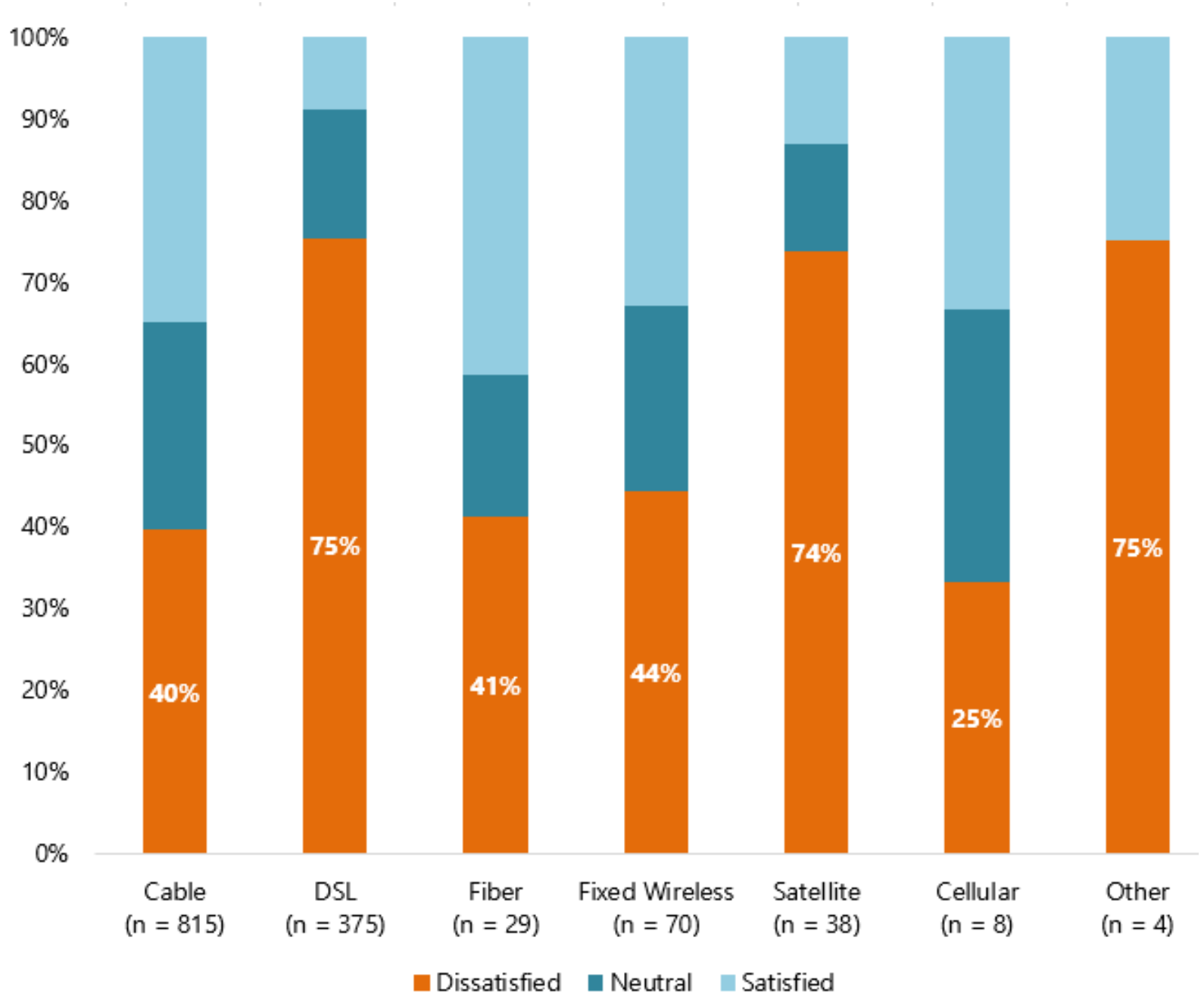
SATISFACTION BY TECHNOLOGY TYPE



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RESIDENTS WORKING FROM HOME

n = 3,504

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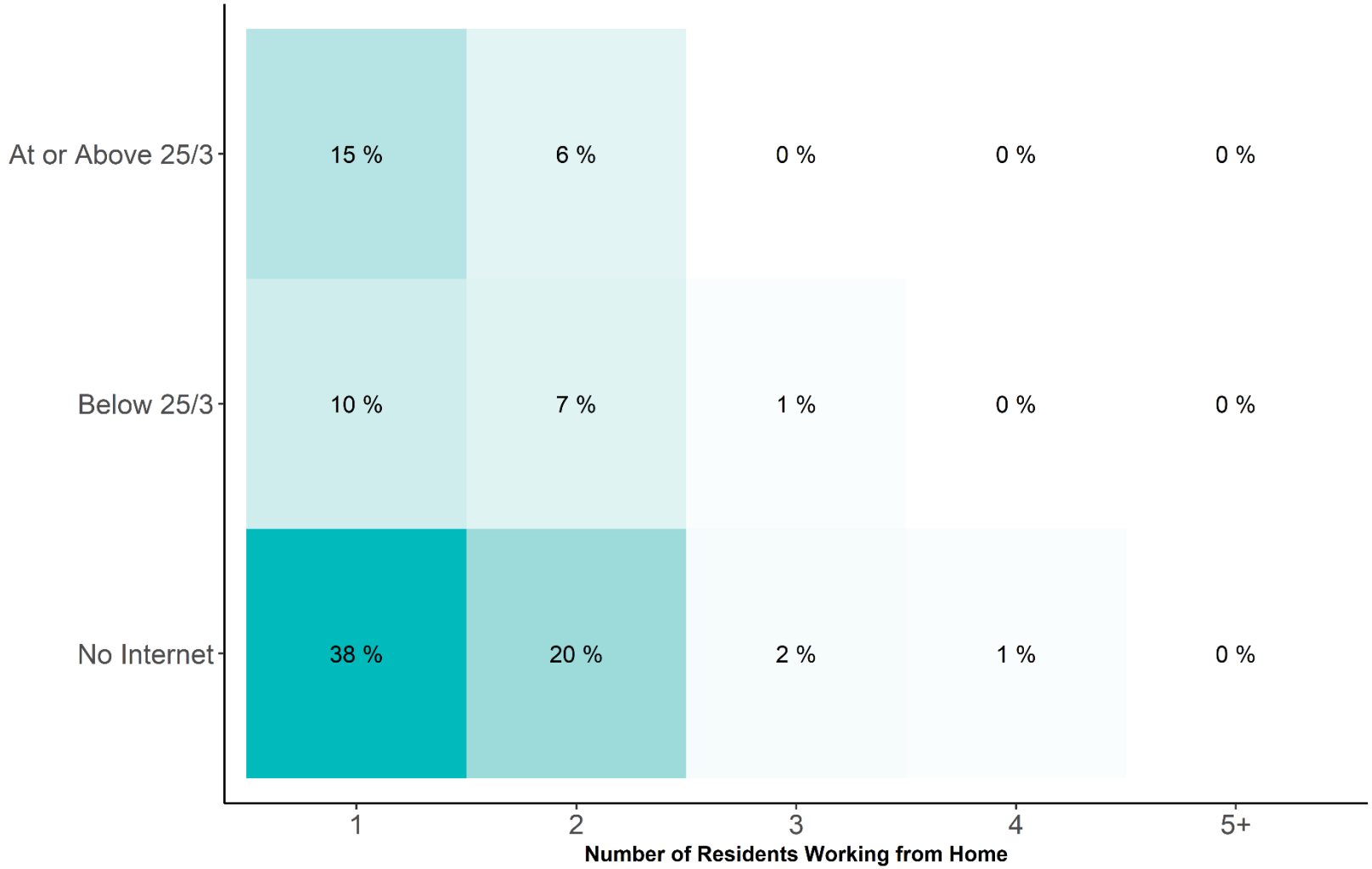
INTERNET SPEEDS OF RESIDENTS WORKING FROM HOME



n = 1,862

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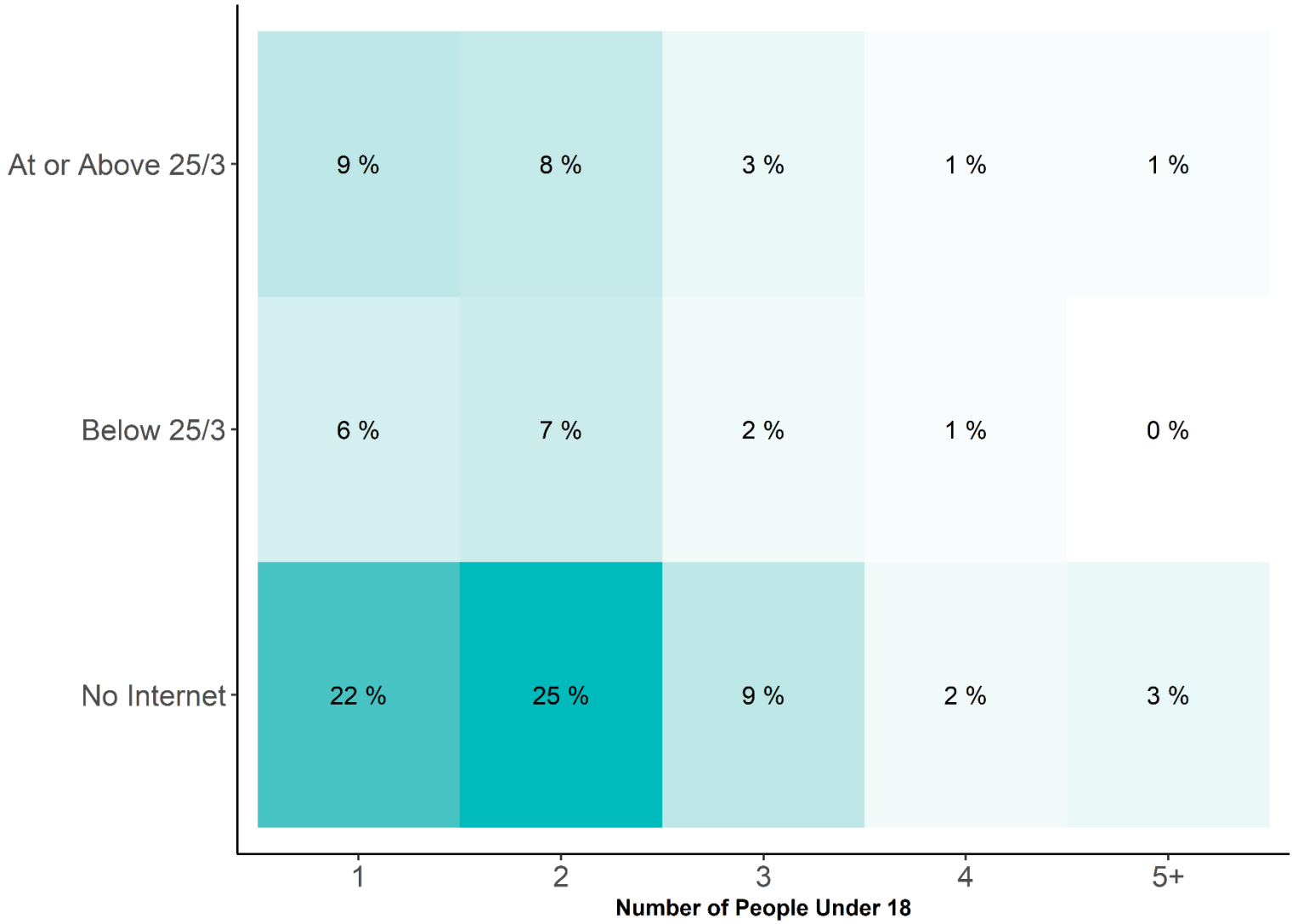
INTERNET SPEEDS OF HOUSEHOLDS WITH CHILDREN



n = 914

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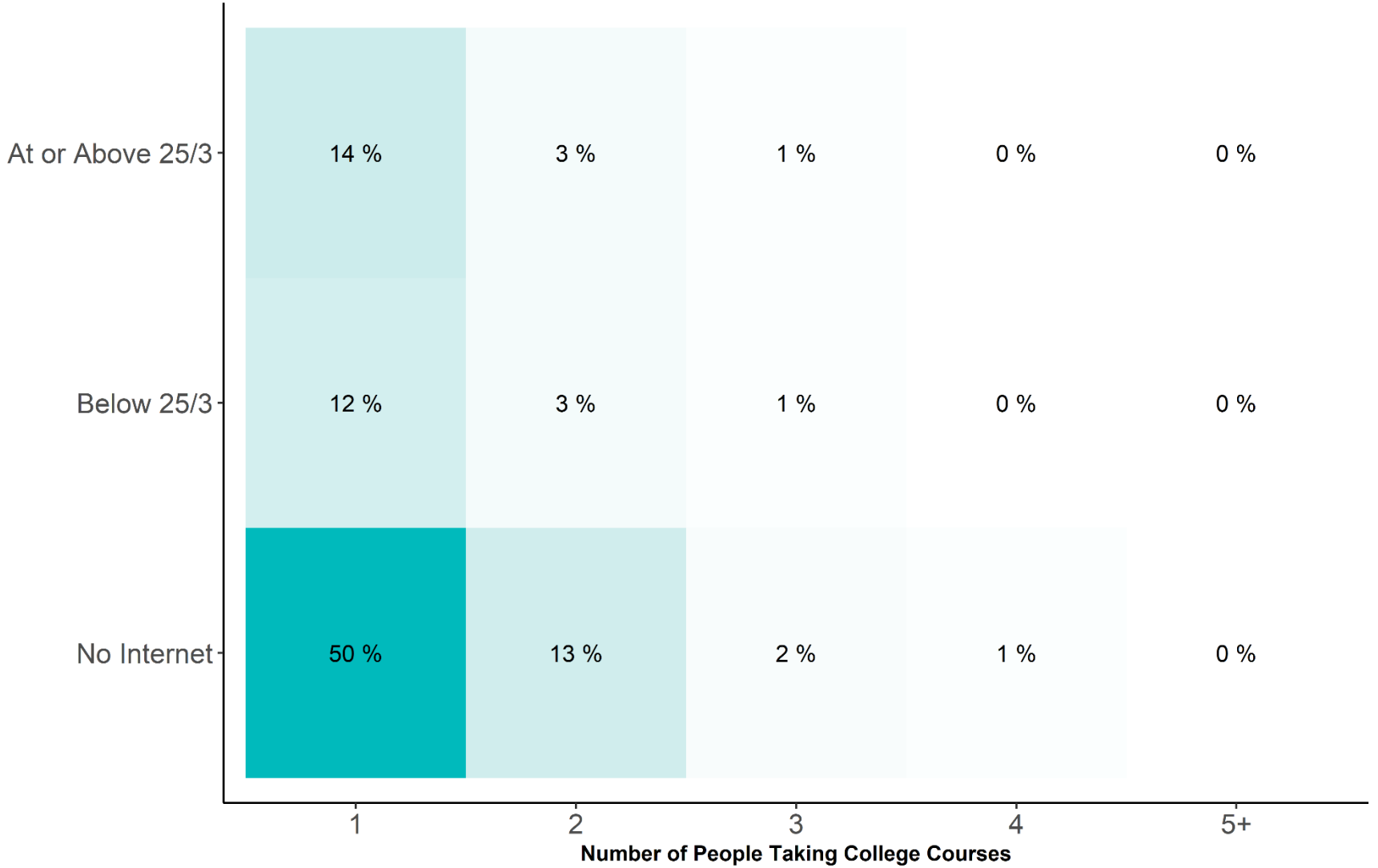
INTERNET SPEEDS OF HOUSEHOLDS WITH COLLEGE STUDENTS



n = 663

UNSERVED RESPONDENTS

Photo by Sveta Fedarava on Unsplash

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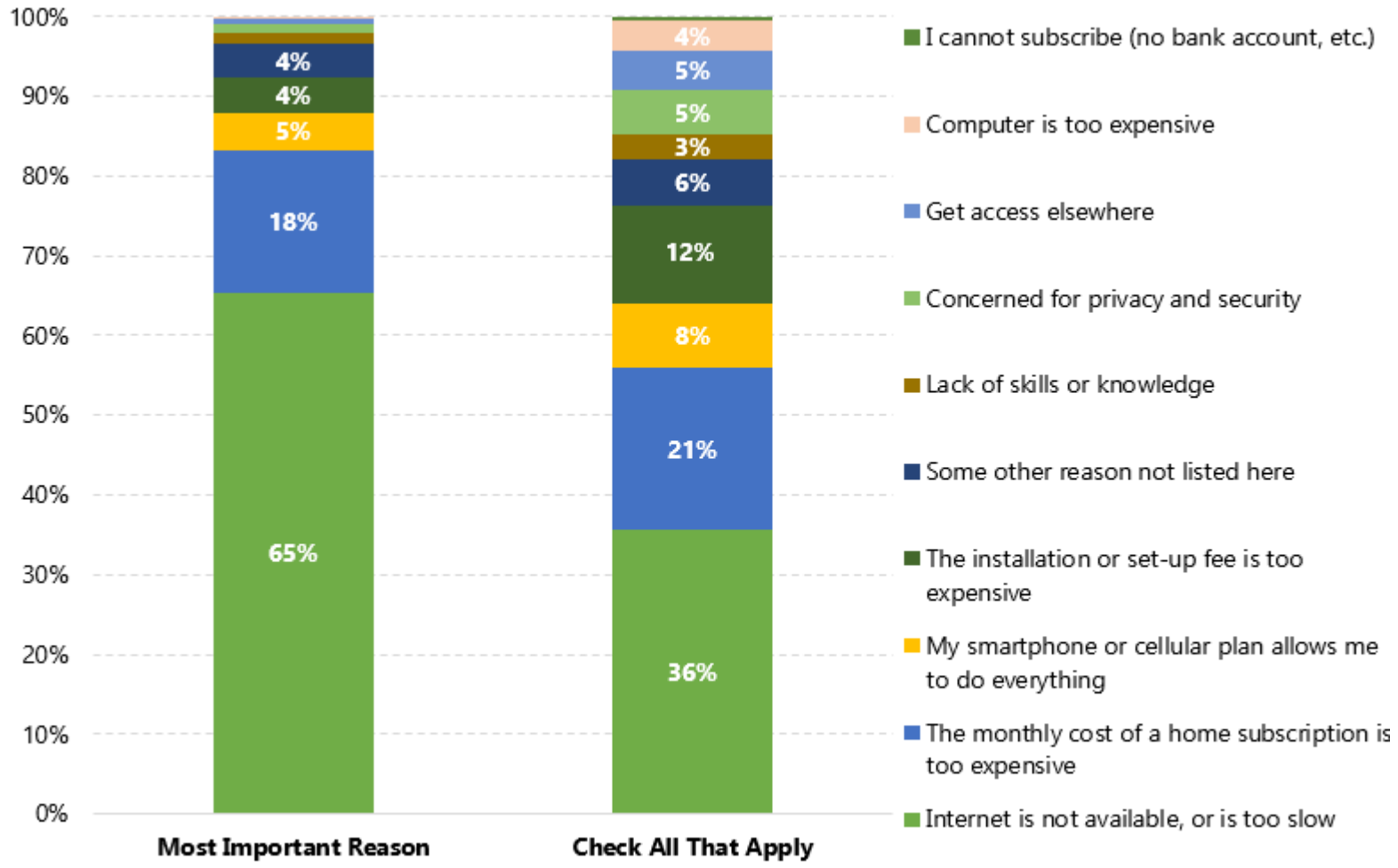
REASONS WHY HOUSEHOLDS LACK INTERNET



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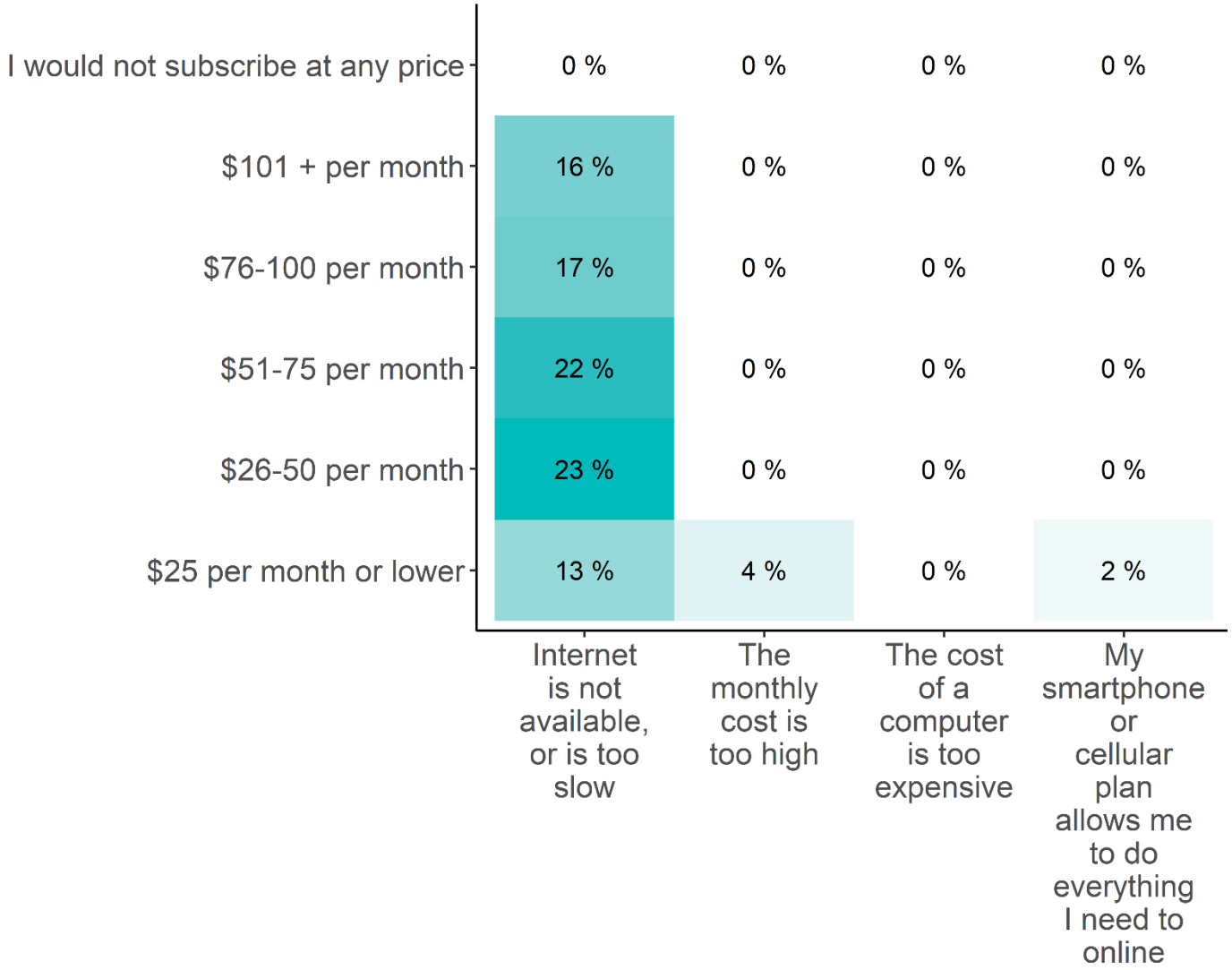
REASONS WHY HOUSEHOLDS LACK INTERNET BY MAXIMUM PRICE



n = 1,781

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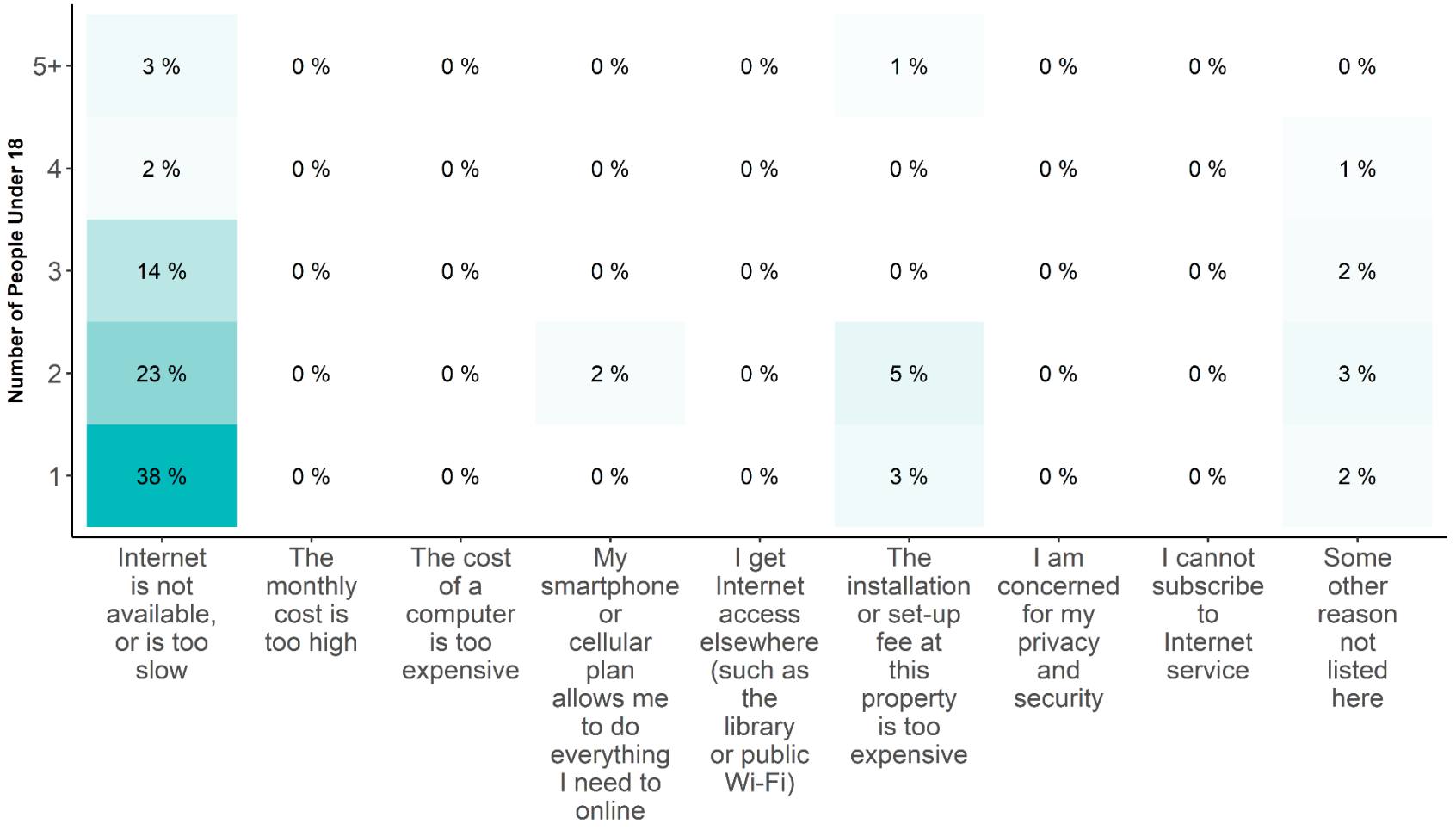
REASONS WHY HOUSEHOLDS WITH CHILDREN LACK INTERNET



n = 299

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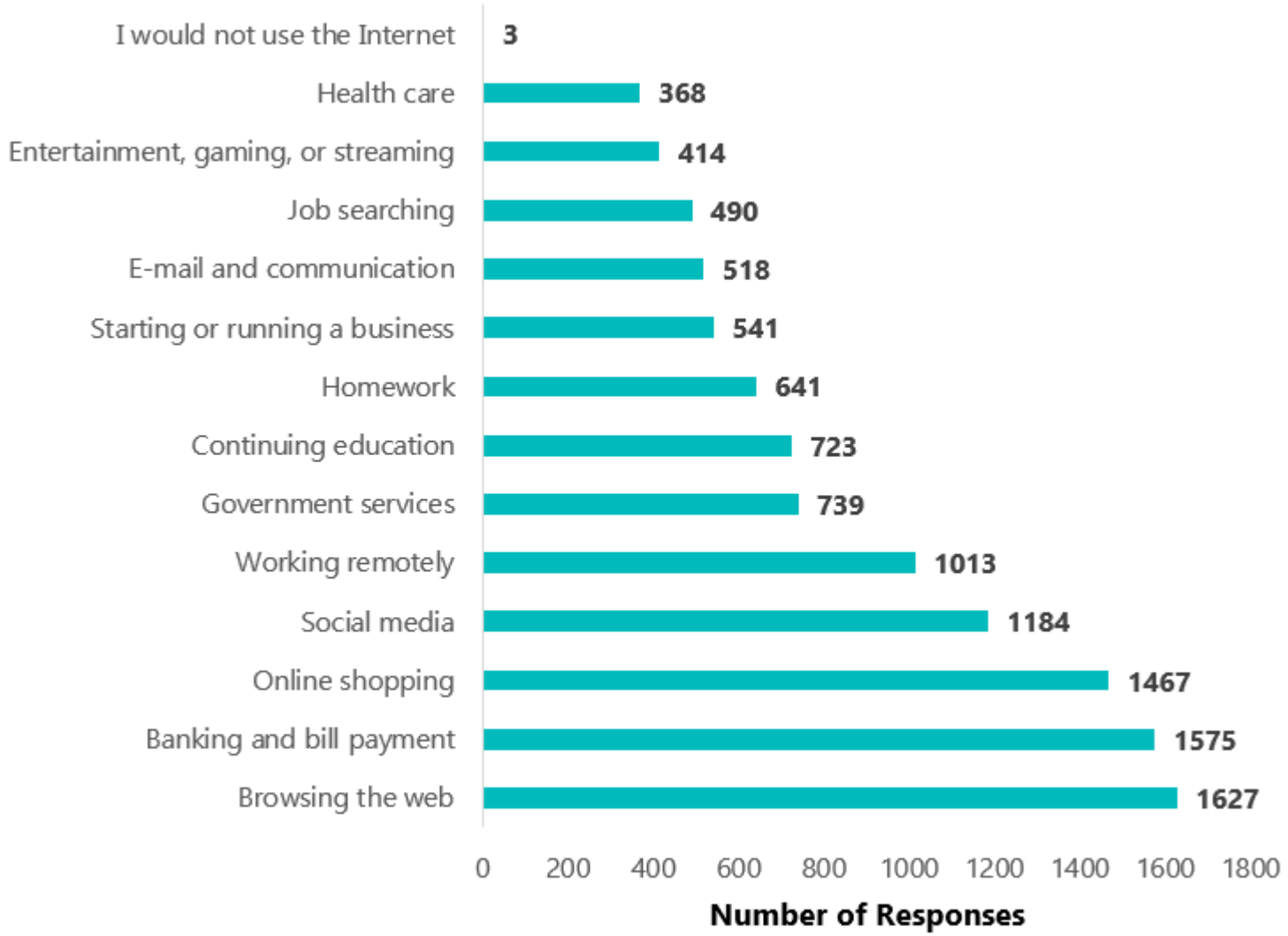
INTENDED USES OF INTERNET



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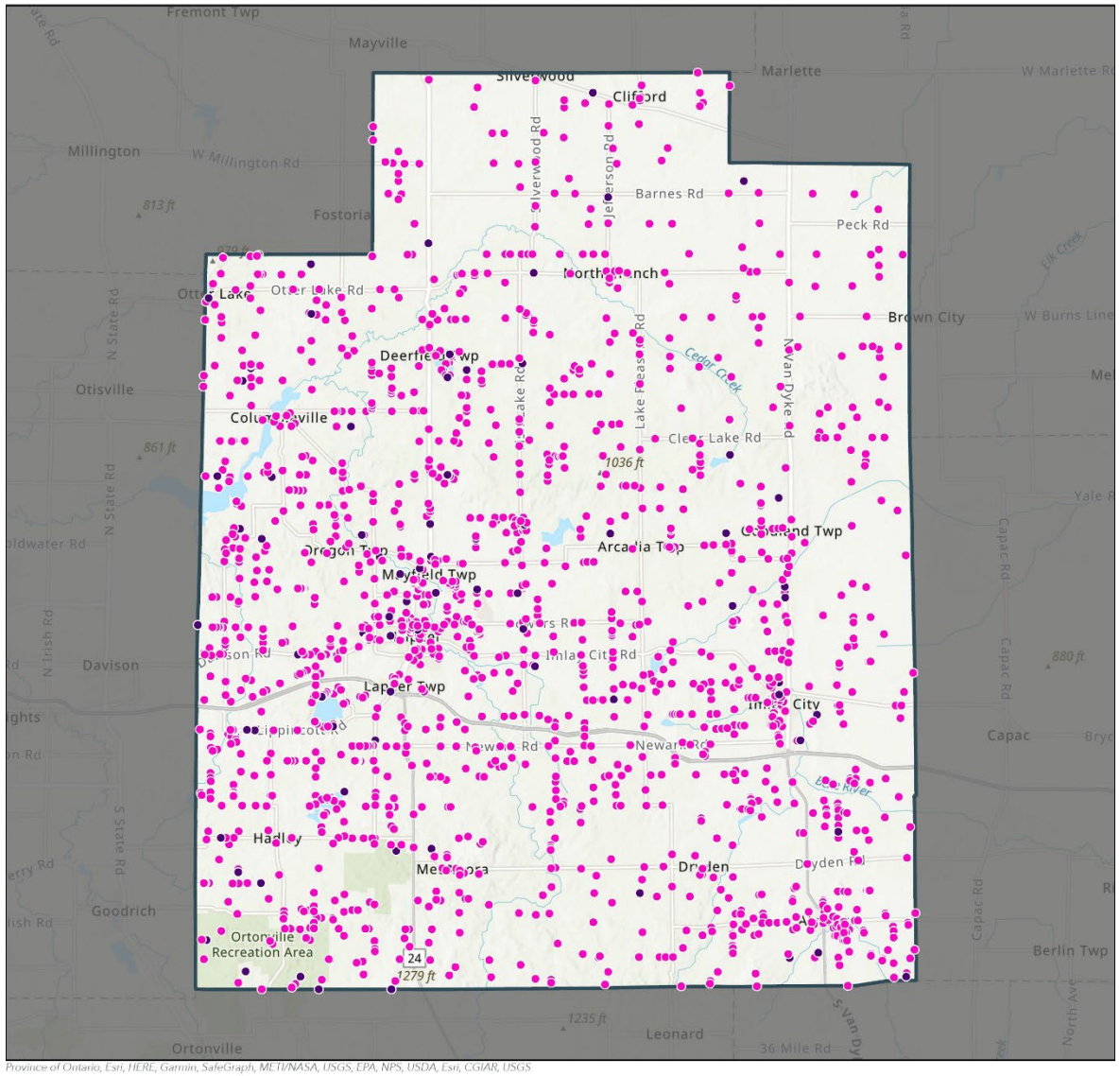
HOUSEHOLDS MOVING IN & OUT OF SERVICE

SURVEY RESPONDENTS | MOVING IN AND OUT OF SERVICE



- Served - Has Canceled Service in Past (87)
- Unserved - Has Had Service in Past (1,695)

95% are currently unserved

2% are cell phone dependent

4% get Internet elsewhere

24% have a child in the home

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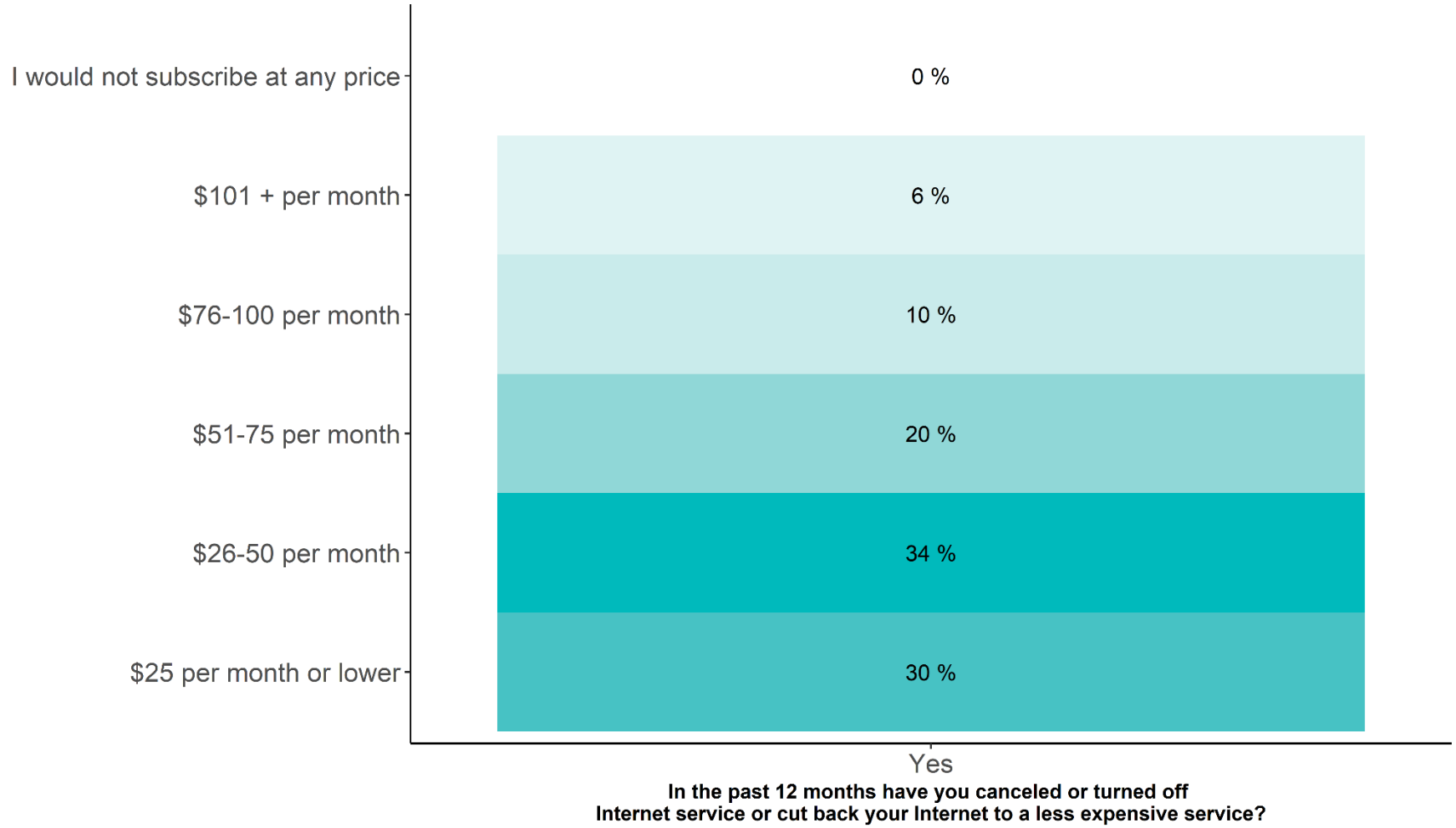
MAXIMUM PRICE FOR HOUSEHOLDS THAT REDUCED SERVICE



n = 176

SUMMARY

The majority of served households do not experience the internet speeds they purchased

Unserved and underserved residences exist across the county, and are concentrated in the northeast townships

16% of households that are unable to get high-speed internet at their location are willing to pay over $100 per month for fast internet

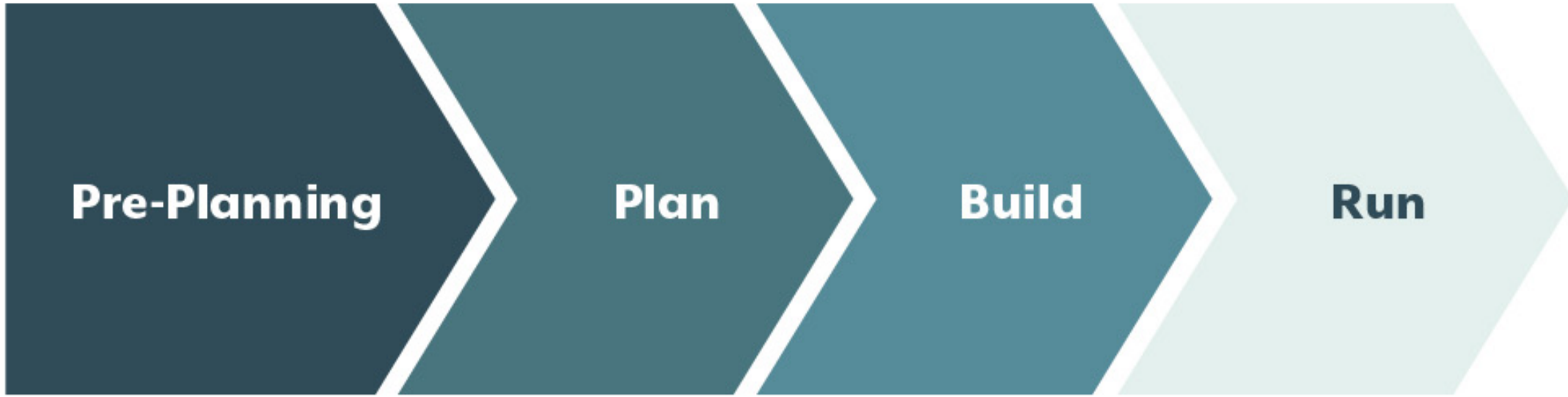
21% of residents without home internet access cite cost as the main reason they do not have service

20% of households without access care willing to pay a maximum of $25 per month for access

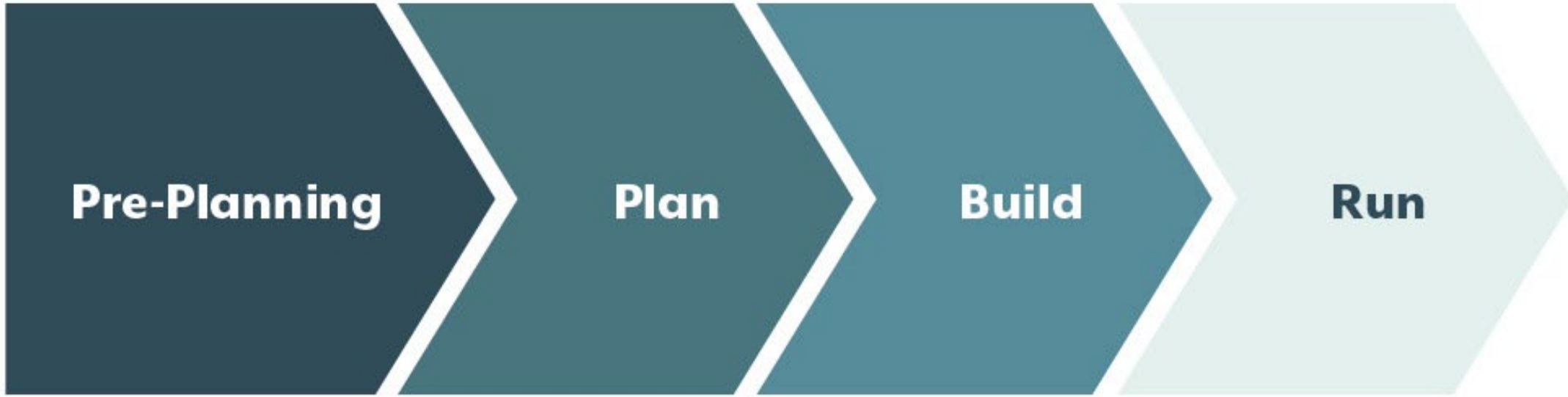
NEXT STEPS

Photo by Sveta Fedarava on Unsplash

What Needs to Happen to Get Broadband?



Your Nonprofit Trail Guides



THE MICHIGAN MOONSHOT

THE MICHIGAN MOONSHOT

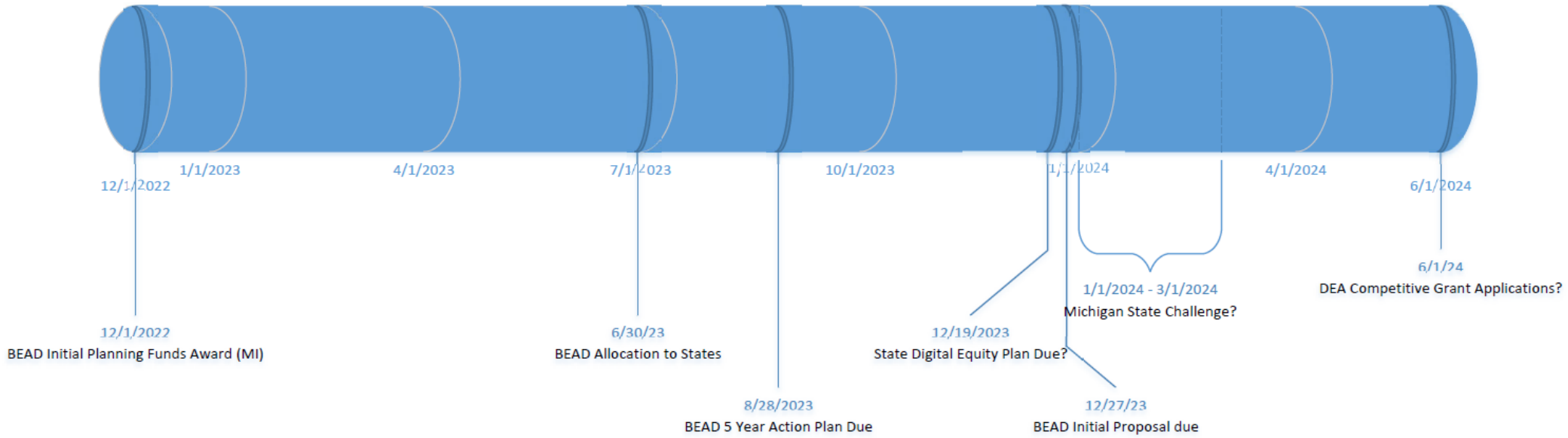
PATHFINDER PROGRAM STEPS

MAY INCLUDE

1. Assess Current State & Set Goals
2. Collect Connectivity Data & Resident Sentiment
3. Select an Ownership & Operations Model
4. Feasibility, OSP Inspection, & Pre-Engineering
5. Navigate Legislative & Legal Requirements
6. Secure Funding
7. Engineer & Build or Expand
8. Network Operation Guidance

THE MICHIGAN MOONSHOT

BROADBAND EQUITY, ACCESS & DEPLOYMENT SUBGRANT TIMELINE (ESTIMATED)



The estimated date for the Michigan State Challenge is based on 2 assumptions: 1) MIHI will not submit their Initial Proposal until the due date, and 2) The Assistant Secretary for Communications and Information will approve the challenge process (in the Initial Proposal) as quickly as possible

Last updated 4/18/23
Merit Network, Inc.

KEY DATES FOR BEAD ELIGIBILITY

Late May 2023 – Availability Challenge deadline for Fabric 4.0

June 2023 – Fabric 3.0 publicly available

August 2023 – Location challenge deadline for Fabric 4.0

November/December 2023 – Fabric 4.0 publicly available

January 2024 – Estimated start of state map challenge process

2024 – BEAD Subgrant application window opens

NEXT STEPS

Problem is now well defined, what next?

- **Define success -** what is the desired end state? (Create the 'vision')
- **Identify abilities and appetite -** align authorities and abilities around the 'vision'. (Create the 'mission'.)
- **Document a plan -** organize and institutionalize actions that leverage capacities to fulfill mission, achieve vision.

GUIDING PRINCIPLES

Because what the problem needs is leadership:

- **Decisive, actionable steps** clearly articulated with regular systematic review is essential for progress.
- **The level of County ownership** for the problem will be the most challenging decision.
- **Indecision** (handwringing) is simply a slow death (a path to certain failure).