Starting (and Growing) a Rural Library Hotspot Lending Program

NACDEP 2019 National Innovation and Creativity Award Winner

Brian Whitacre, Oklahoma State University
Department of Agricultural Economics

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Agenda

- Background on the Digital Divide

- Why Broadband Adoption Matters

- Hotspot Lending Program Basics

  - Program Overview

  - Pilot Survey Results

  - Challenges of the Program

A Good Starting Point…

- What is "Broadband," anyway?
  - High-speed Internet connection
  - Defined by Federal Communications Commission
- Historically, anything > 200kbps in at least 1 direction was considered broadband
  - Dial-up modems provided ~56 kbps
  - Some datasets still use this!! (FCC's Adoption Data)
- Previous FCC thresholds:
  - 200 KBPS at least 1 direction (prior to 2008)
  - 786 KBPS down (2008)
  - 4 MBPS down, 1 MBPS up (2010)
- Current FCC Definition (2015+):
  - 25 MBPS down, 3 MBPS up

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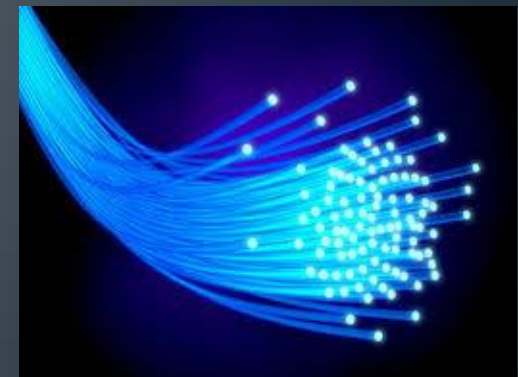
Background on the Digital Divide
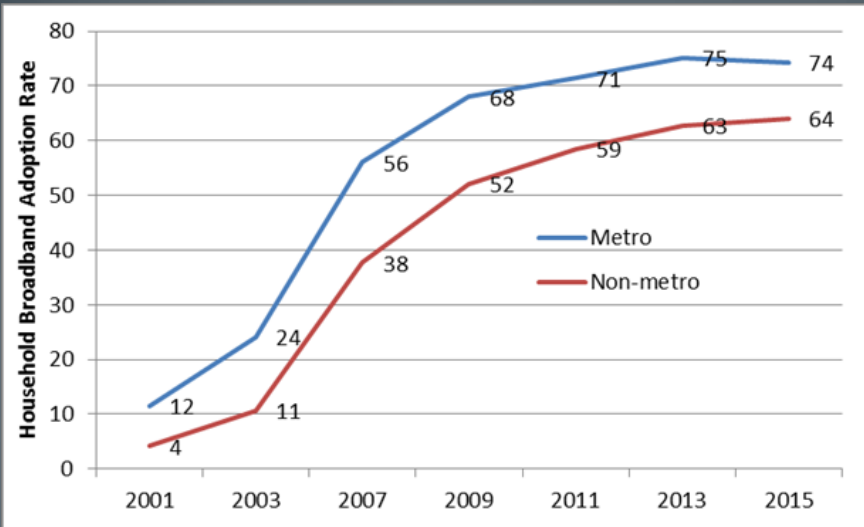
Source: Current Population Survey Internet Use Supplements, 2001-2015
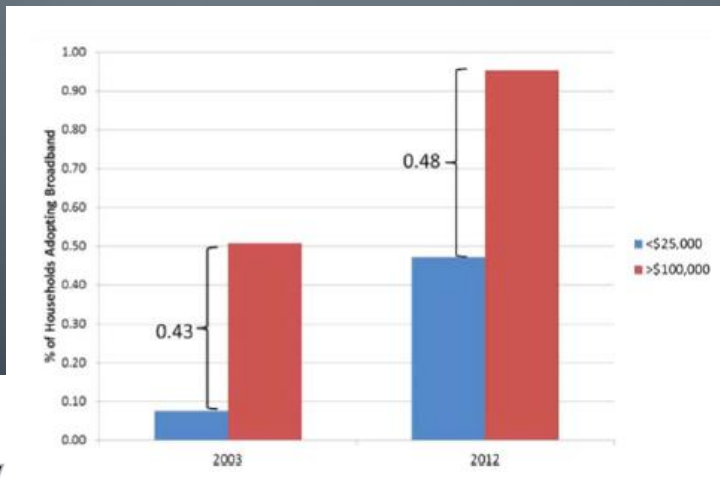
Source: Lee and Whitacre, 2017

- Rural broadband adoption rates <u>persistently</u> lag those in urban areas

- Low-income households have only ~50% adoption (compared to 95% for high-income)
- Income-based digital divide has actually <u>increased</u> over time

Why Does This Matter?

- Households without a high-speed connection to the Internet are increasingly at a disadvantage (Horrigan and Duggan, 2015)
- Studies have shown that it is broadband ADOPTION (not simply having availability) that matters for changes to rural economies.

Telecommunications Policy 38 (2014) 1011–1023

Contents lists available at ScienceDirect

Telecommunications Policy

URL: www.elsevier.com/locate/telpol

ELSEVIER

Broadband's contribution to economic growth in rural area
Moving towards a causal relationship ☆

Brian Whitacre [a,*], Roberto Gallardo [b], Sharon Strover [c]

[a] Department of Agricultural Economics Oklahoma State University Oklahoma State University, Stillw
[b] Mississippi State University, USA
[c] University of Texas, USA

Ann Reg Sci (2014) 53:649–670
DOI 10.1007/s00168-014-0637-x

ORIGINAL PAPER

**Does rural broadband impact jobs and income?
Evidence from spatial and first-differenced regressions**

**Brian Whitacre · Roberto Gallardo ·
Sharon Strover**

COMMUNITY DEVELOPMENT, 2016
http://dx.doi.org/10.1080/15575330.2016.1212910

Routledge
Taylor & Francis Group

Broadband and civic engagement in rural areas: What matters?

Brian E. Whitacre and Jacob L. Manlove

Department of Agricultural Economics, Oklahoma State University, Stillwater, OK, USA

Think about everything you do online!

- Connect socially
- Pay bills
- Search / apply for jobs
- File taxes
- Search for health information
- Entertainment (Netflix, Music, Hulu…)
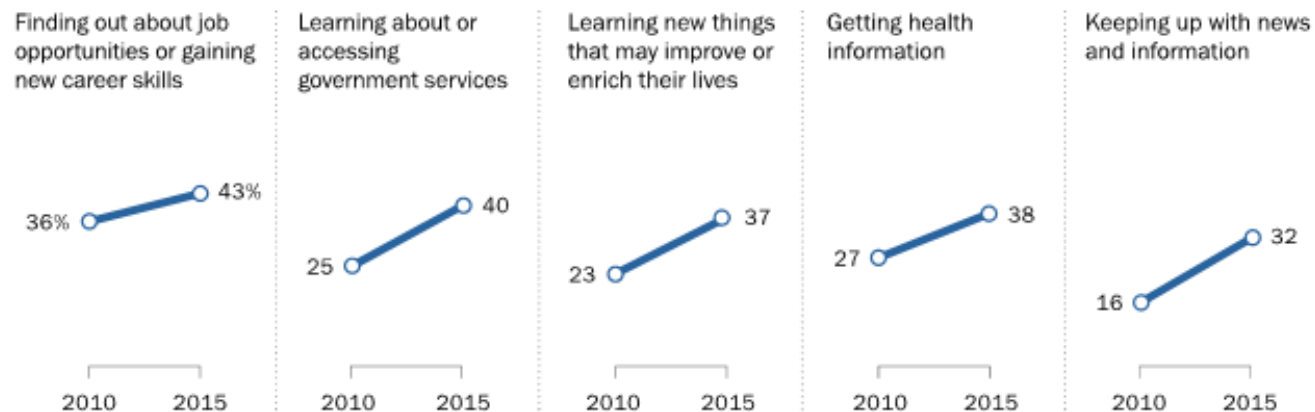- Civic engagement
- Schoolwork / Research

A Common Misperception…

- "They don't WANT to be online…"

  - Horrigan and Duggan (2015) use national survey data to show otherwise.

Non-broadband adopters are increasingly likely to view lack of broadband as a disadvantage in key areas of life
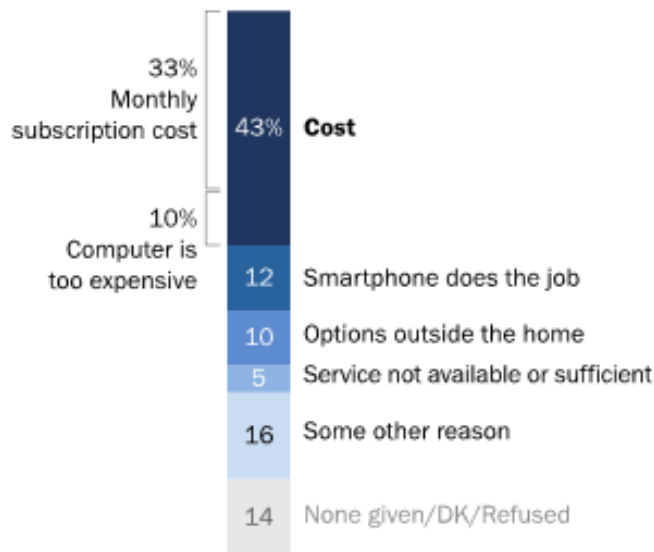
% of non-broadband users who believe those without home broadband are at a major disadvantage in these situations

Finding out about job opportunities or gaining new career skills	Learning about or accessing government services	Learning new things that may improve or enrich their lives	Getting health information	Keeping up with news and information
36% → 43%	25 → 40	23 → 37	27 → 38	16 → 32
2010 2015	2010 2015	2010 2015	2010 2015	2010 2015

So…why aren't they online?

Cost is the major reason most people do not have broadband connections

% of non-broadband users who cite the following as their most important reason for not having broadband service

33% Monthly subscription cost

10% Computer is too expensive

43%	**Cost**
12	Smartphone does the job
10	Options outside the home
5	Service not available or sufficient
16	Some other reason
14	None given/DK/Refused

Source: Survey conducted June 10-July 12, 2015. Sample size = 2,001

PEW RESEARCH CENTER

- More recent research suggests that those <u>without</u> home connections fully recognize the importance of Internet access (Reisdorf, 2018; Strover, Rhinesmith, Whitacre, 2017)

Why Hotspot Lending Programs?

- Rural libraries are uniquely positioned to impact the digital environment of their communities

- Specific possibilities:
  - Shrinking the "homework gap"
  - Providing financially disadvantaged patrons with home-based access (including those with limited data plans)
  - Helping patrons search for employment / job opportunities
  - Keeping in touch with family / friends
  - Accessing health information
 - Offering connectivity at community-wide events

Hotspot Lending Program Basics

- Connects via a cellular (wireless) service provider (i.e. AT&T, Verizon, Sprint)
  - Area must have coverage for the device to work!
- Emits a Wi-Fi signal that users can connect their per... smart ph...
  - Most c...
- Mobile – ... provider...
- Speeds based on provider signal (4G LTE is best – 5G is coming!)
- Similar to data plan of cell phone
  - Unlimited plans available (and needed!)

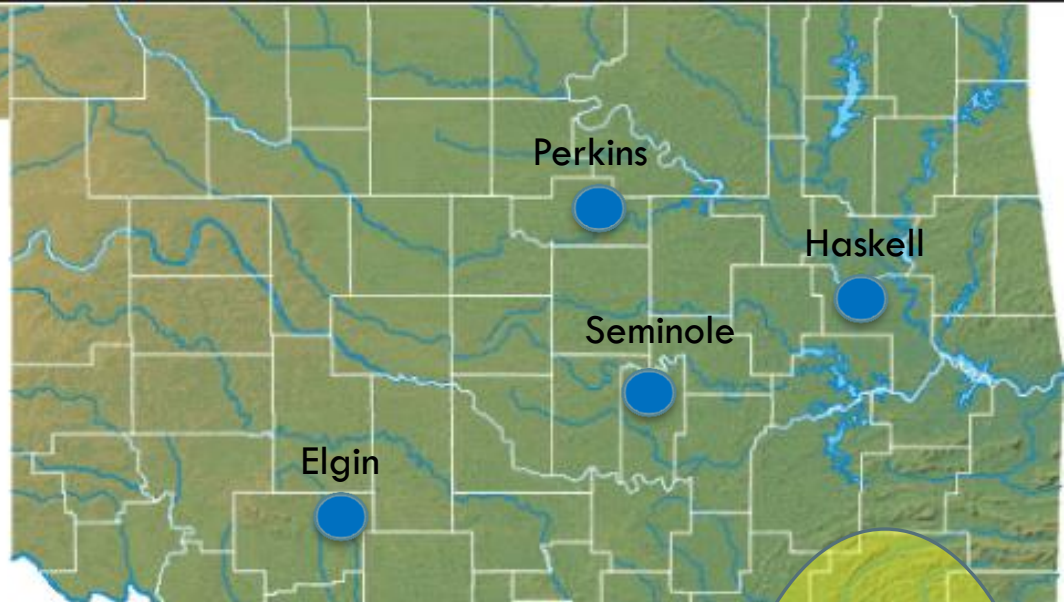| Dec 2017 Broadband Availability for RURAL locations (all US) (FCC, 2019)	
Wired 25 / 3 Mbps	73.6%
Mobile 5/1 Mbps	99.1%
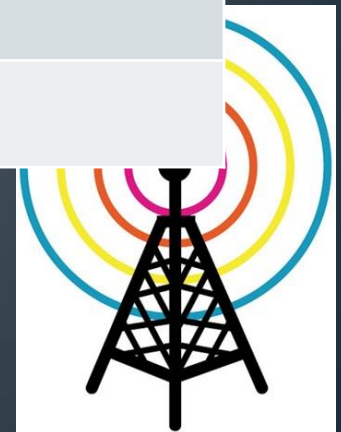
Pilot OK Program (Started May 2017)

4 libraries, 4 devices each

Broadband Adoption data from 2017 ACS

Site	Population (2015)	% Poverty (2011-15)	MHI (2011-15)	% Without Internet
Elgin	2,700	7.9%	$65,625	9.0%
Perkins	2,800	21.6%	$40,861	30.1%
Seminole	7,500	24.6%	$32,594	36.7%
Haskell	1,900	28.3%	$32,244	50.0%

OK Rural Library Hotspot Program Basics

- OSU funds devices / data for 1st year

  - Libraries try to fund on their own after that (local sponsors, budget)

- Libraries set all policies (length of loan, late return fees, etc.)

- Librarians report monthly statistics

- Librarians participate in monthly conference calls

  - Sounding board for what is going right / wrong

  - This proved to be very helpful!!

- Patrons complete 1-page survey upon return

  - OSU summarizes results

  - Can be very helpful in making case for local sponsors!

OK Pilot Program – 1 year summary

- Extremely well received!
  - 4 devices each (some have upgraded to 7); high demand even without significant amount of marketing
  - Texts sent out when devices are ready – being picked up within 10 minutes!
  - Immediately request being put on waiting list upon return
- Surveys reveal most are being used in conjunction with smartphones / tablets
- Most use by lower-income households, likely to purchase home broadband service for $10 / month (but not $30)

OK Hotspot Program Survey

Library Hotspot User Survey

1) On a scale from 1-10, with 1 being low and 10 being high, how would you rate the following?

Please list the two websites you visited most often while checking out the device.

1) _____

2) _____

On a scale from 1-10, with 10 being very proficient, how would you rate your internet skills:

o Before checking out the device? _____

o After checking out the device? _____

For each of the price points below, how likely is it that you would purchase broadband Internet service for your household in the next six months?

	Very unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Very likely
$10 / month	O	O	O	O	O
$30 / month	O	O	O	O	O
$50 / month	O	O	O	O	O

Additional Comments on Library Hotspot Program: _____

_____

Which of the following devices did you connect to the hotspot? Select all that apply.
- O Desktop computer
- O Laptop
- O Smartphone
- O Tablet (e.g. iPad)
- O E-Reader (e.g. Kindle)
- O Other

Please mark your TOP 3 uses of the device.
- O Entertainment
- O Learning job-related skills
- O Helping my child with schoolwork
- O Connecting with family and friends
- O Research
- O Keeping informed of current events
- O Other_____

Devices Loaned / Wait Lists

| Library	City population (2015)	Initial number of hotspots	Final number of hotspots	Total loans (June 2017– April 2018)	Average loans per month	Average wait-list length (no. of people)
Perkins	2,860	4	7	155	12.9	6
Haskell	1,904	4	7	169	14.1	20
Seminole	7,508	4	6	95	7.9	10
Elgin	2,700	4	4	106	8.8	7
Totals				525	10.9	11.6

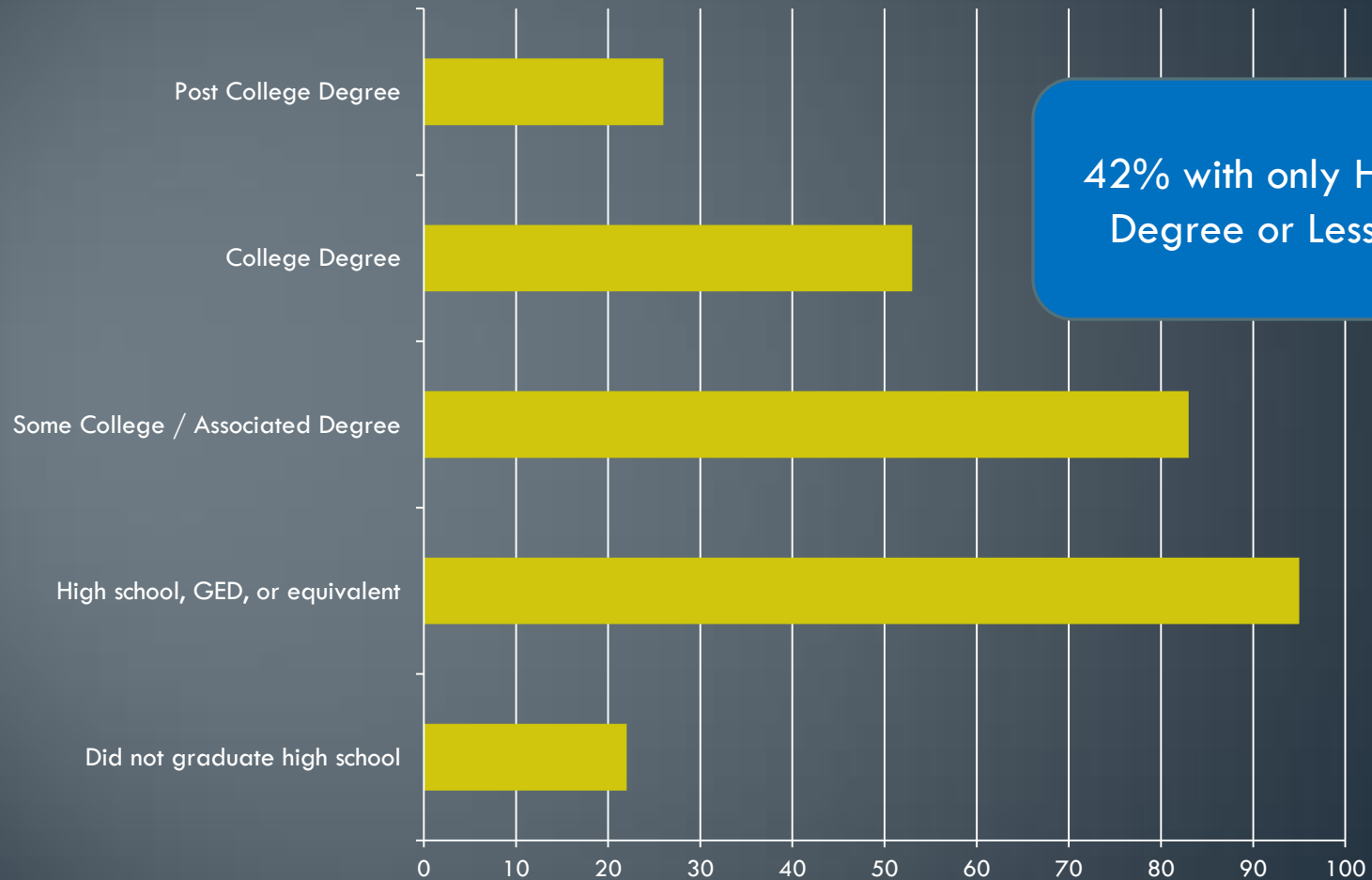Total Devices Loaned: 525
(Avg. of 11 / library / month)

Avg. Wait List: 11.6

Q1a. On a scale from 1-10, with 10 being high, how would you rate your satisfaction with the library hotspot program?
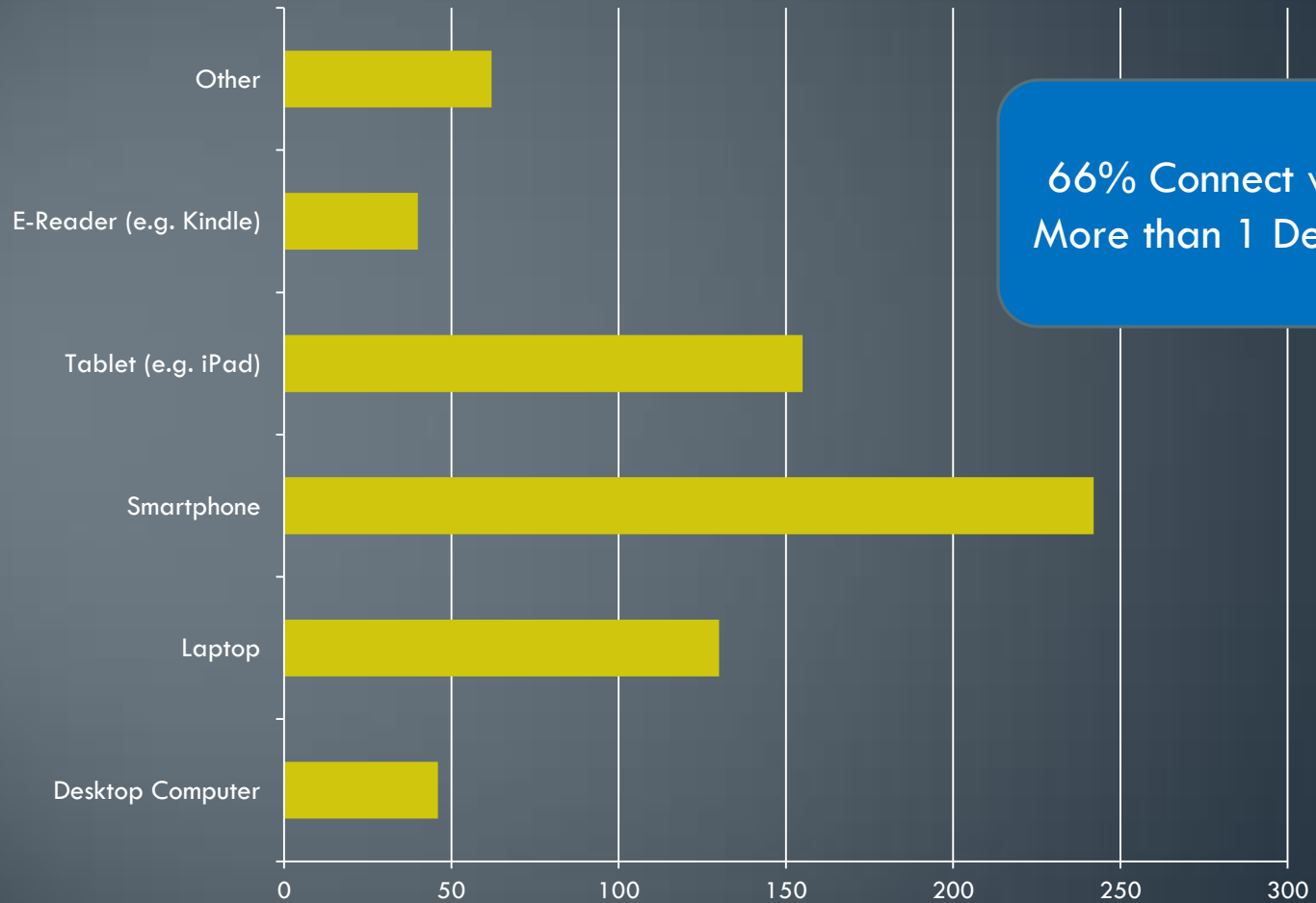
Average Ranking: 9.5 / 10
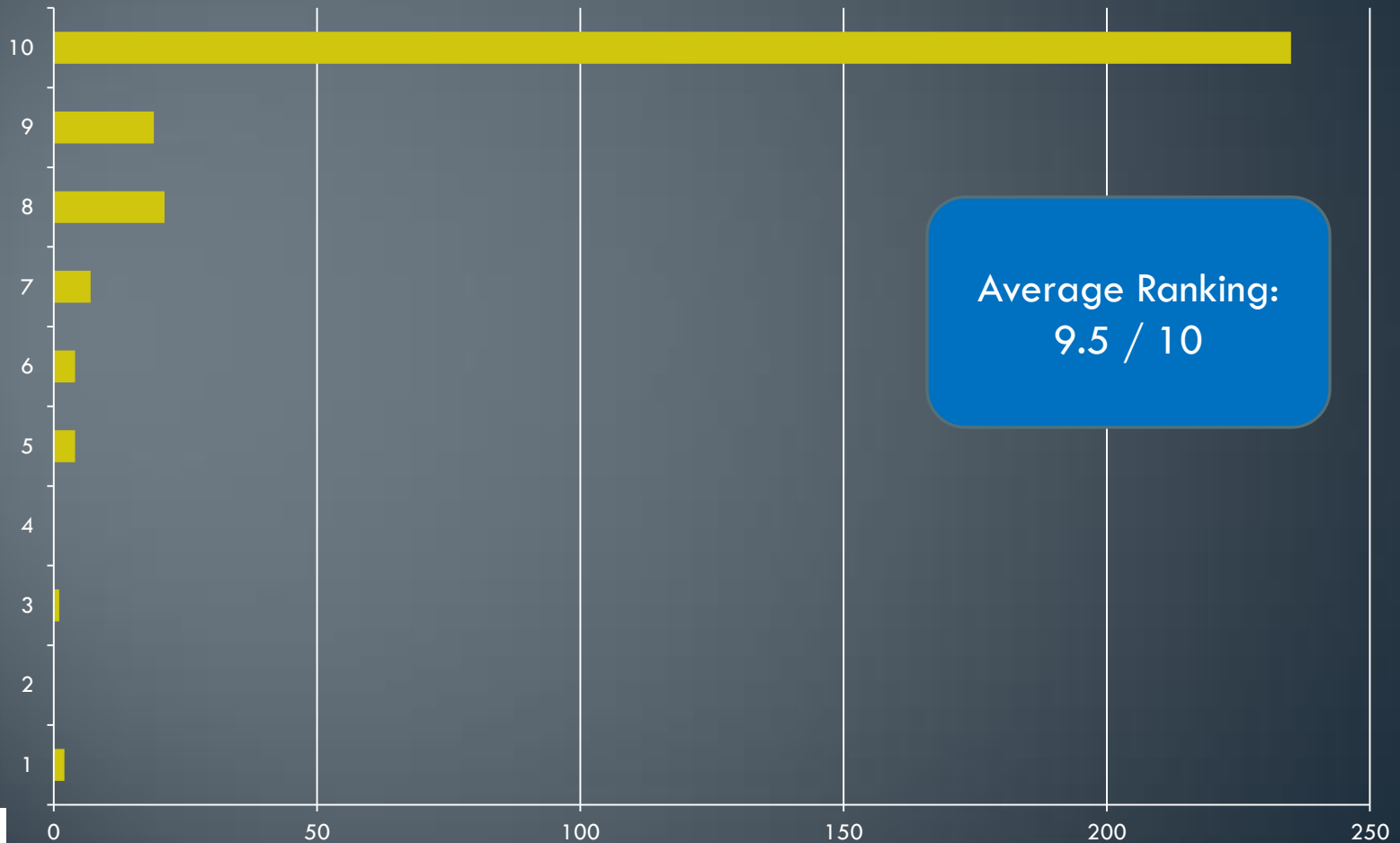
Q2c. What is your annual household income?

75% earn below $50,000
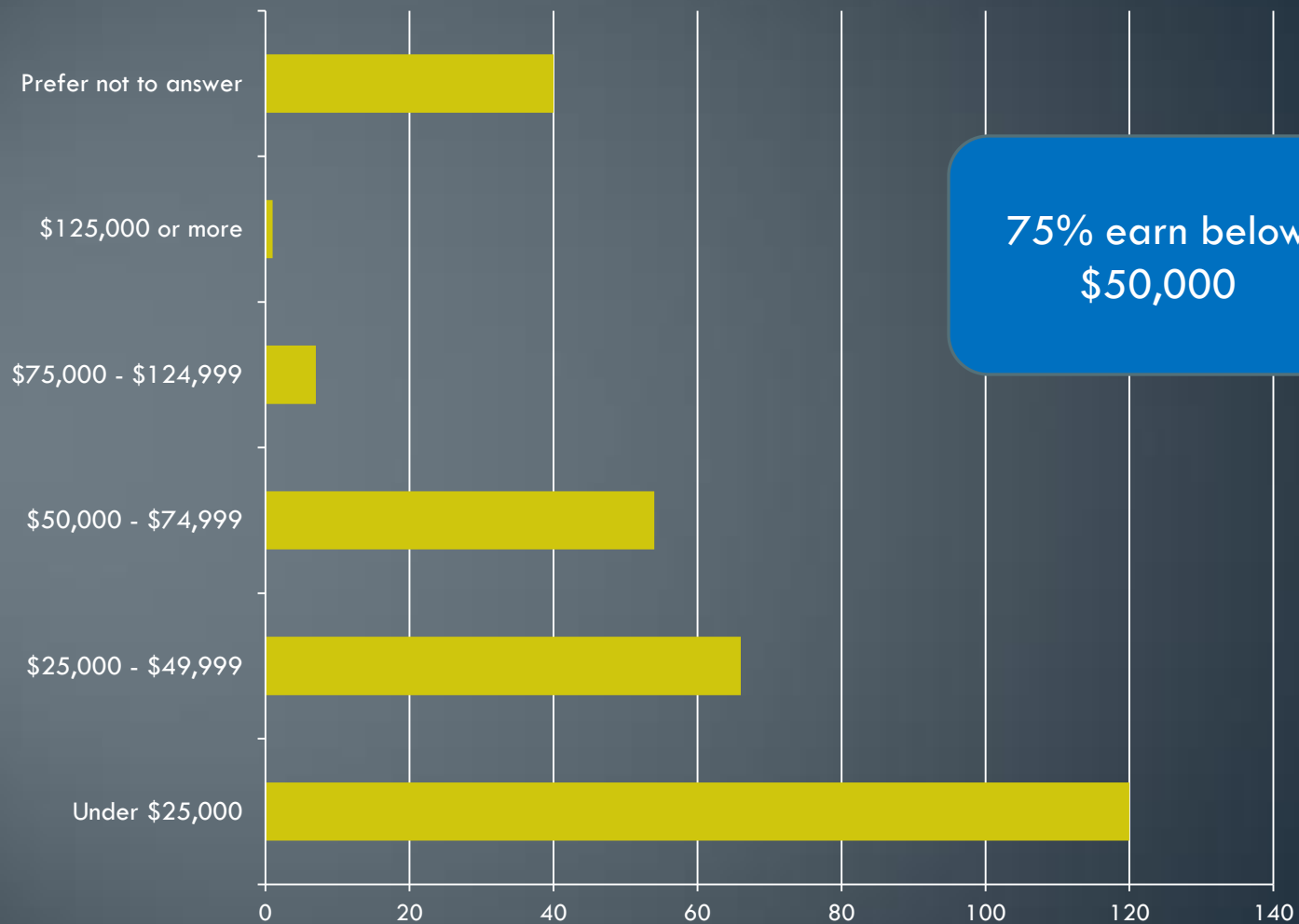
Q2d. What is the highest level of education of any adult in your household?

42% with only HS Degree or Less

Q3a. Which of the following devices did you connect to the hotspot (choose all that apply)?

66% Connect with More than 1 Device

Horizontal bar chart with x-axis from 0 to 300 (increments of 50):
- Other: ~62
- E-Reader (e.g. Kindle): ~40
- Tablet (e.g. iPad): ~155
- Smartphone: ~242
- Laptop: ~130
- Desktop Computer: ~45

Q3b. Please mark your TOP 3 uses of the device

94% Use for Multiple Purposes
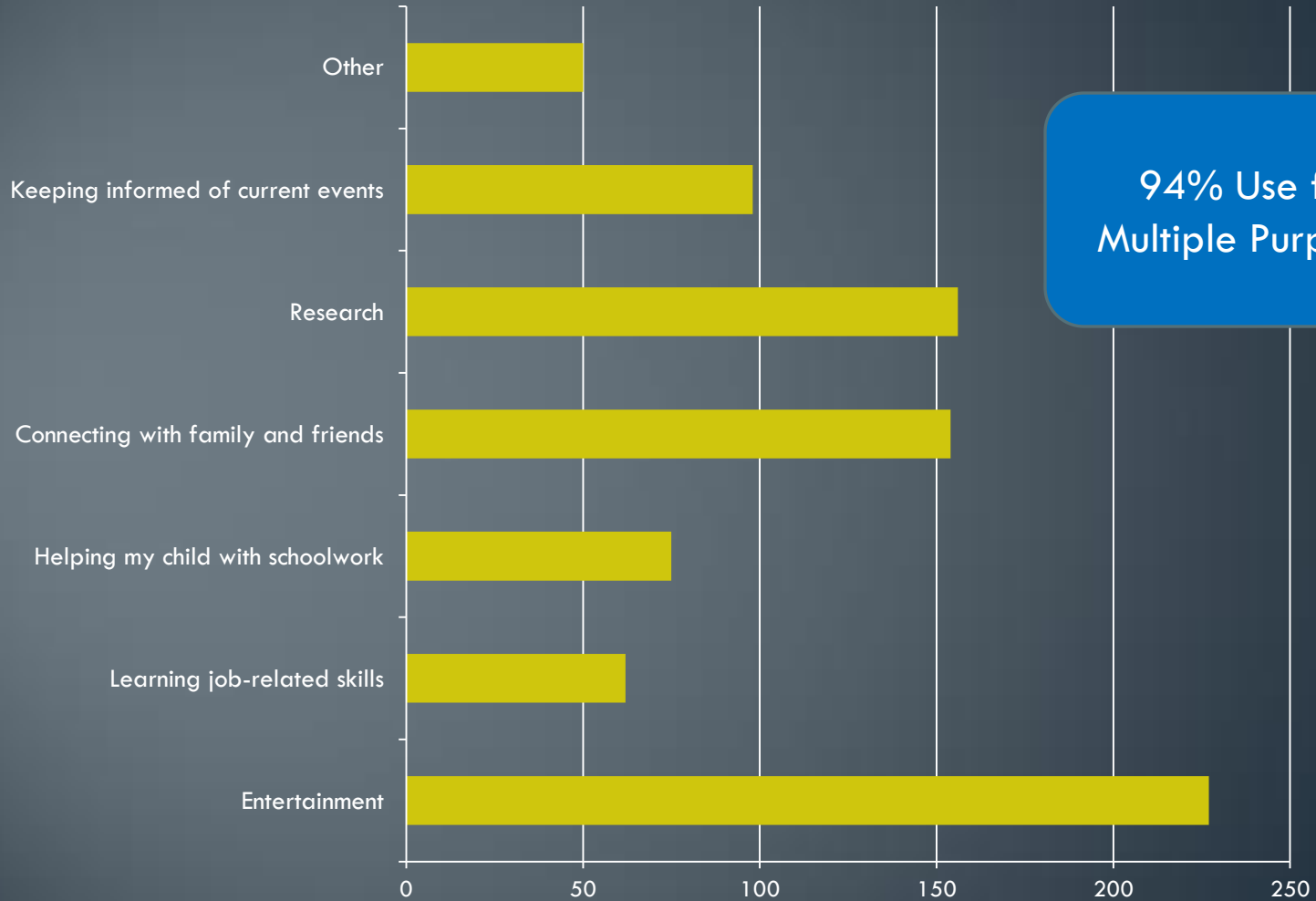
Sample Comments from Patrons

- "I love it!"
- "Great for research and helping my son and daughter do their homework"
- "It's a total blessing"
- "Awesome program – thanks!"
- "Used for Planning Community Event"
- "I greatly appreciate as I am a full-time student without Internet at home"
- "Thank you, thank you, thank you. It's great!
- "Wonderful program – just need more available to check out"
- "Good program, used for banking / paying bills"
- "So happy that we have an outstanding library that broadens our community's opportunities – I love you library!"
- "Can't thank you enough – hope to purchase my own unit soon"
- "This is a wonderful thing for the library to do."
- "Wish it was longer than a week."
- "This is a wonderful program that is extremely beneficial to my children."
- "Love it! Simple to use. No hassle and very convenient to take wherever you go."
- "Please keep doing it! Thank you!"

Round 2 (and 3!)

15 Total Libraries Participating

Pilot site (2017-18)

2nd round site (2018-19)

3rd round site (2019-20)
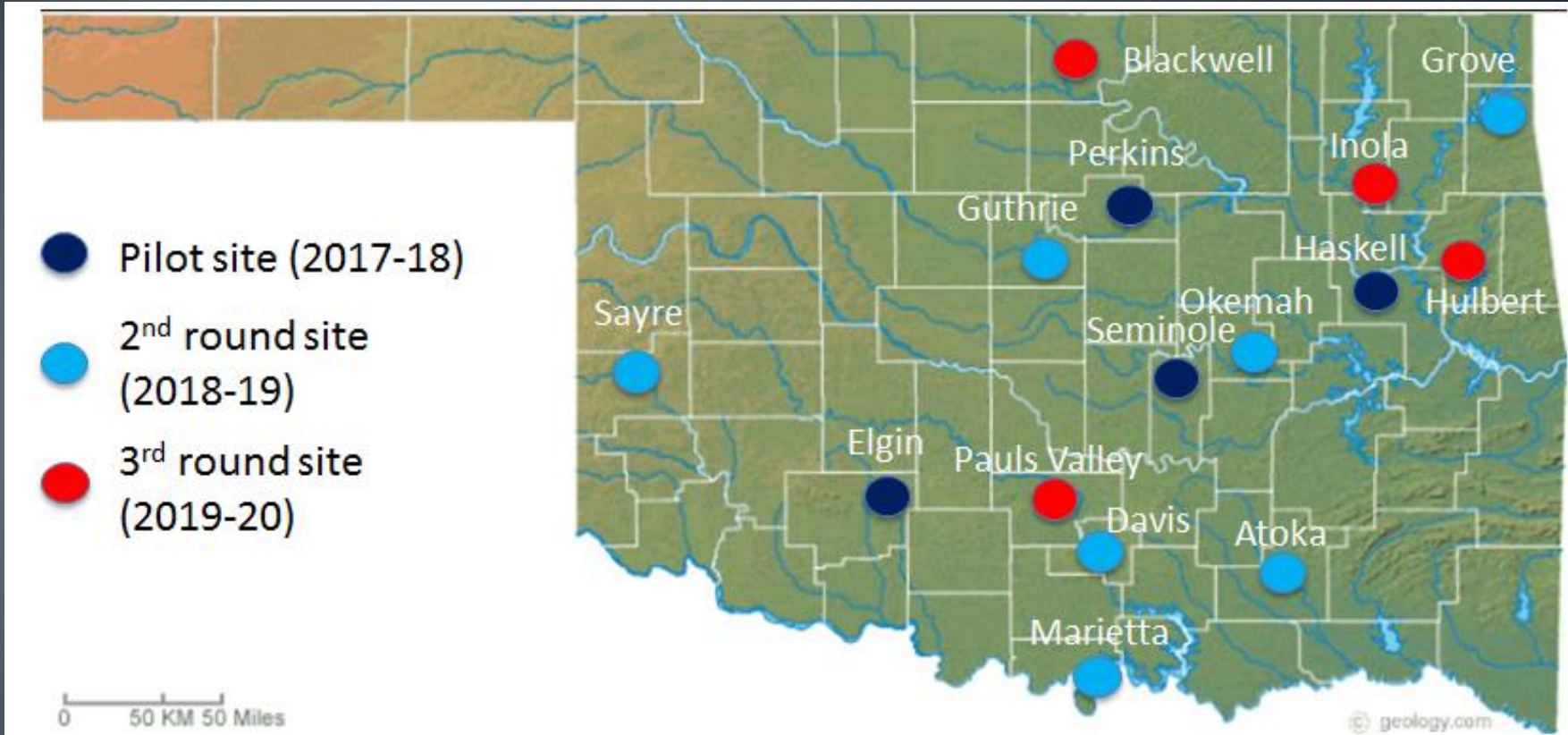
Each Round:

- ~4 libraries, 4-7 devices each
- 1-week loans
- Libraries attempt to continue program (on their own) after 1st year

Supplemental funding from:

AARP
Real Possibilities

($3,000 - $5,000 grants)

2nd Round Site Data / Statistics

Site	Population (2017)	% Poverty (2013-17)	Median HH Income (2013-17)	% Without Internet Subscription	# Hotspot Loans (Thru May 2019)
Grove	7,060	13.6%	$40,435	26.8%	108
Guthrie	11,350	21.1%	$44,084	32.3%	165
Okemah	3,196	35.3%	$30,432	46.6%	186
Sayre	4,490	16.5%	$29,500	28.4%	80
Atoka	3,077	30.0%	$30,042	25.2%	84
Davis	2,774	15.7%	$48,295	32.9%	91
Marietta	2,669	21.8%	$43,065	40.5%	122

1 year

7 months

24

The Main Barrier to Continuing: COST

$3,200 funded pilot round of 4 devices for 4 libraries

- Devices cost ~$70 each
- Unlimited data is the real problem:

Cost for 1 year of Unlimited Data:

Sprint (PCs for People)	AT&T	T-Mobile
$135	$420	$300

- We partner with PCs for People (non-profit; limited to Sprint)
  - Ongoing cost for a library with 4 devices: $540 / year
  - Very limited budgets for most rural libraries!
- Expanding to other providers has proven challenging
  - T-Mobile wants to partner but higher costs will be difficult in the post-grant period

Specific Network Coverage Can Be Limited

- Sprint Coverage in Oklahoma:
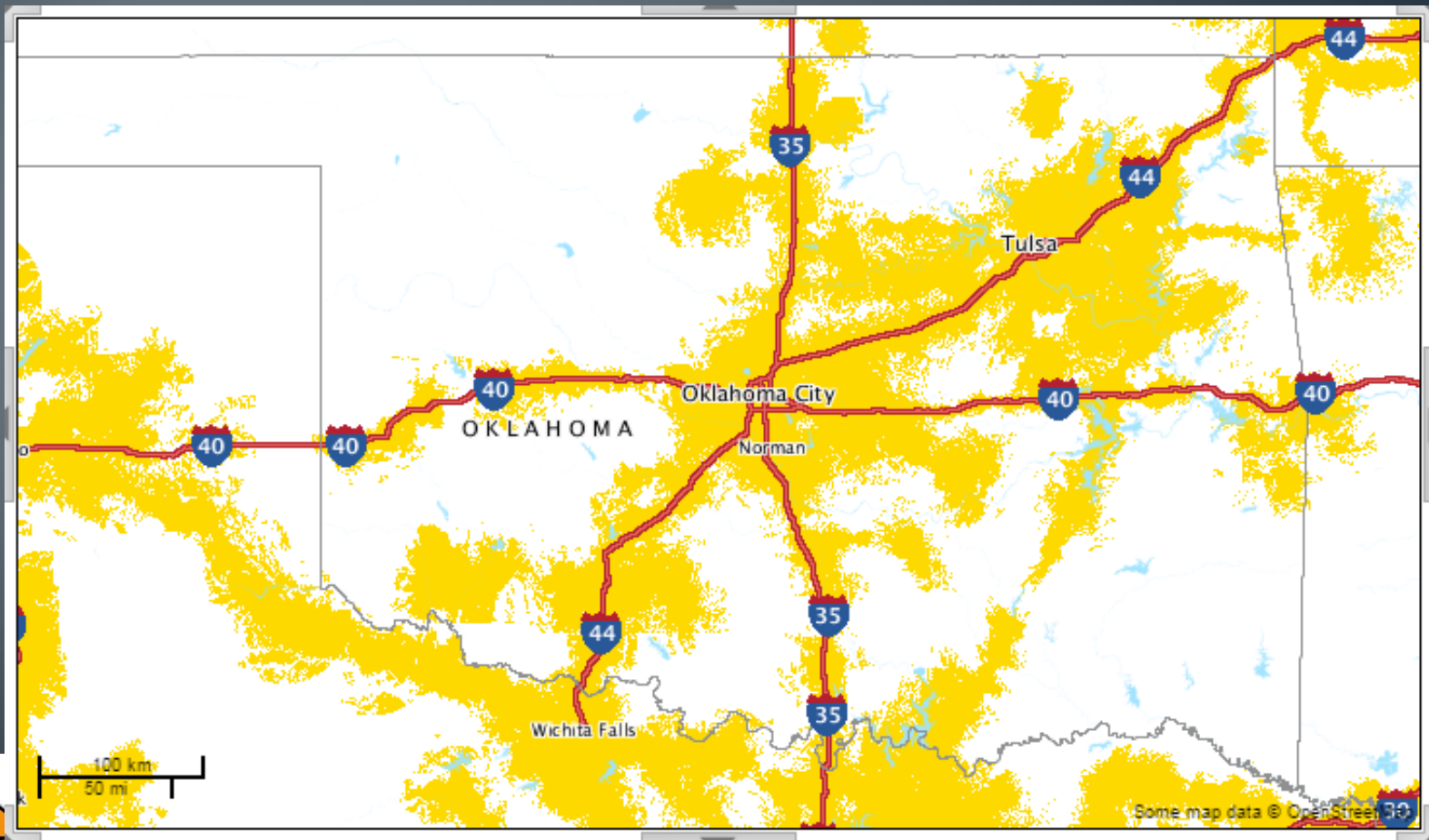
What is Extension's Role?

Manager of Risk

1. Establishing funding for Year 1
   - <u>No</u> libraries would have started program on their own
2. Providing sounding board for problems (monthly calls)
3. Promoting the program locally
4. Gauging local interest in sponsoring devices after pilot ends

Interested in learning more? Visit our website:
http://agecon.okstate.edu/hotspot/
Or, take a look at our recent JOE article:
https://www.joe.org/joe/2019april/a2.php