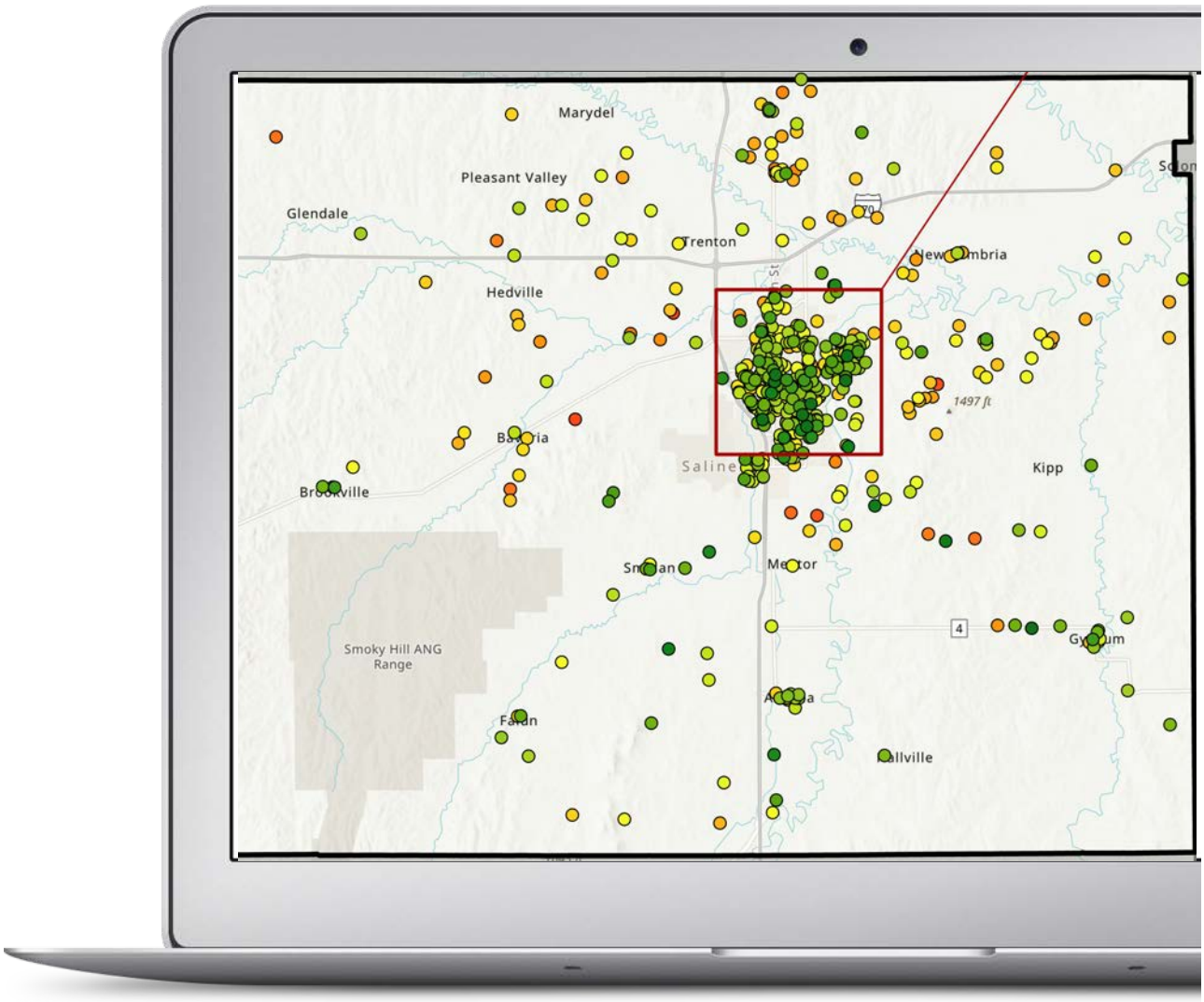
SALINE COUNTY

Broadband Community Assessment



DESIGN NINE
broadband planners

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1 EXECUTIVE SUMMARY

A broadband study of Saline County began in late spring of 2024 and was completed in the early fall of 2024. The study included meetings with stakeholders and interested parties in the county, interviews and meetings with businesses, meetings with County officials, and residential and business broadband surveys. The report has several key sections:

- **Technical and Asset Analysis** – Demographic data, tower and fiber assets in Saline County and identification of underserved and unserved areas of the county.
- **Market, Current Use, and Gap Analysis** – A review of current service provider service offerings, speeds, and prices for those services and what bandwidth is available.
- **Broadband Surveys** – In Saline County, both a residential broadband survey and a business broadband survey was distributed. A strong response was received.
- **Infrastructure Funding and Grant Opportunities** – A discussion of a variety of grant and funding strategies.
- **Partnership Opportunities** – An overview of the process of developing productive public/private partnerships between the County and interested Internet Service Providers (ISPs).

The survey data collected as part of this study indicates that residents and businesses are anxious for better Internet service. Because a very large number of often passionate comments were received, they have been included in a separate document.

- 89% of respondents are interested in having access to Gigabit fiber Internet.
- 85% believe that local government should help facilitate better Internet access.
- 26% of residents report the quality of Internet service is affecting where they choose to live.
- 100% of businesses indicated that the Internet is important to the success of their business.
- 74% of businesses reported that they need employees able to work from home.

1.1 FUTURE-ORIENTED INFRASTRUCTURE

Affordable high speed Internet is essential to the future growth and prosperity of Saline County. Over the past twenty years, Internet access has evolved from a luxury to a necessity. School students need Internet access to complete homework and to study. Online shopping can save energy and make it easier for the elderly and homebound to obtain the needs of every day life. Telemedicine and telehealth services and applications is revolutionizing health care, reducing costs, and allowing older citizens to live independently longer.

The Covid crisis created a realization that many jobs can be successfully done from home, rather than traveling back and forth to an office. Since 2020, many rural areas of the country have begun to see an influx of younger families and workers who place a high value on the kinds of amenities that contribute to a good quality of life–traditional neighborhoods, vibrant smaller downtowns, a wide range of recreation opportunities, good schools, and a sense of place. This new class of workers and their families make relocation decisions based on quality of life only where there is abundant and affordable broadband, because broadband is the enabler of this new approach to personal and work life.

More and more workers and business people are working from home, either on a part time or a full time basis, and the Covid crisis has highlighted the critical need for reliable high performance Internet service for work, learning, and access to health services. New work from home job opportunities are growing rapidly, but most of those jobs require reliable, symmetric Internet service to qualify.

Many business employees are already trying to work more from home more often (e.g. one or two days per week) to reduce travel costs. Some major businesses in other parts of the U.S. are actively planning to have 20% of their workforce work full time from home to reduce employee travel costs and office energy costs. Corporate employees working from home require high bandwidth services to be connected to the office network and to use corporate videoconferencing systems. These corporate network services often require 10-50 Megabit ***symmetric*** connections.

Broadband has become essential infrastructure.

Just as communities had to take on the task of building and maintaining roads in the early twentieth century, communities must now ensure that high performance digital road systems are available and affordable as a matter of community and business survival.

The communities of Saline County, with growing availability of Gigabit fiber broadband infrastructure, can be attractive to an emerging new group of young workers, businesspeople and entrepreneurs that typically are making choices about where they lived based on family needs and interests, rather than business interests.

Saline County is unique in our experience, as it has two Kansas telecommunications firms that are actively expanding the areas where they offer Gigabit fiber access, and several other firms that are also offering fiber to the home service. Small communities like Gypsum already have Gigabit fiber that has passed every home in the community, and several other small rural communities in Saline County also have world class fiber. This is a feature that should be widely marketed by the county, as it has the potential to bring new families and home-based workers to these smaller towns.

1.2 CLOSING THE GAPS

There are three parts to solving the broadband challenges in Saline County:

Availability, Affordability, and Adoption.

All three must be addressed appropriately. Many of the larger incumbent telecom providers focus on availability while ignoring the affordability of their services. Services that are available but unaffordable leave many households and businesses with sub-standard Internet service. Similarly, good quality, affordable service may be under-utilized by some households and businesses if they lack the knowledge and training to adopt improved services. The table below summarizes these characteristics.

Availability	Affordability	Adoption
Sufficient infrastructure and coverage to deliver reliable wired or wireless broadband service.	Ability to pay for the total cost of being connected to reliable high performance broadband and Internet service.	The training, skills, and knowledge needed to obtain access to reliable high performance Internet and the software and tools needed to use the Internet.

Compared to many other localities, Saline County has several advantages when evaluating broadband options, challenges, and opportunities.

Availability

Saline County is fortunate to have Internet Service Providers who are actively expanding the availability of Gigabit fiber. Home Communications (HCI) and Nex-Tech are both Kansas companies that are actively expanding their service areas and fiber to the home. Many smaller rural communities in the county already have Gigabit fiber service. Twin Valley, Tri-County, Wilson Communications, and AT&T also indicate they offer some fiber in the county. Compared to many other rural areas of the country, Saline County is fortunate to have this kind of investment in broadband infrastructure taking place. Every wireless and wireline ISP we talked to expressed interest in working with the County to expand and improve Internet service in the county.

Affordability

Service providers in Saline County offer Internet service at a wide variety of price points. Fiber Internet service prices average $59.67, which is about 8% less that the national average (about $65) for that service, according to a recent article in Forbes magazine. In may parts of the country, fiber to the home Internet fees can be even higher, particularly with the higher speed Internet packages. Wireless Internet prices in the county average $60.83, which is below the national average of $65. However, county residents that still have to rely on satellite Internet are paying higher prices than their wired neighbors. The average cost for HughesNet and Viasat averages $90/month, and Starlink customers pay $120/month. The County should continue to work with the terrestrial (wired) providers to expand their service area to reach more rural customers that are still reliant on satellite service.

Adoption

According to Census Bureau statistics, 92.8% of county households have a computer, which is very close to the national average of 94%. Similarly, 86.7% of county households have an Internet subscription, which is also very close to the national average of 88.3%. Residents of the county have embraced computer and Internet technology and do not lag behind the rest of the country. There does not appear to be a gap for Internet adoption in the county.

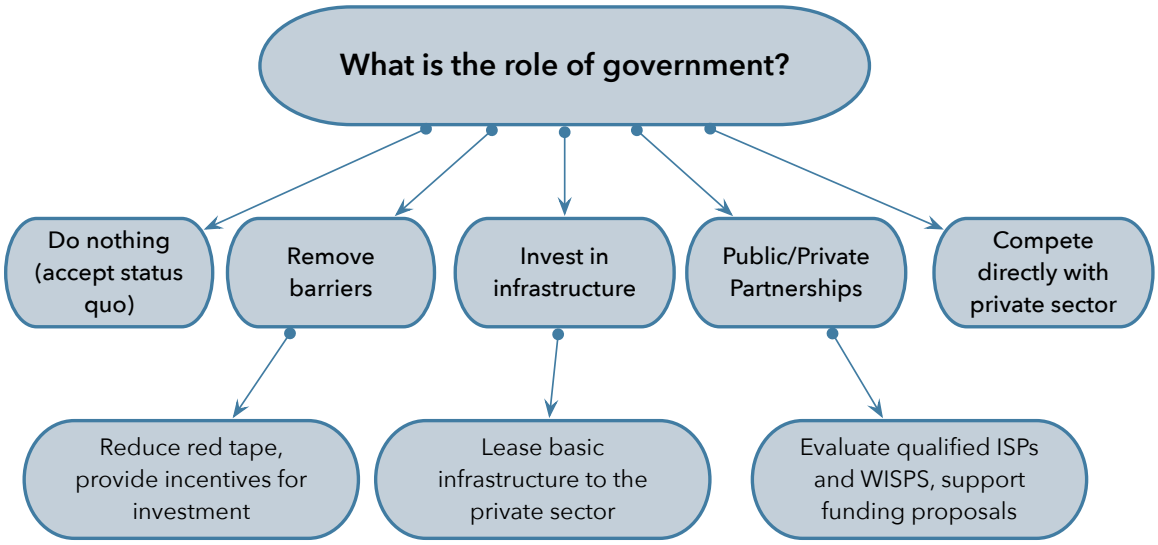
RECOMMENDATIONS FOR IMPROVEMENT

Strategy	*Description*
Market Saline County fiber connectivity	Many of the smaller communities in Saline County have excellent housing stock and offer the kinds of traditional small town amenities that are attracting younger families (low or non-existent crime, a traditional Main Street, good schools, and low traffic commutes to the Salina area for work. The growing availability of Gigabit fiber Internet in these smaller communities should be leveraged to market Saline County as a great place to live and work from home.
County GIS should map and maintain fiber infrastructure in the county	Any company using public right of way on county roads to install fiber cable is required to get permits and provide as-built drawings. Ensure that as-builts are provided, and that County GIS staff uses as-built data to map and track fiber infrastructure.
Include the broadband survey data collected in this study in the County GIS system	The FCC uses its broadband maps to allocate billions of dollars in subsidies, but it relies on data supplied by internet service providers. Companies can report that a census block is served even if only one household has internet service, which leads to overstating access. Location-based survey data can help strengthen broadband grant applications. Local schools can help improve broadband mapping– most schools have purchased devices for students, and schools could play an important role in collecting data on actual usage and speed. For example, every school-provided laptop could have a speed-test link or application that could be used to continuously collect location-based data.
Adopt a "Dig Once" Policy	Implement a "dig once" policy that encourages the installation of conduit or fiber-optic infrastructure during planned excavation or construction projects. This approach reduces future costs by minimizing the need for disruptive and expensive excavation work.
The County government should not become an Internet provider	The County should focus on developing public/private partnerships with local ISPs. Provision of Internet service is best left to the private sector because of the fast changing nature of the technology, services, and applications.

Strategy	*Description*
Develop partnerships with WISPs and ISPs	WISPS and ISPs should be provided a copy of this report, and then be invited to meet to provide input on what infrastructure investments would enable them to expand service most efficiently. Local and regional WISPs may be able to provide insight into where towers are most needed and what they are willing to pay for tower space. WISP and ISP suggestions should help inform the broadband strategy for the County, noting that ISP/WISP demands may not always match the long term broadband needs of businesses and residents.
Work Cooperatively with Interested ISPs on Grant Funding	The Federal government has been steadily increasing the amount of grant funding available for broadband infrastructure, with USDA and HUD both having programs that are designed to help underserved and unserved areas construct new broadband infrastructure. Because BEAD (Broadband Equity, Access, and Deployment) funding will exceed the previous Covid funding program (ARPA, CARES), Saline County's share of Federal funds should be substantial and a portion of it could cover a large part of the needed broadband infrastructure improvements. BEAD funding typically requires a public/private partnership with an ISP (Internet Service Provider). Discussions with providers should start well in advance of developing an application for funds. The County should have regular contact with all interested ISPs seeking BEAD grant funds.
Manage Expectations	The current deficiencies in Internet access in the county took decades to develop, and the proposed improvements should be approached as a multi-year process, with an expectation of substantial improvements in access and availability in twelve to eighteen months.

2 WHAT IS GOVERNMENT'S ROLE?

Successful improvements in broadband access, affordability, and reliability for Saline County involves several decision points, as outlined in the illustration below. Government has several "first choice" options.



Do nothing is to accept that businesses and residents in the county will have to continue to use whatever is available, despite the cost and bandwidth limitations that limit what many are able to do online.

Government can **remove barriers** to private sector investment. This can be an effective and low cost strategy. Possibilities include reducing permit fees for fiber construction and tower installation, incentives to developers to install conduit and meet-me boxes in new residential and commercial construction, simplified permit requirements for utility pole installation on private property, and identifying areas of residential and business demand and sharing that information with providers.

The County government can choose to **make investments in basic infrastructure** (e.g. a fiber network) and make that infrastructure available to the private sector via revenue-generating lease agreements.

The County can pursue **public/private partnerships** with technically qualified and financially stable ISPs and WISPs. Where appropriate, the County can channel grant funds to providers who will use the funds to build and manage new broadband infrastructure. Selected providers should be able to show technical competency and have a demonstrable track record of managing substantial fiber and/or wireless builds on time and within budget.

Because Saline County already has some excellent Internet Service Providers actively expanding the availability of Gigabit fiber services, the County should work collaboratively with all providers seeking to improve broadband and Internet services. **At this time, there does not appear to be a reason for the County to own telecom infrastructure other than what is needed for County departments and services**.

3 TELECOM ENVIRONMENT ANALYSIS

A wide variety of assets in Saline County are identified in the following pages.

The included maps provide detail on the following:

Points of Interest – This information is used to identify key users of Internet services that could benefit from improved broadband infrastructure in the county. K12 schools, public safety facilities, fire and rescue locations, health facilities, and County facilities are included.

LMI/HUD Areas – Low and Moderate Income (LMI) and HUD-eligible areas often qualify for certain kinds of grants not available to other areas.

Towers – Of particular importance are towers, which can be divided approximately into two categories: publicly owned towers and privately owned towers. As a general rule, WISPs (Wireless Internet Service Providers) have found that the lease fees to obtain space on cellular towers is too high to justify the expected revenue from broadband Internet customers in the area around that tower. To improve broadband Internet coverage in rural areas of the county, some new towers may be needed to support Fixed Wireless Access (FWA).

Long Haul Fiber Routes – Saline County has several long haul fiber routes passing through the county to other major metro areas and/or connecting only a few institutional and enterprise customers.

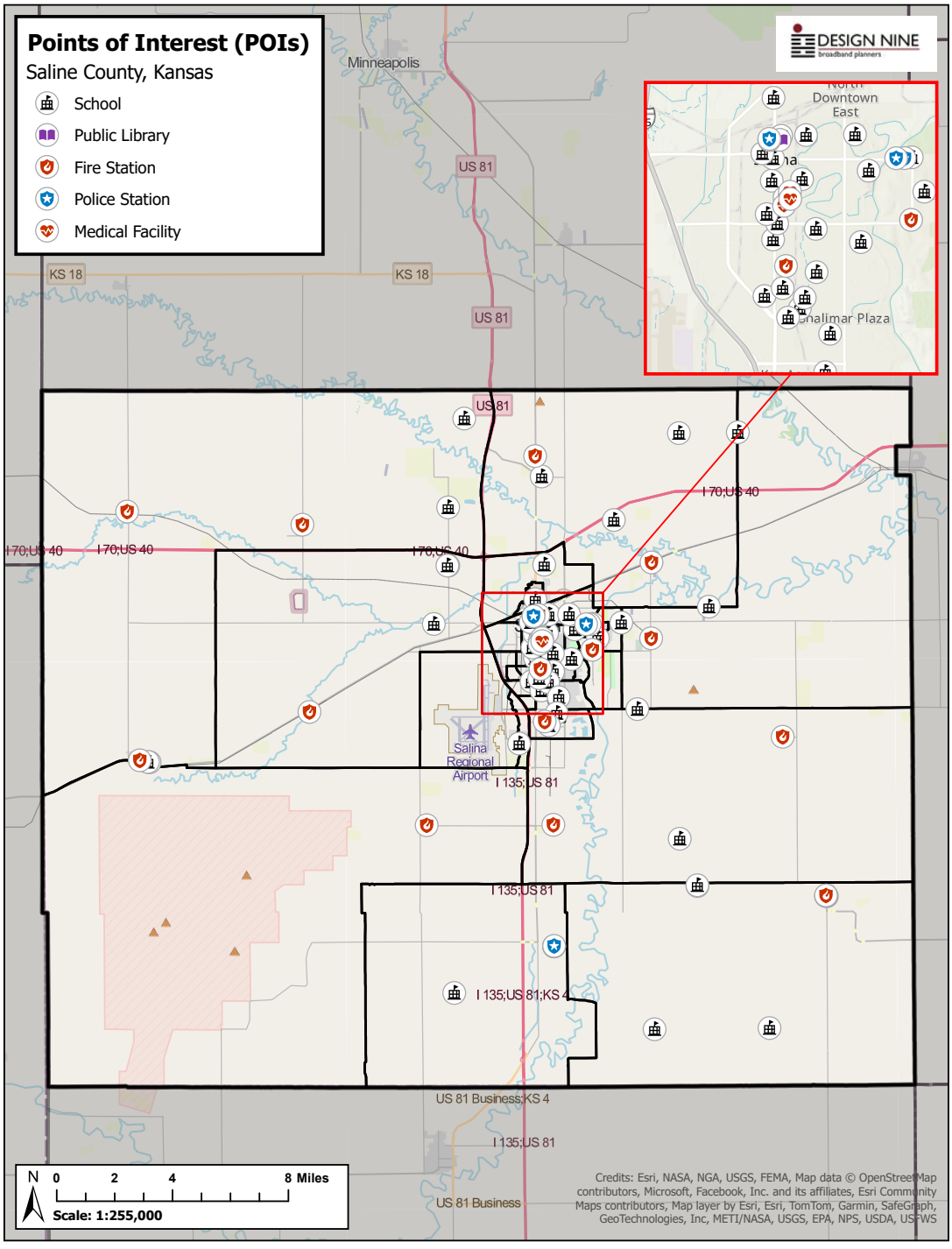
Service Levels – This map illustrates information on served, underserved, and unserved areas in the county obtained from data submitted to the National Broadband Map. The data is self-reported by the service providers.

Cellular Coverage in the County – This data has been developed from data provided to the National Broadband Map by the cellular companies.

RDOF Awards – Locations in the region where Federal funds have been awarded.

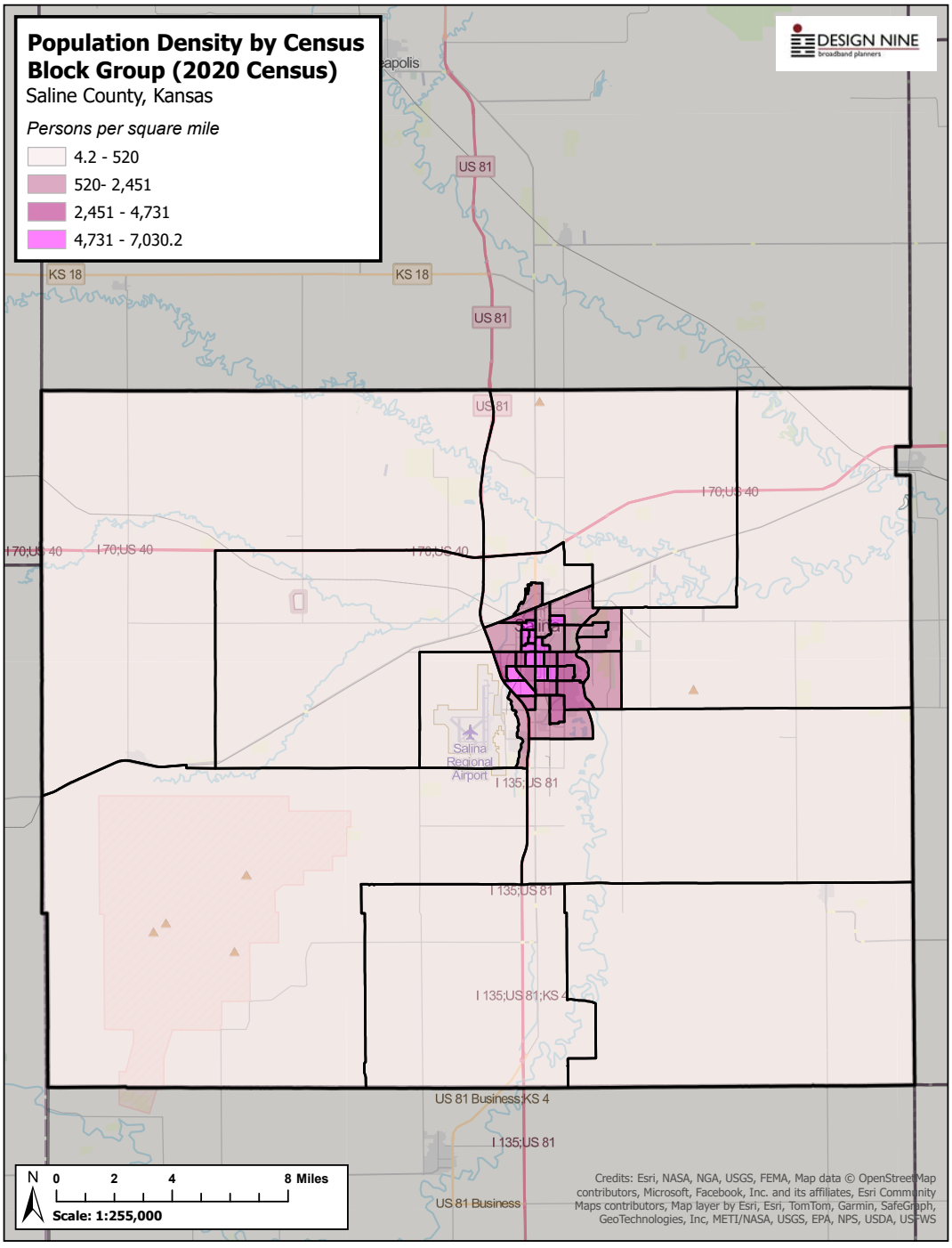
3.1 POINTS OF INTEREST

County facilities, municipal facilities, libraries, K12 and higher education facilities, fire and rescue stations, and public safety locations are all candidates to be anchor tenants for fixed point wireless and/or fiber services.



3.2 POPULATION AND DENSITY DISTRIBUTION

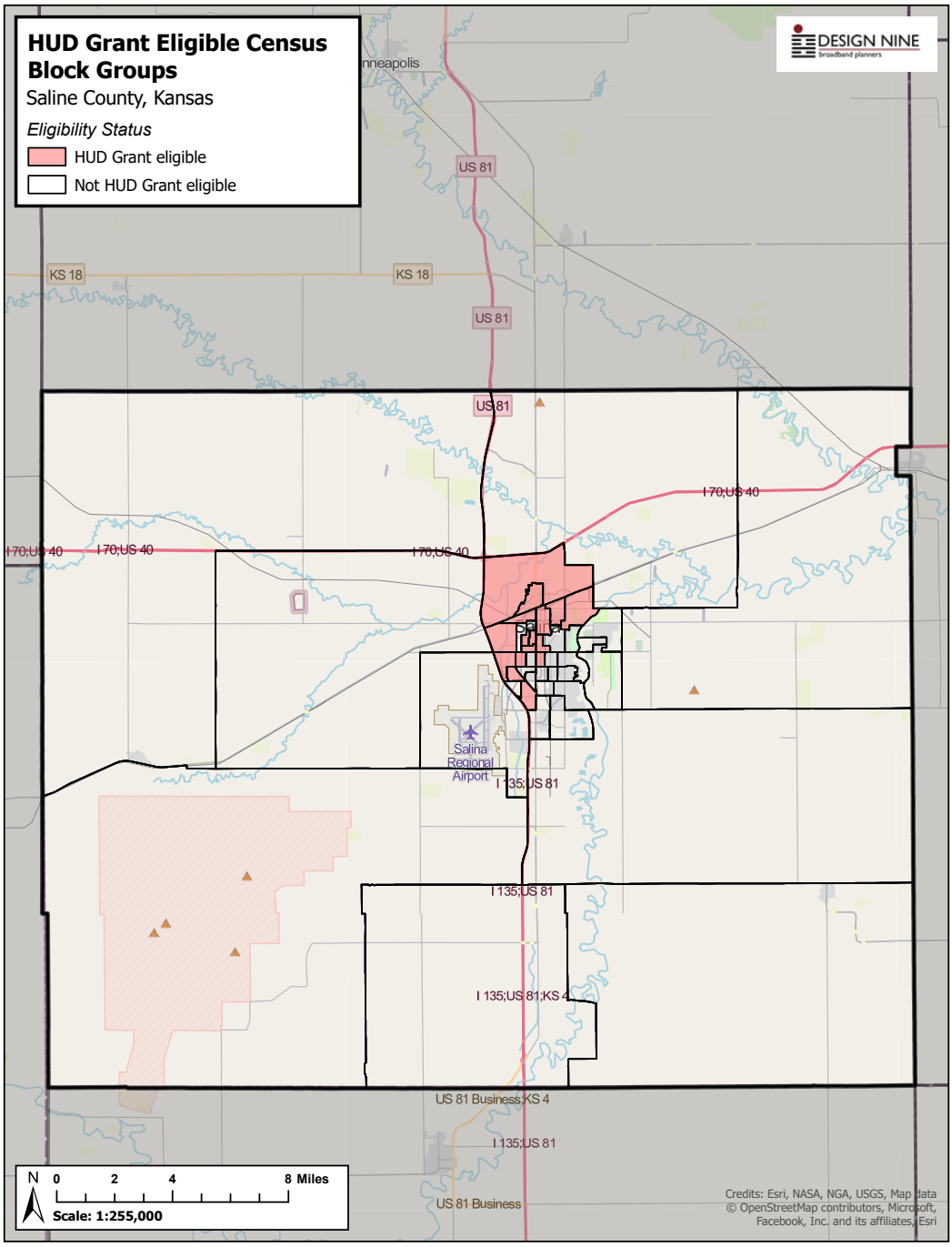
This map shows the population and density distribution in the county, by census block. This information can be helpful when working with service providers and when trying to identify what technologies are most appropriate for various areas of the county.

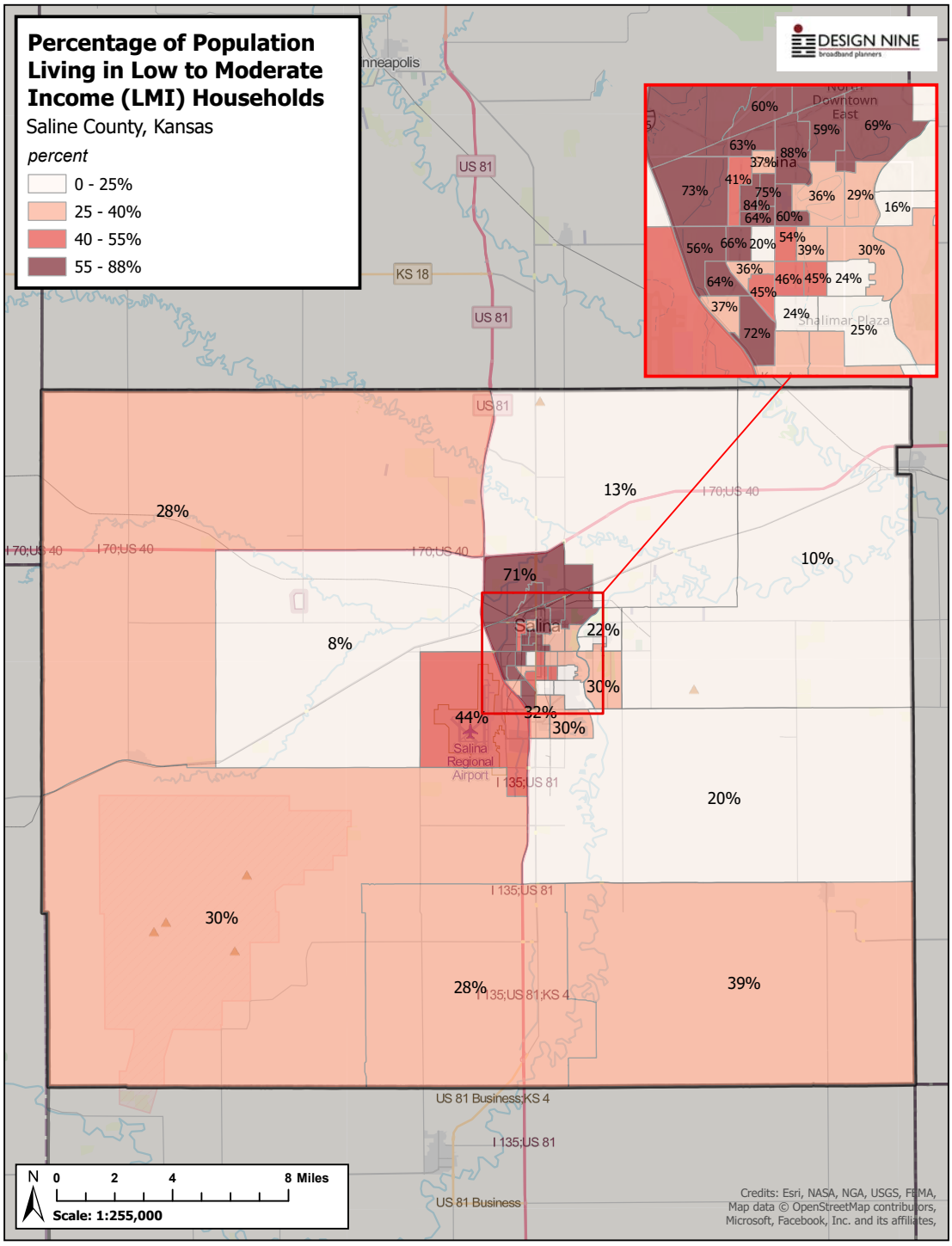


3.3 LMI AND HUD ELIGIBLE AREAS

HUD-eligible areas are determined by LMI (Low and Moderate Income) statistics—but can be different from census blocks in the county that meet LMI thresholds. Most of the county is not eligible for HUD grants. A few areas clustered in and around Salina do qualify for HUD grants.

HUD-eligible census blocks can qualify for CDBG funding for telecom infrastructure projects.



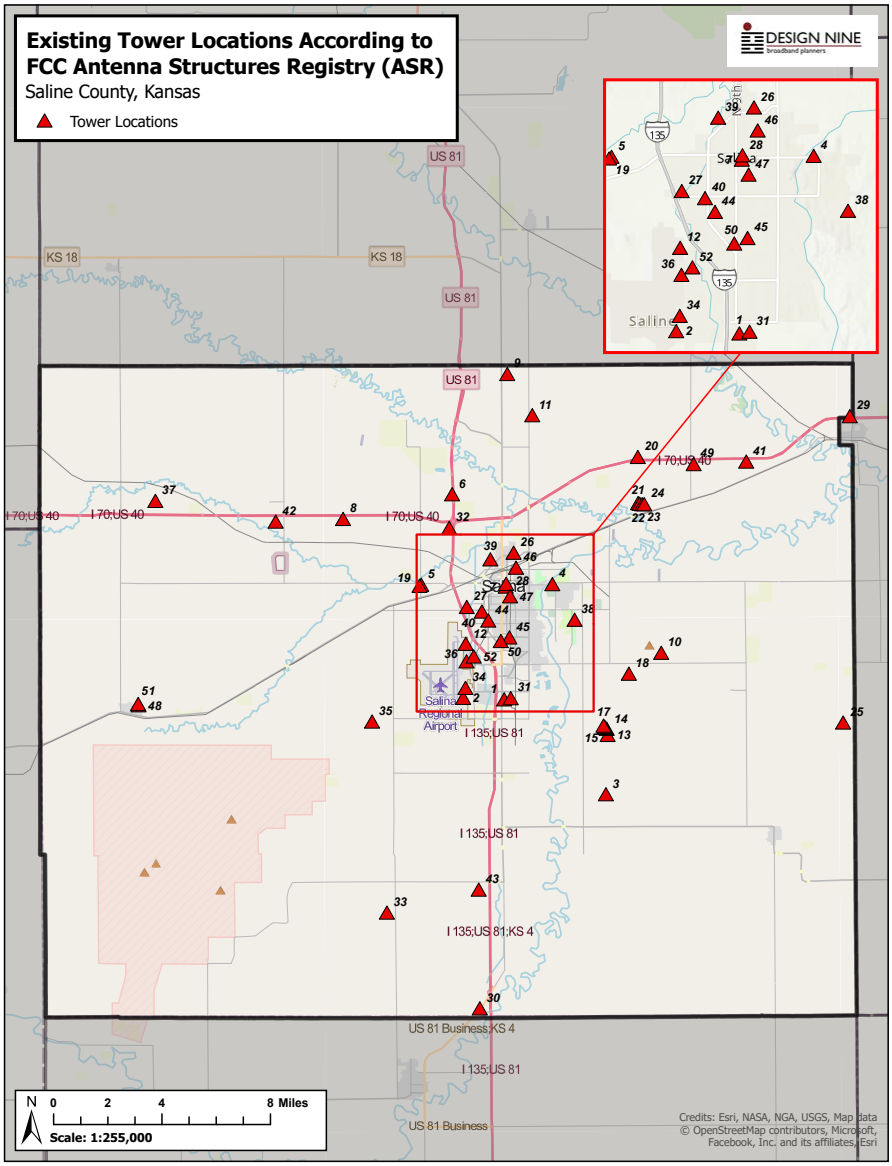

Percentage of Population Living in Low to Moderate Income (LMI) Households
Saline County, Kansas
percent
0 - 25%
25 - 40%
40 - 55%
55 - 88%
DESIGN NINE
broadband planners
US 81
KS 18
I 70;US 40
I 135;US 81
I 135;US 81;KS 4
US 81 Business;KS 4
US 81 Business
Salina
Salina Regional Airport
Shalimar Plaza
28%
13%
10%
71%
8%
22%
30%
44%
32%
30%
20%
30%
28%
39%
60%
59%
69%
63%
88%
37%
41%
73%
75%
36%
29%
16%
84%
64%
60%
56%
66%
20%
54%
39%
30%
36%
64%
46%
45%
24%
45%
37%
24%
72%
25%
N
0
2
4
8 Miles
Scale: 1:255,000
Credits: Esri, NASA, NGA, USGS, FEMA, Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates,

3.4 TOWERS IN THE COUNTY

A variety of publicly-owned and privately owned towers are shown here. Tower data is collected from an FCC database, County data, and other public and commercial data sources. The FCC database usually includes most towers that are in a locality, and generally includes all or nearly all cellular towers. Tower ownership data is not always updated in a timely manner in the FCC database.

Towers can be divided approximately into two categories: publicly owned towers and privately owned towers. Publicly owned towers can be owned by local government, by regional authorities, or by the state. In the county, privately owned cellular towers are the most common type of tower, and are generally clustered along major roadways and higher density population areas.

Many commercial towers, especially cellular towers, may have tower lease fees that are too high for a WISP (Wireless Internet Service Provider) to make a business case for putting fixed point broadband equipment on the tower. The cost to a WISP for getting on a privately owned tower often has to be checked on a case by case (tower by tower) basis.



To improve broadband Internet coverage in rural areas of the county, some new towers are going to be needed, with very modest lease fees– to attract WISPs onto those towers.

A second consideration for

placing WISP equipment on a cellular tower is where space is available–that is, at what height? Space may be available at an affordable price, but the location on the tower may not be high enough to cover an area large enough for a decent number of customers.

This table provides additional detail on tower owners and tower locations. Height of the towers is in meters, as that is the way the Federal Communications Commission requires towers to be registered in their database. Not all companies provide the height of their tower when registering it.

FCC Registration Number	Tower Owner	Height	Street Address	City	Latitude	Longitude
1023021	ALLTEL COMMUNICATIONS, LLC	47.5	167 EAST AVENUE "A"	SALINA	38.7799	-97.6114
1028339	UNITED STATES CELLULAR CORPORATION	48.8	3119 ARNOLD AVENUE	SALINA	38.7808	-97.6394
1029399	WESTERN RESOURCES D/B/A WESTAR ENERGY	70.1	1.6 KM SOUTH AND 5.6 KM EAST OF MENTOR KS	SALINA	38.7289	-97.5422
1030147	KANSAS DEPARTMENT OF TRANSPORTATION	36.6	MARIAN HALL, 2025 EAST IRON ST.	SALINA	38.8414	-97.5781
1031281	NVT WICHITA, LLC	75	4 MI W	SALINA	38.8414	-97.6678
1031778	VCY AMERICA, INC DBA = KCVS RADIO	97.5	1 MI N I-70 & I-135	SALINA	38.8897	-97.6464
1032236	ALLTEL COMMUNICATIONS, LLC	42.3	118 WEST IRON(SALINA1)	SALINA	38.8402	-97.61
1032384	MCC RADIO, LLC	122	2100 N. MUIR RD., 6.4 KM W. OF I-70 & 135	SALINA	38.8767	-97.7211
1032385	MCC RADIO, LLC	119.5	2100 N. MUIR RD., 6.4 KM W. OF I-70 & 135	SALINA	38.9539	-97.6083
1032467	UNITED STATES CELLULAR CORPORATION	146.3	2101 S.CUNNINGHAM RD	SALINA	38.8044	-97.5039
1032685	SBA STRUCTURES, INC	131	5 MI NORTH OF SALINA ON OHIO STREET	SALINA	38.9318	-97.5913
1032747	KANSAS DEPARTMENT OF TRANSPORTATION	36.6	BLDG. 939 MUNCIPAL AIRPORT	SALINA	38.8097	-97.6375
1032977	EAGLE COMMUNICATIONS, INC	79	TWR 1 - 4098 S SIMPSON RD	SALINA	38.7606	-97.5408
1032978	EAGLE COMMUNICATIONS, INC	79	TWR 2 - 4098 S SIMPSON RD	SALINA	38.7639	-97.5414
1032979	EAGLE COMMUNICATIONS, INC	79	TWR 3 - 4098 S SIMPSON RD	SALINA	38.7644	-97.5422
1032980	EAGLE COMMUNICATIONS, INC	79	TWR 4 - 4098 S SIMPSON RD	SALINA	38.765	-97.5428
1032981	EAGLE COMMUNICATIONS, INC	79	TWR 5 - 4098 S SIMPSON RD	SALINA	38.7656	-97.5436
1032982	EAGLE COMMUNICATIONS, INC	137	4266 E MAGNOLIA RD	SALINA	38.7933	-97.5261
1039952	GRAY TELEVISION GROUP, INC	88.4	W STATE ST 3.36 KM WNW	SALINA	38.8408	-97.6689
1046555	UNION PACIFIC RAILROAD	84.4	APPROX 2 MI NW	NEW CAMBRIA	38.9092	-97.5192
1052687	MCC RADIO, LLC	66.1	TWR 1 - 0.5 MI NORTH OF WOODWARD RD. FROM OLD HWY. 40	NEW CAMBRIA	38.8845	-97.5192
1052688	MCC RADIO, LLC	66.1	TWR 2 - 0.5 MI NORTH OF WOODWARD RD. FROM OLD HWY. 40	NEW CAMBRIA	38.8842	-97.5181

FCC Registration Number	Tower Owner	Height	Street Address	City	Latitude	Longitude
1052689	MCC RADIO, LLC	66.1	TWR 3 - 0.5 MI NORTH OF WOODWARD RD. FROM OLD HWY. 40	NEW CAMBRIA	38.8839	-97.5164
1052886	MCC RADIO, LLC	66	TWR 4 - 0.5 MI NORTH OF WOODWARD RD. FROM OLD HWY. 40	NEW CAMBRIA	38.8839	-97.515
1057947	ALLTEL COMMUNICATIONS, LLC	56.7	10744 EAST WATERWELL ROAD	GYPSUM	38.7665	-97.3799
1057957	KANSAS DEPARTMENT OF TRANSPORTATION	24.4	1006 N. THIRD	SALINA	38.8583	-97.6045
1058123	ALLTEL COMMUNICATIONS, LLC	45.7	1901 ST. LOUIS STREET	SALINA	38.8294	-97.6367
1059971	MCC RADIO, LLC	20.7	131 N SANTA FE	SALINA	38.8417	-97.6097
1063756	AMERICAN TOWERS, LLC	102.7	5143 N. SOLOMON RD. (SOLOMON 75491)	SOLOMON	38.9303	-97.3739
1064074	AMERICAN TOWERS, LLC	101.2	HWY-4 @ CENTENNIAL RD (SMOKY HILL 75161)	BRIDGEPORT	38.6147	-97.6289
1064080	AMERICAN TOWERS, LLC	53.3	AVENUE A 3.4 KM OF SALINA MUNICIPAL AIRPORT (75132)	SALINA	38.7805	-97.6069
1065219	AMERICAN TOWERS, LLC	85	6.48 KM N. OF SALINA MUNICIPAL AIRPORT (ELM CREEK 75163)	SALINA	38.8717	-97.6485
1204157	VCY AMERICA, INC	151.8	12 MI SOUTH OF	SALINA	38.6661	-97.692
1206828	SALINA WASTE SYSTEMS, INC	21.3	1848 SUMMERS RD	SALINA	38.7861	-97.6378
1207138	KA-COMM., INC	31	4400 WEST WATERWELL RD.	SALINA	38.7683	-97.7017
1207864	STATE OF KANSAS	7	2409 SCANLAN ROAD	SALINA	38.8003	-97.637
1211346	AMERICAN TOWERS, LLC	100.6	2733 N. MAHAN RD. (GLENDALE 35347)	SALINA	38.8866	-97.8495
1229450	PINNACLE TOWERS ACQUISITION, LLC	68.3	851 MARKLEY ROAD A	SALINA	38.8223	-97.563
1232680	T-MOBILE CENTRAL, LLC	60.7	1100 WEST GRAND, BUILDING G (A5L0001)	SALINA	38.8548	-97.6204
1236135	WAITT RADIO, INC	18.3	1321 W. CRAWFORD	SALINA	38.8269	-97.6264
1236444	T-MOBILE CENTRAL, LLC	94.5	I-70 & KIPP ROAD (A5L0005)	SOLOMON	38.9064	-97.445

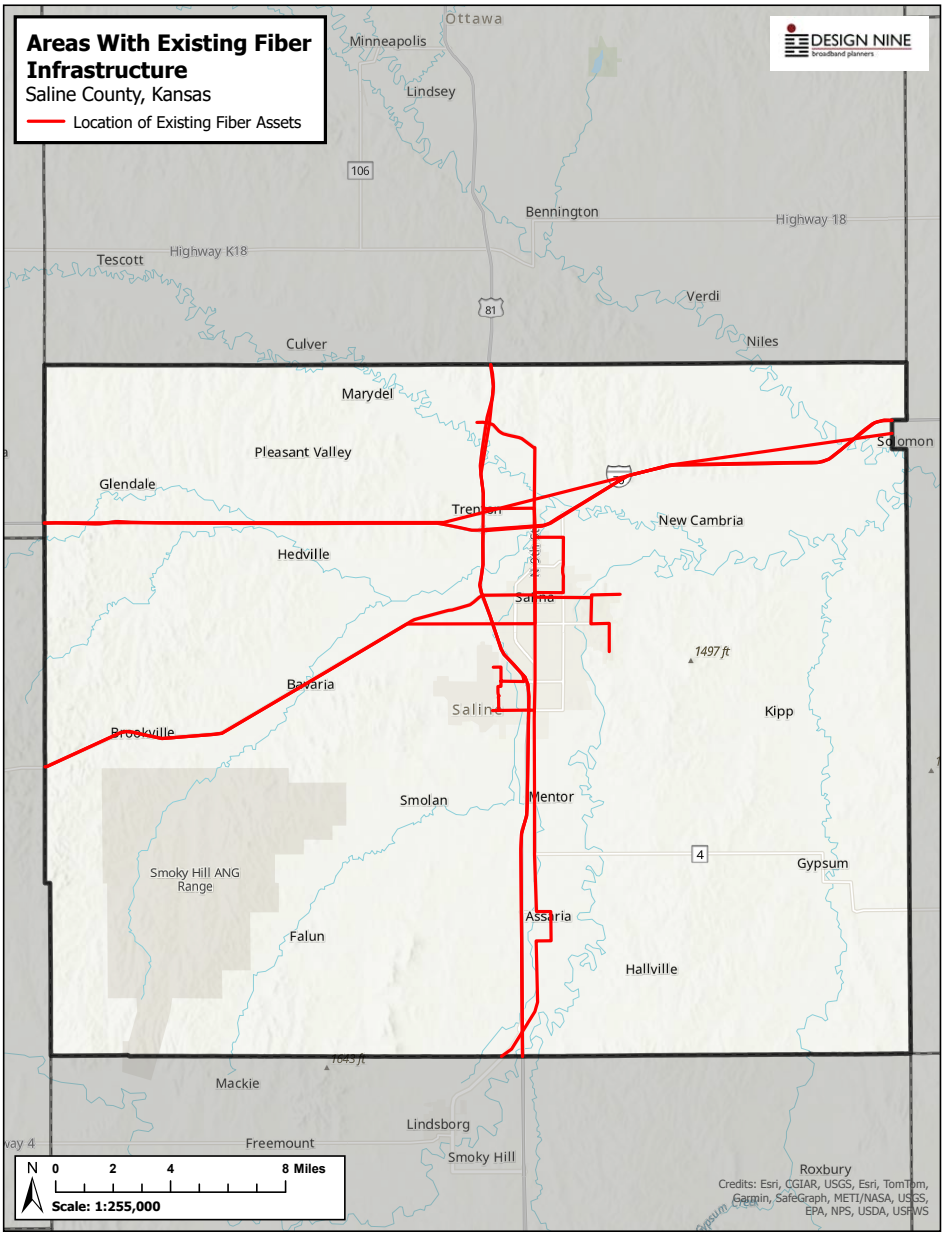
FCC Registration Number	Tower Owner	Height	Street Address	City	Latitude	Longitude
1236445	T-MOBILE CENTRAL, LLC	79.2	NW CORNER OF STIMMEL ROAD & HEDVILLE ROAD (A5L0006)	SALINA	38.8754	-97.7672
1238387	NEW CINGULAR WIRELESS PCS, LLC	76.8	S. CENTENNIAL ROAD	ASSARIA	38.6782	-97.6293
1240215	GLOBAL TOWER, LCC	36.6	1005 FRANKLIN	SALINA	38.8221	-97.622
1241128	ALLTEL COMMUNICATIONS, LLC	13.7	SALINA 6 SITE: 100 EAST CLAFLIN AVENUE	SALINA	38.813	-97.6076
1248310	SBA TOWERS II, LLC	53.6	600 NORTH FRONT STREET (KS10868-A)	SALINA	38.8503	-97.6029
1255376	TCCSA, INC DBA TRINITY BROADCASTING NETWORK, INC	51.2	SANTA FE AVE. AND SOUTH ST.	SALINA	38.835	-97.607
1257749	UNITED STATES CELLULAR CORPORATION	91.4	THE E/2 AND THE NW/4 OF SEC 3, T15, R05	BROOKVILLE	38.7773	-97.8612
1263280	SBA TOWERS III, LLC	114.3	3616 N. NILES RD (KS12783-A)	NEW CAMBRIA	38.9052	-97.481
1263311	UNITED STATES CELLULAR CORPORATION	36.5	NE 1/4 OF NE 1/4 OF SECTION26	SALINA	38.8111	-97.6135
1273224	ALLTEL COMMUNICATIONS, LLC	85.6	404 MCPHERSON STREET	BROOKVILLE	38.778	-97.8615
1280503	ALLTEL COMMUNICATIONS, LLC	30.5	1635 COOPER COURT	SALINA	38.8029	-97.6321

3.5 FIBER ROUTES IN THE COUNTY

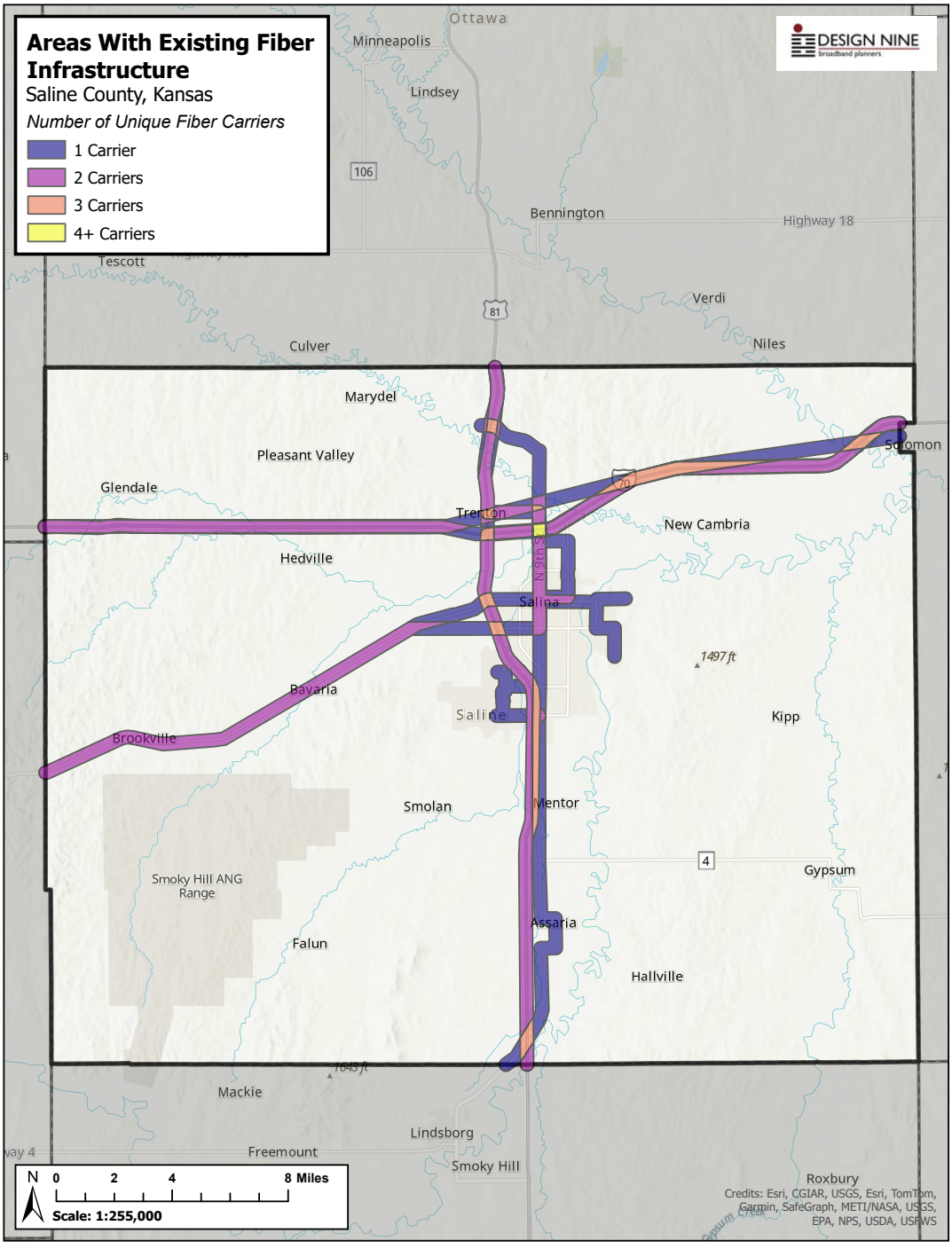
Fiber route data is compiled from publicly available sources and commercial databases. Some telecom providers do not share their route data.

Many fiber routes, not only in the county but throughout the country have been designed as long haul point to point fiber routes between population centers. This means that even if a fiber cable passes down a rural road or a residential area, it has not been designed for residential or small business fiber to the premises.

The county has both long haul fiber routes and substantial amounts of last mile fiber. The last mile fiber belongs primarily to HCI (Home Communications) and Nex-Tech. HCI appears to offer fiber in approximately 30% of the county, and both Nex-Tech and HCI are expanding their fiber footprint steadily.



This map provides an overview of the long haul fiber in the county. As one would expect, there is more of this long haul and national carrier fiber in and around the City of Salina due to local demand for high speed connections by larger businesses and enterprises. Many Internet providers and carriers lease fiber strands on a cable owned by a third party. Where the colored lines indicate two or more carriers on the same route, it is very likely that those carriers are all using the same cable (but leasing different strands in that cable).



3.6 SERVED, UNDERSERVED, AND UNSERVED AREAS

The areas on the map below have been identified using FCC (Federal Communications Commission) 477 data. The map also shows the three areas (outlined in red) where fiber pilot studies were done as part of this work (see Section 7). Service providers, including incumbent telephone and cable companies, file a 477 report with the FCC to identify where their service is available and at what speed, using the FCC designations :

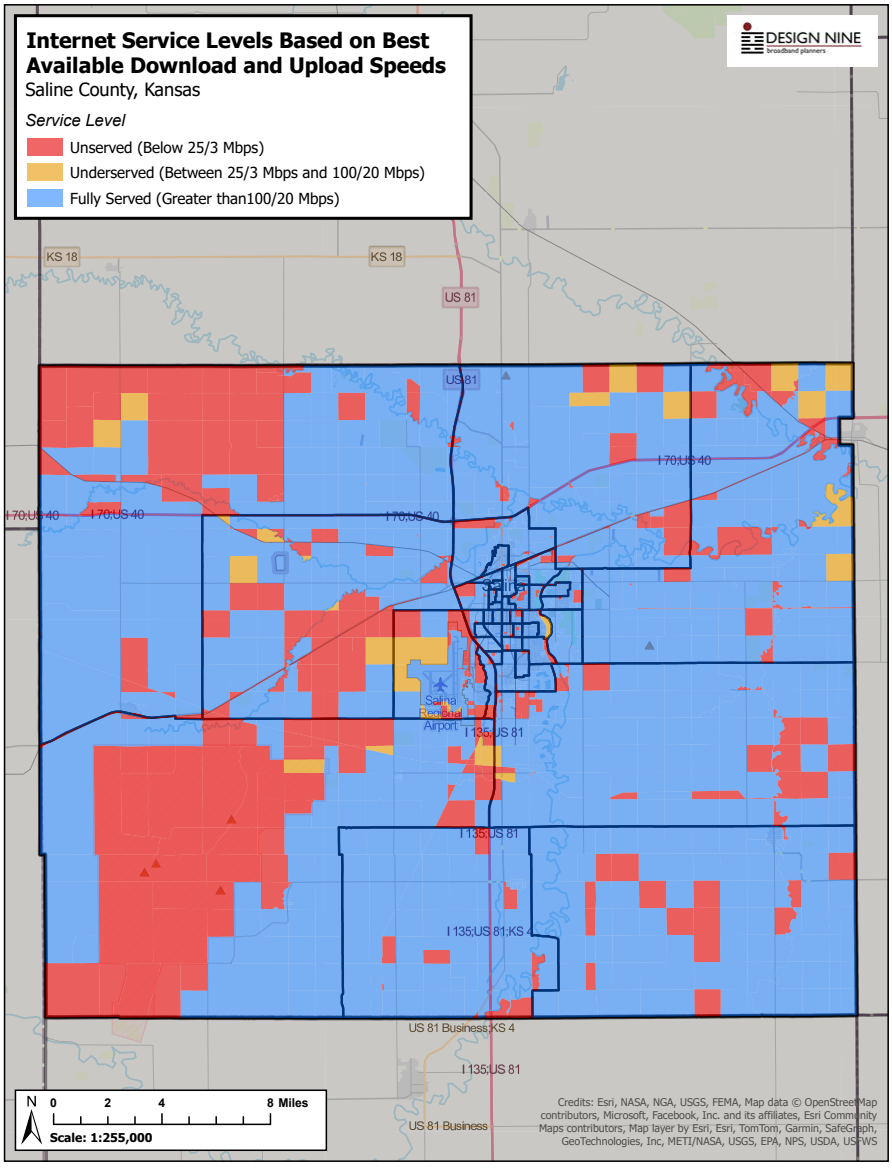
Unserved – Less than 25 Megabits down/3 Megabits up

Underserved – At least 25 Megabits down/3 Megabits up and less than 100 Megabits down/ 20 Megabits up

Fully Served – Equal to or better than 100 Megabits down/20 Megabits up

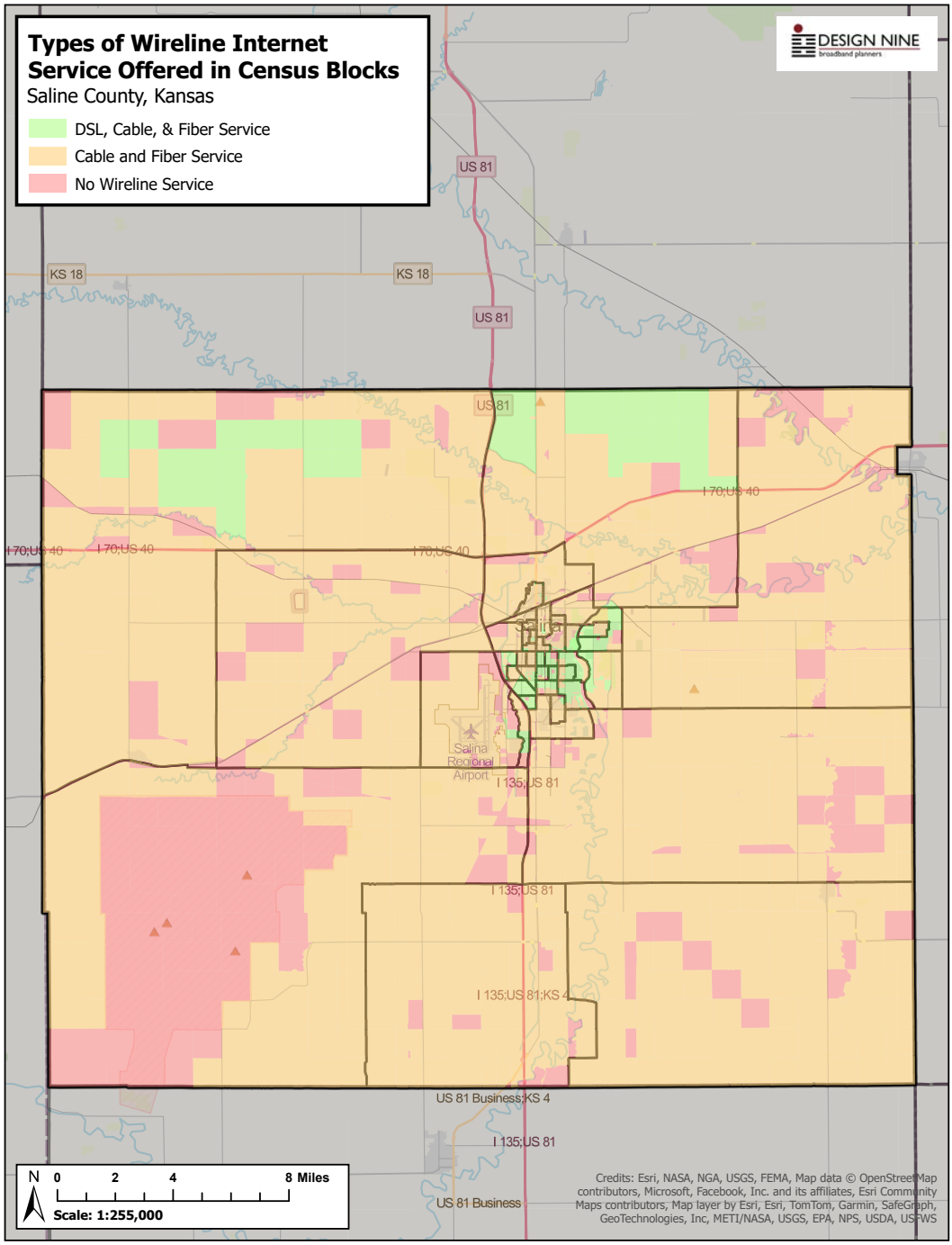
There are two problems with the 477 data:

- The data is self-reported by the providers, who typically report their most optimistic Internet speeds. In practice, customers may not always get the reported speeds.
- A single customer receiving service in a census block means that the provider can indicate that the entire census block is counted. So if one household receives 25/3 service, all households in that census block are counted as receiving that level of service.



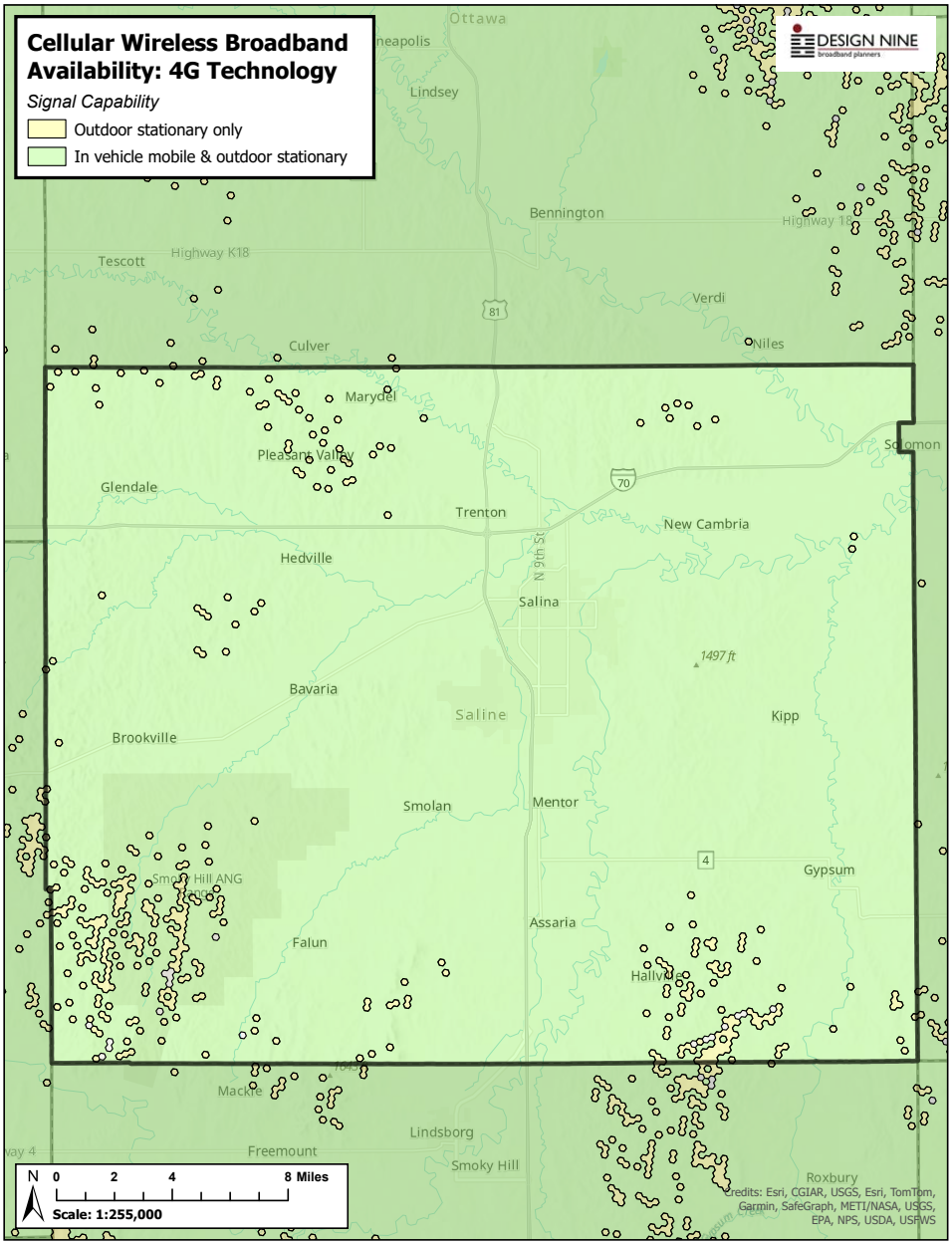
3.7 TECHNOLOGY TYPES

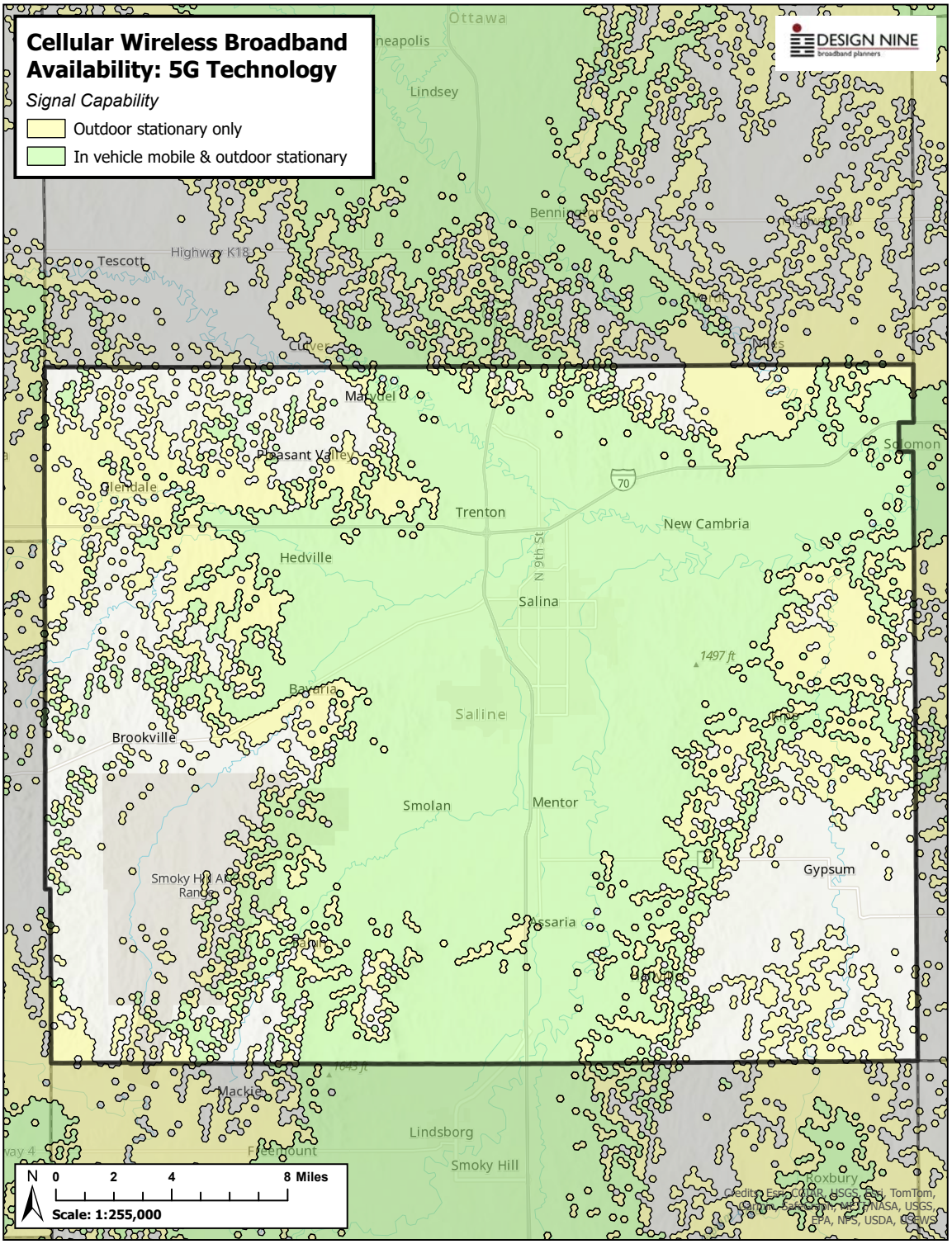
While the FCC data indicates that most of the county and city is fully served, there is wide variance in the kind and type of service available to households. Because this data is self-reported by the Internet providers, the coverage areas can be optimistic.



3.8 CELLULAR COVERAGE IN THE COUNTY

The following maps show cellular broadband coverage data taken from the FCC's new Broadband Data Collection (BDC) System. Cellular coverage is broken down into categories based on the technology of transmission. The map below shows 4G LTE coverage level and the map on the following page shows the coverage levels for 5G. Additionally the cellular coverage in each area is sorted into two levels of quality. "Outdoor stationary only" represents areas where the given service is only attainable when outside and stationary. This can be considered a less reliable level of cellular coverage. The "In-vehicle and outdoor stationary" is a service level which can be considered more reliable and capable by comparison.

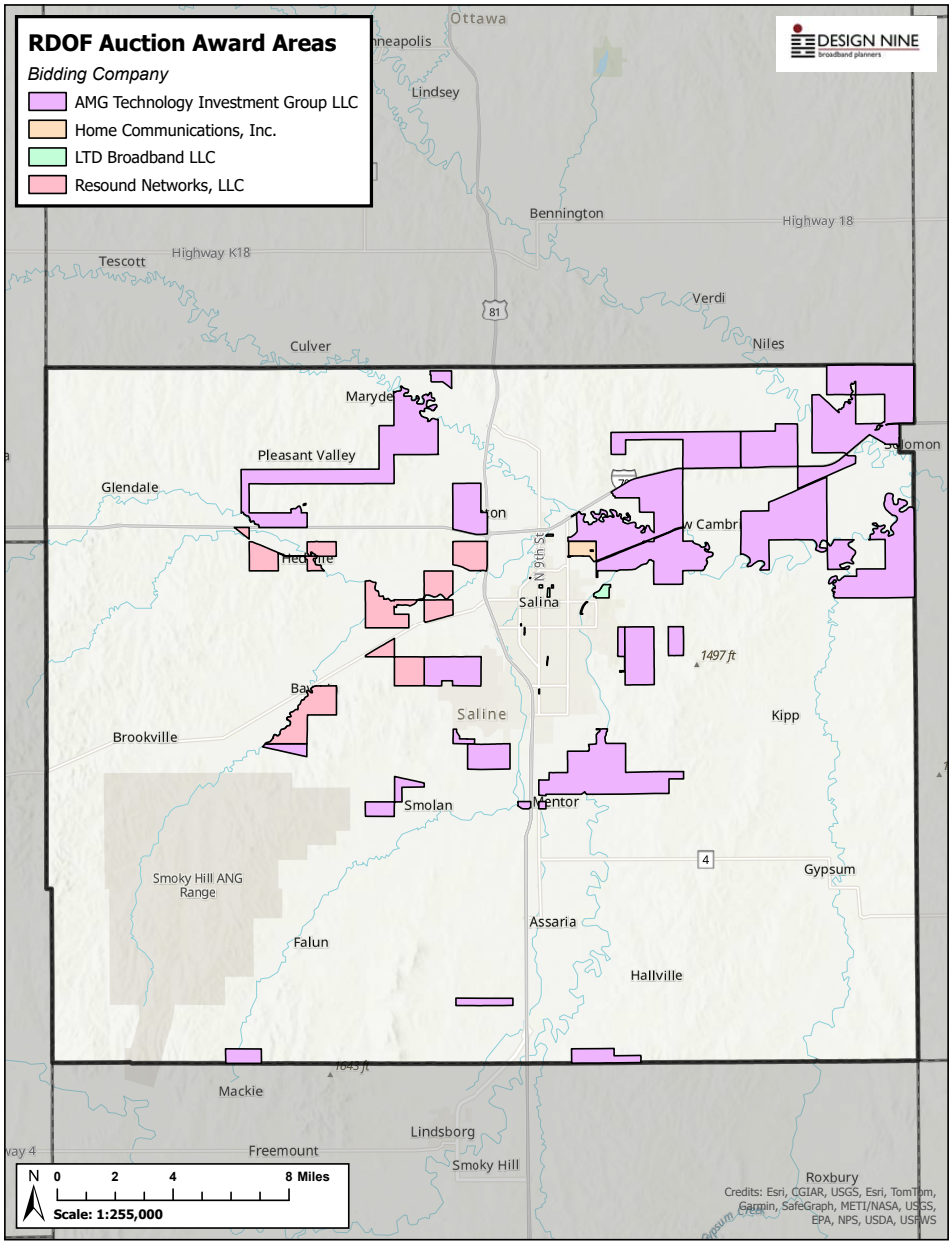



Cellular Wireless Broadband Availability: 5G Technology
Signal Capability
Outdoor stationary only
In vehicle mobile & outdoor stationary
DESIGN NINE
broadband planners
Ottawa
Lindsey
Tescott
Highway K18
Pleasant Valley
Glendale
Trenton
New Cambria
Hedville
N 9th St
Salina
1497 ft
Bavaria
Saline
Brookville
Smolan
Mentor
Gypsum
Assaria
Mackie
Lindsborg
Smoky Hill
Roxbury
N
0
2
4
8 Miles
Scale: 1:255,000

3.9 RDOF AWARD AREAS

This map indicates the areas where service providers successfully bid and received an RDOF (Rural Digital Opportunity Fund) award. The awardees have ten years from the date of the award to make the network improvements outlined in their application.

The FCC published the final eligible census blocks for the auction on February 6, 2018. The final areas were based on FCC Form 477 data as of December 31, 2016 (the most recent publicly available FCC Form 477 data at the time). So there is a time lag between the determination of a qualifying census block or blocks and the schedule for submitting a bid to serve those areas. The first round of funding was announced in early 2021, and was immediately m



4 SERVICE PROVIDER ANALYSIS

This report section includes information which shows what Internet services are available to Saline county residents and how much county citizens pay for the services they chose. Pricing information is often deliberately difficult to obtain because many providers do not want consumers doing comparison shopping. Real pricing is often hidden behind promotional pricing that is hard to decipher or requires a phone call to a sales representative.

Our data is assembled from several public sources that provide data on Internet use, including FCC data, social media data, and commercial Web sites that provide Internet use data. The best information utilizes zip codes but those boundaries are not aligned with local government jurisdictions, and some zip code data as we discuss later includes areas outside the county. The information in these charts and tables is current as of the middle of June 2024. It shows the **areas where service providers claim to provide service**. Percentages of customers being offered different kinds of service do change as equipment is upgraded or new neighborhoods are reached. Data is often only updated every six months. Because of rapid changes that can take place with pricing and available services, this report should be only viewed as a snapshot of the information when the report was written. Service provider prices rarely remain the same even for ninety days.

This report also provides estimates of pricing, services and speeds received by households in a particular zip code. Actual pricing, services, and speeds are more discoverable in survey responses which document what services customers actually are using.

Consumer Reports found in their Summer 2021 Broadband Survey, "Fifteen percent of American households only have access to the internet through their smartphone data plan and one in 20 use DSL or dial-up to access the internet. Three percent of Americans say their household does not have access to the internet."[1] These are good metrics to use in looking at coverage in your county.

Our model estimates that 13% of Saline county residents access the Internet only with their smartphone or 5G services. There are 7% of residents that only have satellite Internet access. Another 7% use DSL services. Those 27% of residents using cell phone, satellite, or DSL for Internet would be unable to do serious computer-work-from-home jobs. Add the 13% of residents who have no Internet access and you have 40% of Saline County residents unable to take advantage of the Internet like 21st century residents of our country.

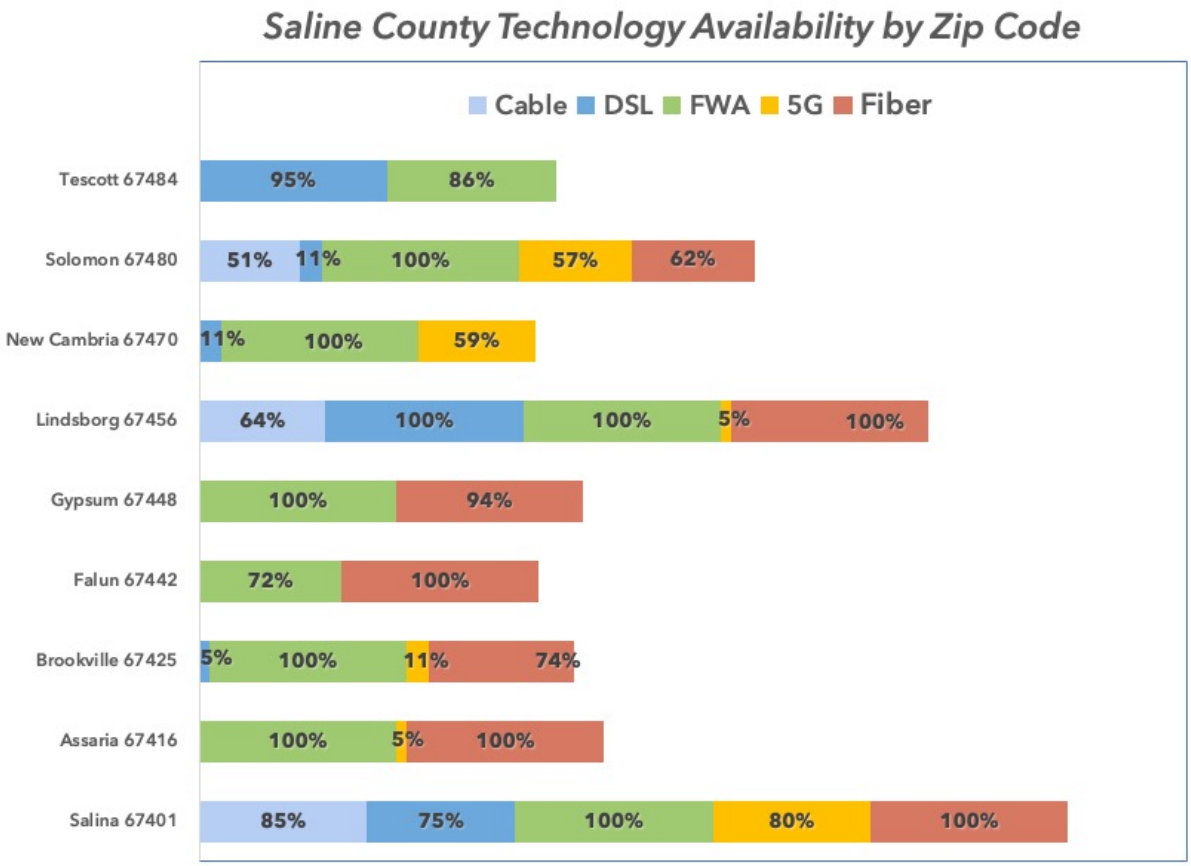
Consumer Reports recently stated that 84% of their members in March 2022, agreed that Internet service is "as important as water or electricity." National surveys mirror those numbers with the latest number there being an April 2020 survey showing 80% of all surveyed consumers agreeing.[2]

Pew Reach Center reported in September 2021, that during the pandemic, "connection quality has been important for school, meetings and virtual social encounters. Roughly half of those with

[1] Broadband Survey, Consumer Reports, July 2021

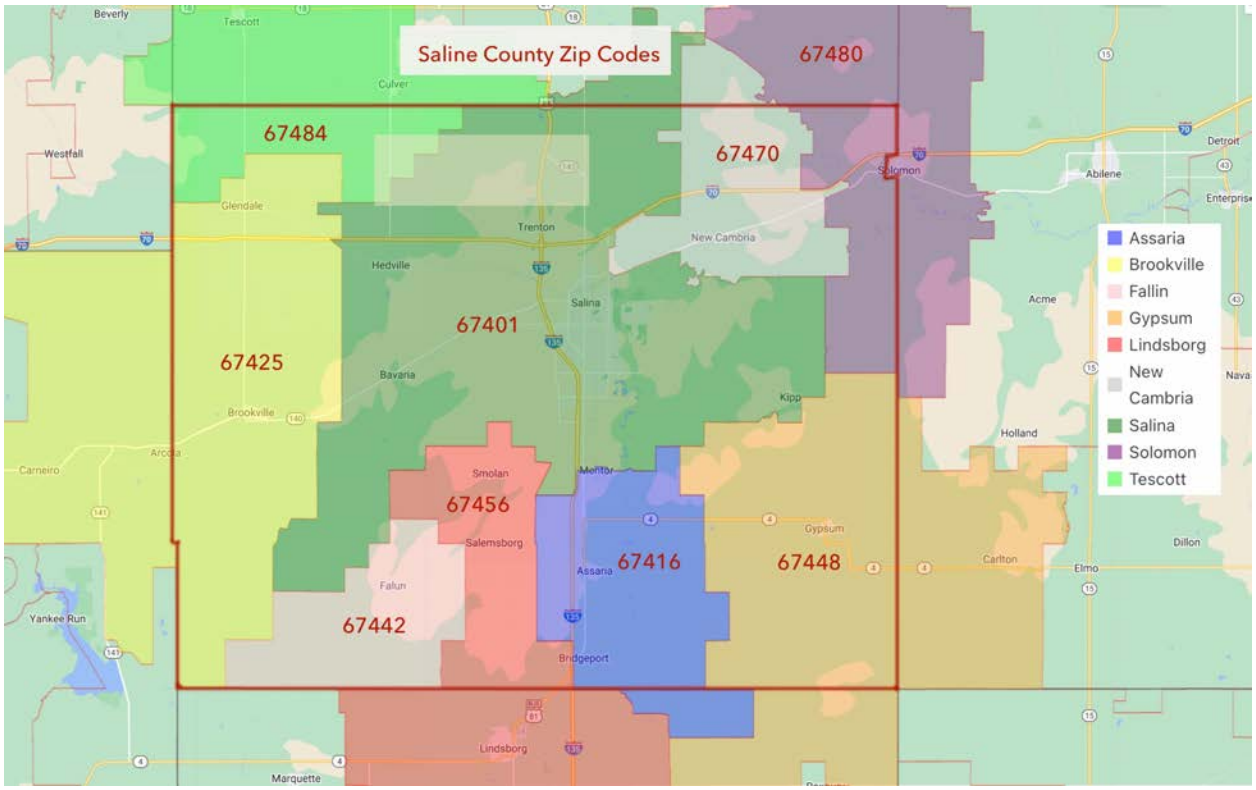
[2] Best and Worst Home Internet Providers of 2022, By James K. Willcox, November 7, 2022, page 1

a high-speed internet connection at home (48%) have problems with the speed, reliability or quality of their home connection often or sometimes."[3]

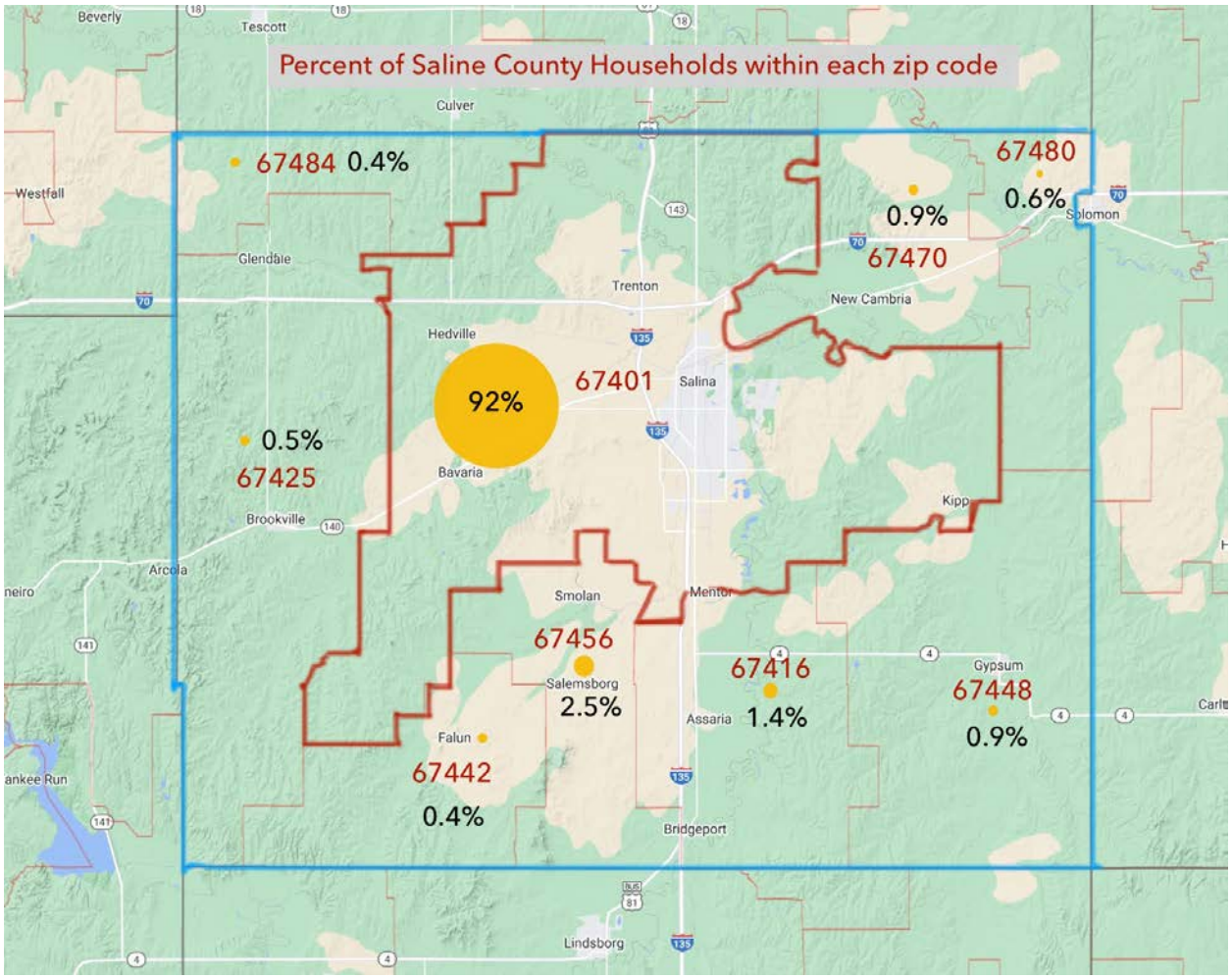


[3] The Internet and the Pandemic, Page 1 https://www.pewresearch.org/internet/2021/09/01/the-internet-and-the-pandemic/

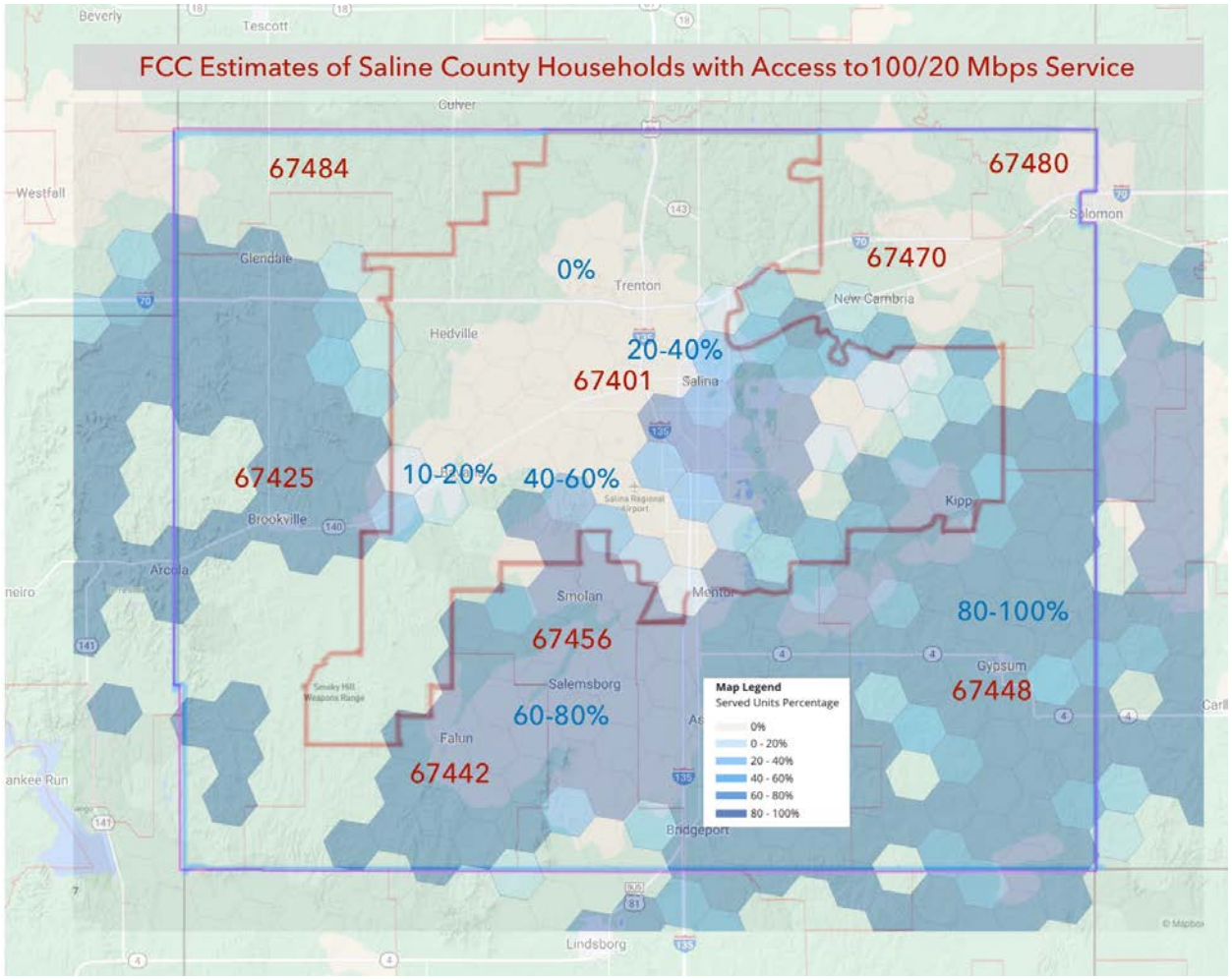
This map shows outlines of the zip codes for Saline county, Several zip codes bleed into other counties.



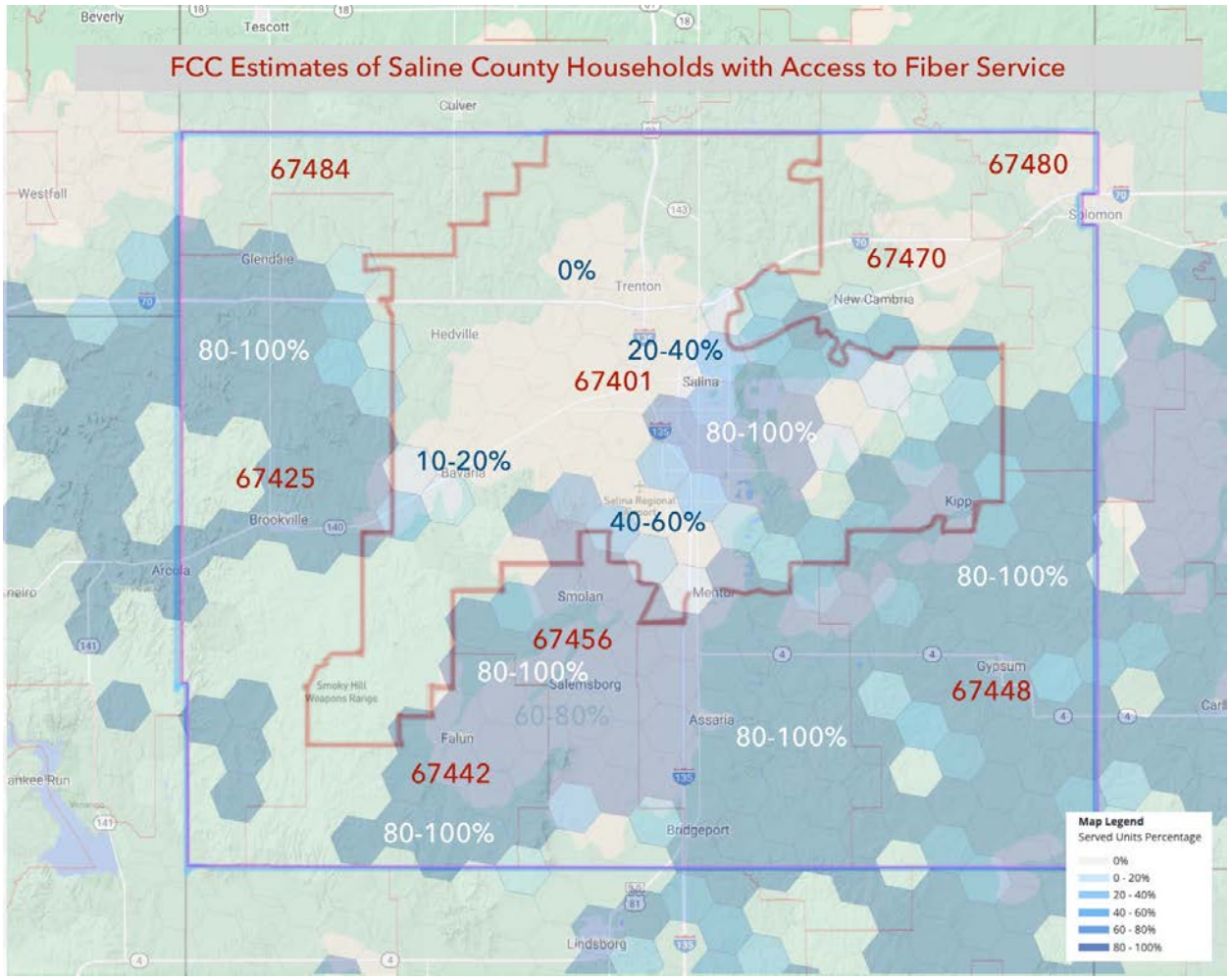
The following map shows those same zip codes with the number of households percentages and size appropriate bubbles. Only eight percent of the county's households are outside of zip code 67401, the home of Salina.



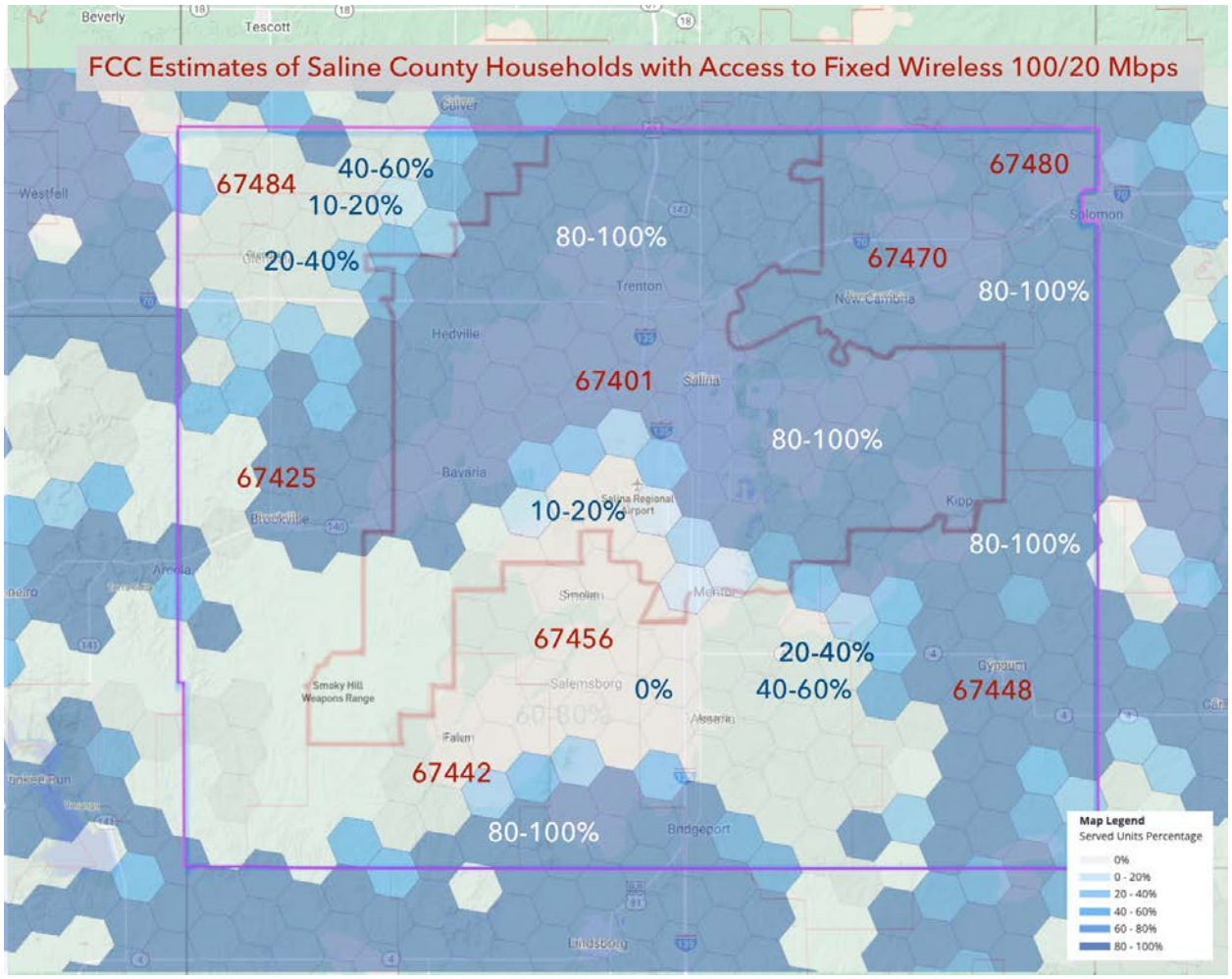
The following map is based on the latest FCC estimates of wired 100/20 Mbps service availability in Saline County.



Estimates of fiber availability in Saline County.



This is the most recent FCC estimates of Fixed Wireless (FWA) at speeds of 100/20 Mbps or greater in Saline County.



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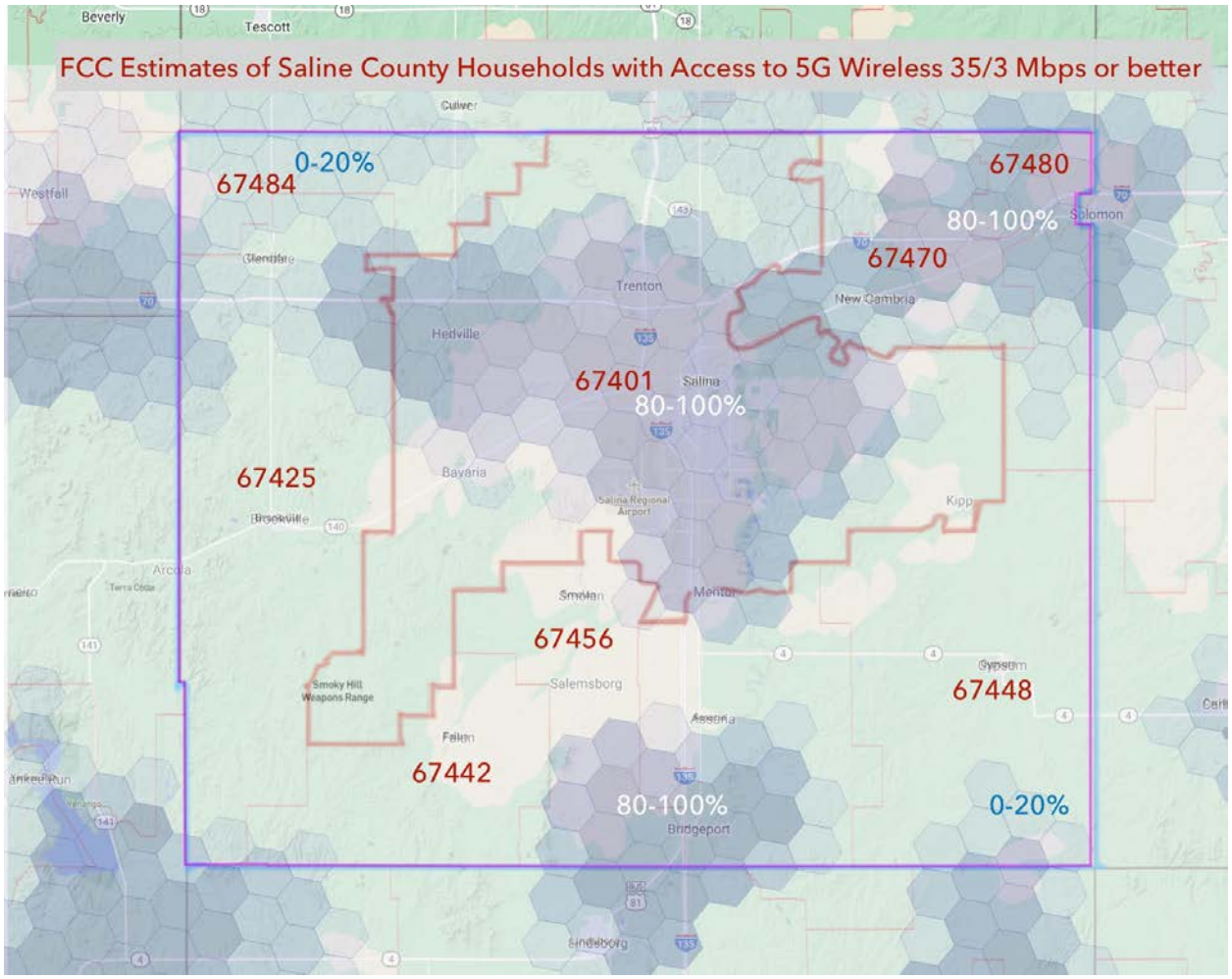
This is the most recent FCC estimates of 5G Wireless technology at speeds of 35/3 Mbps or greater in Saline County.



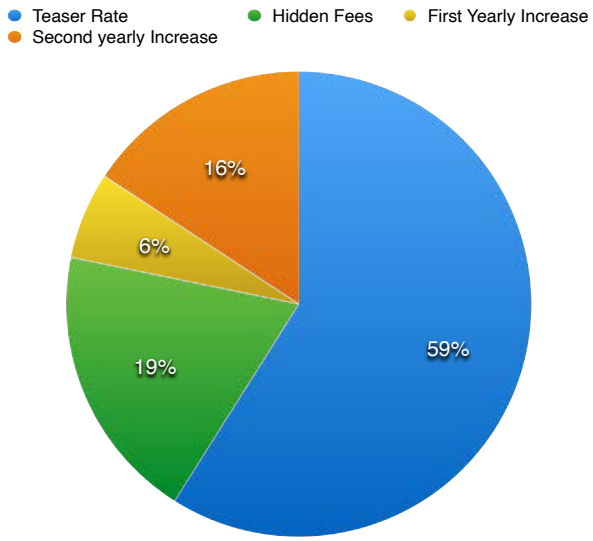
Our survey data provides more details and potentially shows where the FCC data might be incomplete.

Hidden fees have remained a problem since a 2019 Consumer Reports study[4], first reported on them. At that time the national average advertised price for standard triple play services of Internet, television, and telephone across the country is $156.17. Because of fees and taxes, the actual national average cable bill was $217.42. Nationally, the study showed consumers got an average of 24% added to their bill. Data caps which were turned off early in the pandemic are back[5] in many

[4] Cord Cutting Continues, Fueled By High Cable Pricing, Consumer Reports' Survey Finds 9/17/2019

[5] Consumer Reports -Get Ready for Cable TV and Internet Price Hikes and Data Caps in the New Year 12/21/20

areas. The Cord-Cutter data illustrated in the chart below[6] comes from one national cable provider and shows those fees can be much higher. The 2021 Cord Cutter example showed almost $32 in hidden fees. In their 2022 study of 22,000 bills Consumer Reports found companies imposed "junk fees"—under names such as "network enhancement fee," "internet infrastructure fee," "deregulated administration fee," and "technology service fee." These are not government required fees. They only improve the company's profits and sometimes used to raise costs for customers without breaking contracts.[7] Dealing with data caps can also be expensive for consumers, often adding $30 or more per month.



From CORD-CUTTER CONFIDENTIAL January 28, 2021
Cable-bill transparency laws haven't killed sneaky fees

		Increase % teaser rate	Increase % Two year rate
Cable Teaser Rate	$97.49		
Price Increase at Checkout	$31.85	33%	20%
First Yearly Rate Increase	$10	10%	6%
Second Yearly Increase	$20.00	21%	13%
Total monthly bill at Two years	$159.34		

[6] Cord-Cutter Confidential, January 28, 2021

[7] What Consumer Reports Learned From 22,000 Internet Bills.- Dec. 17, 2022, page 4

This rate card is typical of the complexity of fees that consumers face when they are trying to bundle services.

Digital Services

All pricing below is monthly unless otherwise indicated

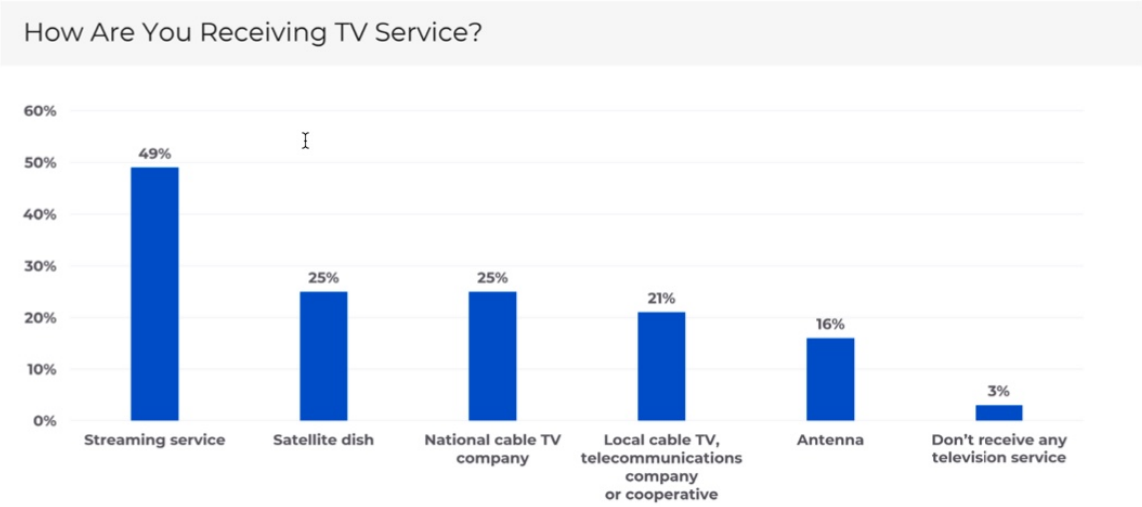
PREMIUM MOVIE SERVICES	
HBO Max, Cinemax, Starz/Encore	$19 each
HBO Stand Alone	$19
Showtime/TMC	$10.99
Add Showtime/TMC to any single Premium service or any two or three Premium services	$10.99
Any two Premium Movie Services	$32
Any three Premium Movie Services	$42
Hispanic Tier	$6
Digital Value Pack	$16
TV Plus	$12

EQUIPMENT RATES	
Wired/Wireless EMTA	$12.50
Wired or Wireless Docsis 3.1 Modem	$12.50
Modem	$10.50

OTHER SERVICES & FEES	
2nd Phone Line	$20
Caller ID, Voice Mail & Voice Mail to Email	$7
International Calling	Varies
Cable Service Guard	$5
Installation (call for details)	$0 - $90
Activation Fees (call for details)	$0 - $100
Equipment Deposits	May apply
Sports Surcharge	$9.20
Broadcast TV Surcharge (varies by area. call for details)	$14.44 - $30.54
Broadcast TV Delivery Surcharge (where applicable, call for details)	$3.95
Internet Surcharge (where applicable, call for details)	$2.75
Unlimited Data	$30
Regulatory Cost Recovery Fee (Phone Customers only)	$5.62

Cord cutting and moving to streaming continues at an increased pace. "As streaming video continues its ascendancy, cable, satellite and internet TV providers in the U.S. turned in their worst subscriber losses to date in the first quarter of 2023 – collectively shedding 2.3 million customers in the period, according to analyst estimates."[8]

This chart from Innovative Systems' study of rural broadband users[9] shows how streaming is becoming an important delivery mechanism even in rural areas. Streaming is just one of the factors that increases the demand for greater bandwidth across the full spectrum of broadband users. Streaming can be problematic with services that have high latency.



- Just about half of rural residents identify streaming as a source for video.
- DBS satellite accounts for 25% of rural TV subscribers, and another 25% subscribe to a national cable TV provider.
- Just about 1 in 5 households (21%) get TV from a local provider or cooperative.
- Local broadcast television via an antenna reaches 16% of rural residents.

OpenVault recently reported "average per-household data consumption was 605.8 GB at the end of Q1 2024." This is a 58% increase from the 2020 Pandemic bump of 384 GB. [10]

Increasingly, households are using multiple devices simultaneously. Sometimes two people are working remotely while children are doing school work online. Then there are high-bandwidth applications like streaming that continue to drive large increases in downloaded data.

Residents already access the internet for employment, education, and health purposes when their connection permits. When connection quality and speed improve, people take advantage of it.

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[8] Cord-Cutting Hits All-Time High in Q1, as U.S. Pay-TV Subscriptions Fall to Lowest Levels Since 1992, Variety, May 12, 2023

[9] Rural Video and Broadband Industry Study - 2021, page 4, by Innovative Systems

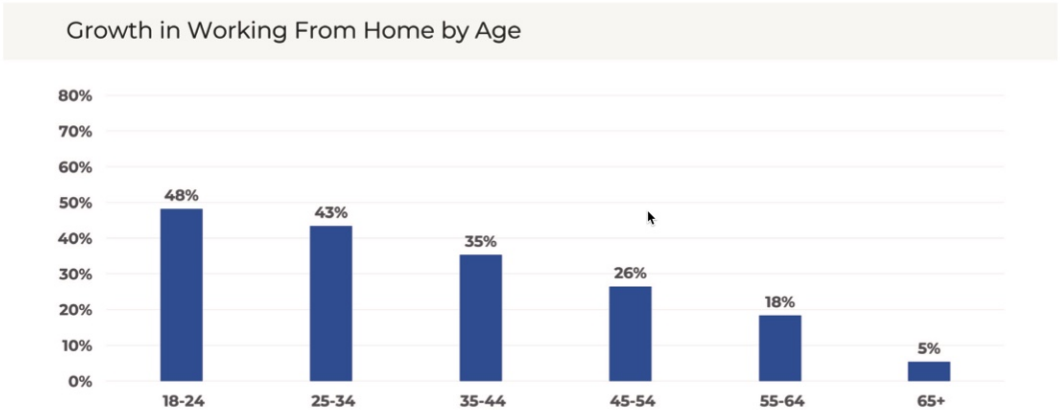
[10] OpenVault, Broadband Insights Report (OVBI) Q12024

The Pandemic has also had a major impact on the amount of work done from home even in rural areas.[11] Data usage has continued to grow steadily even after the pandemic.

Pandemic Impact

The pandemic impacted just about every aspect of life, including video and internet usage. The following data reveals some of that impact on rural consumers.

Does someone in your household work from home who did not prior to the pandemic? (n=726)
Note: Represents those answering yes.



- **For rural consumers, the younger you are, the more apt you are to have been working from home as a direct result of the pandemic.**

Survey results presented in November 2021, by Kyle Rosner, Deputy Broadband Advisor for Virginia, indicate that the number of people working from home (among those who can) has jumped from a pre-pandemic level of 20% to 71% who are currently working from home.[12]

Nationwide this trend remains strong. According to Forbes, "Currently, 12.7% of full-time employees work from home, illustrating the rapid normalization of remote work environments. Simultaneously, a significant 28.2% of employees have adapted to a hybrid work model. This model combines both home and in-office working, offering flexibility and maintaining a level of physical presence at the workplace."[13] Workers and companies are driving this trend towards remote work.

Many Saline county residents, some in very rural areas, have the kind of access they need to work from home in a job that requires significant Internet access. However, our study of online data shows that is not always the case. Survey data will focus on defining those areas. As these points from a Forbes article indicate, providing households with a robust Internet connection is not longer optional.

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[11] Rural Video and Broadband Industry Study - 2021, page 13, by Innovative Systems

[12] Connect Commonwealth Presentation by Kyle Rosner to NC Broadband Matters, November 15, 2021, slide 16

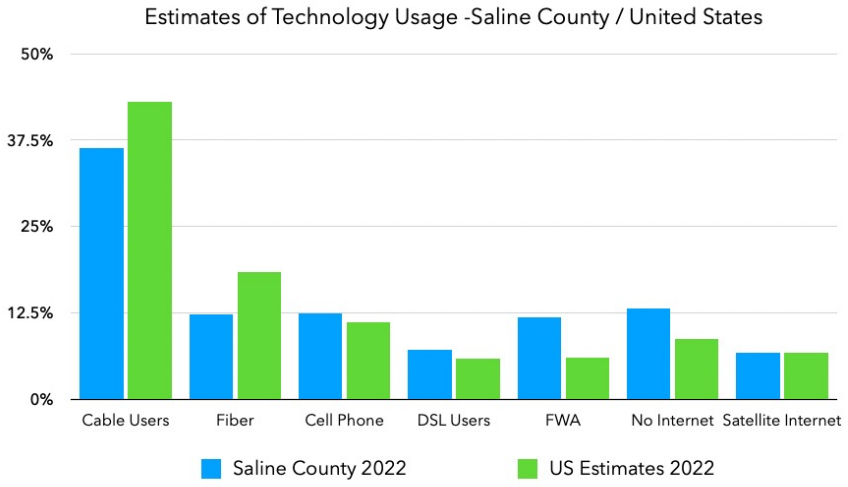
[13] Remote Work Statistics And Trends In 2023, page 1

- A staggering 98% of workers expressed the desire to work remotely, at least part of the time. This overwhelming figure reflects the workforce's growing affinity towards the flexibility, autonomy and work-life balance that remote work offers.
- 93% of employers plan to continue conducting job interviews remotely
- This indicates a willingness to adapt to virtual methods and signals the recognition of remote work as a sustainable option.
- About 16% of companies are already fully remote, operating without a physical office. These companies are pioneers in the remote work paradigm, highlighting the feasibility of such models and paving the way for others to follow.[14]

Below is a chart which compares the way people accessed the Internet in the US in 2022 compared to what we have found in Saline county in June 2023. These are estimates use mostly FCC data.

It is important to understand how significant broadband bills have been become for all households. When faced with limited broadband choices driven by lack of competition there are few ways for a household, especially a small one, to lower broadband costs significantly. The increasing dependence of households on broadband services makes this even more critical.Those houses purchasing a traditional cable package at or above average national costs now find that their cable package costs more than all their other utilities put together.

"One important thing we found in our research was how relatively expensive a cable bill is compared to other utilities for smaller households. The average cable bill stays relatively similar across household sizes, whether it's one person living in a small apartment or a family of ten living in a large house. This is not true of utilities like electricity or water, with much wider scales for their

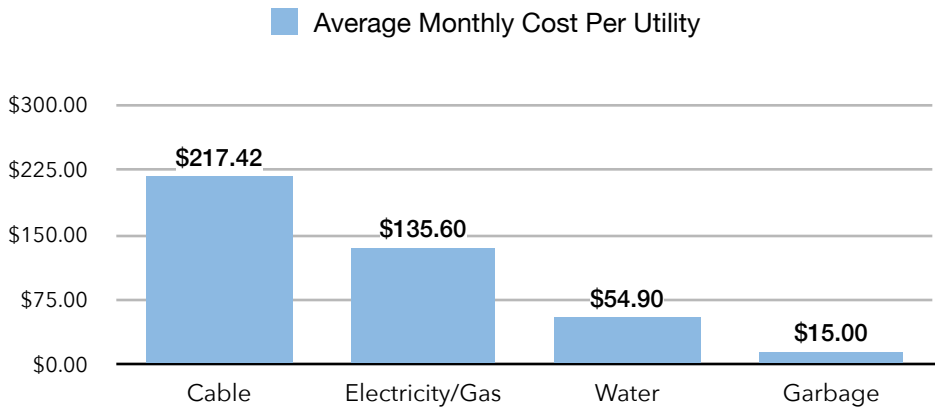


average bill size depending on household size."[15]

[14]Remote Work Statistics And Trends In 2023, page 1

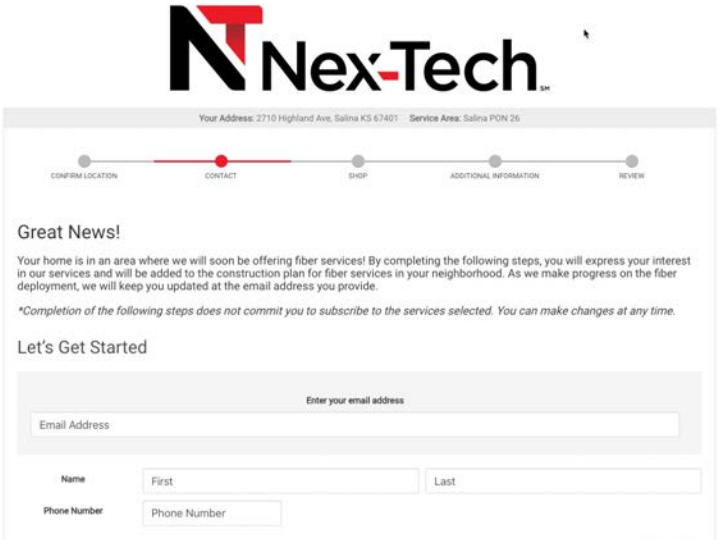
[15] Report: The average cable bill now exceeds all other household utility bills combined, AllConnect 6/22/2020

Sources: Municipal utility reporting, Consumer Reports 2019 study, energystar.gov
Nationwide, Circle of Blue



The only service provider not on our pricing list for Saline County was Mutual Telephone FWA. Their service is provided in a remote area near Lindsborg which is zip code 67456. There were no homes discoverable in the area and is often the case pricing cannot be confirmed without an address.

We also cannot analyze zip codes which are just post office boxes or office buildings because there is no way to accurately determine where those people using the post office boxes receive their Internet services. Only one zip code, 67402, was excluded as post office box only. Two relatively new fiber providers have shown since we started working on the project in April. The two providers are Next-Tech fiber which is offering Gig services in the Salina area. The second provider



is Clearwave which offers four packages from symmetric 100 Mbps to symmetric 2Gig service.

Saline county has less cable infrastructure than we normally see. By having only two cable companies, our typical pricing analysis on triple is not as valuable as it normally is when there are more providers.

Satellite prices are also not considered in median cost comparisons since they are available everywhere and would distort local pricing. We also exclude Earthlink 5G and T-Mobile 5G home Internet services for the same reason

The median price of a 25/3 Internet connection in Saline county is $60.00 which is very close to median prices we have seen in recent studies. It is 10% below the average of the median prices ($66.71) of our last fifteen county studies and 4% below the median ($62.95) of those fifteen median prices.

Bundled triple-play (Internet-TV-Phone) services for Saline county citizens are not competitive compared to other places we have studied. The median triple-play service cost across our last nine county studies was $152. Saline county residents subscribing to the least expensive cable triple play available in the County at $179 are paying almost 18% more.

It should also be noted that 5G Home Internet packages are touted as being widely available in Saline County. Multiple attempts at signing up with the three providers advertising 5G Home Internet packages yielded no confirmed locations in Saline County. This will likely improve over time.

4.1 Local Pricing Data

This information provides pricing data and services available from providers in Saline county. Prices, availability and promotional offers change frequently, sometimes weekly and sometimes vary depending on street address. This is a snapshot of prices from the middle of June 2024. The abbreviation, "FWA," as used stands for fixed wireless access. Unless previously discovered in a nearby by study, pricing for services offered to less than 5% residents in a zip code is not shown. Exceptions are noted.

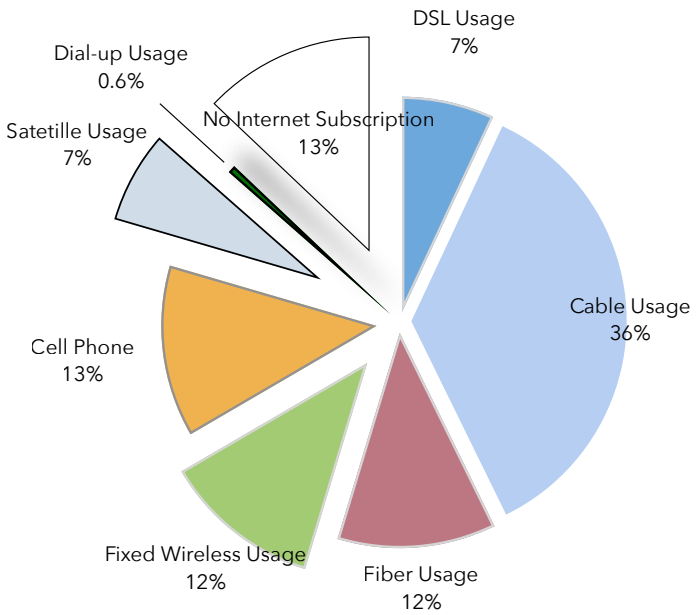
Summary of Service Provider Data - Saline County, Kansas

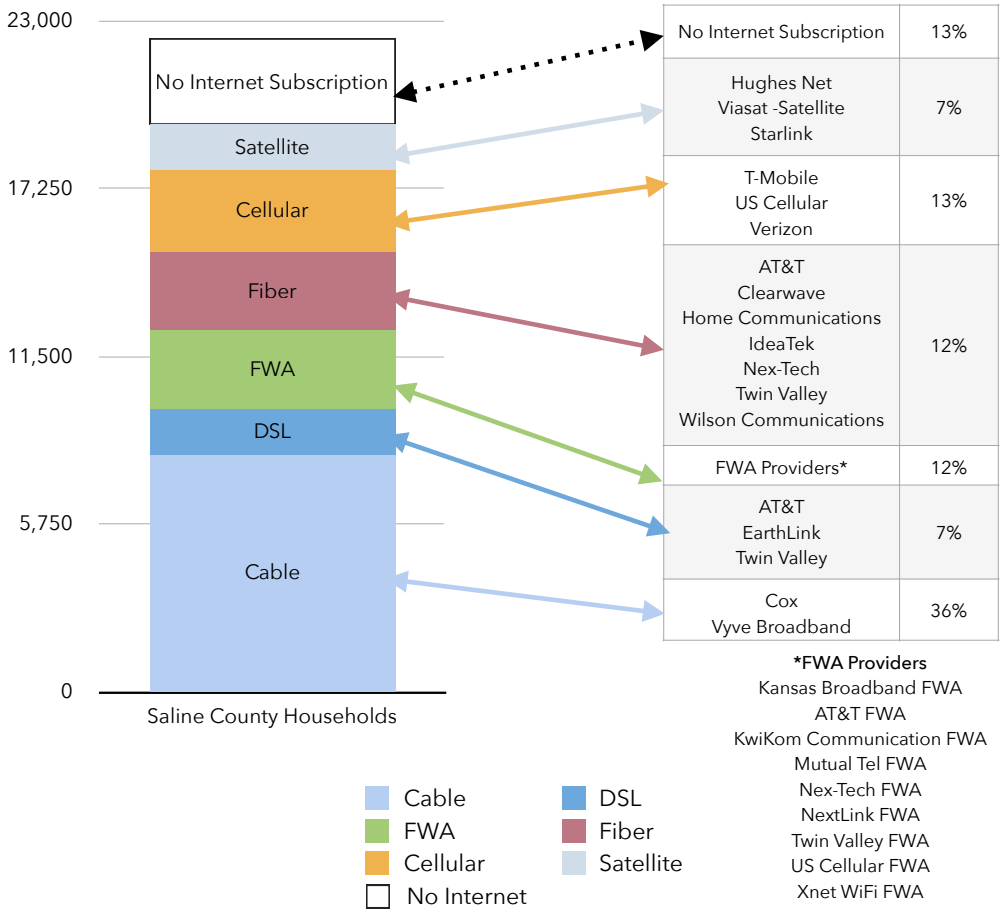
	Least Expensive Internet Only Service	Least Expensive Internet Only Service Meeting 25/3	Least Expensive Triple Pay Package Meeting 25/3
AT&T DSL	$70.00	$70.00	N/A
EarthLink DSL	$69.90	N/A	N/A
Twin Valley Tel DSL	$59.99	N/A	N/A
Cox Cable	$50.00	$50.00	$179.00
Vyve Broadband Cable	$67.49	$67.49	$274.58
AT&T Fiber	$60.00	$60.00	N/A
Clearwave Fiber	$40.76	$40.76	Clearwave uses MyBundle which makes it impossible to compare with standard cable bundles
Home Communications Fiber	$59.99	$59.99	N/A
IdeaTek	$49.95	$49.95	N/A

	Least Expensive Internet Only Service	Least Expensive Internet Only Service Meeting 25/3	Least Expensive Triple Pay Package Meeting 25/3
Nex-Tech Fiber	$69	$69.95	$185 1 Gig fiber - $69 Home phone - $20 TV Now Deluxe - $96
Tri-county Telephone Fiber	$59.95	$59.95	$188.65
Twin Valley Telephone Fiber	$64.99	$64.95	N/A
Wilson Communications Fiber	$62.95	$62.95	N/A
Kansas Broadband FWA	$60.00	$85.00	N/A
AT&T FWA	$60.00	$60.00	N/A
KwiKom Communication FWA	$55	$85	N/A
Mutual Tel FWA	No pricing discovered		N/A
US Cellular FWA	$59.99	N/A	N/A
Xnet Wifi	$85.00	N/A	N/A
T-Mobile 5G Internet	$55.00	$55.00	N/A
Nex-Tech FWA	$65	$75.00	TV Phone Bundle $201 50/6 $85 Phone $20 TV Deluxe $96
US Cellular 5G	$59.99	$59.99	N/A
Verizon 5G	$60.00	$60.00	N/A
HughesNet	$79.99	$79.99	N/A
Viasat	$99.99	$99.99	N/A
Starlink	$120	$120	N/A

Estimated Internet Access by Type

Information from surveys often does not total 100% because some respondents choose more than one answer even when requested to pick only one.





No Internet Subscription	13%
Hughes Net Viasat -Satellite Starlink	7%
T-Mobile US Cellular Verizon	13%
AT&T Clearwave Home Communications IdeaTek Nex-Tech Twin Valley Wilson Communications	12%
FWA Providers*	12%
AT&T EarthLink Twin Valley	7%
Cox Vyve Broadband	36%

***FWA Providers**
Kansas Broadband FWA
AT&T FWA
KwiKom Communication FWA
Mutual Tel FWA
Nex-Tech FWA
NextLink FWA
Twin Valley FWA
US Cellular FWA
Xnet WiFi FWA

The table below illustrates the estimated telecom expenditures, public and private, over the next thirty years. Over that time period, **nearly $2.3 billion** is put in envelopes and much of it leaves both the county and the state. Redirecting as little as 5% of those funds could build fiber to every home and business in Saline county

Telecom Expenditures - Saline County, Kansas

Households	22,358							
Businesses	1,466							
Household Internet Access Type Estimates	Cell Phone / 5G	Fixed Wireless	DSL	Satellite	Cable	No Internet Access	Fiber	Dial-up
Household Percentage	13%	12%	7%	7%	36%	13%	12%	1%
Households	2,907	2,683	1,565	1,565	8,049	2,907	2,683	134
Average monthly telecom expenditures	Cell Phone for Voice/ Internet $160 Satellite TV: $100	Cell Phone $127 Fixed Wireless $50 Satellite TV: $100	Cell Phone $127 Phone: $15 Satellite TV: $100, DSL Internet : $55 Internet	Cell Phone $127 Satellite TV: $100, Satellite Internet: $100	Cell Phone $127 Phone $40 TV: $70 Cable Internet $80	Cell Phone $127, no Internet, Satellite TV $100	Cell Phone $127, Fiber Internet $65, Stream-ing TV $45	Cell phone $127, Dial-up Internet $12.95, Satellite TV:$100
Monthly cost of Services	$260	$277	$297	$327	$317	$227	$237	$240
Annual household cost	$3,120	$3,324	$3,564	$3,924	$3,804	$2,724	$2,844	$2,879
Annual cost all households	$9,068,405	$8,918,159	$5,577,874	$6,141,295	$30,617,940	$7,917,415	$7,630,338	$386,266
30 year expenditures	$272,052,144	$267,544,771	$167,336,215	$184,238,863	$918,538,186	$237,522,449	$228,910,147	$11,587,973
Total residential expenditures	$2,287,730,748							
Estimated Hidden Fees	$98,837,027							
Total Business Costs	$105,552,000							
Total expenditures	**$2,492,119,775**							

5 CURRENT AND FUTURE DEMAND ANALYSIS

5.1 COMMUNITY ASSESSMENT

A series of broadband stakeholder meetings were held before, during and after Design Nine's visit to Saline County during the week of June 23-28, 2024 in support of a broadband study for the County.

The schedule of the meetings, both remote (via teleconference) and in-person is described below, along with a summary of comments and feedback received during the meetings.

Most of these meetings were arranged by Melissa McCoy, Public Information Officer, Saline County. Meetings with Internet Service Providers were arranged by Design Nine through our analysis of local and national ISPs in Saline County.

- The Kansas-based firm Home Communications, Inc. (HCI) is actively deploying Gigabit fiber to the home service throughout their service area, which covers nearly 40% of Saline County. Some of the smallest communities in the county (e.g. Gypsum) already are fully served by world class fiber infrastructure.
- Nex-Tech, which is an Internet provider in the county, attended several community meetings. The company has been deploying fiber in the county, and provided useful insights into how the company makes decisions about where to deploy fiber next. The firm conducts customer and market research to assess customer interest before constructing fiber, and encourages customers to register their interest on the Nex-Tech Web site (no purchase obligation required).
- Some participants noted what they called "urban refugees." These were workers and families moving out urban areas to more rural areas of the county, driving largely by the Covid pandemic. Poor Internet in the rural areas of the county was cited as a major issue in terms of attracting new jobs and households in those rural areas.
- Participants noted that there is a significant urban/rural broadband divide in the county, with many rural areas at a significant disadvantage in terms of service availability, quality of service, and pricing.

Saline County Administration, June 24, 2 PM

Andrew Cohill and Jack Maytum of Design Nine met with County Administrator Phillip Smith-Hanes and Melissa McCoy, Saline County's Public Information Officer. The schedule for planned community meetings was discussed, and an overview of the broadband planning study was also discussed. Melissa McCoy arranged all of the community meetings documented in this section of the report.

Town of Gypsum Community Forum, June 24, 7 PM

Ten residents from Gypsum attended this meeting. They had many comments about both Internet and phone service.

- I use my internet connection for Zoom meetings. I have a business, an Airbnb. I use it for all that. My internet provider is HCI and I have the basic HCI and I've never had any trouble. I never have any trouble with watching any movies or anything else. I think it's $60 a month, something like that. $69.99. Yeah. The basic service.
- I use my smartphone. I have an Apple, the newest model. That's all I use. I noticed I only have one bar in town. If I'm in the back of my house, I have no bars. But if I'm in the front of my house, I have one to two bars. I don't ever have any trouble with it. We have HCI and my husband watches a lot of TV with it. He orders stuff on the internet like car parts. Get it on Google We can find out how to fix something. He's always asking. Google's a mechanic in the pocket.
- We have internet at the office over here. And we've used that for everything.Orders and email.
- We have internet at the office over here. And we've used that for everything. Orders and email. It sure would be nice if we are looking at grant-funded infrastructure that it provides opportunities for young people to move out of cities and live in smaller towns and work from home.
- Like it would be nice if my calls did not get dropped when I'm talking to an advertiser or interviewing someone. I mean, most people are pretty graceful about it, but like that's cell phone service is just about as important as internet. I don't get any cell phone service in the middle of Canton, but I can connect to wifi in different spots and I can't make a phone call if I'm connected to wifi down there
- For a while I would call Verizon and ask them for help. I had their cell service and they gave me a little tiny box to hook up to my cable modem that made the cell phone work better. We've been having trouble with Verizon, with Ann calling me. I'm picking up on the first or second ring. And she's telling me it rang eight or 10 times before I picked it up. And I'm saying, no, I'm sitting right aside of my phone. I just picked it up. And that just began. It's been going on a couple months. That's what I've heard over in like the Brookville area, that their cell phone services decreased over the past year, which is why I asked that earlier, because I feel like I had better cell phone service when I moved to town in 2018. And this has just happened over the past year or so. So I don't know if this is a tower issue, but maybe I just wasn't paying attention.
- Well, to my understanding is that Home Communications is really one of the best companies in the country.I mean, I've ran several press releases from them. They win awards. They have been really working hard to make sure that they're providing great, um, internet services and that they are, I mean, that's their goal. They try to do a really good job. Their service response is great too. If they don't get you the same day, they the next morning.

Cox Communications, Teleconference, Tuesday, 8:30am, June 25

Design Nine consultants and County Staff met with a representative from Cox Communications. Cox is putting fiber in all new neighborhoods, and is able to provide 10Gig service to many of its fiber customers. The company is steadily expanding its fiber services in the county, and is interested in working with the County for Federal and state grant funds that would help

accelerate the company's fiber expansion plans. Cox offers affordability programs to low income families, who can qualify for a $10/month reduction in the cost of Cox Internet.

Broadband Equity Community Forum, June 25, 1 PM

A meeting was held at the Salina Public Library. Thirteen community members attended the meeting and a wide-ranging discussion took place, with many comments, as listed below.

- Our Internet is a little bit better than average for about 10 days of the month. And then once our expensive service runs out, then it's catch as catch can.
- So, yeah, it's interesting. This is probably two or three years ago, we were having a meeting like this, and one of the attendees was a, a reporter who lived out in the country, worked out of his home, and had a cell phone, had a tether with a cell phone to get his internet, and he was, he was spending up to $800 a month on his cell phone bill. And it was the only option he had.
- For us, the internet is not a toy. Yeah. I'm sure we may stream a show or something, but it's not about that. We really need it. It's essential.
- I am a retired business accounting and computer teacher. I started teaching computers in the mid eighties. I was trained on the big mainframes and key punch and all of that. They asked me to teach with these desktop computers. I learned along with the kids. After I retired from teaching in 2002, I managed the credit union, the teacher's credit union here in town, and quickly found out, because I didn't have the technology support that you can get really fast. And the training I know is lacking. We too live in a black hole, I think, when we moved to the country in '99, and I live just west of Solomon. And when we moved out there, they said we could keep our Salina phone number. No, they hooked us up to Solomon's phone number and we had no connection to Solomon. We're in Solomon School District. Our address is New Cambria, where there's no post office anymore, so it really comes from Salina. So we're just kind of out there where nobody wants to claim us. When we moved out there, a dial up connection was what we had. Okay, I thought it was fantastic, and it seems to be better than some of the later options we've had. But anyway, I don't remember the exact chronological order, but we were on DSL and Blue Sky for a while and we tried to connect with Eagle from Abilene. Nope, we have too many trees because we have the mile marker tree lines and so forth. And we tried to get Kansas broadband. No, you'd have to cut down trees in your front yard. And so anyway, to make a long story short, we were on DSL for a while, then Kansas broadband said they can service us, and so we have a little antenna with the radio thing on top of an old TV antenna by our house and the ports over to New Cambria. But when they decided they wanted to serve new Cambria region better, they pointed their tower down but it's not as good. So, we had Twin Valley come out and Twin Valley says, Nope, too many trees. Even though we have cut down five pine trees in our front yard because of the pine beetle, we still have too many trees. They can't connect. We said, well, can you put your little satellite on top of our, pole? No, we won't do it, because every time we'd have to come out and service it, we'd have to bring a bucket truck and Kansas Broadband when they come out. If they have to climb the tower, they charge us $50 extra, which they don't have to come out very often. But anyway, so that's where we stand. I was using it for nonprofit work, but that has kind of gone away. But

we can't stream anything, even though we have the best that Kansas Broadband can deliver to us. We can't really stream a movie or anything because it always buffers - just not fast enough. We got the fastest that they offer, but that's no fun. I'm not interested in doing that, but my husband does.

- Kansas Broadband is using our old TV tower [for wireless Internet]. That TV antenna used to be on years ago, and that's where they put their new antenna and it works fine. But Twin Valley says, no, all of our neighbors have Twin Valley, and our closest neighbor is a half a mile as the crow flies. But, up north and east of us, west of us, south of us, I don't know about east of us, but they all have Twin Valley. So we thought, okay, we'll get Twin Valley out here. Twin Valley was not encouraging. Said they'd have to bring a bucket truck out here every time they came. And so that's where we stand.
- I represent a small hospital in town. What I'm interested in hearing is, are we, in the community going get enough service that we can do more telemedicine? We could deliver better healthcare if telemedicine worked a little better. And I'm in the IT department and, and our connection is fine. More reliability obviously would help all, all of us, but what I'm really interested in seeing the community get enough better service that we offer and do more telemedicine to our patients in the county.
- I just wanted to say that on the personal side of things, I live in a black hole that you guys are talking about. I'm on North Ohio. I can literally throw a stone and hit the Verizon Tower. And other than my Starlink satellite, I have nothing. I have been throwing a lot of stones. Black hole in my part of the county.
- I have fantastic internet. I'm just curious. I have AT&T Fiber. I live in Manchester, so it's in the middle of the state. I have no issues, but I was a teacher for seven years and technology's kind of my passion and so I am interested to see the troubles that we're having and why we can't get some of the good stuff further out in the county.
- I live in rural Gypsum. I actually have great internet. I have HCI. I'm here because I work at a center of rural health at K Med. I have a lot of interest in rural access and reducing those disparities.
- The Central Kansas District of Kansas State Research and Extension covers Saline and Ottawa County both. Our local office here in town is actually out on the Kansas State Salina campus. So internet is not a problem out there. Our office is in Ottawa County. So again, we've got good connectivity up there. For those that are familiar with K State, obviously we're in the education business, and so we're the outreach arm of the university. And again, for us, in the office, the internet is not a problem. Where the breakdown is, is all of our clientele. They're out wherever they are. And we service the, the most remote areas of our district, as well as right here in middle of Salina. Education at our level as well as, as maybe K-12, has changed a lot in terms of the technology needs. We rely a lot on Zoom conferencing webinars. We rely on social media with both videos and podcasting to get information out to people. And obviously since the pandemic with the, the younger generation coming up and being out in the in the world, they're requesting maybe I'll say demanding, more on-demand information. It's not the old

school approach. They want delivery of information at their own pace. That may be two in the morning, it might be six in the morning while the farmers are out doing chores on their cell phone. So that is kind of our new way of operating. And again, for us, it's easy to create that content, but it's, it's very difficult in some parts of both counties to access that information. So many of our users do use smart phones. And so with good cell service, which is spotty at best in some parts of the county, they don't have a problem getting on the phone. But it's that home office or that home desktop or something like that where sometimes we have a lot of issues with some of our Zoom meetings with folks not having the bandwidth to have their video turned on, or maybe even the audio can't keep up. And so that is why I'm here is to chime in on that end. The Central Kansas district was chosen of one of three extension units from around the state that will be launching a pilot program this fall called The Digital Ambassador Program. And we were actually just awarded a grant through the Kansas Office of Broadband Development to carry that project out this fall. The goal is that it will be offering training on the many tools and resources available through internet, hopefully through broadband. But telehealth will be one of those along with online banking, online job searching interviews. We want to help people to access that and access it safely and have the safeguards in place. We'll be delivering a curriculum, but what that'll be based on is actually a cadre of volunteers that we hope to develop, between now and the fall, to go out and actually do that type of work. It may be as simple as presentations to civic groups or whatever, or it may be actually in home technical assistance. So I want to inform myself of what that program needs to look like in Saline County. And that's what I'm jotting down. Probably a lot of what you are.

- So last year, the Kansas Office of Broadband Development in Saline County Department issued a challenge, the MAP initiative where we ask everybody, go to this website, try to download this test and prove that you do or do not have the access that these providers say you do. So yeah, it was, it was kind of cool. You felt very rebellious. So that is something that is known and understood at the state level and that the Kansas Office of Broadband Development does have a good understanding that that FCC map is wildly inaccurate in their words, wildly. So, that's just to give you a little hope and understanding that we do know that that is not an accurate representation of the current mapping with the BEAD funding based on the actual structure, a house or a business rather than the census tract. So theoretically it should be more accurate, but as Melissa said, there's a challenge process which allows communities and individuals to challenge that information. If they say, I looked on a map and it shows that I've got a hundred megabit connection to this house and I live in it, and I know I don't, then I'm challenging that report. The only reason I have wireless is because the tower over in Bennington, 20 miles away that shoot the signal to test it, but it's the haves and have nots. If you're closer to Bennington, you've got signal or if farther away you don't. But I will say that the Office of Broadband Development maps delineate that exact scenario. I mean I feel pretty good about the state of Kansas' maps and how they differ from the feds. It is so essential to rural development that there needs to be oversight. Well, that's the thing is the question we're posing is is it essential or is it a luxury? I mean, it is clearly essential. I mean, you can't go to school without it. I can't fill out my medical forms without it online. I mean, they're like, mail you

something I guess we can, and insurance that's iffy. I'm in the insurance industry and I mean, literally everything is online. If twice a month I have to go and download pictures and I can't do it from my house most of the time, so I go to Sonic.

Smolan Community Meeting, June 25, 7 PM

- For the most part, Internet in Smolan has been very good since HCI installed fiber.
- Our zip code issues is a big deal out here. It is critical out here. And they've taken ours away and we cease to exist. UPS don't even recognize us. The worst part part about the zip code thing between us and Lindsborg, there's 73 residential addresses in Smolan. Out of those 73, 25 of them have duplicates in Lindsborg we share share address.
- A lot of people out in the county don't have fiber.
- There was a time where Smolan was kind of in a hole as far as cell service. But that's been quite some time ago.
- Everybody in Smolan who could get fiber did get fiber (within the City limits). At their house, terminated at their house.

Salina Area Chamber of Commerce Meeting, June 26, 9 AM

- Melissa McCoy introduced the Saline County Broadband Study. Jack Maytum of Design Nine explained the components of the broadband plan. Renee Duxler of the Chamber expressed the observation that most business owners and managers in Salina felt that their Internet service was adequate in terms of speed, reliability and cost. She had heard no complaints regarding broadband performance but was interested in the results of the study.

Brookville, Hedville, and Bavaria Community Meeting, June 26, 7 PM

- Today I tried to call one company. I prefer not to say their name; it was a cable company, but they don't offer the service in my area. Yesterday I contacted another company, but I would have to have a contract with them and I cannot be tied to a contract.
- I'm a retired teacher and so I needed the internet a lot at home and it was been an ongoing struggle. But now that I'm retired, you know, you just deal with it. So our repeater is up on top of a grain elevator. And let's say this is my house and here's the antenna. There are trees that are over a hundred years old that are this tall. Well, let's put it to scale here. 'cause that's really tall. When the leaves are on the trees, it's a problem. We experience what you said within the household. If our kids come visit, everybody has problems. If it's a Chiefs game or NASCAR, whatever, and everybody's on streaming and stuff in Bavaria, we experience difficulty. We have a lot of lightning strikes and outages, wind just racking back and forth on top of the elevator. And so it's very frequent that we have to call the provider that putting out the signal. So a line runs fiber optics line runs on the north side of one 40. Here's Bavaria, here's the highway, here's the line. I don't know where it goes. Ellsworth? Brookville? I don't know where it goes. But this little community of, you know, four square blocks with 25 houses or whatever, you know, we can't get it.
- So one of the drawbacks usually with getting all your internet on the phone is you tend to run out of data and they start charging you more. T-Mobile has their own little modem sitting right

there. Okay. So you're in good shape, takes care of all that. And then of course they also get on this being a consultant, I was downloading massive files, so I needed a decent connection. So you're getting your internet on your smartphone, you're doing a lot of work on the internet. And I'm working, actually. So everything in my house is wifi, all my cameras. All my Alexas everything. But it's coming off their 5G network. So quite frankly, I'm surprised that they were right around me.

- I have the same unlimited that he did. Good. I'm one of the green dots in there. I have no idea what service we actually have. That's my husband's job.
- Most of the time it's pretty good for us. I don't do a whole lot of internet work, but they're down quite a bit, which is kind of annoying. They get, they keep you down for maybe an hour, up to a day or something.
- I don't really notice the tree leaves so much. I don't know where our tower We're high, pretty high. We get our signal from Slide. It's an elevator antenna. It used to be United Life Building years ago. But, they moved it and we get reception pretty good. They had three plans and I, I had the slowest one to start with, and then I upgraded to the second highest one. I don't know what speed is for sure. I don't know that much about the megabits, the situation, but, it kind of does the job for me. But I don't know if fiber optic would be faster, I'm sure it is.
- So I'd be looking at something that's faster and more reliable as what I would like. And I got a deal from Nex-Tech here a month or two ago. Like they were gonna have, I guess available fiber optics that's in my area on my road, but haven't heard any more about that. They offered tv also, you know, with it, it's pretty comparable for what I got for Dish and my Kansas Broadband price. So I don't know. Is Nex-Tech is one of the main providers of fiber optic in this area– it sounds like it.
- We have Kansas Broadband. My service comes from a tower right up there where the store used to be on Sundown West. It's down so much, in fact, I have a program on that computer that tracks when the downtime occurs and stuff. So it's fairly unreliable. And, and I guess I shouldn't complain too much because I don't pay anything for it for here. They provide it for free. And part of the reason that they do that was when we were constructing this building, we had offered to let them put their backbone stuff here. We didn't get our building done in time for them. And they wanted it, they ended up putting it somewhere else but they gave us the internet for free. It's the lowest tier of their service. So when I teach classes or anything here, a lot of times YouTube videos and stuff like that are pretty laggy. But if I call 'em ahead of time and I pay month to month, I can get the next level which works. So we're pretty excited to wind up with fiber out here. I think it'll make teacher classes and doing stuff out here a lot better. My house is a half a mile down the road and we can't get any other provider. We have starlink. That's $120 a month and that works fantastic. I really like that, but I'm looking forward to the fiber because I think that'll be certainly more affordable.
- We have not really experienced much problem with cloud cover. If it's a really heavy storm, then we don't have service. But it's we used to have two different satellite services in the past and any storm would take those out. It didn't matter what kind of service you were paying for,

it just couldn't work through even the smallest rainstorm. So, we've tried both of those. We had Verizon, we had an outdoor antenna with Verizon for several years. When Verizon changed to 5G in Salina, they won't admit it, but whatever they did to set up 5G in Salina killed our service. So even cell phones, you could not load an email or open a page outside this building for months. And there was enough community grumbling about that. They finally fixed it. But you couldn't you couldn't download an attachment, anything with that, whether that was here or whether that was at home. And so that's why we switched to starlink in the first place was because our outside antenna on Verizon wouldn't do what it was supposed used to do. So, yeah, I'm looking forward to the opportunity with fiber.

- Well, we, we can now the, we have my, we used to have WiFi too. So my daughter's house is the one just north of mine. And we both had WiFi in the house, and WiFi would work in the house before, but whatever they did when they changed everything in Salina to 5G, even 4G wouldn't load a page. Well, I know they were out, Verizon was out two months ago and they upgraded the antenna. So that could have fixed it.

New Cambria Community Meeting, June 27, 7 PM

Meeting was to be held at the fire station, and had to be canceled because of local fire emergencies.

Breakfast Bandits (AMBUCS), June 28, 6:30 AM

Design Nine and Melissa McCoy of Saline County introduced the broadband study to approximately fifty members of AMBUCS (American Business Club), a local service group that is part of the national AMBUCS organization.

City of Salina, June 28, 9 AM

Design Nine and Saline County met with Salina Assistant City Manager Shawn Henessee. A brief description of the broadband planning effort was presented. Mr. Henessee noted that there were relatively few businesses that complained about their Internet service. Henessee expressed some concern regarding the imminent demise of the American Connectivity Program (ACP) which provided a $30/month stipend to low-income residents.

5.2 HOW MUCH BROADBAND IS ENOUGH?

Bandwidth needs for the past several years have been growing by an estimated 30% per year and show no sign of slowing.

This means residential and business bandwidth needs are doubling every three years.

As computers and associated hardware (e.g. video cameras, audio equipment, and VoIP phones) become more powerful and less expensive, new applications and services are continually emerging that drive demand for more bandwidth.

“Next generation” is the term used to describe future planning for network connectivity and infrastructure. Next-generation broadband reaps substantial benefits. There are several key benefits of Next-generation broadband:

- Dramatically faster file transfer speeds for both uploads and downloads.

- The ability to transmit streaming video, transforming the Internet into a more visual medium.
- The means to engage in true-real time collaboration.
- The ability to use many applications simultaneously.
- The ability to maintain flexible work schedules by being able to work from home on a part-time or full-time basis.
- The ability to obtain health-related services for an occasional illness and/or long term medical services for chronic illnesses.

Clearly, consumers have a strong interest in a visual medium from when and wherever they are. YouTube is the second most popular search engine after Google, which demonstrates the need to support the infrastructure to transmit streaming video. In addition to video streaming, true real-time collaboration also provides an effective way for people to interact from wherever they are. People can engage in a two-way real-time collaboration so that fruitful, visual conversations can be held between friends, family, business associates from the state, country, or internationally.

Because of fiber networks, employees have the capability of working from home. Findings suggest that if all Americans had fiber to the home, this would lead to a 5% reduction in gasoline use, a 4% reduction in carbon dioxide emissions, $5 billion in lower road expenditures, and 1.5 billion commute hours recaptured.

In Saline County today, many residents and businesses are still relying on copper-based services, especially in Salina. Proportionally, there may be more homes in the county with Gigabit fiber service than in the city. The bandwidth tables on the following pages show what is likely to be needed over the the next several years in terms of bandwidth. The existing copper infrastructure is going to become a limiting factor in economic development.

5.3 JOB AND WORKFORCE CHALLENGES

There are many areas and communities in Saline County that can be attractive to an emerging new group of businesspeople and entrepreneurs that typically are well-educated, own their own businesses or work for large global corporations, and are making choices about where they lived based on family needs and interests rather than business interests.

This new breed of entrepreneurs and workers places a high value on the kinds of amenities that contribute to a good quality of life, such as traditional neighborhoods, vibrant downtown areas, a wide range of cultural and recreation opportunities, good schools, and a sense of place.

These businesspeople and their families make relocation decisions based on quality of life only where there is abundant and affordable broadband, because broadband enables this new approach to personal and work life.Most residents and businesses in the county currently have, at best, Internet service that meets the FCC definition of "fully served," which is 25 Megabits down/3 Megabits up bandwidth. Some more recent grant programs are finally pushing higher speeds, with 100 Mbps down, 20 Mbps up as a more realistic target.

However, what has become painfully clear during the Covid pandemic is that this definition of "fully served" is not adequate to support many kinds of work from home activities. During the Covid lockdown, it was common to have both spouses trying to work from home while K12 and/or college age children were also trying to use video-heavy distance learning resources.

When home-based workers need to connect to a corporate VPN (Virtual Private Network), bandwidth requirements can increase even more. Work from home and business from home activities should have, at a minimum, a symmetric service of at least 10 Megabits download and 10 Megabits upload speeds. Higher speed service could include service levels like 25 Megabits down/10 Megabits up. The critical requirement is an upload speed that supports work from home.

If the goal is to enhance business access to broadband, there can be no upper limit on the definition of broadband. Saying that broadband (as an example) is 5 Megabits/second of bandwidth or 10 Megabits/second is to tell the residents and businesses in the county that there will be limits on their work and job opportunities.

Broadband is a community and economic development issue, not a technology issue. The essential question is not, "What system should we buy?" or "Is 5G wireless better or cheaper than fiber?" Instead, the question is:

"What do businesses of and home-based workers of Saline County need to be able to compete globally over the next thirty years?"

In short, the county today has "little broadband" in the form of DSL limited cable modem service, along with a growing number of residents and businesses with "big broadband" in the form of fiber.

The County government can continue the work supporting public/private partnerships with local and regional Internet providers, and the following goals can provide a road map:

Broadband Services, Technologies, and Needs

BROADBAND SERVICE	TARGET DATE	TECHNOLOGY	WHERE NEEDED
100 Mbps download 20 Mbps upload	2024	Fiber	In many locations in the county, noting that many county residents already have full symmetric Gig/Gig fiber service.
100 Mbps download 100 Mbps upload	2025	Fiber	Available to a minimum of 50% of residents and businesses in the county. Given the rate at which HCI and Nex-Tech are expanding fiber services, this may be a modest target.
1 Gbps download 1 Gbps upload	2026	Fiber	Widely available throughout the county.

Two key concepts that should drive the County's strategic goals in telecom are:

"Broadband" is not the Internet

Bandwidth is not a fixed number

Broadband and "the Internet" are often used interchangeably, but this has led to much confusion. Broadband refers to a delivery system, while "the Internet" is just one of many services that can be carried on a broadband network. The challenge for the County is to ensure that businesses and

homes have a broadband network with sufficient bandwidth to deliver all the services that will be needed and expected within the next three to four years, including but not limited to "the Internet."

The economic impact can make it more difficult to keep younger workers and families in the county. Younger workers and families tend to be heavy users of Internet services, and real-estate agents are reporting that younger house buyers are reluctant to live in areas with poor Internet service. **Note that a significant percentage of respondents to the residential survey (24%) indicated that Internet availability or lack of it was affecting where they choose to live.**

Many of the smaller communities in Saline County have excellent housing stock and offer the kinds of traditional small town amenities that are attracting younger families (low or non-existent crime, a traditional Main Street, good schools, and low traffic commutes to the Salina area for work. But the growing availability of fiber Internet in these smaller communities should be leveraged to market Saline County as a great place to live and work from home.

5.4 BUSINESS BANDWIDTH NEEDS

The table below shows bandwidth consumption for several types of businesses and a projection of the bandwidth needed 5 and 10 years out. The Covid pandemic has had the effect of dramatically increasing the number of home-based works and has also affected business travel decisions. More and more businesses will invest in high definition (HD) quality business videoconference systems to reduce the need for travel and to maintain high quality communications with a dispersed workforce. These HD systems require substantial bandwidth; a two-way HD video conference requires 20-25 Mbps during the conference, and a three-way conference requires 30-35 Mbps during the conference.

Business Bandwidth Needs

	LARGE BUSINESS		SMALL BUSINESS		HOME BASED WORKER	
DESCRIPTION	A larger business with about 50 workstations.		A small business with 10 to 15 employees, and 7-10 workstations.		One or two people working from home.	
	Concurrent Use	Mbps	Concurrent Use	Mbps	Concurrent Use	Mbps
Telephone	20	5	5	1.5	2	0.5
Credit Card Validation	4	4	1	1		0
Security System	1	5	1	2	2	2
Internet	50	500	7	10.5	2	20
VPN Connection	20	100	5	50	2	5
Data Backup	5	7.5	1	10	2	10
Web Hosting	1	2		0		0
Workforce Training (online classes)	5	20	1	10	2	10
HD Video-conferencing	20	125	2	20	2	10
Totals		**768.5**		**105.0**		**57.5**
5 YEARS FROM NOW	3-10 Gbps		250-500 Mbps		100-200 Mbps	
10 YEARS FROM NOW	10 + Gbps		2-4 Gbps		500-750 Mbps	

As more workers are moved to home-based offices, the business location must provide network access (Virtual Private Network (VPN)) to employees working from home. These home-based workers will make extensive use of videoconferencing to attend routine office meetings remotely and to enhance communications with co-workers, including videoconferences with other home-based workers in the company. A VPN network providing remote access to just two or three home-based employees could require 50 Mbps of bandwidth during normal work hours.

5.5 RESIDENTIAL BANDWIDTH NEEDS

The table below depicts the bandwidth needed for typical residential services which are available now or will be available in the near future. The Covid pandemic has illustrated the shortcomings of cable Internet services, in which the upload and download speeds are highly asymmetric.

For home-based workers, upload speeds need to be equal to or nearly equal to download speeds. Current cable Internet systems are not able to deliver symmetric or near symmetric service. Today's shared networks (cable and wireless in particular) rely on the "bursty" nature of traffic to provide services to end users. If all end users were consuming their advertised maximum bandwidth, today's cable and DSL networks would grind to a halt.

Residential Bandwidth Needs

	RESIDENTIAL DAYTIME		EARLY EVENING		EVENING & LATE NIGHT	
DESCRIPTION	Work from home, K12 distance learning and home schooling, telemedicine, streaming video		Increased Internet use as children arrive home from school and employees from work.		Peak television and Internet use. Multiple TV's are on, phone and computer being used.	
	Concurrent Use	Mbps	Concurrent Use	Mbps	Concurrent Use	Mbps
Telephone	1	0.25	1	0.25	1	0.25
Work From Home	1	10	1	10	1	10
Streaming TV	1	4	2	8	2	8
Security System	1	2	1	2	1	2
Internet	1	1.5	1	1.5	2	3
Online Gaming	0	0.25	1	5	2	10
VPN Connection	0	0	1	2	1	2
Data Backup		0	1	5	1	5
Telehealth	1	4	1	4	1	4
Distance Learning/ home schooling	1-2	10	1-2	10	1	10
Videoconferencing	1-2	10	1	10	0	0
Average needed bandwidth		**20-30**		**25-35**		**20-35**
Five years from now	50-75 Mbps		60-90 Mbps		50-100 Mbps	
Ten years from now	150-300 Mbps		200-350 Mbps		175-250 Mbps	

Existing cable modem network users are overwhelming the digital cable networks that were upgraded as little as three or four years ago, and the firms have had to artificially reduce the bandwidth available for certain kinds of high bandwidth services (e.g. peer to peer file sharing). Some cable providers have even run into capacity issues with the TV portion of their networks, and some consumers have observed that some HD TV channels have been so highly compressed that picture quality has been noticeably degraded.

5.6 CURRENT AND FUTURE USES AND SERVICES

When analyzing future service needs, it is important to take into account ALL services that may be delivered over a broadband connection. Broadband is not a service – it is a delivery medium. Using roads as an analogy, broadband is the road, not the trucks that use the road. Internet access is a service delivered by a broadband "road," and that Internet service is just one of many services that are in demand. Today, congestion on broadband networks is not due just to increased use of email and Web surfing, but many other services.

This means that current DSL, wireless, and cable modem services are completely inadequate for future needs. Current DSL offerings are in the range of one Mbps to three Mbps for most residential users, three Mbps to five Mbps for business DSL users, and there are severe distance limitations on DSL. Higher bandwidth is possible, but as the DSL bandwidth goes up, the distance it can be delivered goes down.

Typical wireless broadband (not cellular data service) offerings are in the range of 10 Mbps to 40 Mbps download speeds, and some providers do advertise higher speeds. In practice the actual upload and download speeds can vary substantially, depending on tree cover, terrain, and distance from the tower.

Across the U.S., current average download bandwidth for cable modem services is typically 25-80 Mbps, with cable companies promising much more using the phrase "up to..." to obscure actual bandwidth being delivered. Download speeds on cable Internet systems continue to much lower, with speed tests regularly showing highly asymmetric upload speeds as much as 10-20 times lower than the download speeds.

The highly asymmetric bandwidth (unequal download/upload speeds) of copper-based cable and DSL as well as fixed point wireless continues to highlight the long term superiority of fiber connections, which can and do deliver symmetric bandwidth (equal upload/download speeds). Another key advantage of fiber networks is the ability to upgrade capacity simply by replacing the equipment—properly installed fiber has a useful life span of fifty years or more.

The challenge for the area is to ensure that the businesses, residents, and institutions have a telecommunications infrastructure in place that will meet future needs.

Distance learning, entertainment, and video conferencing are three major applications of internet video. Distance learning from home with live video feeds requires high-performance two to five Mbps connections in the near term, the next two to four years. Over the next four to seven years, there will be many distance-learning courses that will incorporate live HD two-way video feeds, enabling students to participate in classroom discussions at a much higher quality level. Distance learning could be an important home-based application for workforce training and retraining.

U.S. homes now have more than half a billion devices connected to the Internet, according to a study by the NPD Group. Furthermore, the average number of connected devices per household is 10 and growing rapidly. This is more than three times the average number of people per household.

6 RESIDENTIAL SURVEY RESULTS

During the summer of 2024 a broadband survey was conducted in Saline County, Kansas as part of a county-wide study in broadband needs. The online (Web) version of the survey was publicized on social media and the County web site. Residents were encouraged to complete the survey online or fill out and return the paper version by surface mail. Businesses were encouraged to complete a separate business-focused survey, and the results of that are included later in this report.

A total of 605 responses were collected in the residential survey which represents approximately 2.7% of the households in the county. Note that because of rounding, not all percentages sum exactly to 100%.

Some of the key findings from the results are listed below.

59% of respondents are interested in faster and more reliable Internet service

29% of residents are "dissatisfied" or "very dissatisfied" with current Internet speeds

85% of respondents said that they believe the County government should help facilitate better broadband

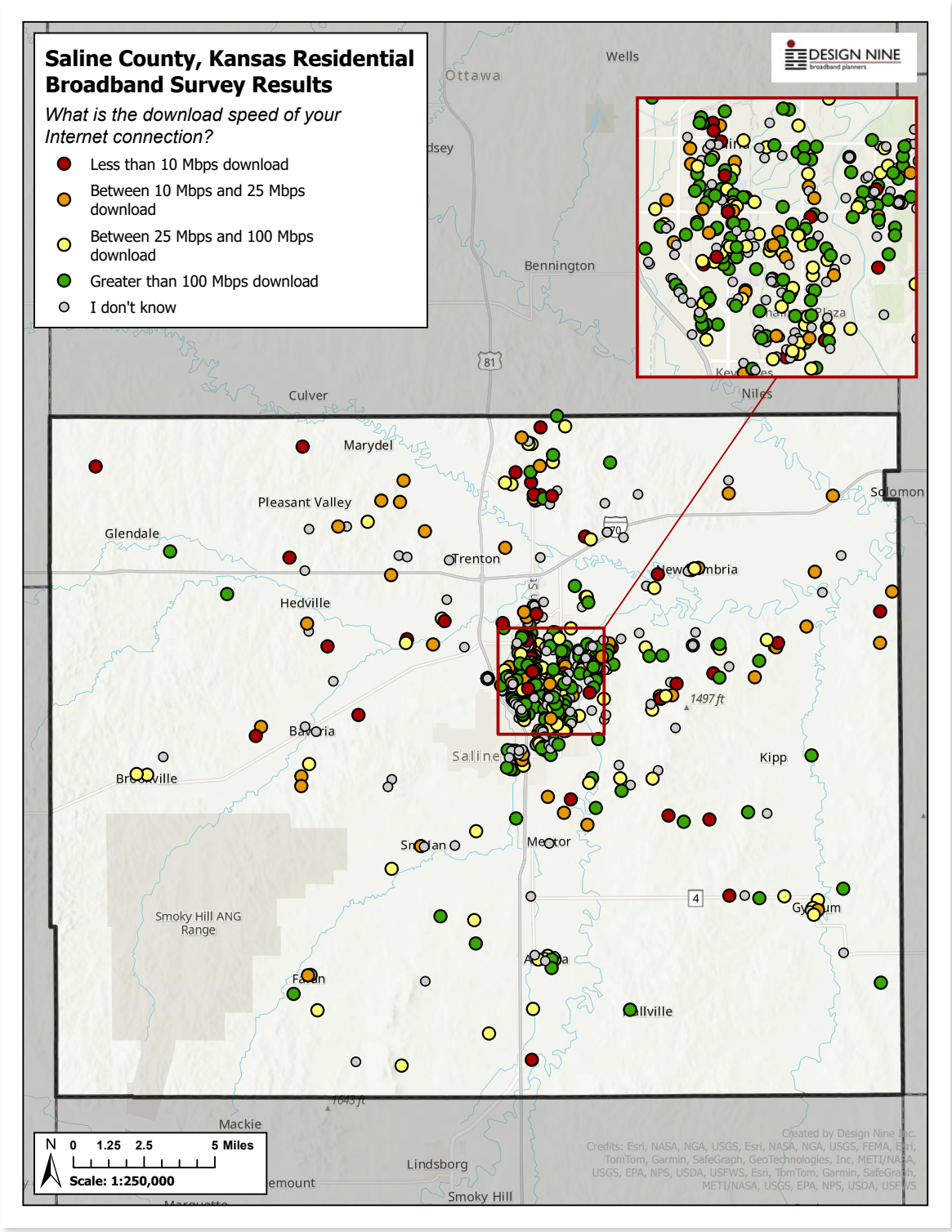
53% of residents have 7 or more Internet-connected devices in their home

32% of respondents have too few or no other options for their Internet service

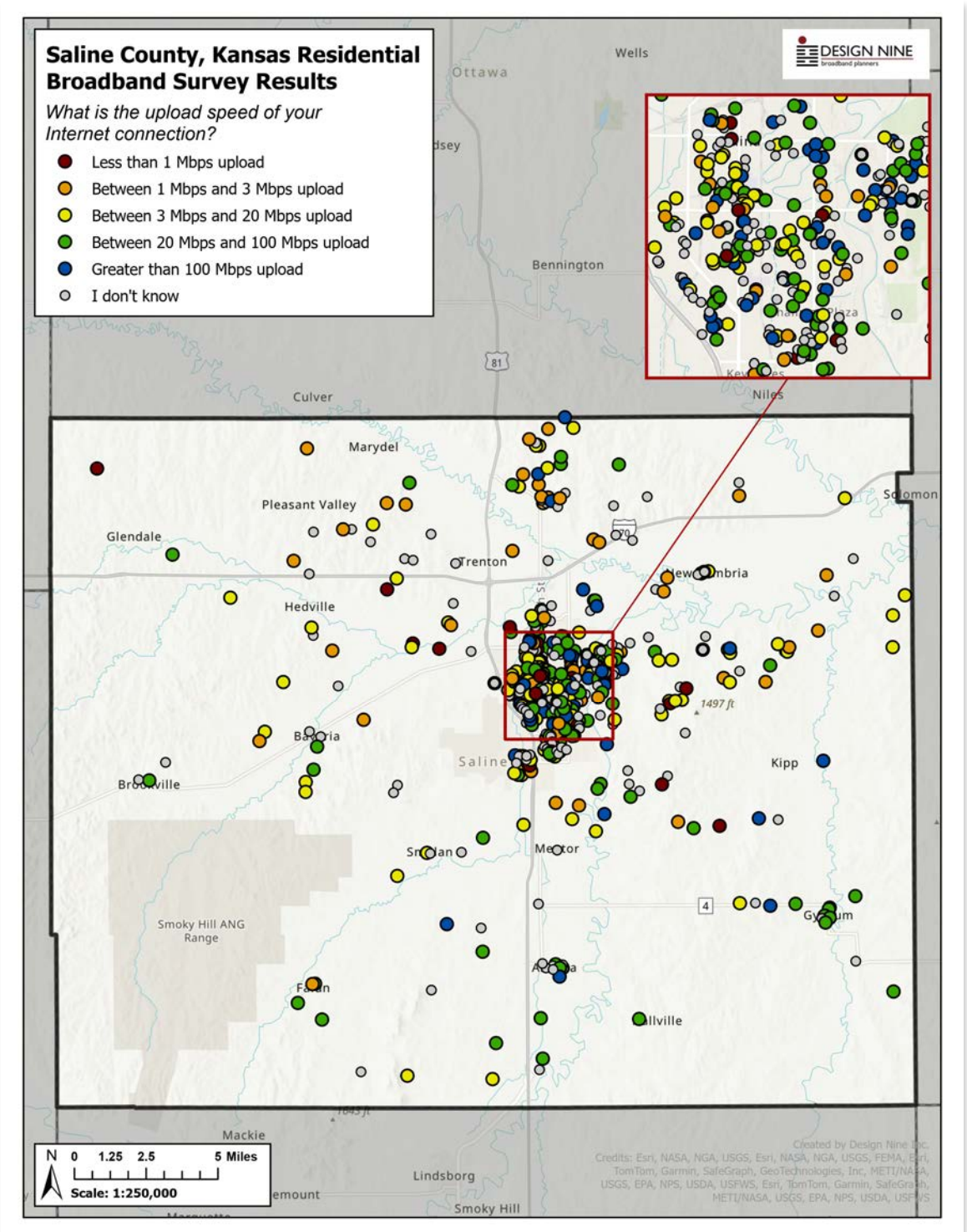
26% indicate that availability of broadband Internet is affecting where they choose to live

6.1 DISTRIBUTION OF RESIDENTIAL SURVEY RESPONSES

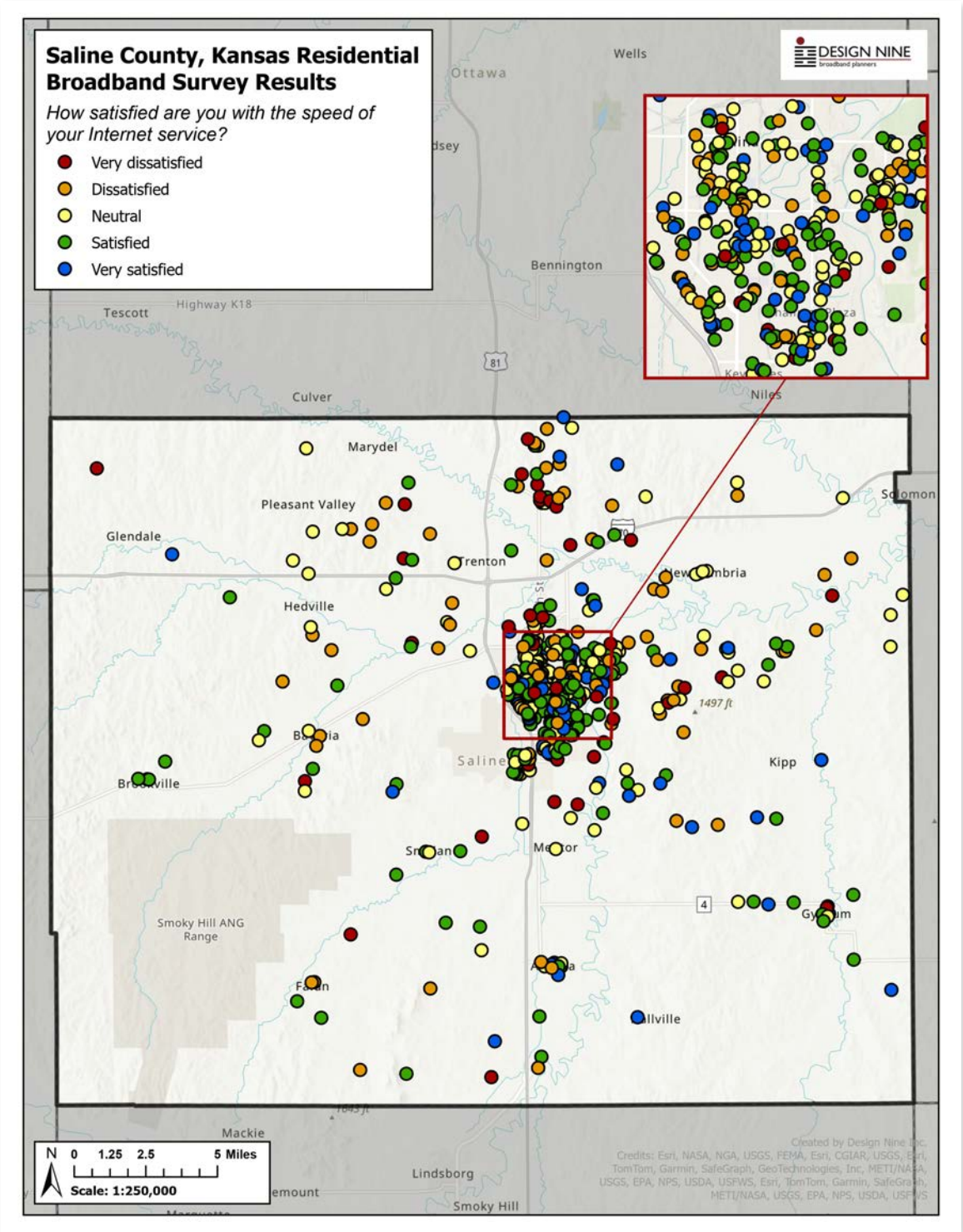
The map below shows the geographic distribution of responses to the residential survey, coded according to the *download speed* of their Internet connection (Question 10).



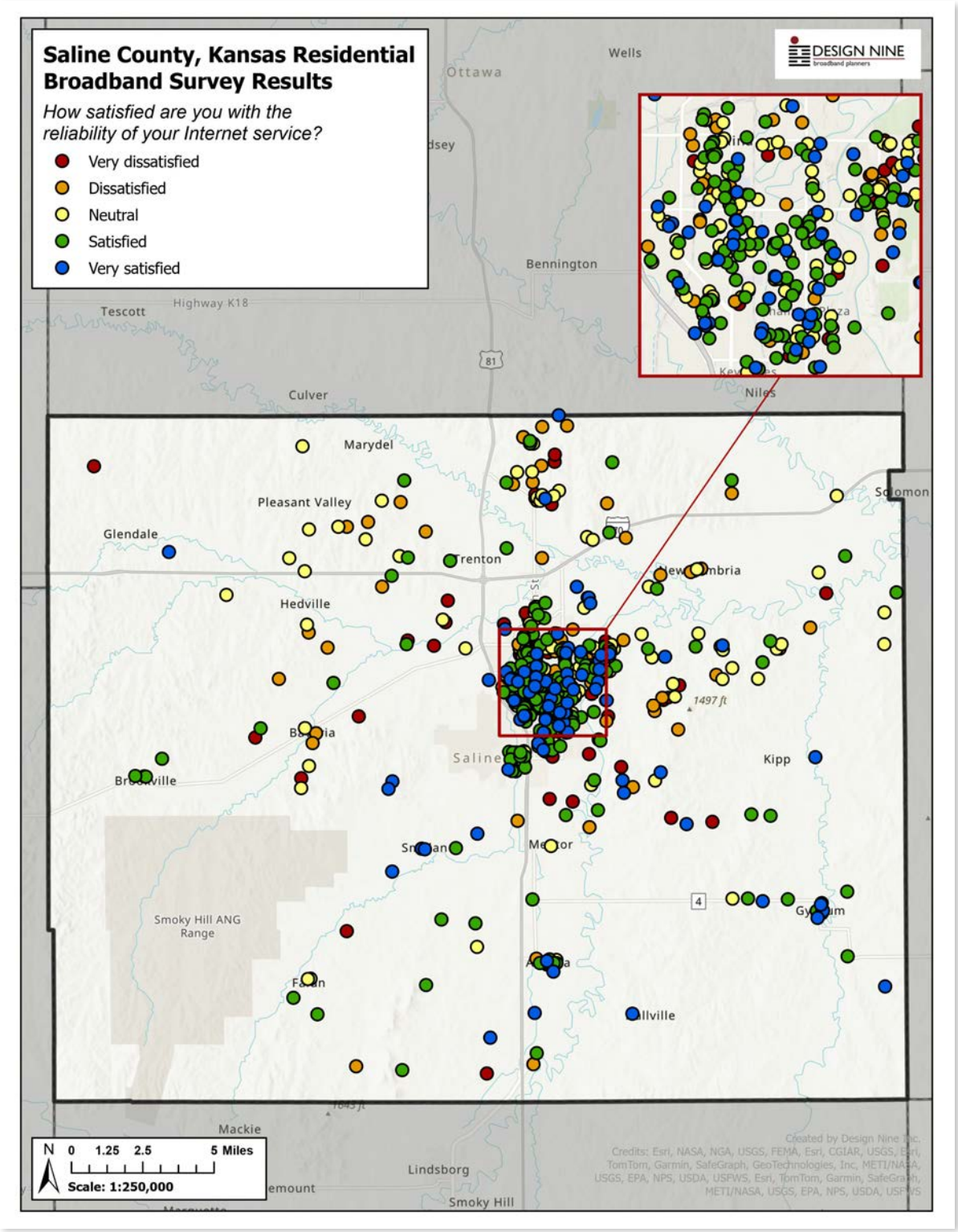
The map below shows the geographic distribution of responses to the residential survey, coded according to the *upload speed* of their Internet connection (Question 11).



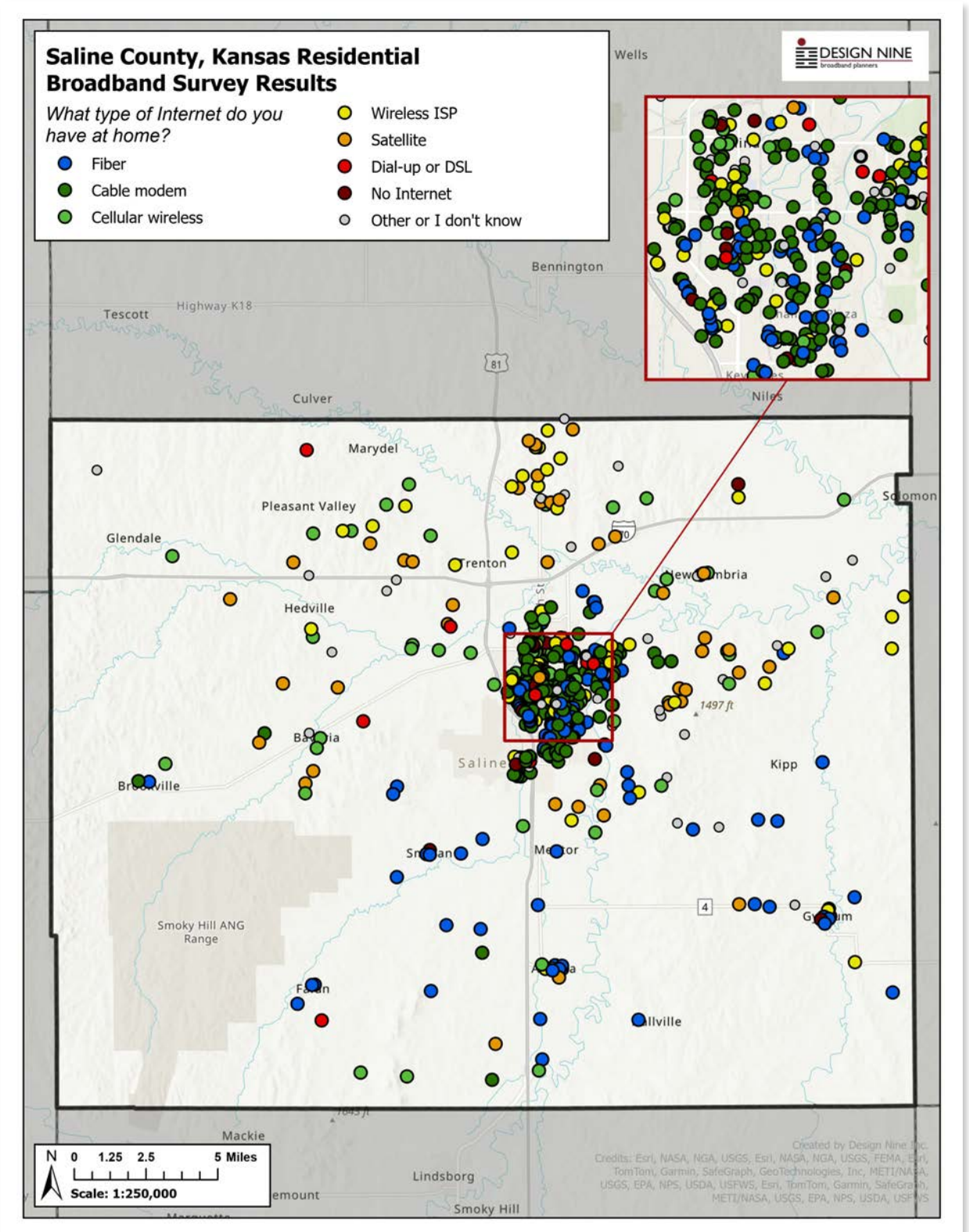
The map below shows the geographic distribution of responses to the residential survey, coded according to their satisfaction with the *speed* of their existing Internet service (Question 12).



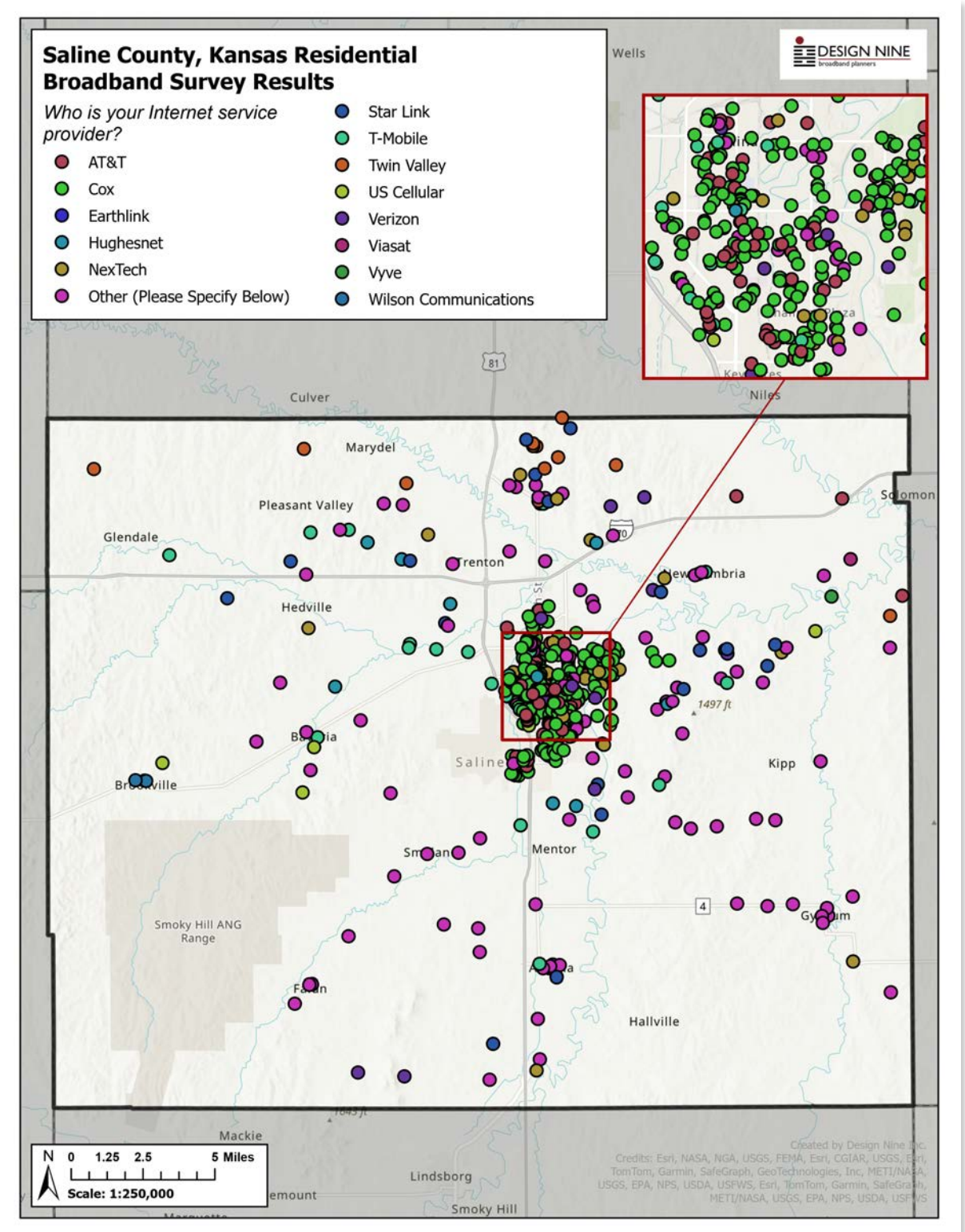
The map below shows the geographic distribution of responses to the residential survey, coded according to their satisfaction with the *reliability* of their existing Internet service (Question 13).



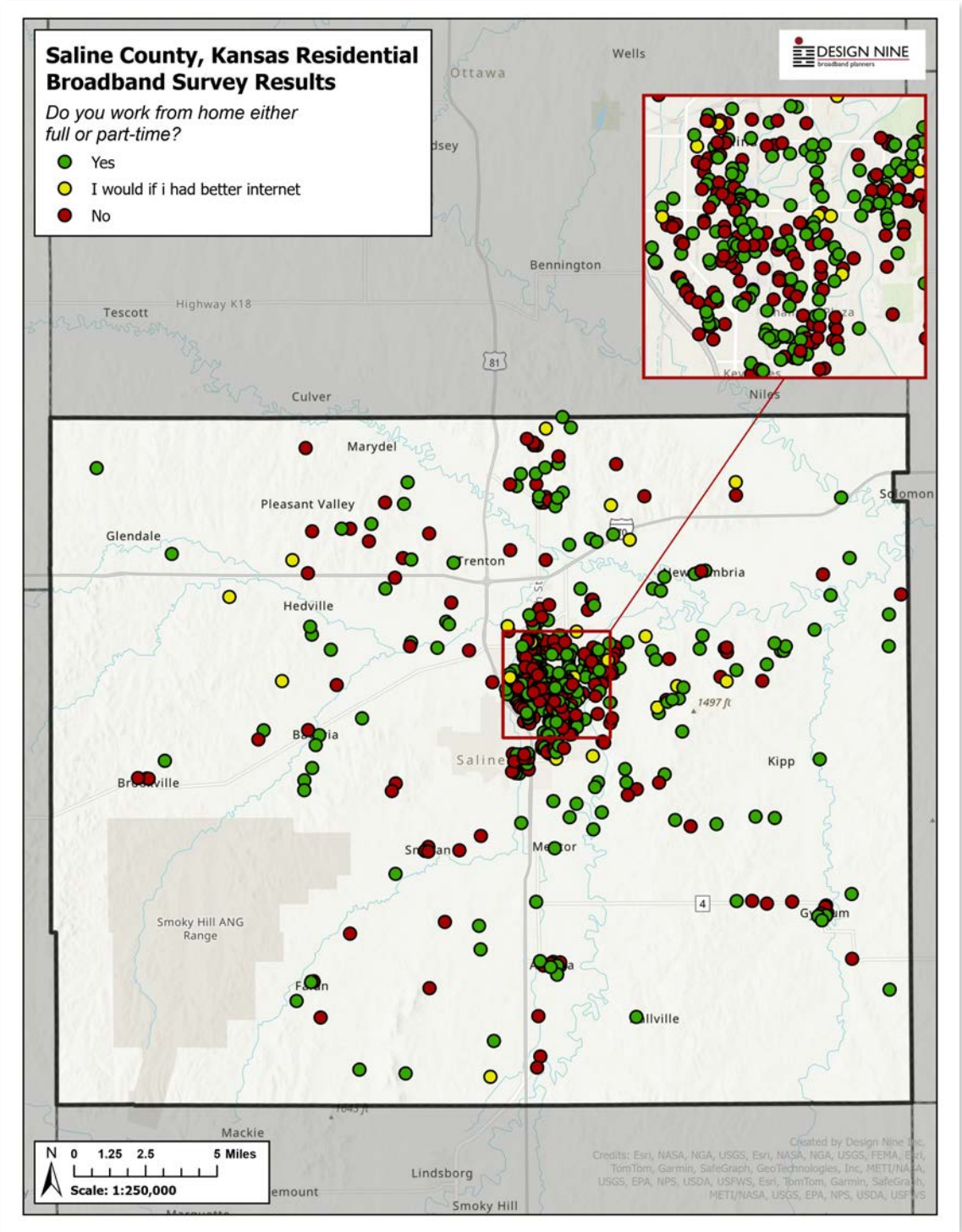
The map below shows the geographic distribution of responses to the residential survey, coded according to the type of Internet technology with which they currently receive service (Question 7).



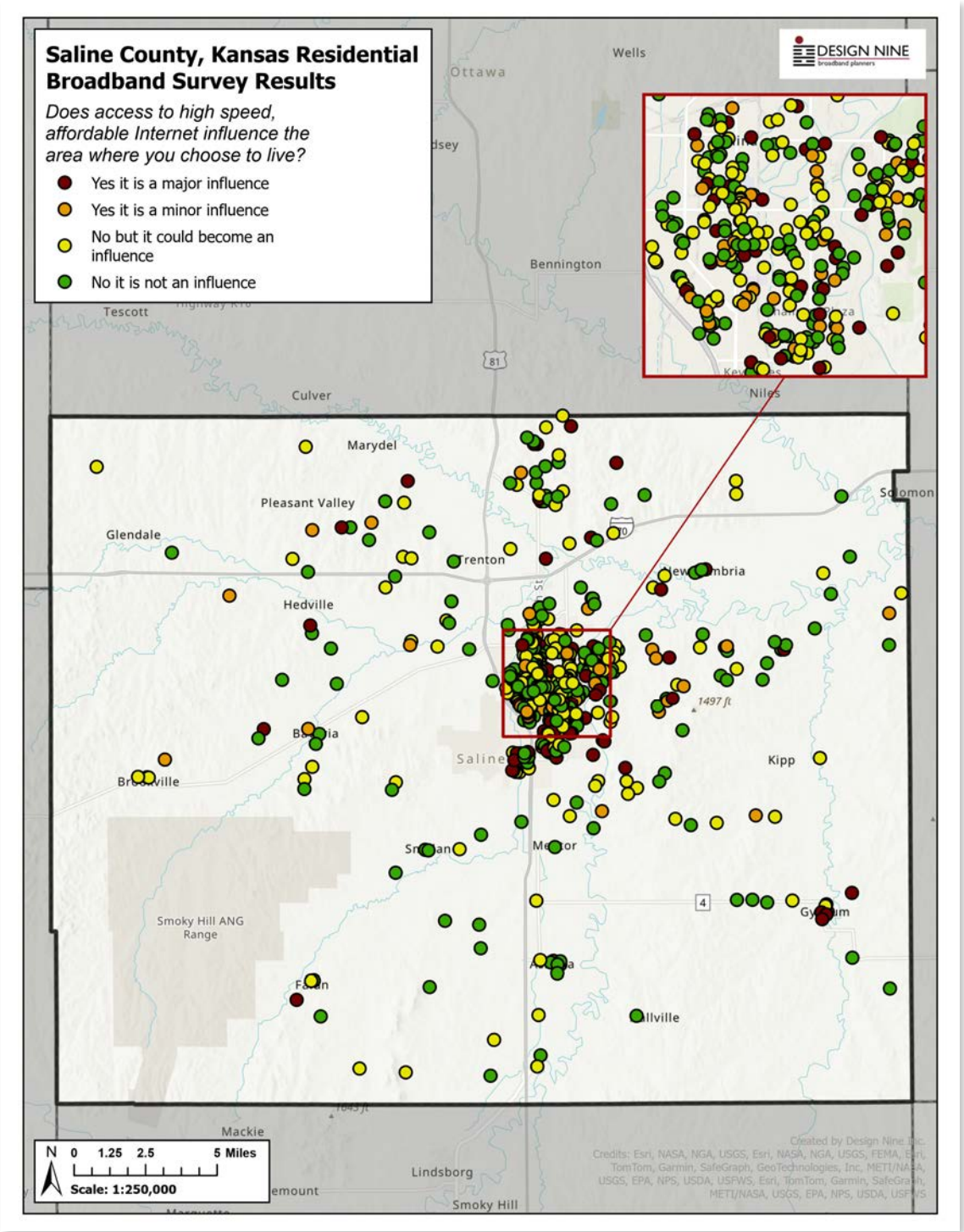
The map below shows the geographic distribution of responses to the residential survey, coded according to the who their current Internet service provider is (Question 9). HCI (Home Communications, Inc.) was mentioned several times in the Other category. HCI is deploying Gigabit fiber in several small towns and rural portions of the county.



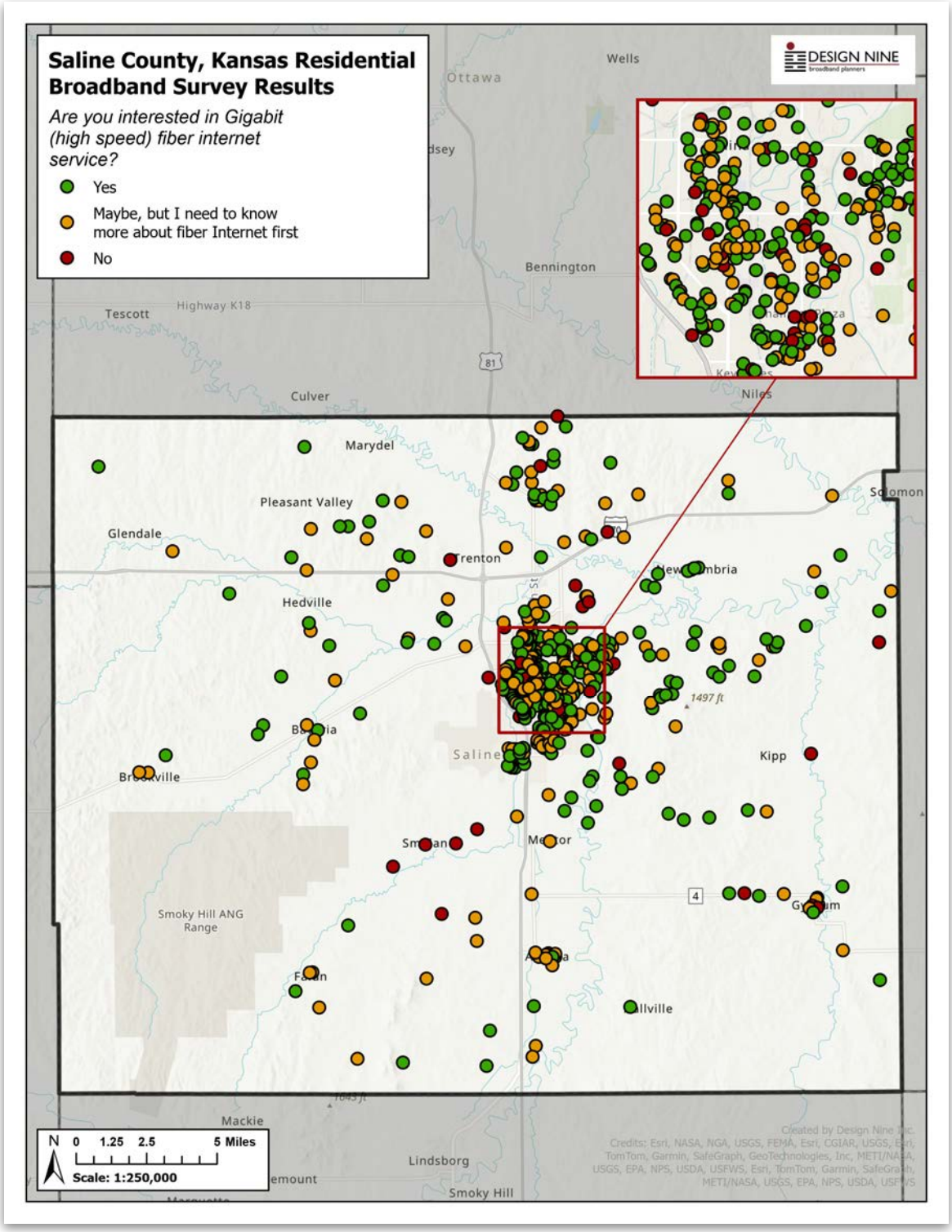
The map below shows the geographic distribution of responses to the residential survey, coded according to their work from home status (Question 20). 62% of respondents report that they work from home, which is ***one of the highest percentages we have seen*** in more than twenty similar surveys.



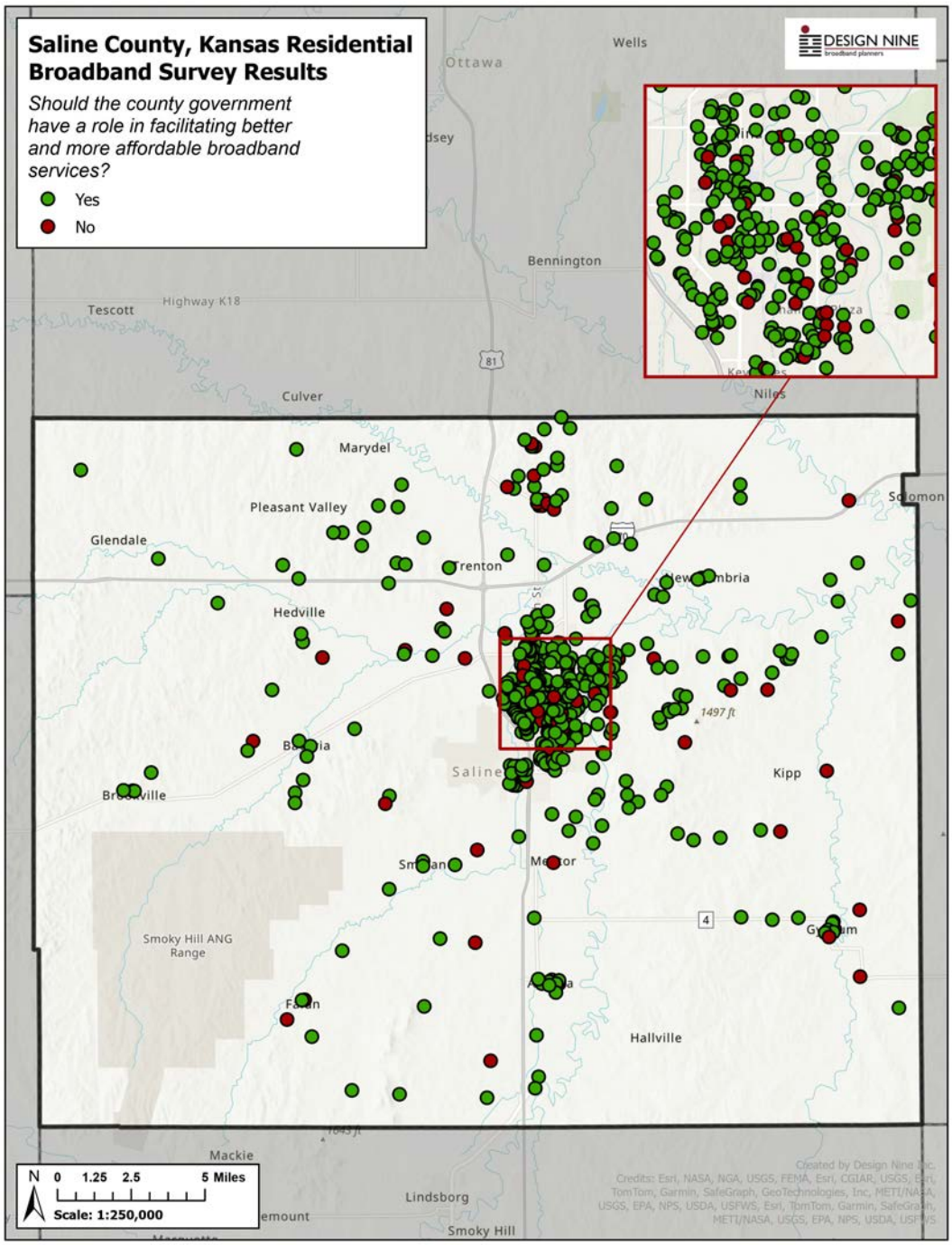
The map below shows the geographic distribution of responses to the residential survey, coded according to whether or not they feel that Internet service availability affects where they choose to live (Question 16). 26% of residents report that the availability of affordable high speed Internet affects where they choose to live. Internet availability can affect property values and the tax base.



The map below shows the geographic distribution of responses to the residential survey, coded according to whether or not they are interested in fiber Internet (Question 21). Exactly half of respondents are interested in Gigabit fiber service, and an additional 39% may be interested if they knew more–suggesting the importance of digital literacy and the availability of seminars and educational materials on the topic of broadband and fiber.



The map below shows the geographic distribution of responses to the residential survey, coded according to whether or not they feel that the county government should facilitate better Internet services (Question 22). 85% of respondents felt the County government has a role in facilitating better and more affordable broadband. This does not suggest the County should become an Internet provider, but the County could work with local and regional providers to expand availability of high speed broadband, especially in underserved and unserved areas of the county.



6.2 RESIDENTIAL SURVEY SUMMARY DATA

1a. Total number of adults in household

None	1	2	3	4	5	6	7+
0	130	380	65	18	4	2	0
0%	22%	63%	11%	3%	1%	0%	0%

1b. Total number of K-12 Students in the house hold

None	1	2	3	4	5	6	7+
462	53	54	19	7	1	1	1
77%	9%	9%	3%	1%	0%	0%	0%

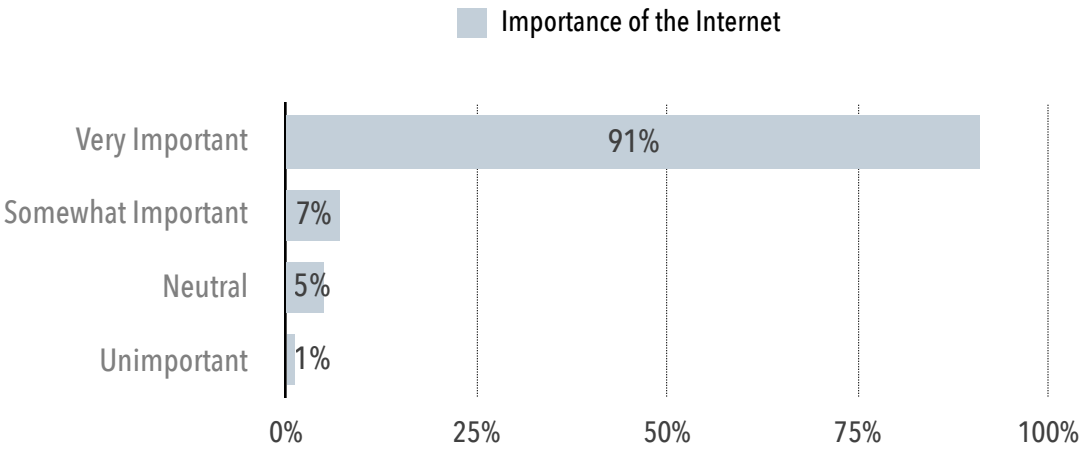
1c. Total number of college students in household

None	1	2	3	4	5	6	7+
3133	292	64	12	3	1	0	0
89%	8%	2%	0%	0%	0%	0%	0%

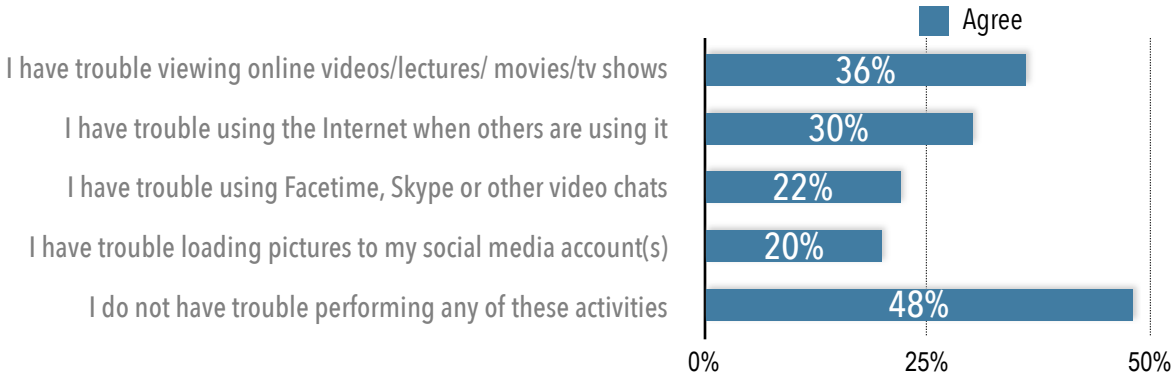
1d. Total number of daily Internet users in the household

None	1	2	3	4	5	6	7+
5	122	280	82	68	24	9	9
1%	20%	47%	14%	11%	4%	2%	2%

2. How important is Internet access to you or your household?



3. Select the items you agree with below



4. Select all items you use the Internet for now

Email	585	97%
Online Shopping	546	90%
Streaming video services (e.g. Netflix. Prime, Hulu, YouTube, etc)	496	82%
Online Backup (files, photos, music)	370	61%
Smart home technology (e.g. video doorbells, security cameras, smart lighting, smart speakers, AI assistants like Alexa, Siri. Dot. etc.)	326	54%
Work from home either full or part time	310	51%
Telemedicine, Telehealth	253	42%
VoIP Internet phone (Vonage, Skype, FaceTime, etc)	249	41%
Homework / Schoolwork / Distance Learning	230	38%
Online Gaming	208	34%
Other	23	4%

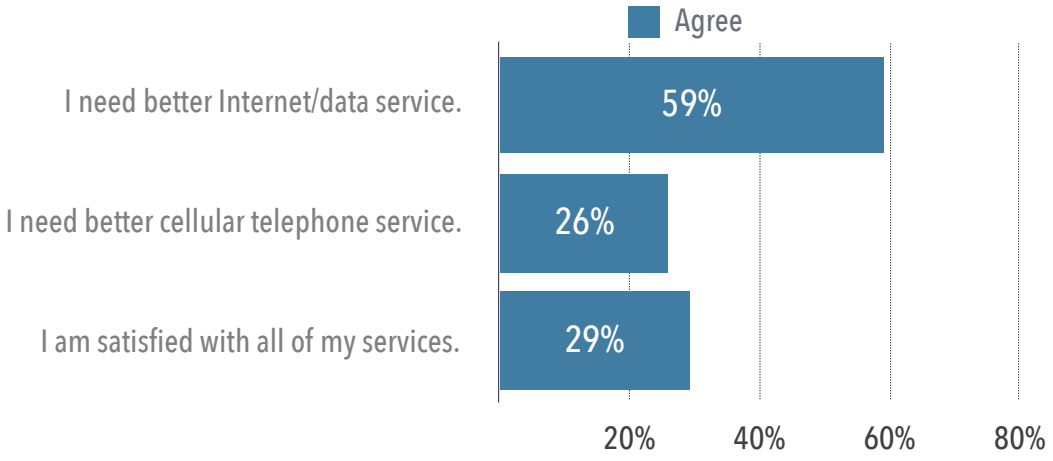
Other Internet uses responses:

- Job searching, resume building
- Remote video
- Banking and financial management
- paying bills
- Access to health care portals at Mayo and Gundersen, Access to do banking transactions and investment transactions, airline reservations and airline check in, lodging reservations, to research multiple topics, to get travel information, to look up how to do home repairs, online quilting patterns and instructions, ability to do Zoom calls, register for exercise classes at the YMCA. file online rebates, if you have to make a complaint about a product or service you have to go online to do it, to do this survey, etc etc etc

5. For your household, how much do you pay for just your home Internet access each month?

No Internet	I only use free hotspots	$10 to $20	$21 to $40	$41 to $60	$61 to $80	$81 to $100	More than $100/ month	I don't know
18	5	3	27	105	142	115	156	27
3%	1%	1%	5%	18%	24%	19%	26%	5%

6. Select the items you agree with below



7. What type of Internet do you have at home?

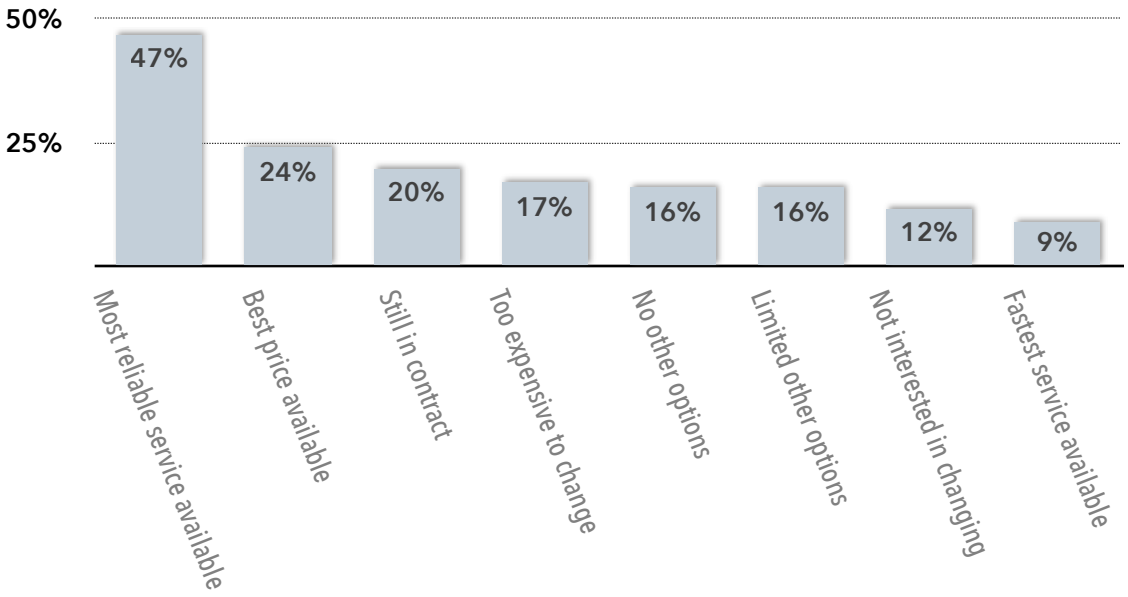
Cable Modem	215	36%
Fiber	108	18%
Wireless ISP	68	11%
Cellular Wireless	59	10%
Satellite	50	8%
I don't know	48	8%
Other	19	3%
DSL Line	14	2%
No Internet	14	2%
Dial-up	1	0%

Other Internet types responses:

- Starlink nothing else available in our area
- Broadband
- Starlink
- Cox
- we had satellite, but it was so bad I use my mobile hot spot from my company phone when we need to do anything that can't be done from a phone
- Question 6-Although I am satisfied with the current service, I am not satisfied with the costs of the current service.
- Nextlink Tower
- hot spot
- Fixed Wireless Internet (FWA)
- Cox
- Wireless. Direct line of sight from the tower to our antenna.
- Kansas Broadband
- I had cox and finally got fiber in my neighbor. We couldn't wait to get aways from cox!!!
- Kansas Broadband
- MIFI Box
- I think it's fiber-optic, but not sure. It's 5G home Internet by Verizon.
- T-Mobile cellular wireless
- Satellite and fiber
- hotspot
- Cox Internet was the only one available at my address.
- Kansas Broadband Internet

- We have a MiFi
- Three personal hot spots on cell phones
- Broadband
- Kansas Broadband - they say they are broadband, but they are ABSOLUTELY terrible and cost a FORTUNE! We pay $104.99/month and the speed is terrible and doesn't work at least 8 days a month. It's garbage, but the only option we have that isn't dial up.
- KS Broadband
- I just have mobile phone service and data.
- ?Tower - KS Broadband
- Residential broadband fixed wireless
- T-Mobile Hotspsot
- radio repeater with small dish
- She doesn't get it very well in her apartment
- Wireless and fiber. I know right! Someone else in the house had their own fiber Internet.
- Broadband
- Cox
- Starlink
- Use of a cellular hotspot from a mobile phone provider in addition to local Internet provider
- Point to point satellite dish (NextLink)
- Cox
- We switched to fiber in May. It is new in our neighborhood. Nex-Tech
- I don't know what it is called...there is a router.

8. Based on the type of Internet connection/ISP you indicated in the above questions, why keeps you with your current service? (select all that apply)

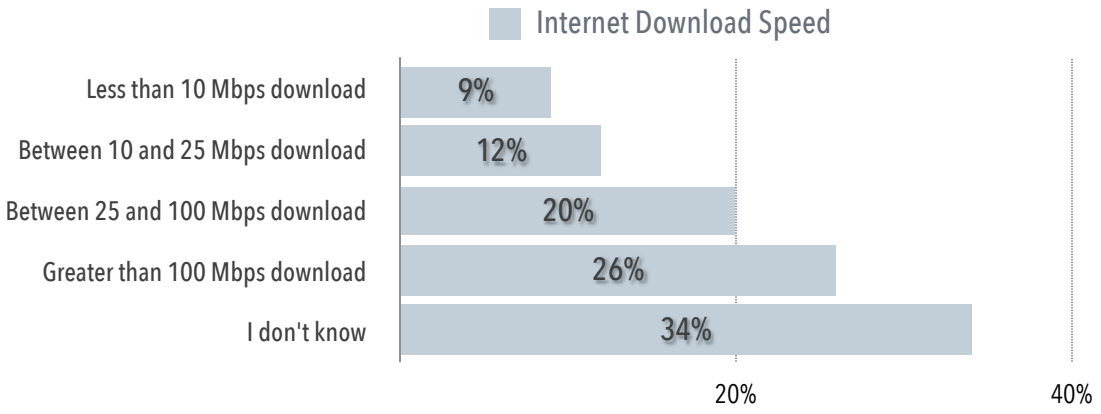


9. Who is your Internet Service provider?

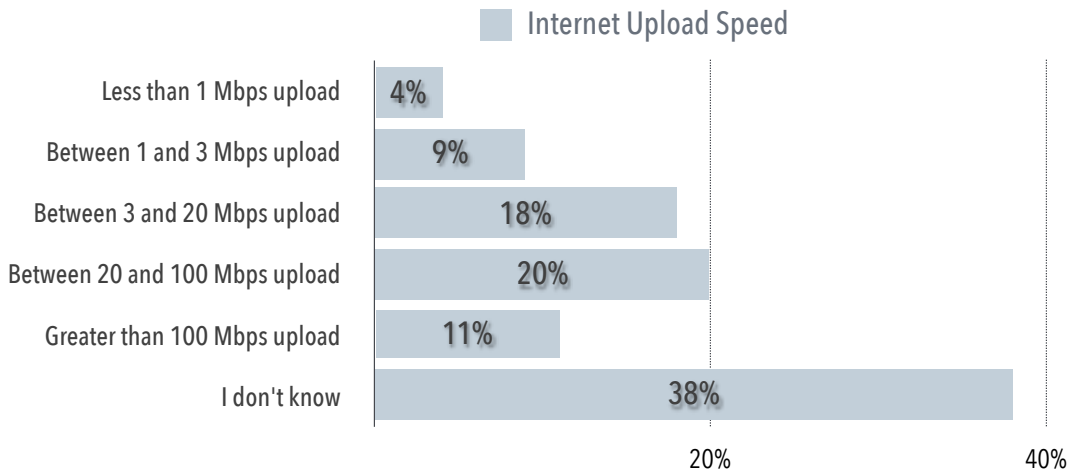
Some responses included more than one provider. "HCI" and "Kansas Broadband" were the most popular "other" response. HCI is deploying fiber in several rural areas and small towns in the county

Cox	251	45%
Other (Please Specify Below)	110	20%
AT&T	63	11%
T-Mobile	30	5%
Nex-Tech	28	5%
Starlink	23	4%
Verizon	16	3%
Twin Valley	13	2%
HughesNet	11	2%
US Cellular	6	1%
Wilson Communications	3	1%
Earthlink	1	0%
Vyve	1	0%
Viasat	1	0%

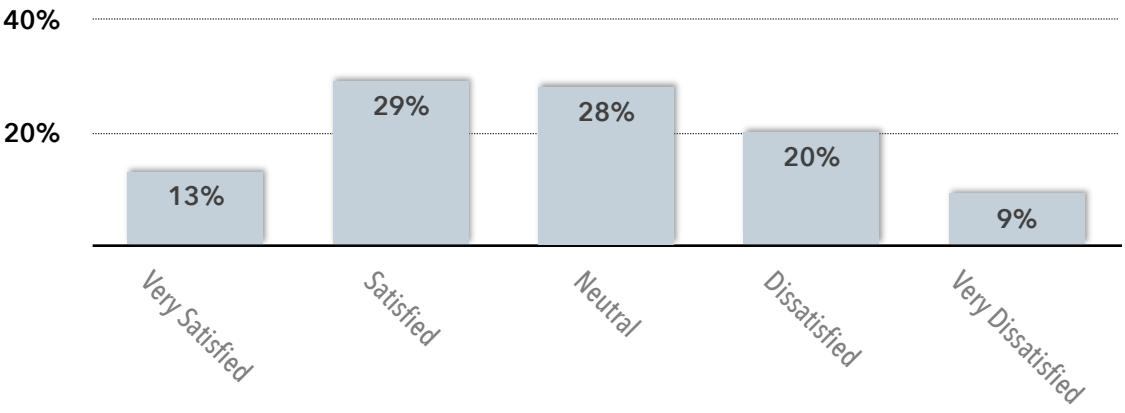
10. What is the download speed of your Internet Connection?



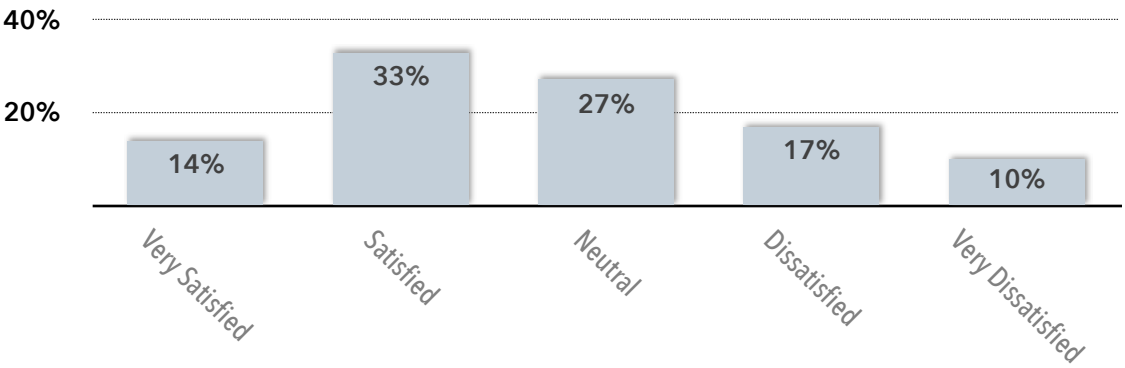
11. What is the upload speed of your Internet Connection?



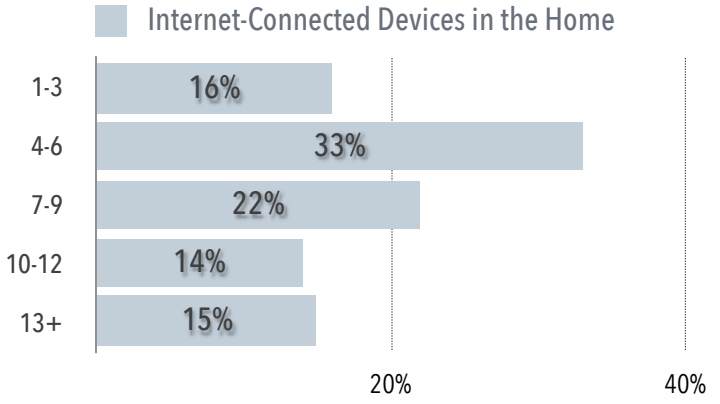
12. How satisfied are you with the speed of your Internet service?



13. How satisfied are you with the reliability of your Internet service?

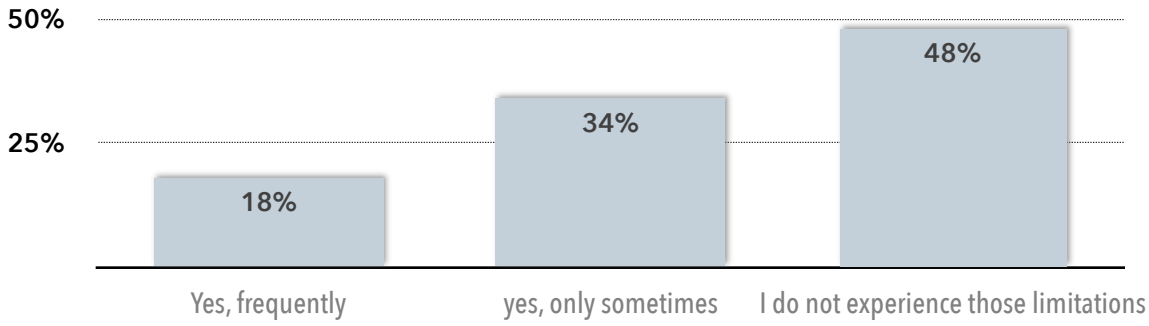


14. How many devices (for example computers, cellphones, smart speakers, smart TVs) connect to the Internet in your household?



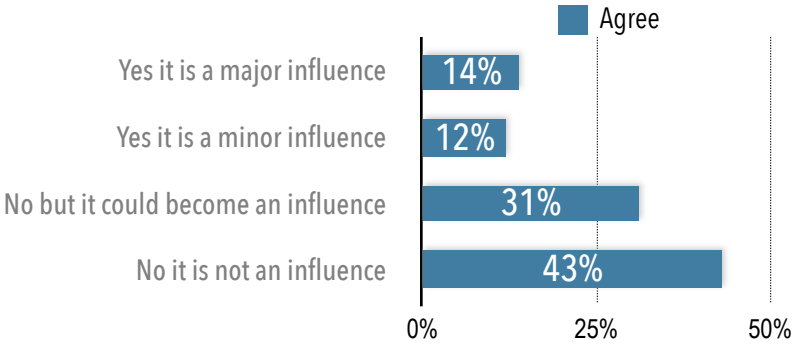
53% of residents have 7 or more Internet-connected devices in their home

15. Do speed or reliability limitations of your Internet service ever force you to limit the number of devices you can have actively using the Internet? If so, how often do you face these limitations?

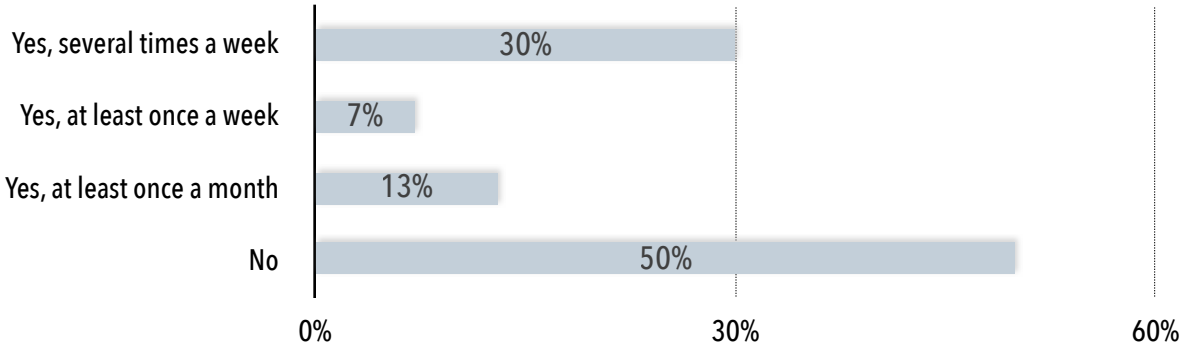


16. Does high speed, affordable Internet influences the area where you chose to live?

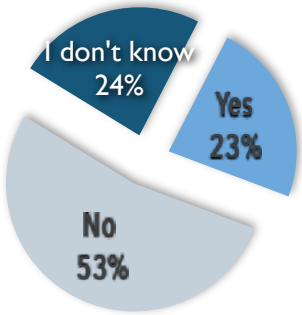
Availability of broadband Internet is affecting where people choose to live. The response of 26% is typical of most communities. Internet availability can impact home prices and community development.



17. Does anyone in your household use / need the Internet to complete school assignments, distance learning, or receive job training course work?



18. Do you have data limits (caps) on your current Internet service?

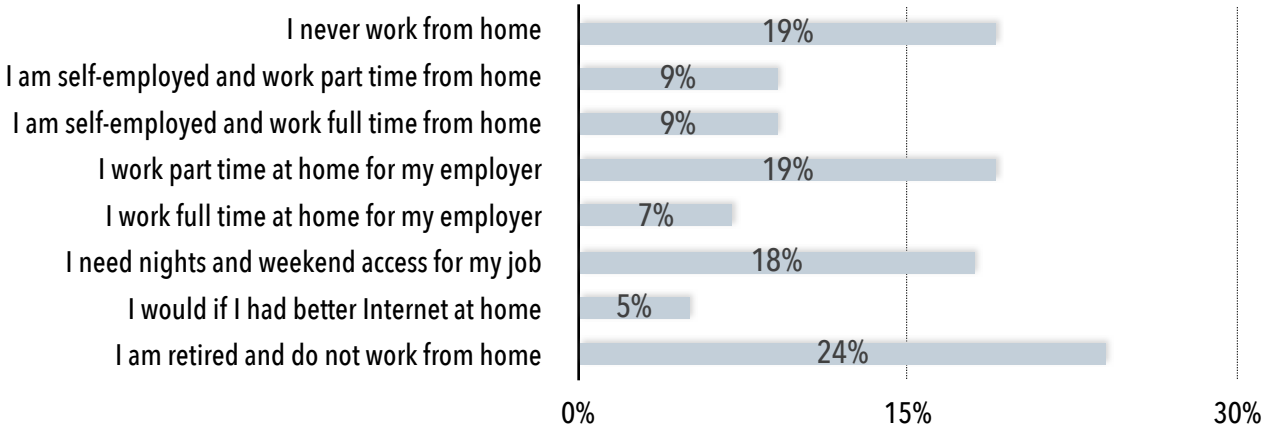


19. If you have data caps, have you exceeded those caps?

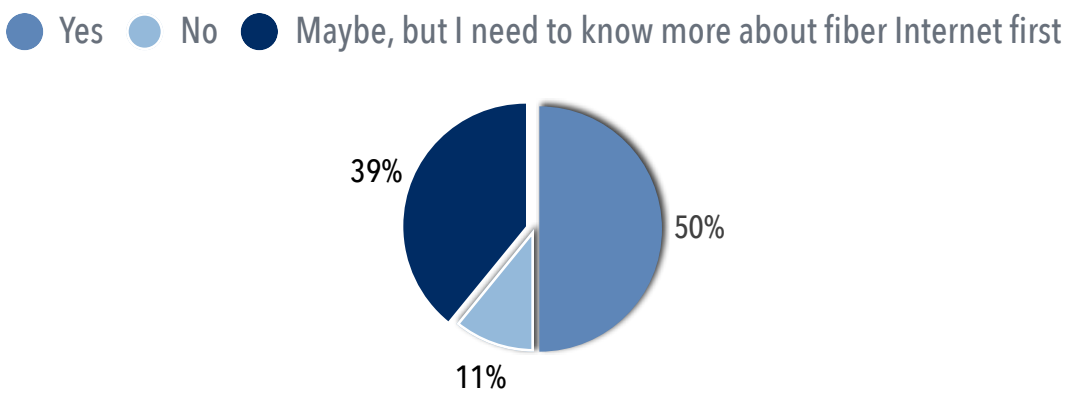
Yes	15%
No	22%
I don't have data caps	2,300%
I don't know	39%

20. Do you work from home?

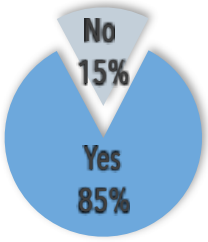
62% report working from home part or full time—the Internet has made residential neighborhoods into business districts. Home-based jobs and businesses reduce traffic congestion and reduce road maintenance. This is also a high number relative to past surveys we have conducted, and undoubtedly the Covid crisis has caused this number to rise.



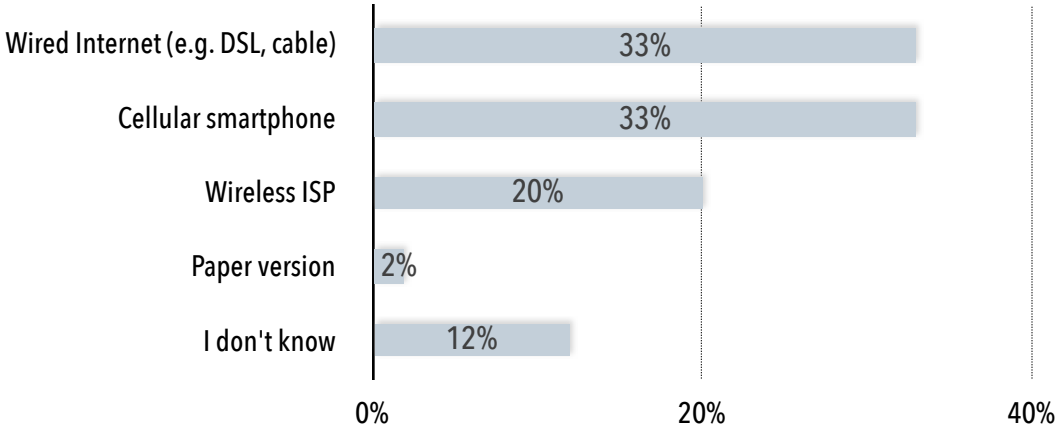
21. Are you interested in Gigabit fiber Internet service?



22. Should the County government have a role in facilitating better and more affordable broadband services?



23. Technology or method used to complete the survey:



24. Any Other Comments

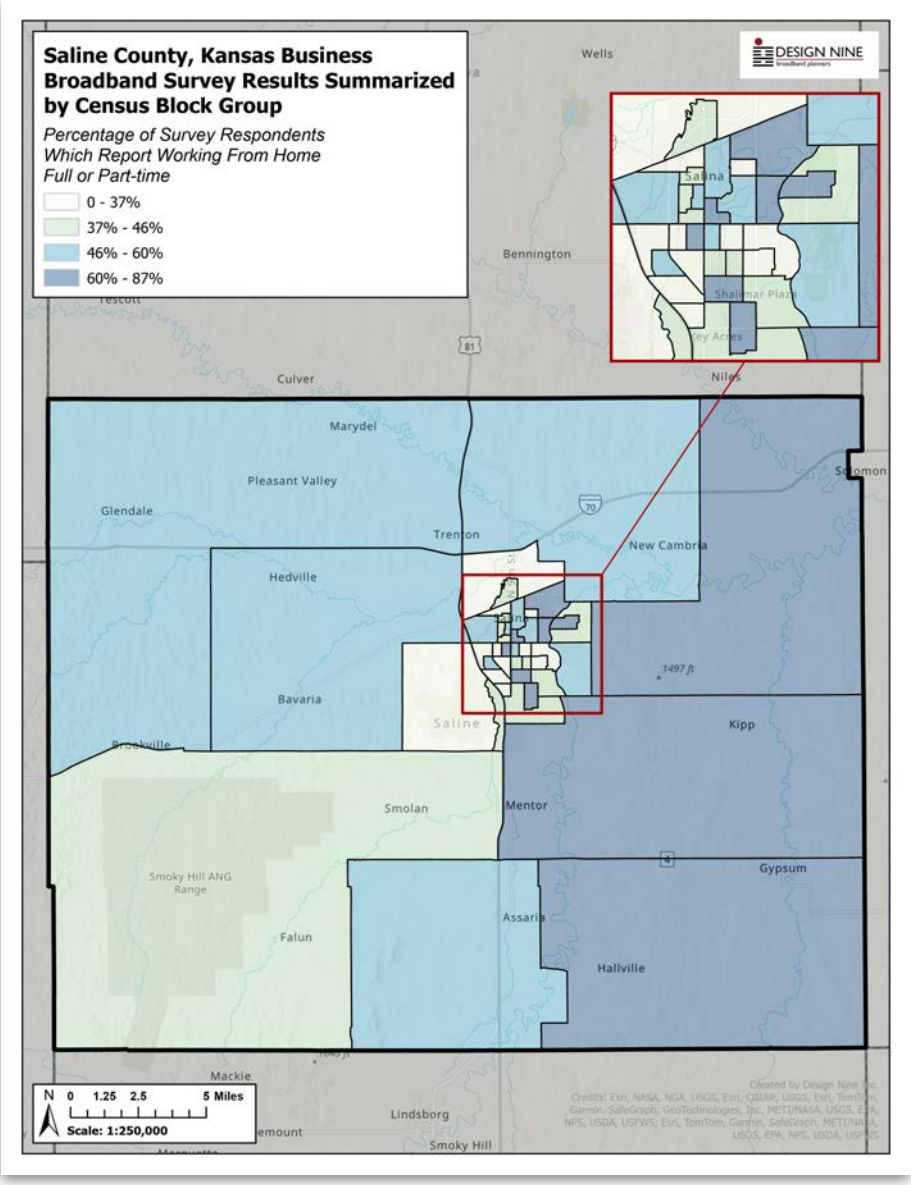
Many comments were received. Because of the volume of replies, these comments can be found in Appendix A.

7 ADDITIONAL RESIDENTIAL SURVEY MAPS & ANALYSIS

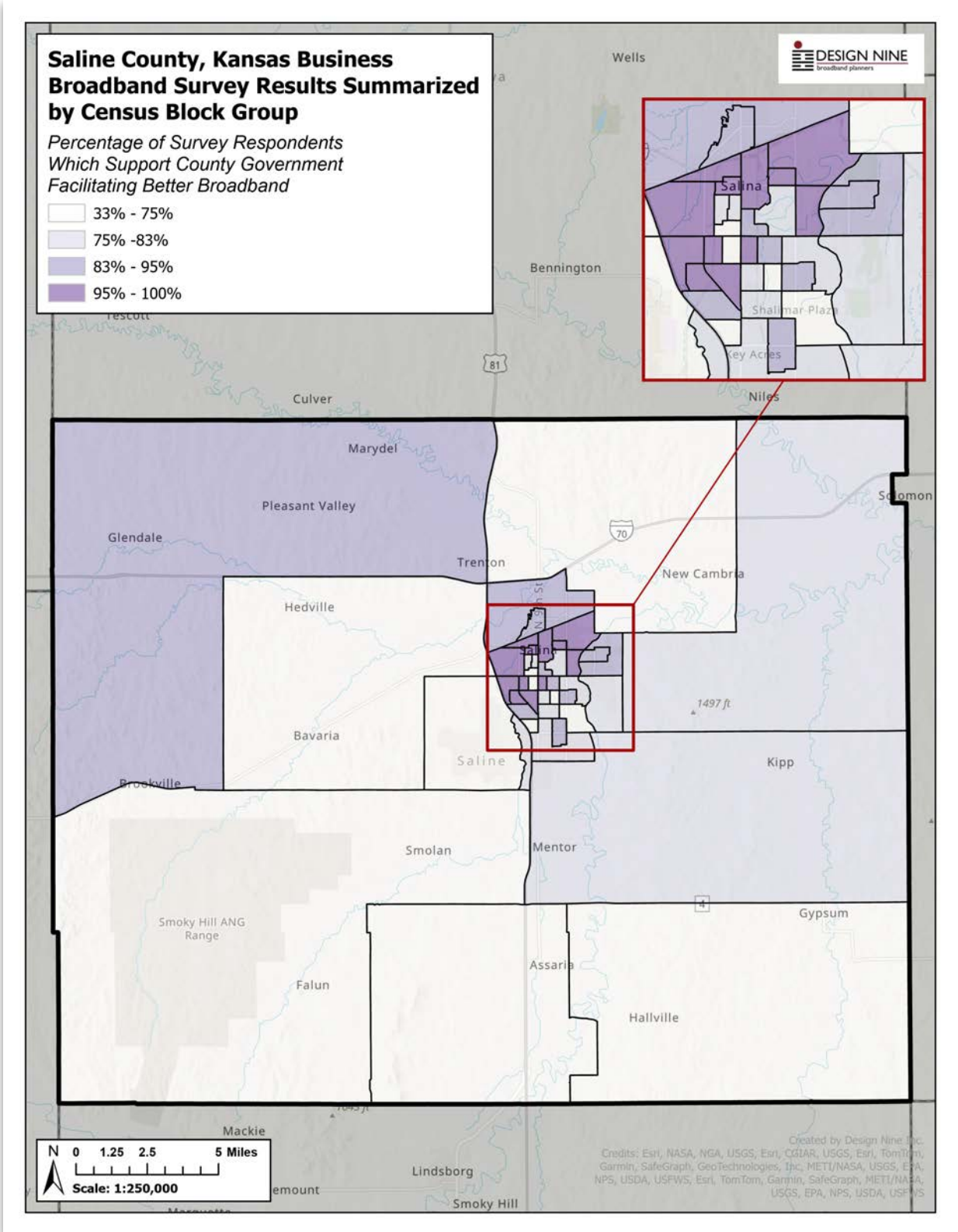
The previous section reported on the raw results of the each and every survey question. Some further analysis of the survey results is required to get a proper understanding of the state of broadband deficiency in Saline county.

Summarizing some select survey results by certain geographic areas will assist in targeting their efforts to the areas most in need or the areas easiest to improve.

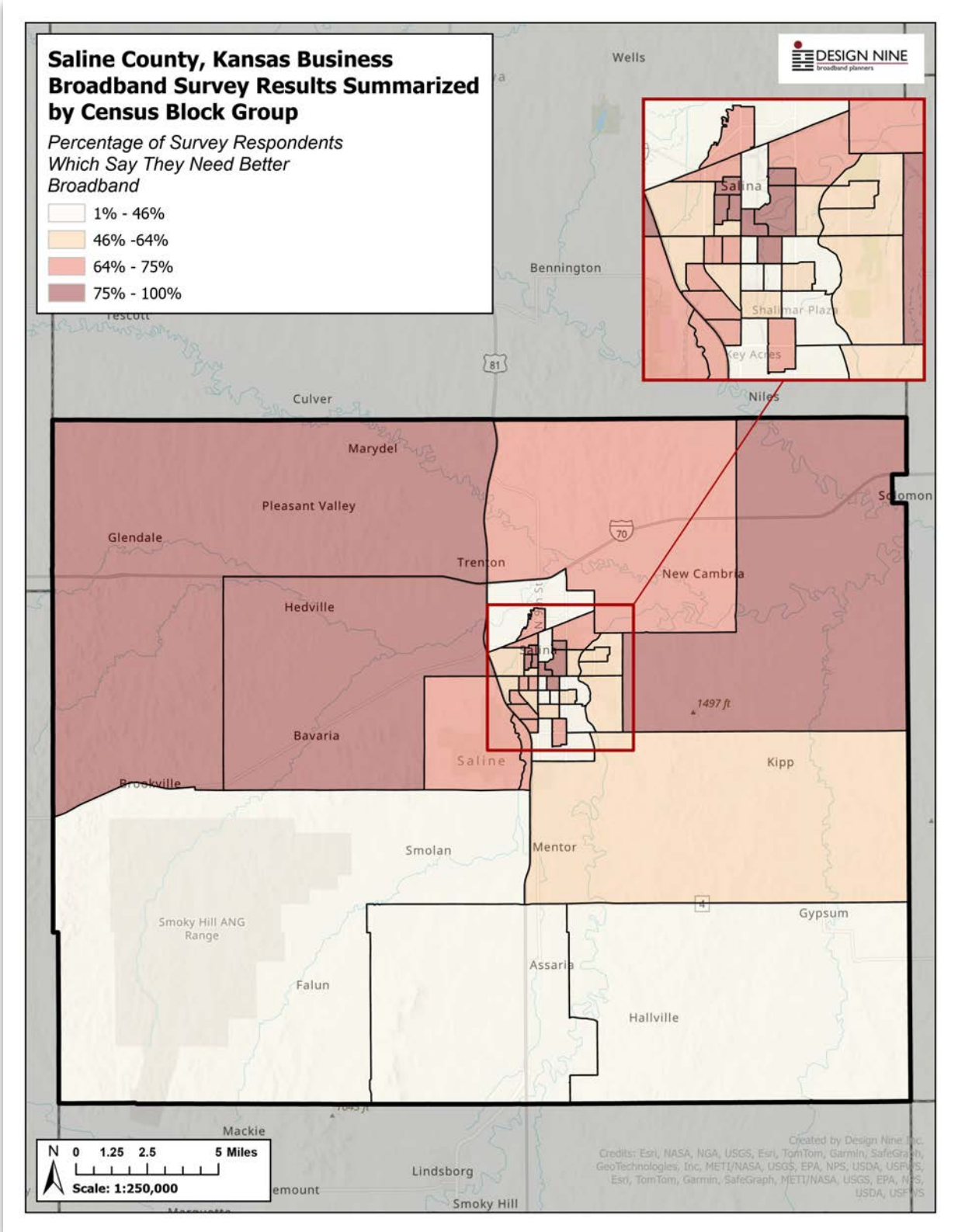
The map below shows the percentage of survey respondents in census tract areas who indicated that they work from home to any degree (full and part-time, evening and weekend work).



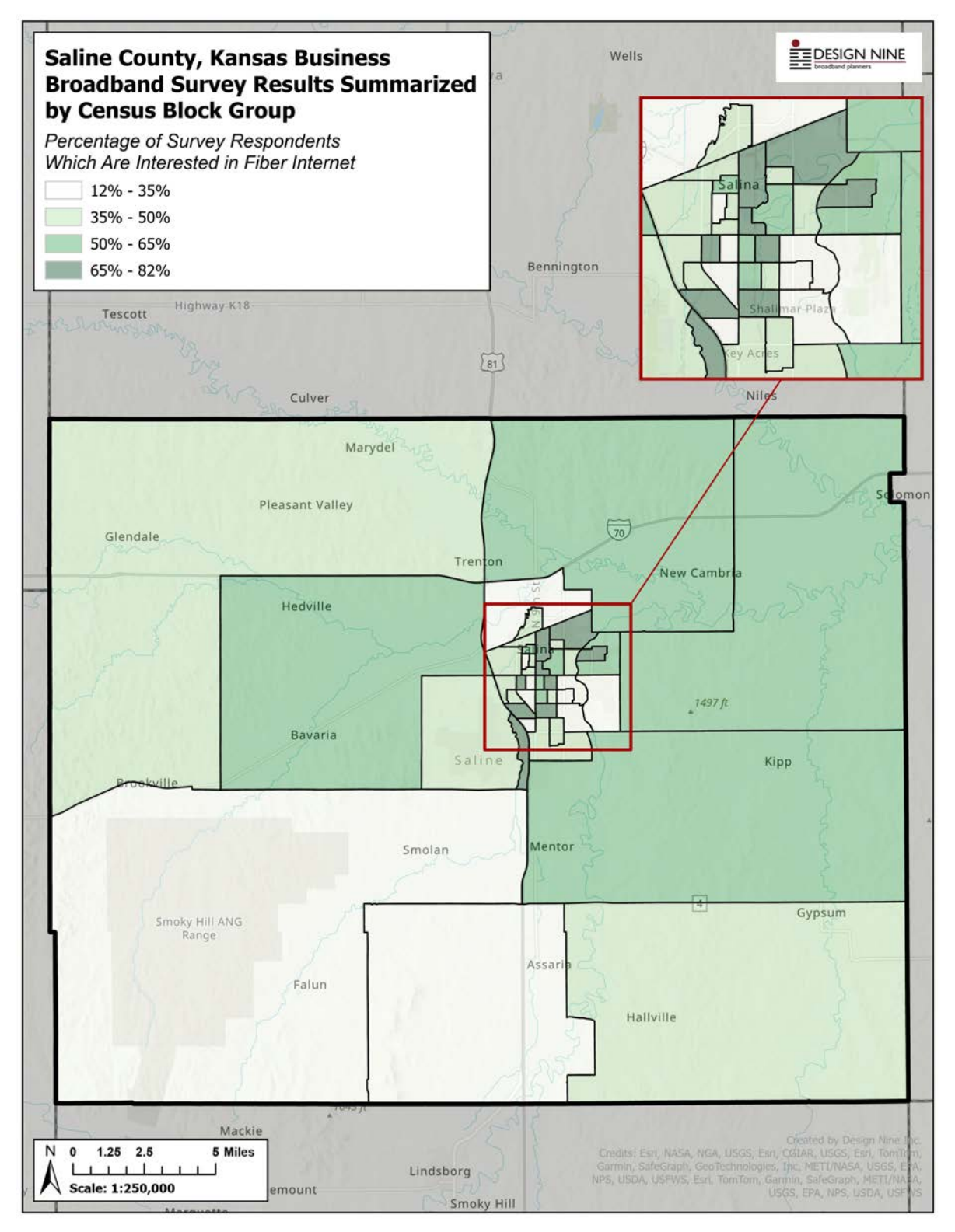
The map below shows the percentage of survey respondents in Census Tract areas who Indicated support for the idea that the county government could help facilitate better broadband.



The map below shows the percentage of survey respondents in census tract areas who indicated that they generally need better Internet service.



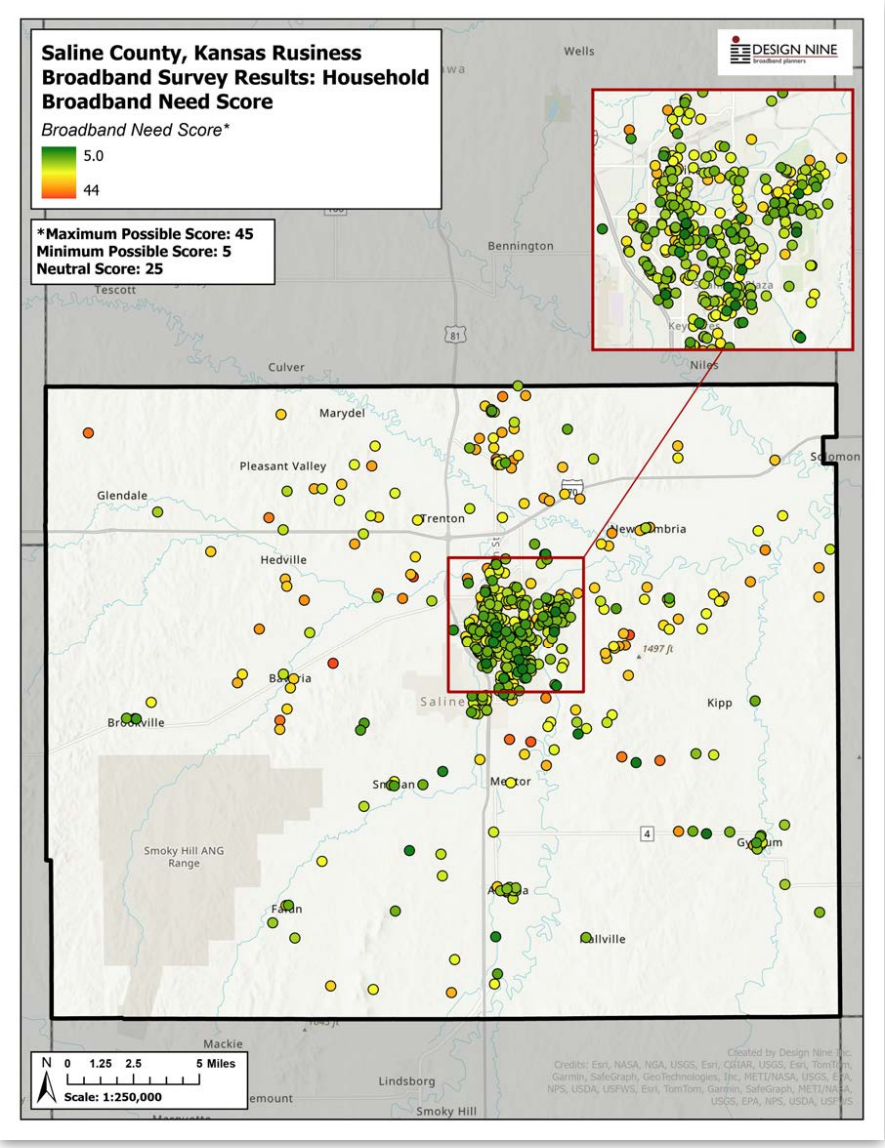
The map below shows the percentage of survey respondents in census tract areas who indicated that they are interested in fiber Internet service.



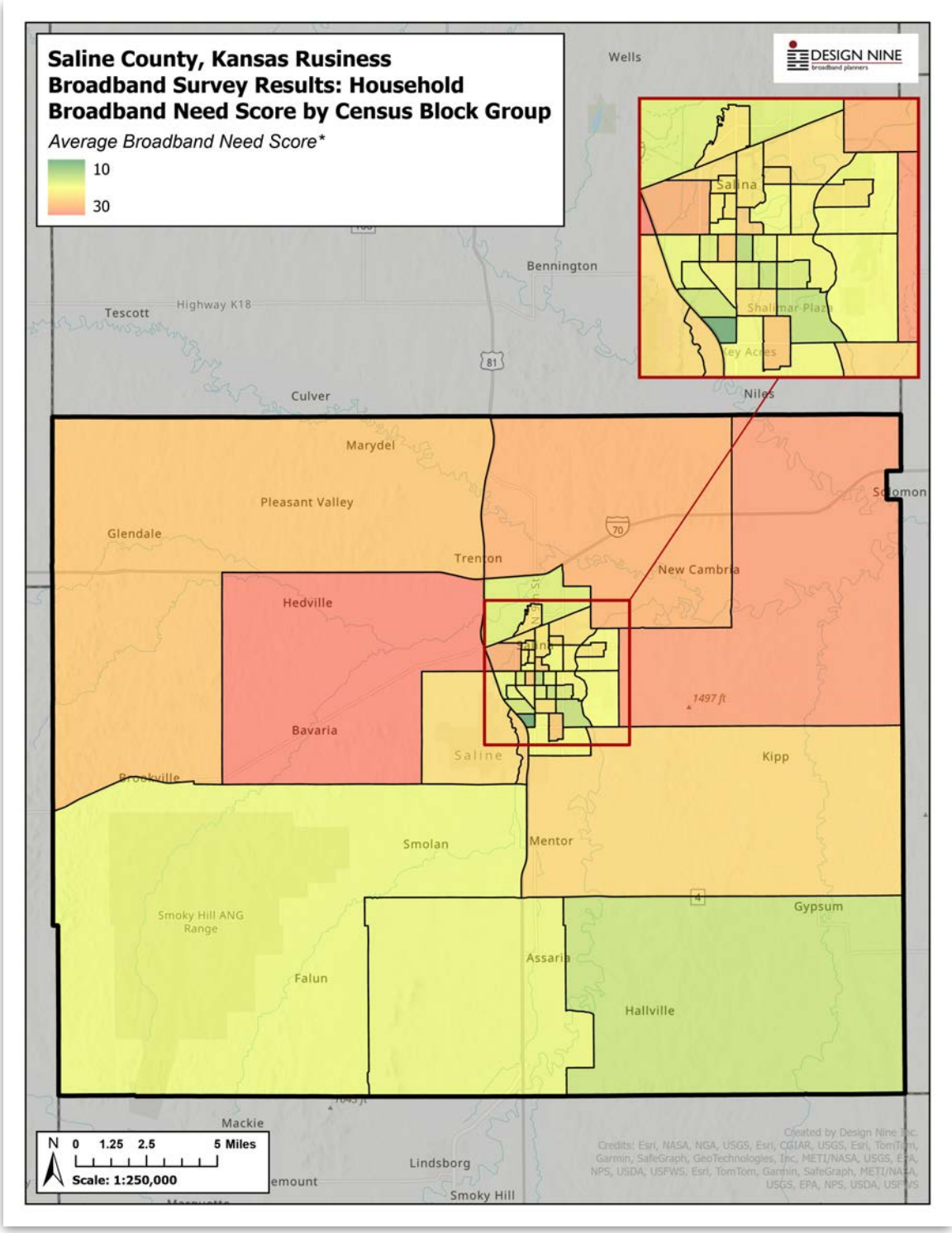
7.1 BROADBAND NEED SCORES

By identifying a selection of survey questions which have a strong connection with overall access to adequate Internet service, we can quantify every individual survey response based on its level of need for better broadband. This is called the "broadband need" score.

Seven questions from the survey are taken and their entire range of possible answers are quantified and multiplied by a weighting factor. These adjusted values are then added together to create a final score. *The broadband need score exists on a relative scale where higher scores equate to a higher level of need relative to other survey responses.* In other-words, a lower score is better and a high scoring household represents one that is relatively more in need of broadband relief. The map below shows the location of every survey response coded to their respective broadband need score. Rural areas of the county clearly show a higher "need better broadband" score.



The map below shows the average broadband need score of all survey points within a respective census tract area. The higher scores indicate a higher need for better broadband. This correlates well with the lower upload and download speeds reported in the previous section—rural areas of the county need better service.



7.2 ISP COST, SPEED, & PERFORMANCE COMPARISONS

The following tables summarize how the different ISPs compare when it comes to some of the other performance questions on the survey.

Please note that the service provider question on the survey (question 9) is ultimately user reported with no verification of the responder actually taking service from that provider. Many residents can be confused about the identity of their current Internet service provider.

Responses which indicated "other" to what ISP they have, or which did not answer the ISP question at all have been removed from these tables. ISPs which were selected by fewer than 10 survey takers have been removed (Earthlink, Viasat, US Cellular, Vyve, & Wilson Communications)

Reported Monthly Internet Cost						
	$10 to $20	**$21 to $40**	**$41 to $60**	**$61 to $80**	**$61 to $100**	**More than $100/month**
AT&T	0.0%	11.5%	21.3%	44.3%	19.7%	3.3%
Cox	1.3%	4.3%	11.7%	20.0%	24.8%	37.8%
Hughesnet	0.0%	0.0%	9.1%	9.1%	45.5%	36.4%
Nex-Tech	0.0%	4.2%	16.7%	45.8%	12.5%	20.8%
Star Link	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
T-Mobile	0.0%	7.7%	76.9%	11.5%	0.0%	3.8%
Twin Valley	0.0%	0.0%	23.1%	53.8%	7.7%	15.4%
Verizon	0.0%	50.0%	7.1%	21.4%	14.3%	7.1%

Reported Download Speed Category					
	Less than 10 Mbps download	Between 10 Mbps and 25 Mbps download	Between 25 Mbps and 100 Mbps download	Greater than 100 Mbps download	I don't know
AT&T	13.1%	13.1%	23.0%	21.3%	29.5%
Cox	2.4%	10.5%	18.2%	33.6%	35.2%
Hughesnet	30.0%	10.0%	20.0%	0.0%	40.0%
Nex-Tech	17.9%	10.7%	7.1%	42.9%	21.4%
Star Link	8.7%	4.3%	26.1%	43.5%	17.4%
T-Mobile	6.7%	20.0%	13.3%	16.7%	43.3%
Twin Valley	23.1%	23.1%	23.1%	23.1%	7.7%
Verizon	18.8%	12.5%	25.0%	6.3%	37.5%

Reported Upload Speed Categories						
	Less than 1 Mbps upload	Between 1 Mbps and 3 Mbps upload	Between 3 Mbps and 20 Mbps upload	Between 20 Mbps and 100 Mbps upload	Greater than 100 Mbps upload	I don't know
AT&T	11.5%	3.3%	13.1%	19.7%	18.0%	34.4%
Cox	2.0%	6.4%	24.5%	19.3%	7.2%	40.6%
Hughesnet	18.2%	27.3%	9.1%	0.0%	0.0%	45.5%
Nex-Tech	0.0%	14.3%	3.6%	14.3%	35.7%	32.1%
Star Link	4.3%	13.0%	17.4%	17.4%	26.1%	21.7%
T-Mobile	10.0%	3.3%	10.0%	26.7%	6.7%	43.3%
Twin Valley	7.7%	7.7%	23.1%	38.5%	7.7%	15.4%
Verizon	0.0%	18.8%	12.5%	18.8%	0.0%	50.0%

Satisfaction Level with Internet Service Speeds					
	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
AT&T	16.1%	16.1%	16.1%	33.9%	17.7%
Cox	3.6%	19.7%	32.1%	34.5%	10.0%
Hughesnet	36.4%	27.3%	18.2%	18.2%	0.0%
Nex-Tech	3.6%	25.0%	28.6%	25.0%	17.9%
Star Link	13.0%	8.7%	26.1%	30.4%	21.7%
T-Mobile	3.3%	20.0%	43.3%	10.0%	23.3%
Twin Valley	15.4%	15.4%	30.8%	15.4%	23.1%
Verizon	25.0%	25.0%	31.3%	18.8%	0.0%

Satisfaction Level with Internet Service Reliability					
	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
AT&T	9.5%	12.7%	17.5%	39.7%	20.6%
Cox	6.8%	15.6%	30.0%	37.2%	10.4%
Hughesnet	54.5%	0.0%	36.4%	9.1%	0.0%
Nex-Tech	0.0%	21.4%	28.6%	28.6%	21.4%
Star Link	4.3%	8.7%	26.1%	43.5%	17.4%
T-Mobile	6.7%	26.7%	40.0%	10.0%	16.7%
Twin Valley	23.1%	15.4%	23.1%	30.8%	7.7%
Verizon	13.3%	26.7%	33.3%	26.7%	0.0%

Indicated That They Must Limit The Number of Devices That They Connect Because Their Internet Is Limited			
	Yes, frequently	Yes, only sometimes	No I do not experience those limitations
AT&T	20.6%	25.4%	54.0%
Cox	10.1%	39.5%	50.4%
Hughesnet	36.4%	27.3%	36.4%
Nex-Tech	21.4%	32.1%	46.4%
Star Link	22.7%	18.2%	59.1%
T-Mobile	24.1%	41.4%	34.5%
Twin Valley	30.8%	38.5%	30.8%
US Cellular	16.7%	83.3%	0.0%
Verizon	40.0%	33.3%	26.7%

Indicated That The Speed & Reliability of Their Internet Service Affects Their Choice of Where to Live				
	Yes it is a major influence	Yes it is a minor influence	No but it could become an influence	No it is not an influence
AT&T	17.7%	9.7%	27.4%	45.2%
Cox	11.5%	14.3%	32.8%	41.4%
Hughesnet	9.1%	18.2%	18.2%	54.5%
Nex-Tech	25.0%	14.3%	28.6%	32.1%
Star Link	13.0%	21.7%	30.4%	34.8%
T-Mobile	6.7%	16.7%	20.0%	56.7%
Twin Valley	38.5%	15.4%	30.8%	15.4%
US Cellular	0.0%	16.7%	0.0%	83.3%
Verizon	6.3%	6.3%	50.0%	37.5%

8 BUSINESS SURVEY RESULTS

During the fall of 2023, a broadband business survey was conducted in Saline County, Wisconsin as part of a county wide study in broadband needs. The online (Web) version of the survey was publicized on social media. Businesses were encouraged to complete the survey online or fill out and return the paper version by surface mail. A total of 47 responses were collected from businesses in Saline County. Not all responders answered every question. Some key findings from the results are listed below.

40% of business respondents want better Internet access

85% of respondents said that they believe the County government should help facilitate better broadband

100% indicated that the Internet is important to the success of their business over the next five years

Only 58% of businesses are "satisfied" or "very satisfied" with the speed of their current Internet service

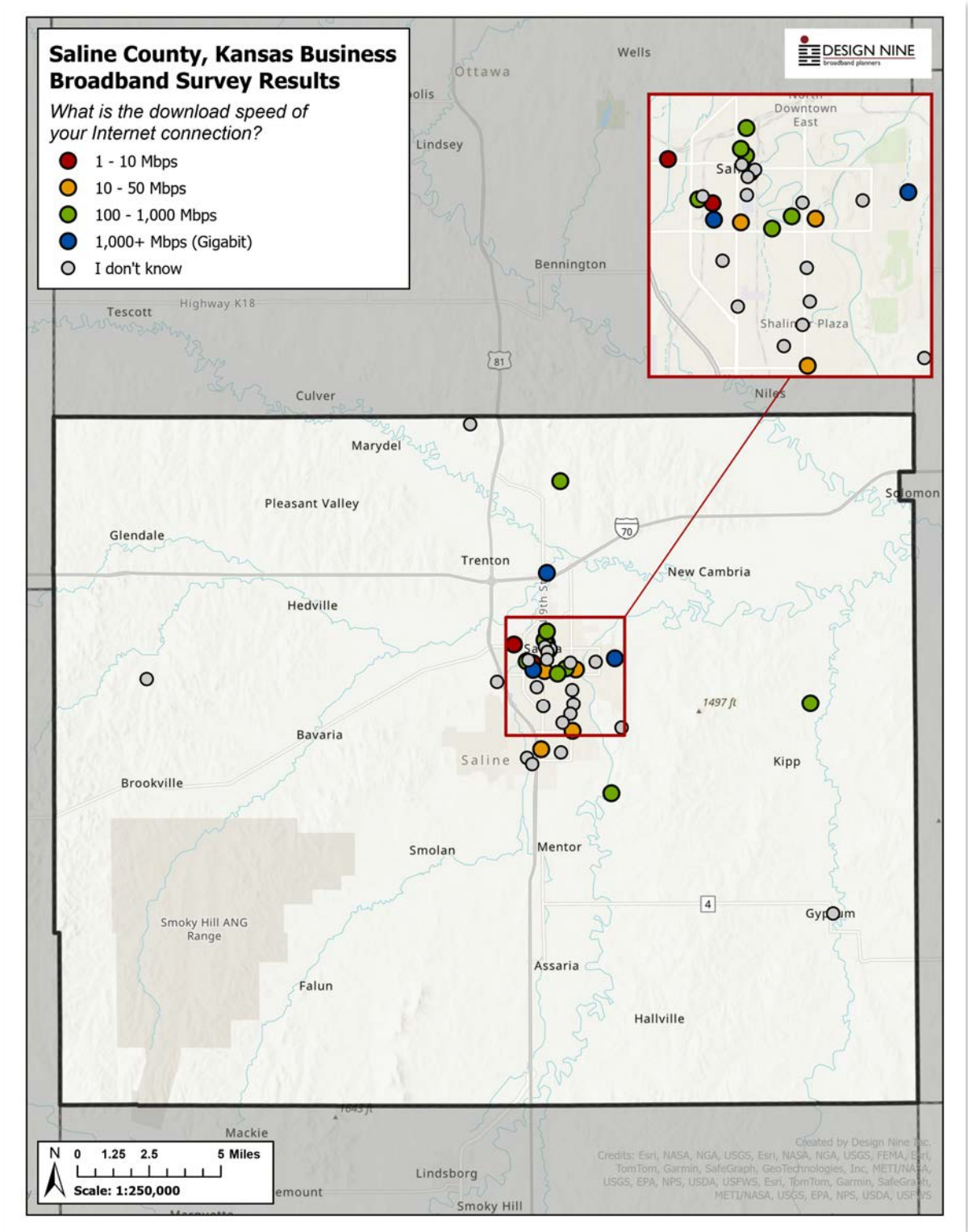
40% of the businesses that responded are home-based

74% of businesses that responded need employees to be able to work from home

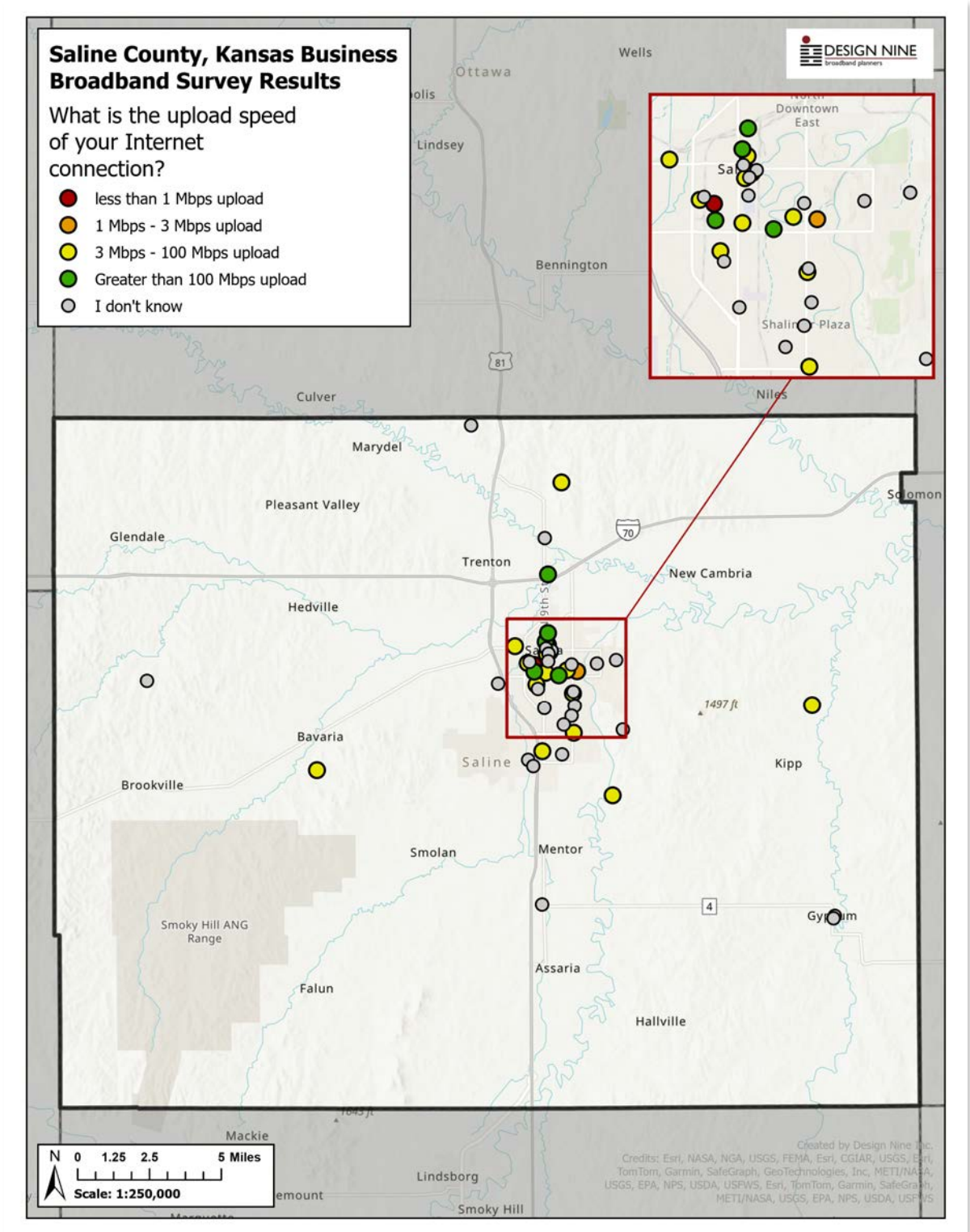
Home-based workers and businesses need affordable Internet access

8.1 DISTRIBUTION OF BUSINESS SURVEY RESPONSES

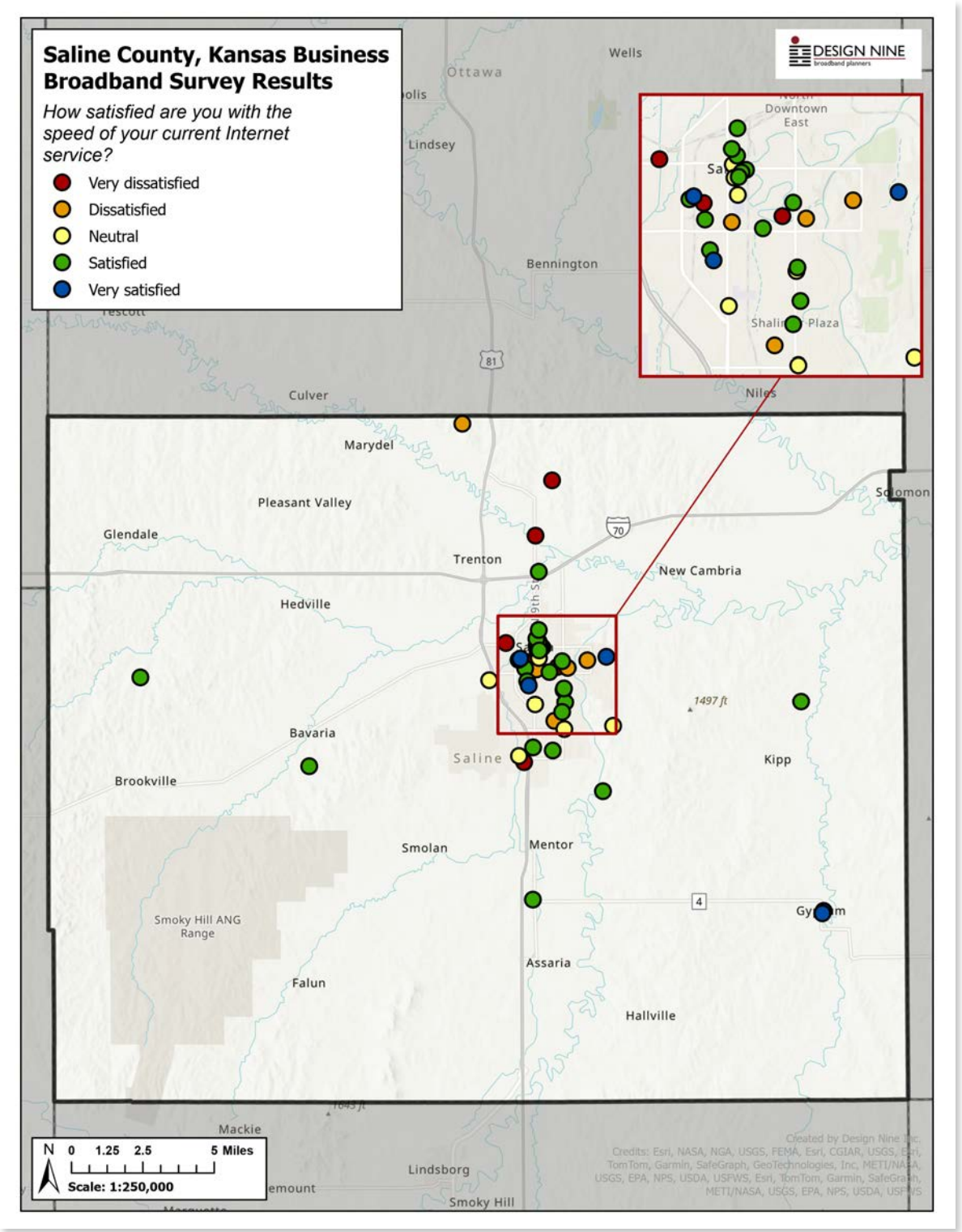
The map below shows the geographic distribution of responses to the business survey, coded according to the *download* speed of their Internet connection (Question 11).



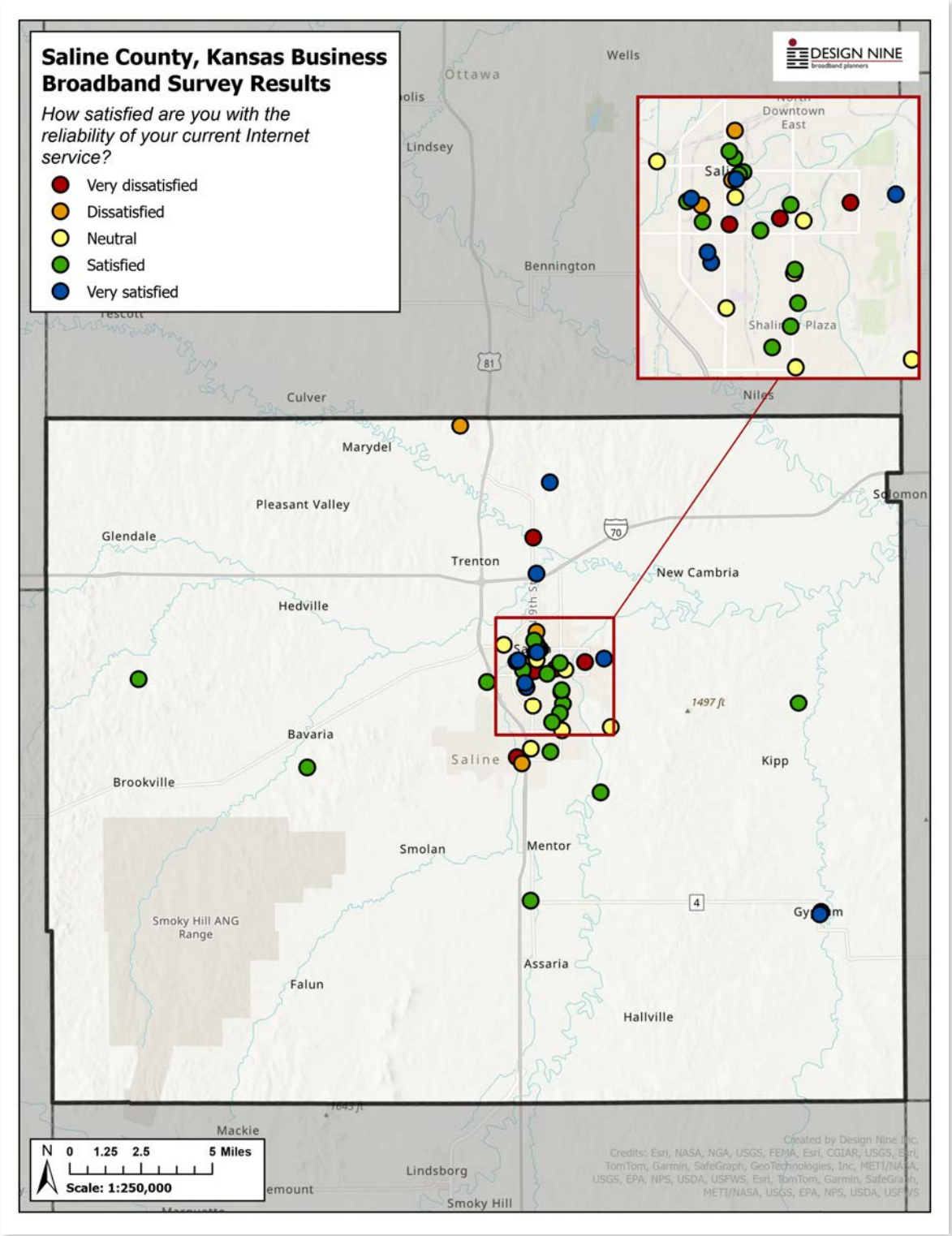
The map below shows the geographic distribution of responses to the business survey, coded according to the *upload* speed of their Internet connection (Question 12).



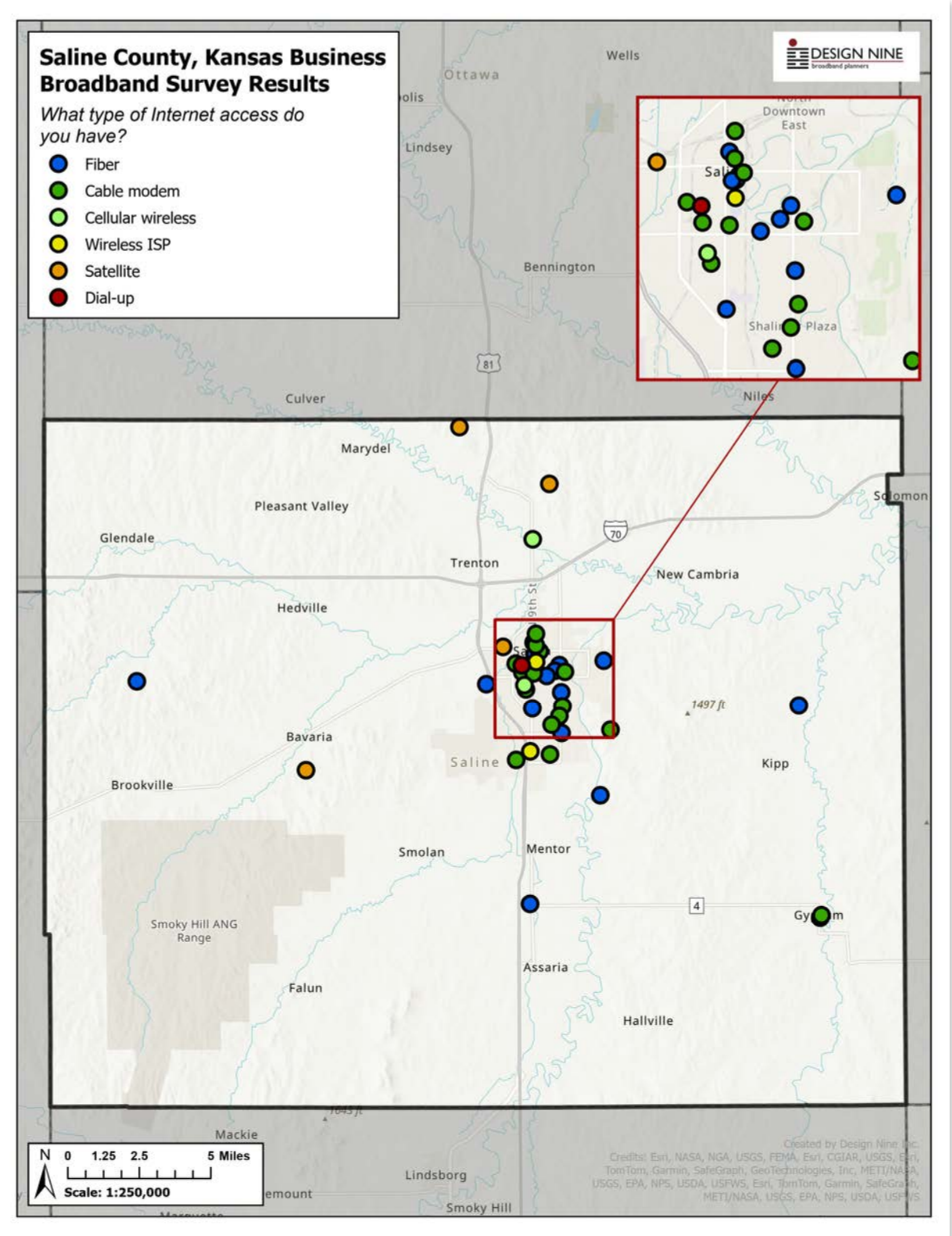
The map below shows the geographic distribution of responses to the Business survey, coded according to their satisfaction with the *speed* of their existing Internet service (Question 13).



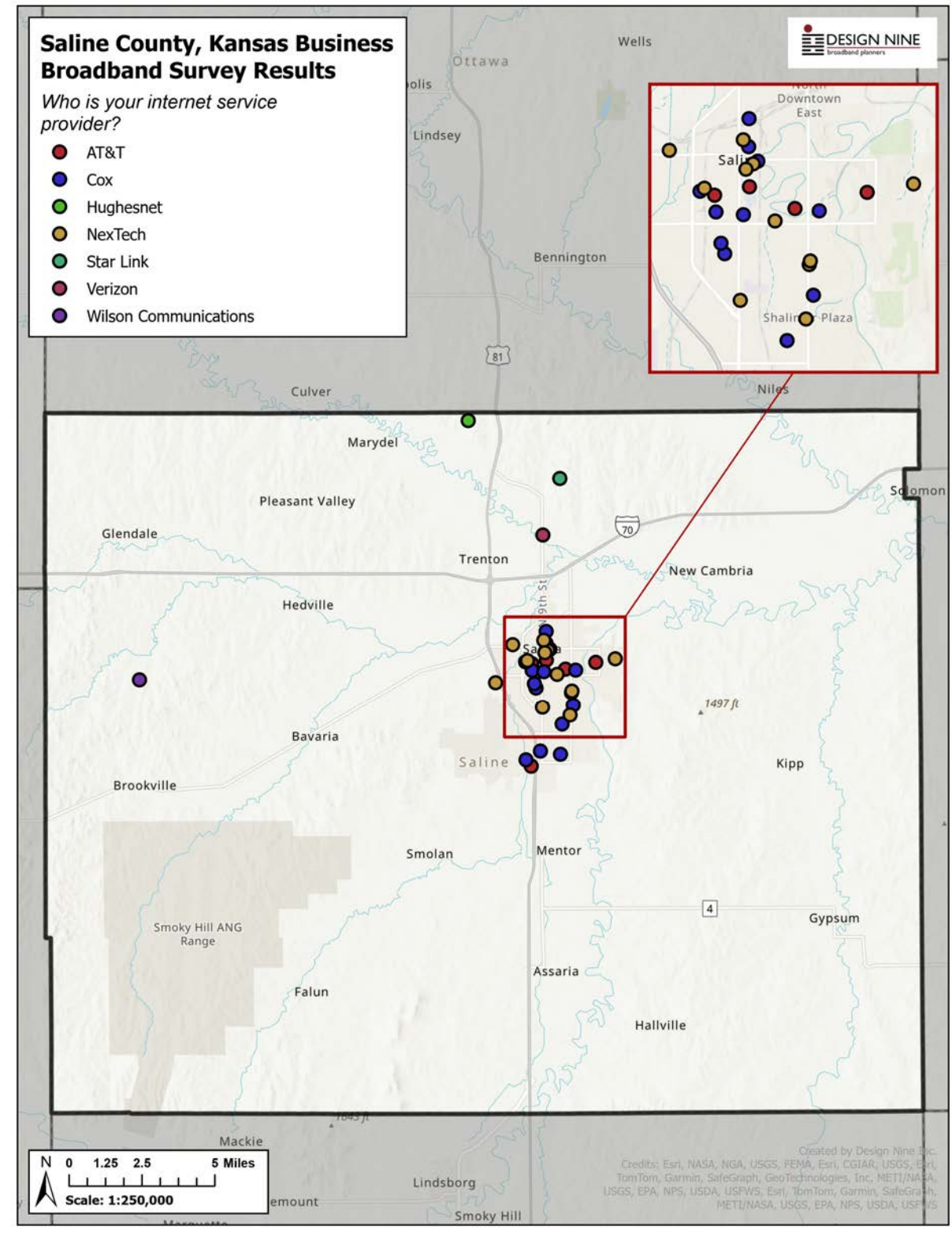
The map below shows the geographic distribution of responses to the Business survey, coded according to their satisfaction with the *reliability* of their existing Internet service (Question 14).



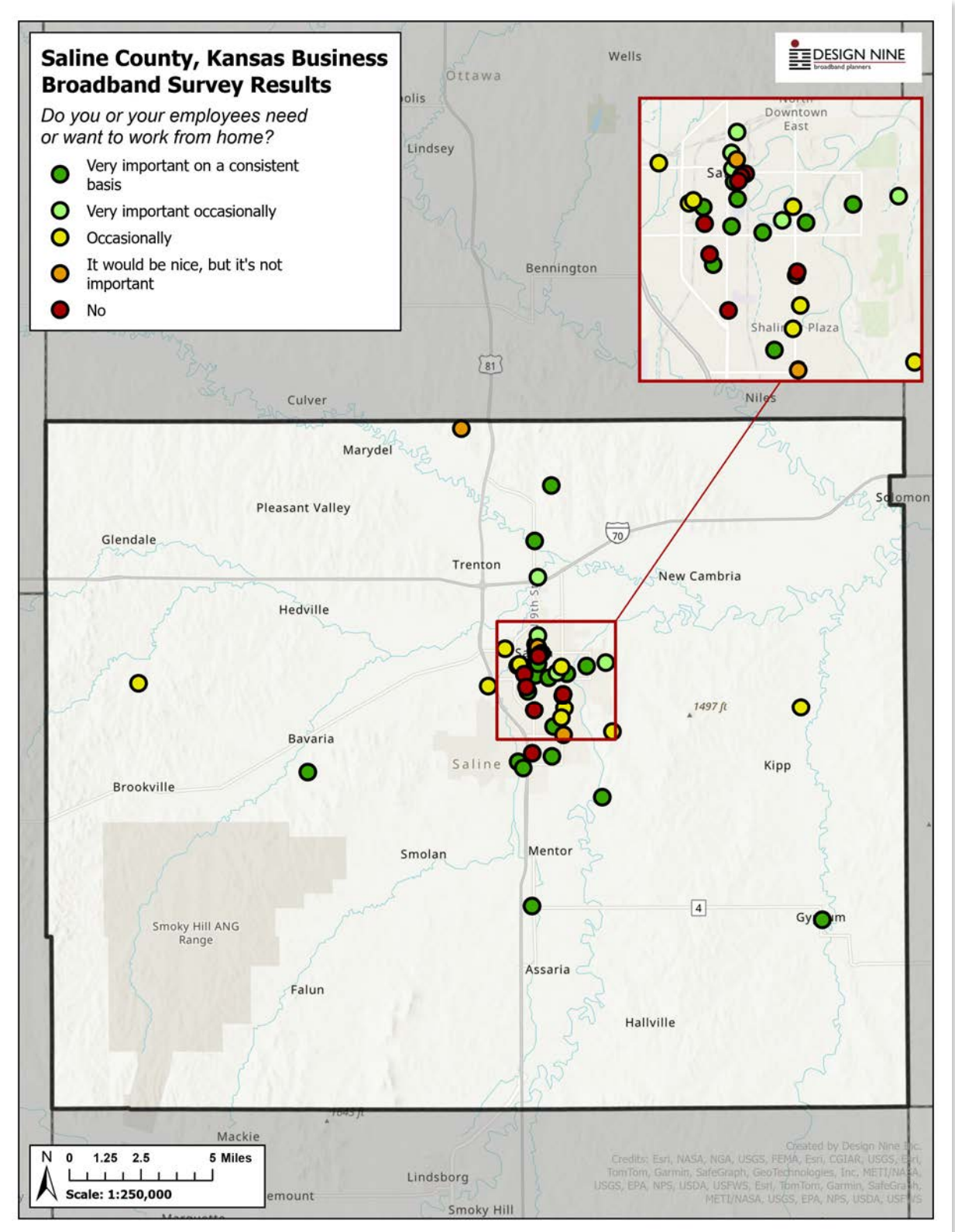
The map below shows the geographic distribution of responses to the residential survey, coded according to the *type of Internet technology* with which they currently receive service (Question 8).



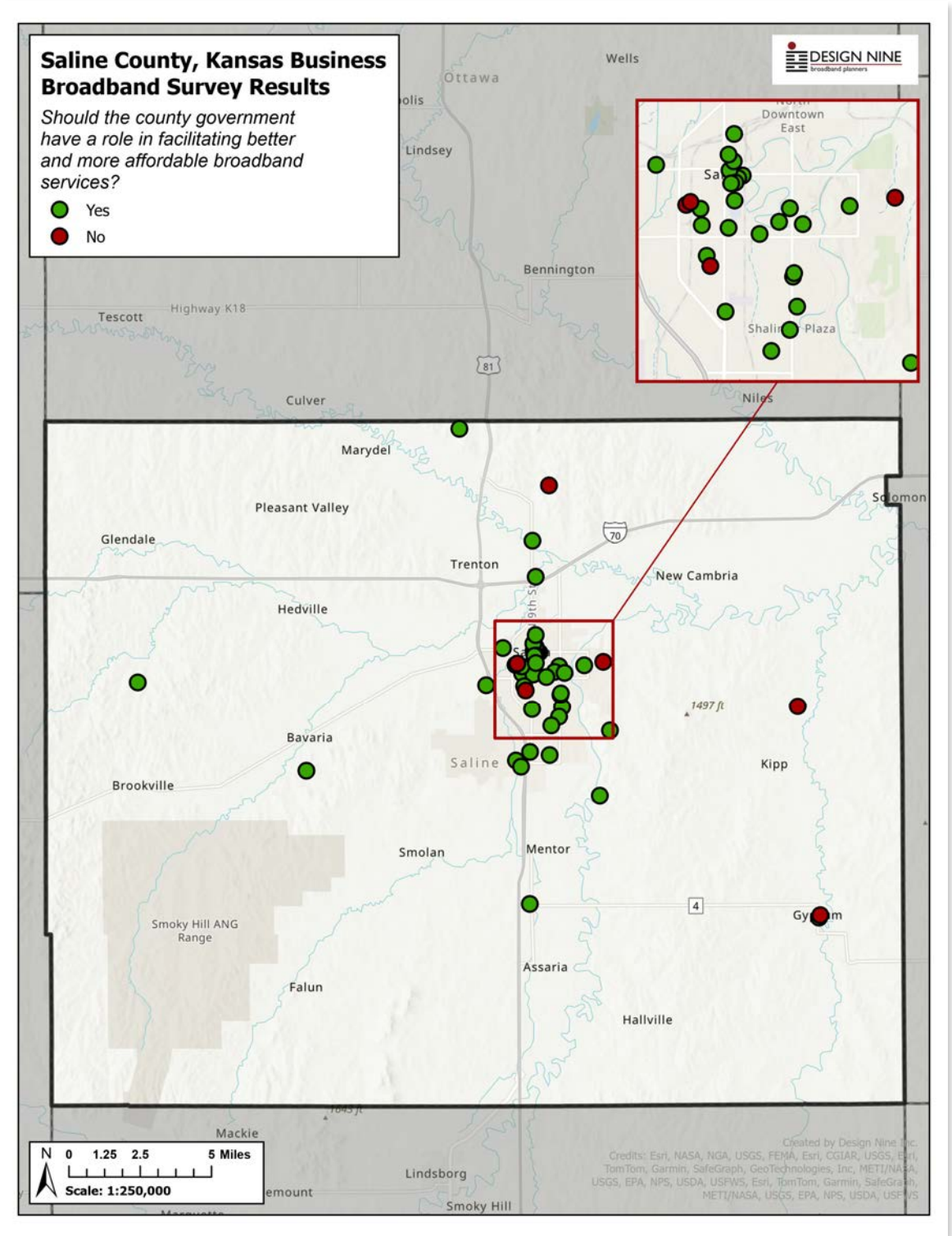
The map below shows the geographic distribution of responses to the business survey, coded according to the who their current Internet service provider is (Question 10).



The map below shows the geographic distribution of responses to the residential survey, coded according to whether or not their employees need or want to work from home (Question 20).



The map below shows the geographic distribution of responses to the business survey, coded according to whether or not they feel that the County government should facilitate better Internet services (Question 24). 89% of business respondents feel that the County government has a role to play in facilitating better Internet service.



8.2 BUSINESS SURVEY SUMMARY DATA

1a. Total number of employees

1 to 10	77%
11 to 40	9%
41 to 80	9%
81 to 150	2%
Over 150	4%

1b. Total number of Internet using employees

1 to10	76%
11 to 40	13%
41 to 80	7%
81 to 150	0%
Over 150	4%

2. What type of business is this? (select all that apply)

Other (Please Specify Below)	14	30%
Professional / Office	8	17%
Non-Profit	7	15%
Retail / Wholesale	6	13%
Educational	4	9%
Agriculture / Forestry	3	7%
Medical	3	7%
Restaurant / Food Services	2	4%
Manufacturing	1	2%
Construction / Maintenance / Repair	1	2%
Communications / Technology	1	2%

Other types of businesses

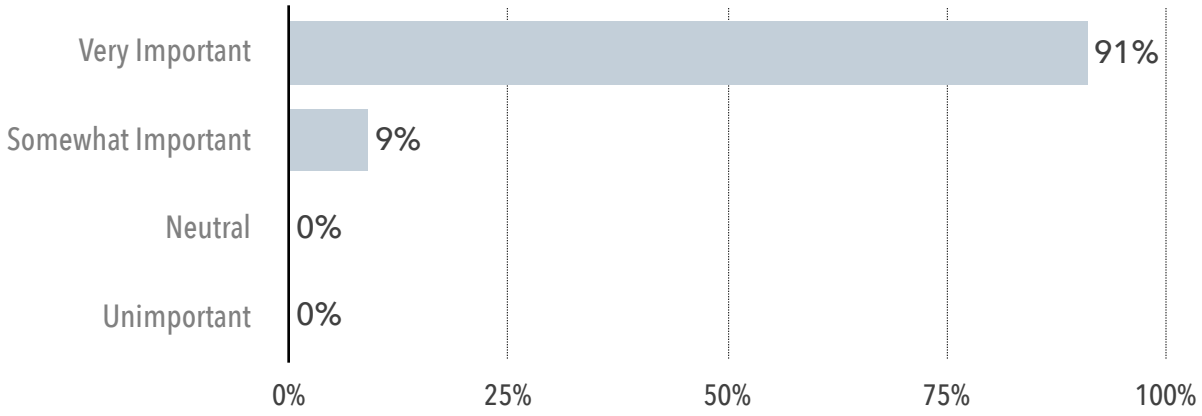
- Health care/chiropractic
- Fire Sprinkler Company
- Childcare (x6)
- Freelance Journalism and my spouse is a travel nurse.
- Pest Control
- Wellness, massage, acupuncture
- Home day care
- specialty housing operator
- Daycare
- Photography
- Arb&b
- Non-profit agricultural research institution
- Finance

3. Is this a home-based business?

Yes	No
19	28
40%	60%

40% of the county businesses that responded are home-based

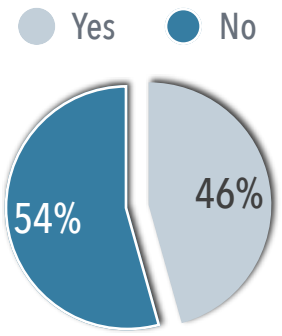
4. How important do you think Internet technology will be for the success of your business over the next five years?



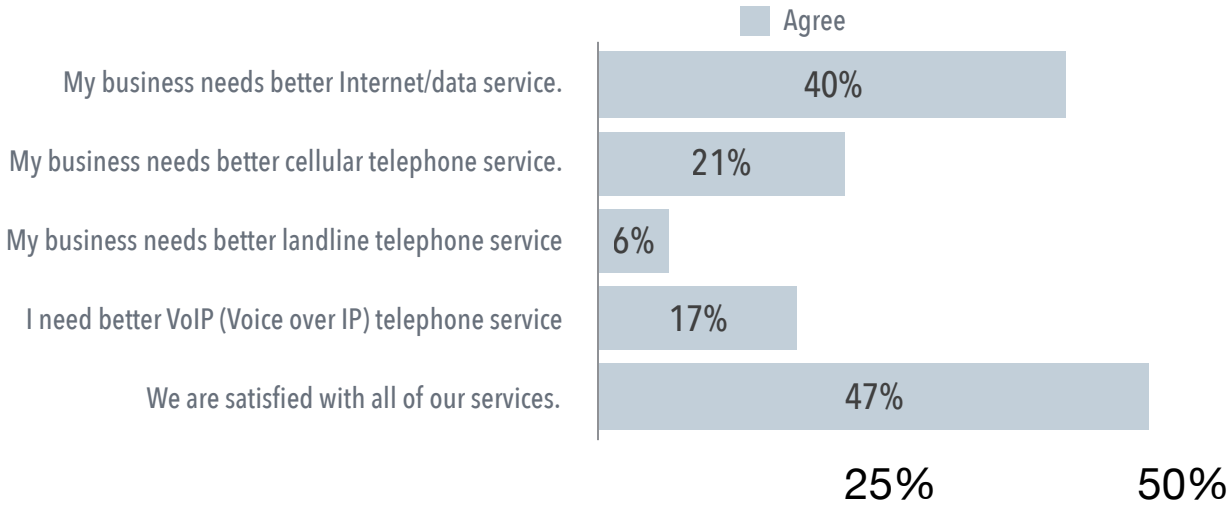
5. How much do you pay now for Internet access each month?

$0 to $100	$101 to $150	$151 to $500	$501 to $1,000	$1,001 to $5,000	$5,000 or more	I don't know
16	12	11	2	2	0	4
34%	26%	23%	4%	4%	0%	9%

6. Are you satisfied with what you pay for Internet service?



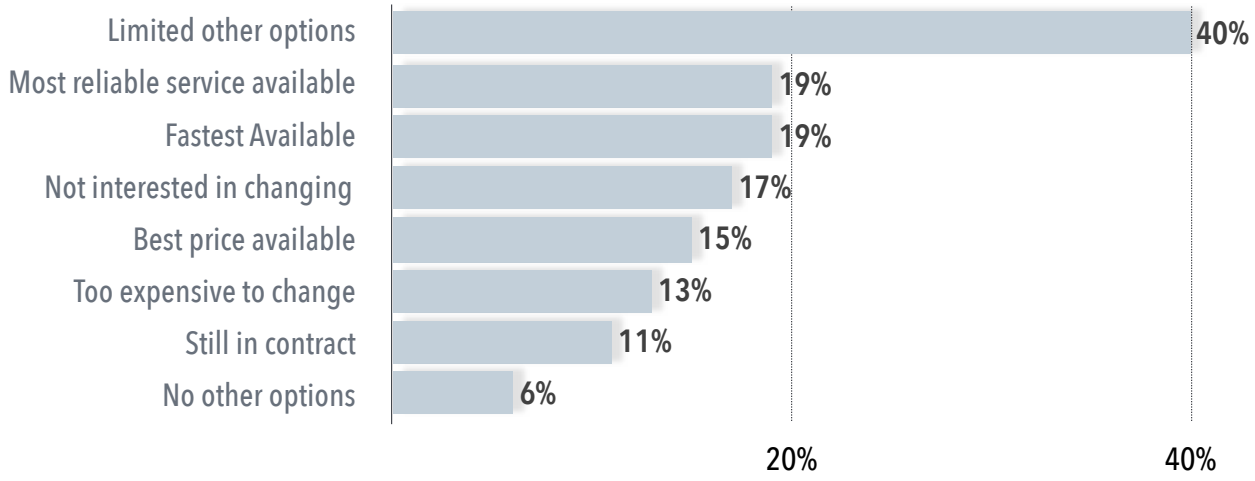
7. Select the items you agree with below



8. What type of Internet do you have?

Fiber	17	37%
Cable Modem	15	33%
Satellite	4	9%
I don't know	4	9%
Cellular Wireless	2	4%
Wireless ISP	2	4%
Other (Please Specify Below)	1	2%
Dial-up	1	2%

9. Based on the type of Internet you selected above, what keeps you with your current service? (Check all that apply)



10. Who is your Internet service provider?

Cox	14	33%
Nex-Tech	12	28%
Other (Please Specify Below)	8	19%
AT&T	5	12%
Starlink	1	2%
HughesNet	1	2%
Wilson Communications	1	2%
Viasat	1	2%
T-Mobile	0	0%

Other Internet service providers

- HCI (x4)
- Nextlink

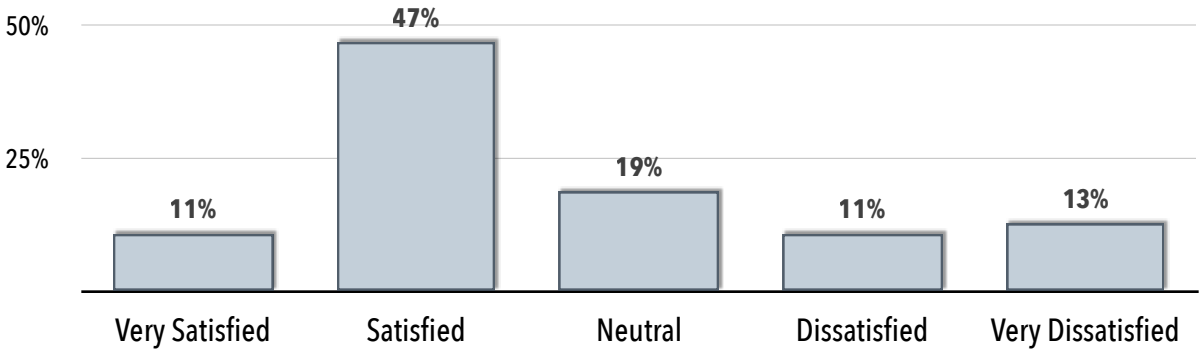
11. What is the download speed of your Internet connection? (A Gigabit is 1000 Megabits (Mbps)

Less than 1 Mbps	1-10 Mbps	10 - 50 Mbps	50-100 Mbps	100 - 1,000 Mbps	1,000+ Mbps (Gigabit)	I don't Know
1	2	4	6	10	3	21
2%	4%	9%	13%	21%	6%	45%

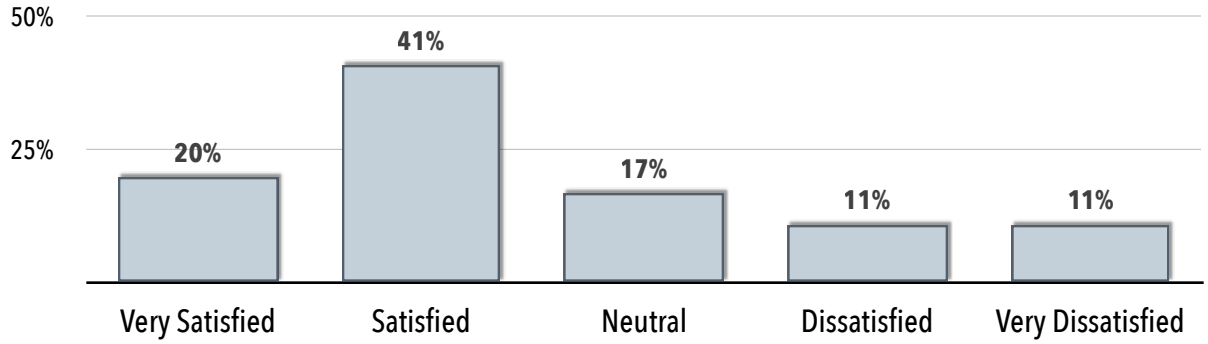
12. What is the upload speed of your Internet connection? (A Gigabit is 1000 Megabits (Mbps)

Less than 1 Mbps	1 - 3 Mbps	3 - 100 Mbps	100+ Mbps	I don't Know
1	2	14	5	25
2%	4%	30%	11%	53%

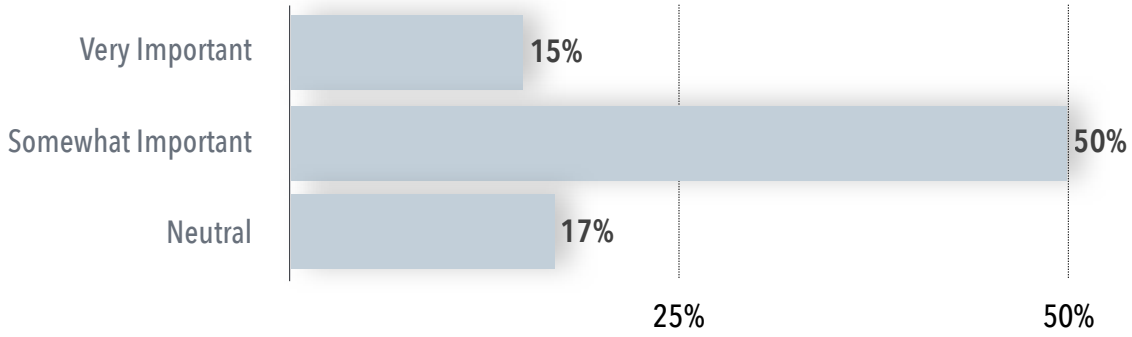
13. How satisfied are you with the speed of your Internet service?



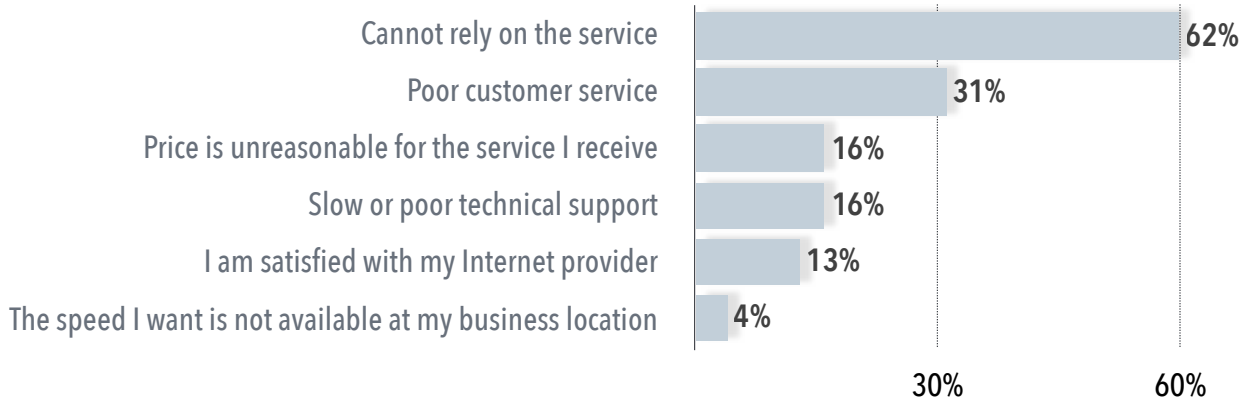
14. How satisfied are you with the reliability of your Internet service?



15. How important is a redundant or second Internet connection to your business?



16. Please select all that apply to your current Internet provider



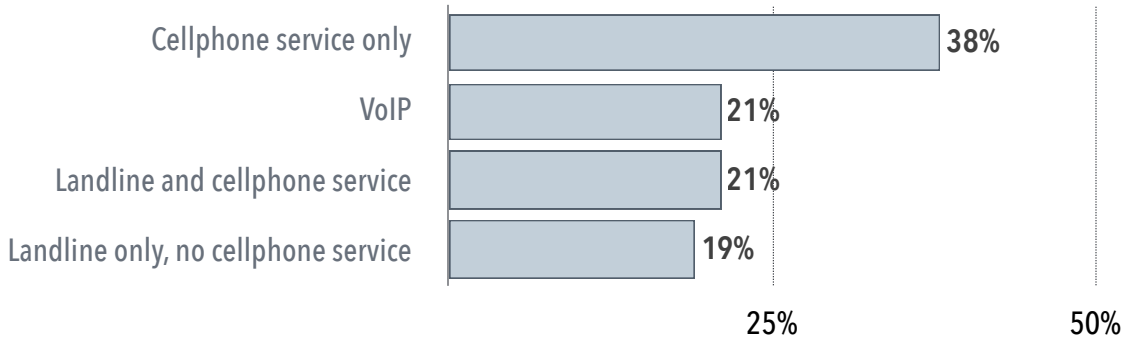
17. Select all the items you use the Internet for now (Select all that apply)

Social Media (Facebook, LinkedIn, Twitter, Instagram)	40	87%
Online Backup (files, photos, music, company data)	36	78%
Videoconferences (Zoom, Webex, Teams, GoToMeeting)	34	74%
Ordering / managing inventory	31	67%
Monitor / control security, alarms, health, processes, etc.	30	65%
Receiving and processing online orders	25	54%
Processing credit card / debit card transactions	24	52%
Cloud-based business, accounting or other services	20	43%
VoIP Internet phone(Vonage/Skype, etc.)	19	41%
Offer customers free WiFi service while shopping	15	33%
Other	2	4%

Other uses for the Internet

- Enrollment app, regular day to day business
- Email, streaming music and video.

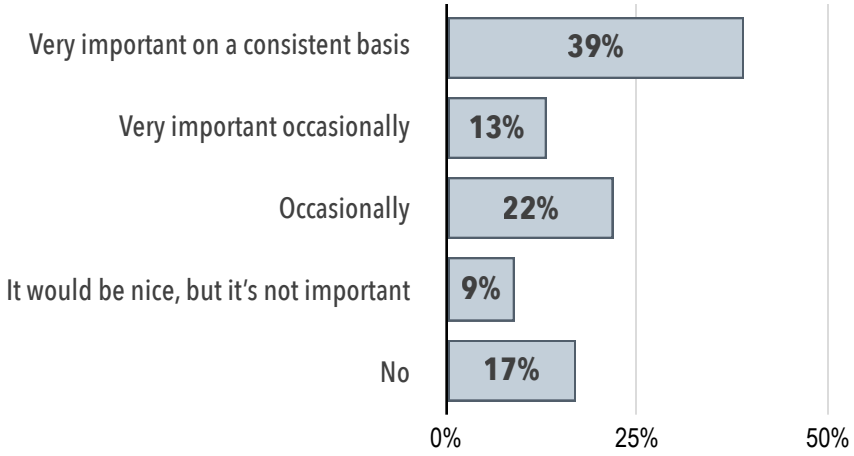
18. What kind of telephone service do you have?



19. Do you or your employees use a VPN (Virtual Private Network) to obtain remote access for your work or to a company network?

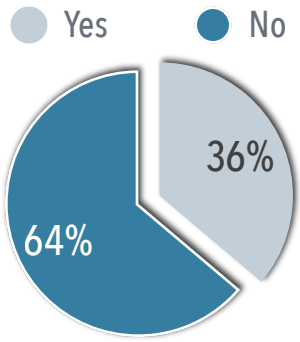
Yes	No	I Don't Know
10	34	3
21%	72%	6%

20. Do you or your employees need or want to work from home?

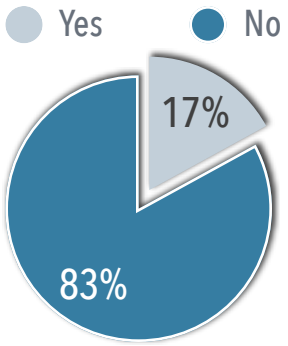


74% of businesses that responded need employees to be able to work from home

21. Does limited Internet access at employees' residences impact your business?



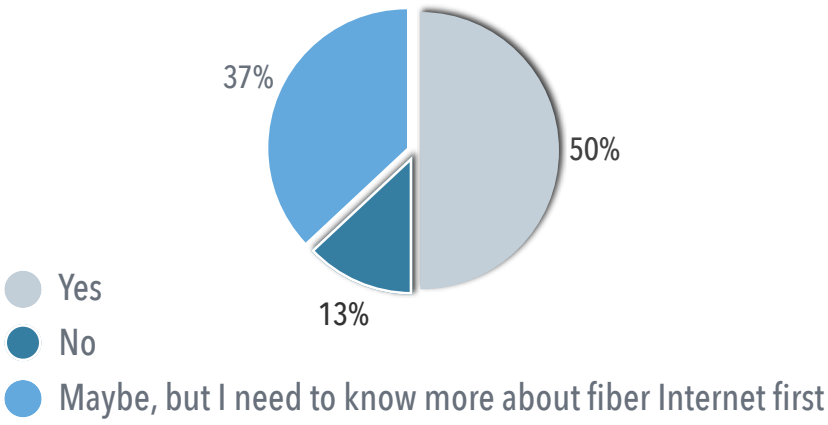
22. Does the availability or pricing of existing Internet options impact your business's decision to relocate or stay in the town?



If yes, briefly state why:

- Slower than average Internet due to satellite option only
- Bottom line is most important
- There is not a choice. The Internet service is terrible. it's barely decent one day a month

23. Are you interested in Gigabit (high speed) fiber Internet service?

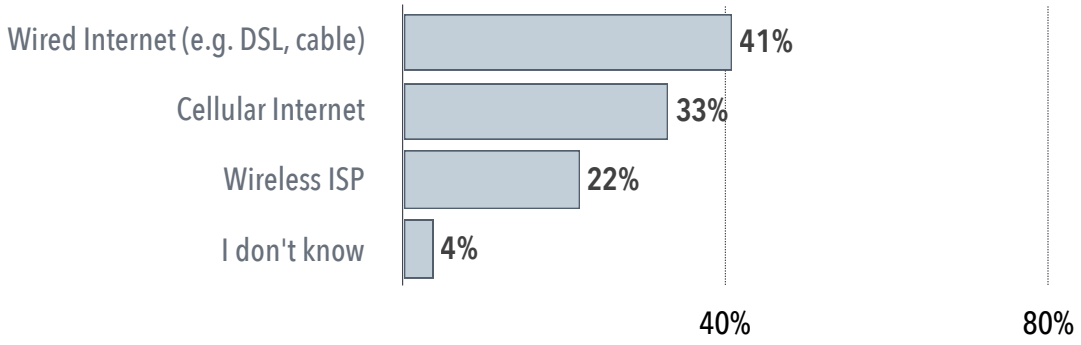


24. Should the County government have a role in facilitating better and more affordable broadband services?

The response to this question (85% positive) matches the response to this same question asked of residents.

Yes	No
39	7
85%	15%

25. Technology or method used to complete the survey:



25. Any Other Comments

- Question 24 - Yes if it is not a tax or fee paid item. No if it would result in increased taxes or cause a long-term franchise agreement.
- Sure hope to see some results soon
- The best the county could do is to make less restrictions on business so more market competition can occur.
- I am told better Internet, i.e. fiber optics, is due to be installed here this fall. Can't wait. Very excited. The challenge is making sure it's affordable and reliable, forever, also updated frequently. Hope Nex-Tech holds up it's end of the bargain.If not, this will be a major failure.
- I am hopeful that improvements can be made, without costs skyrocketing.
- Your survey does not take into consideration that businesses need redundancy for Internet connections. That is why I checked other. we have both AT&T (main) and Cox (secondary) Internet connections. Have a GREAT day
- Consistent Internet is VERY important to our business. We have many international research partners and an increasing number of remote staff in addition to our staff on campus. There are occasionally extremely large research data uploads or downloads that happen which may take

hours and if it is interrupted it could corrupt the data or have to start over. We recently paid HCI to run fiber from Holmes Rd since they were doing a project there and it is so important to us to have good signal. We also have several houses and at least one of them we have not been able to get good service because of where it is (in a valley by the river, surrounded by trees). We are excited to see how Internet continues to improve for the community as well to help local small businesses improve the quality of what they are capable of doing. Good Internet would help rural Kansans be more economically successful and able to run home businesses more easily too.

9 INFRASTRUCTURE FUNDING AND GRANT OPPORTUNITIES

Partnerships between Saline County and one or more ISPs is becoming more common, and more recent grant funding opportunities like BEAD (Broadband Equity, Access, and Deployment) often require the local government be included in the grant application and/or be the submitting applicant for funding.

9.1 KANSAS FUNDING OPPORTUNITIES

The Kansas Office of Broadband Development's mission is to help all Kansans bridge the digital divide through home broadband access, public broadband access, personal devices, and local technology training and support programs. The state has made several recent awards through several different broadband grant programs.

The Federal BEAD (Broadband Equity Access and Deployment) program includes $42 billion for high-speed Internet access, and Kansas has been allocated $451 million dollars to help address the digital divide. This federal grant program, funded by the Infrastructure Investment and Jobs Act goal is to provide universal internet by funding partnerships between states or territories, communities, and stakeholders to build infrastructure where needed to and increase adoption of high-speed internet. BEAD prioritizes unserved locations that have no internet access or that only have access under 25/3 Mbps and underserved locations only have access under 100/20 Mbps.

The Kansas Office of Broadband Development has created a BEAD 5–Year Action Plan. Volumes 1 and 2 of the plan have identified served, unserved, and underserved locations across the state. The 5-Year Action Plan addresses the "what" KOBD will be doing, and Volume 1 and Volume 2 address the "how" it will happen and how KOBD will address the digital divide.

In July (2024), $10 million was been awarded to 12 Internet Service Providers (ISPs) in the latest round of Broadband Acceleration Grants. The awards will be paired with an additional $12.7 million in matching funds, resulting in an investment of nearly $22.7 million for high-speed broadband access projects across 14 rural Kansas counties.

In June (2024), seven organizations received a combined $3.9 million in grants through the Advancing Digital Opportunities to Promote Technology (ADOPT) program. ADOPT supports the Governor Kelly's work to connect more Kansans to high-speed internet by making public Wi-Fi accessible and distributing devices in underserved areas. The program helps organizations serving Kansans move forward by ensuring that communities can access public Wi-Fi and the devices needed to participate in today's technology-driven world.

The Digital Opportunities to Connect Kansans (DOCK) Program is designed to enhance digital literacy and digital skill sets for Kansans. With a total funding of $4.75 million, individual awards may reach $250,000. Successful applications will require a 5% minimum match. The initiative spans from January 19, 2024, to October 15, 2026, and is funded by the Coronavirus State and Local Fiscal Recovery Funds. The DOCK program will enable Kansans to obtain the digital literacy and associated skills necessary to live, learn, work, play and compete equitably in a technology-driven society. In the first half of 2024, $2.8 million was granted to 15 organizations through the program.

The DOCK grants will improve the digital skills of Kansans who have not yet been able to fully capitalize on the power of the internet.

Saline County should maintain regular communications with the Kansas Office of Broadband Development to pursue every possible funding opportunity. the PSC Broadband Web site has an extensive array of materials, webinars, and information on how to apply for the various grants (https://psc.wi.gov/Pages/ServiceType/Broadband.aspx).

9.2 BEAD FUNDING

The BEAD (Broadband Equity, Access, and Deployment) Program has been allocated $42.5 billion to expand Internet access. The funds will be distributed to individual states, based on the number of unserved households in each state. The BEAD program is part of the Infrastructure Investment and Jobs Act (IIJA) passed by Congress in 2021, with a total of $46.2 billion in funds for broadband.

Funding will be distributed state by state based on the number of locations that fall below the 25/3 threshold. The program will allow some overbuilding (i.e. fiber deployment in areas that exceed the 25/3 threshold) but cannot be more than 20% of the total locations to be served. Areas that already have federal, state, or local funding allocated are not eligible; RDOF areas need to be examined as part of the application process, as they would not qualify.

Funds can be spend for:

- Broadband mapping, planning, and data collection.
- New or upgraded broadband infrastructure (i.e. materials and equipment).
- Cost of installation, labor, engineering, and related expenses.
- Workforce training and development.

An interesting requirement of acceptance of grant funds is that no data caps will be allowed. This is an excellent requirement that protects customers from a common type of "hidden" price increase in the future after the initial build is completed.

One billion of the $42.5 billion has been allocated specifically for middle mile projects that will be operated as open access (non-discriminatory use by any and all providers and users). Partnerships are encouraged.

9.3 ARPA (AMERICAN RESCUE PLAN ACT) FUNDING

The American Rescue Plan Act of 2021 was formerly the biggest federal funding program for broadband projects. ARPA had $350 billion in funding for all projects of any kind, not just broadband projects. Each state received an ARPA fund allocation, and how much is targeted toward broadband initiatives was decided by a state legislative committee and/or the governor of the state.

The 2020 CARES (Coronavirus Aid, Relief, and Economic Security Act) funding was typically distributed by state governments to localities (e.g. counties, towns, cities), which were then able to make decisions on how to spend the money within both the state and Federal guidelines attached to the funds.

According to guidance published by the U.S. Treasury, states will be required to provide a plan describing how they intend to use allocated funds under the Capital Projects Fund consistent with the American Rescue Plan and guidance issued by the U.S. Treasury. Support from local communities and partnerships between private and public entities are strongly encouraged. Applicants that are not local governments must at a minimum include with their applications letters of support from the municipal or county legislative body or bodies in the Eligible Areas for which they are submitting applications. Local governments may also provide greater support for private applicants, such as capital funding, agreements to purchase service, or access to public land or facilities that could be used to deploy broadband infrastructure or services. Applicants which are local governments or affiliated organizations must identify in their applications partners which are private for-profit or non-profit companies with experience in the development and operation of broadband networks and services. If awarded, such partners shall be considered sub-recipients of grant funds.

All ARPA funds must be allocated no later than December 31st, 2024, and all funds must be spent no later than December 31st, 2026.

9.4 HUD COMMUNITY DEVELOPMENT BLOCK GRANTS

The U.S. Housing and Urban Development CDBG State Program allows the Kansas state government to award grants to smaller units of general local government (e.g. counties, towns) that develop and preserve decent affordable housing, to provide services to the most vulnerable in our communities, and to create and retain jobs. In recent years, CDBG funds have been successfully used for broadband infrastructure development where the local government applicant can show the improvements meet the general guidelines of the program—so grant funds have to spent in low and moderate income areas.

Over a 1, 2, or 3-year period, as selected by the grantee, not less than 70 percent of CDBG funds must be used for activities that benefit low- and moderate-income persons. In addition, each activity must meet one of the following national objectives for the program: benefit low- and moderate-income persons, prevention or elimination of slums or blight, or address community development needs having a particular urgency because existing conditions pose a serious and immediate threat to the health or welfare of the community for which other funding is not available. More information is available here (https://www.hud.gov/program_offices/comm_planning/communitydevelopment/programs).

9.5 USDA RECONNECT PROGRAM

The ReConnect program is a funding program managed by the USDA Rural Development Office. This program is sometimes called the USDA e-Connectivity pilot program. Grant applications can be a combination of 100% grant, 50% grant/50% loan, or 100% loan. The amount and types of funds available for assistance can be found in the Notice of Funding Opportunity published on February 21, 2024, and proposals are due on April 22nd, 2024. A wide variety of entities can apply, including non-profits, coops, and state and local governments.

As much as $200 million will be available for loans, with another $100 million allocated for loan/grant combinations. As much as $150 million has been allocated for 100% grants. A total of $150 million in grants without a match has been allocated for projects in tribal and socially vulnerable

communities. More information is available here: (reconnect.usda.gov). A mapping tool is available on the Web site to show areas that are eligible. To qualify as an eligible area, households must have less than a minimum of 10 Megabit down/1 Megabit up broadband service.

ReConnect grants can be excellent opportunities for deploying improved broadband service in rural areas, but the grant application typically requires more work to prepare than some other grant opportunities. If La Crosse County is interested in applying for a 2025 ReConnect grant, work on the application should begin no later than mid-fall of 2024.

9.6 OPPORTUNITY ZONES

An Opportunity Zone is an economically-distressed community where new investments, under certain conditions, may be eligible for preferential tax treatment. Localities qualify as Opportunity Zones if they have been nominated for that designation by the state and that has been approved by the Internal Revenue Service. Opportunity Zones are designed to create tax incentives for private investors to make investments that can encourage economic development and job creation in distressed communities. Opportunity Zones would be of most use for Internet Service Providers who could use the tax benefits to make a business case to improve Internet access in a qualifying area (zone).

Opportunity Zones are defined by census tract, and the Census Bureau's Geocoder online tool can provide census tract ID numbers. A link to the list of currently qualified census tracts can be found on this page (https://www.cdfifund.gov/opportunity-zones). The City of Salina and Saline County both have designated Opportunity Zones.

9.7 RDOF/CAF2 FUNDING

The second round of the FCC Connect America Fund (CAF2) (Rural Digital Opportunity Fund) continues to provide funds to incumbent and competitive service providers. As noted in Section 3.9 of this report, Saline County ISPs were the recipients of several RDOF awards.

The funds must be used in unserved or underserved areas as defined by Federal census blocks. To be eligible, a census block could not have been served with voice and broadband of at least 10/1 Mbps (based on Form 477 data) by an unsubsidized competitor or price cap carrier.

The FCC published the final eligible census blocks for the auction on February 6, 2018. The final areas were based on FCC Form 477 data as of December 31, 2016 (the most recent publicly available FCC Form 477 data at the time). So there is a time lag between the determination of a qualifying census block or blocks and the schedule for submitting a bid to serve those areas. The first round of funding was announced in early 2021, and was immediately met with widespread criticism. The FCC last allocated RDOF funds ($163 million) in the fall of 2021.

SpaceX (Starlink) was awarded almost $900 million, and it may have to return some of those funds because the company appears to have included some ineligible census blocks. Many large incumbents also received substantial awards when some smaller ISPs that might have offered competition to the incumbents received much less or no funds.

Because many CAF2 qualifying areas are only served by low performance DSL (e.g. less than 10/1 Mbps service), incumbent carriers use the awards to upgrade DSL switches, which is not a long term solution. More recently, competitive carriers are applying for CAF2 funds to provide higher

performance broadband wireless and in some cases fiber to the home. Because the use of CAF2 funds are so restricted, it has not had as much impact as many hoped. One criticism of the RDOF program is that RDOF awardees (i.e. ISPs) have ten years to spend the funds, and some telecom providers have been very slow to follow through on their proposed network expansion plans.

9.8 GRANT APPLICATION ACTIVITIES

If the County does choose to work with an ISP partner on a grant, the following table and timeline provide an overview of the tasks involved and the typical time each activity might take.

Activity	Description	Discussion	Tasks
Develop a grant application	The grant application process, from start to award announcement, can be nine to twelve months.	Broadband grant application requirements have become more stringent over time, with more grant agency oversight and review. Careful planning is essential to develop a successful application.	• Once a grant opportunity has been identified, review grant requirements to determine if the project can qualify. For example, some grants require two years of financial history. • Identify regional agency that will assist • Begin contacting potential ISP partners. • If the project qualifies, identify at least two people to take the lead to prepare application. • Prepare a task list of all grant materials requirements and identify data needed. • Develop a timeline for developing sections of the grant. • Identify requirements for letters of support and matching funds and develop timeline to solicit and collect commitments. • Complete all sections of grant application with assistance from public and private partners. • Submit grant application.

Typical Timeline	Months											
Tasks	1	2	3	4	5	6	7	8	9	10	11	12
Determine grant qualifications												
Identify regional council partner												
Identify ISP or WISP partner if needed												
Appoint grant team												
Create grant task list												
Prepare timeline and assign tasks to partners												
Identify matching fund requirements and letters of support to solicit and collect as needed												
Complete all sections of the grant application												
Submit grant												
Grant agency review												
Awards announcement												

10 PARTNERSHIP OPPORTUNITIES

Because nearly all telecom infrastructure includes some use of public right of way, public/private partnerships are always a requirement for broadband infrastructure. The County government and private entities like ISPs and WISPs have several needs in common:

- The need for more bandwidth,
- The need for more affordable bandwidth, and
- The need for more affordable bandwidth to be more widely available.

Potential project partners include:

Collaborating with Service Providers

While in many respects a broadband network shares many similarities with other public utilities (e.g. roads, water, sewer) there is one fundamental difference. Other public utilities like water and sewer have a captive audience and the utility is able to operate as a monopoly–meaning the customer base can be taken for granted. Early discussions with service providers have been positive, with at least two providers making requests for additional information about the effort.

A new broadband network or a substantial expansion of an existing broadband network is a public/private enterprise, and Internet service providers are are the typical private sector partner. ISPs making requests for grant funding must be evaluated carefully. Factors to consider include:

- **Operating track record** – How long has the ISP been in business? Do they have a good reputation in the community for customer service and technical expertise?
- **Financial stability** – Can the ISP contribute some or all of the required match funds? Are they willing to provide financial information to show the company is financially stable?
- **Technical expertise** – Does the company have experience building and operating the proposed network? An ISP that has only offered wireless Internet service may not have the staff and experience to build and operate a fiber to the home network.
- **Capacity to meet grant requirements** – Who will assist the grant writing team from the private sector partner? Do they have the time and writing experience to ensure grant materials are completed in a timely manner? We have seen ISPs who promise to provide grant materials but wait until the last minute to start working on them, and the grant deadline is missed.
- **Experience managing larger construction projects** – Does the private sector partner have any experience managing a multi-million dollar construction project? Do they have the vendor relationships that will be needed to meet grant timeline requirements? Companies that have limited experience with larger projects than they have completed in the past may be at risk for having state or Federal grant funds clawed back because of missed deadlines.

Throughout the U.S., many WISPs are aggressively pursuing public-private partnerships (PPPs) with county governments. These partnerships may include a variety of strategies: collaboration on a grant opportunity, shared costs of developing a new tower site, revenue sharing, fee waivers, and other sorts of cost and revenue sharing. The advantage of this kind of PPP is that the WISP typically is responsible for most of the day-to-day management of the network assets.

The County can pursue public/private partnerships with technically qualified and financially stable ISPs and WISPs. Where appropriate, the County can channel grant funds to providers who will use the funds to build and manage new broadband infrastructure.

Selected providers should be able to show technical competency and have a demonstrable track record of managing substantial fiber and/or wireless builds on time and within budget. It will also be important for any public/private partnership agreement have a claw-back agreement. When public funds are transferred to a private company, the County should have the ability to "claw back" the built infrastructure for a minimum of five to ten years.

Conditions for a claw back could include bankruptcy of the ISP, sale to a third party (where substantial profit taking leverages the public funds), poor service, unreasonably high cost of service, and/or poor service reliability.

Public Safety

The Sheriffs department, fire, and rescue departments all need better access to broadband and improved wireless voice/data communications. Throughout the United States, public safety voice and data communications systems are being upgraded, often at staggering cost. Many of the upgrades include new towers to eliminate "holes" in the served area where first responder, fire, and rescue radios do not work. Combining public safety needs with community broadband needs can bring new sources of funding and cut costs, sometimes dramatically. Elected officials may need to take the lead in this area to ensure that public safety officials work collaboratively with the broadband efforts.

The availability of public-safety towers and/or new towers can enable new services and applications for police, fire, and rescue in Saline County. Secure WiFi hotspots can be set up around and near the towers, so that reports can be filed from the field using the WiFi Internet connection. Other communities that have done this have found that it saves time and keeps patrol cars out in the field longer.

There are often grants available for public-safety voice and data communications improvements, like new towers and upgrades to existing tower facilities, that could also support the broadband initiative. Any public-safety tower or communications expenditure should be analyzed to determine if the expenditure can also support expanded broadband access in the county.

K12 Schools

Saline County schools have adequate broadband service at existing school locations. But K12 students often lack adequate Internet service at home, and some schools are careful not to assign homework that requires Internet access. Parents consistently report on the burden of having to drive children to a public library or some other WiFi hotspot to get Internet access for school work. The County should work with the schools to apply for education grant funds to achieve this goal, and to keep K12 parents informed about broadband activities.

County Businesses

Businesses in Saline County have indicated that they are largely satisfied the current choice of Internet providers, packages, and prices. The County, as part of its broadband awareness efforts, should ensure that local businesses are kept up to date with work activities, grants, and other efforts (e.g. attend CoC meetings from time to time to report on County broadband efforts).

11 DIGITAL EQUITY ANALYSIS

The phrase "digital divide" has often been used to identify the gap between urban access to Internet and broadband and rural access to broadband and Internet services. Despite significant growth in technology use, much work remains to ensure all learners, families/caregivers, and communities in the county have access to reliable, high-speed broadband and technology tools for learning. But some rural communities in Saline County still face the following issues:

- Low quality copper-based infrastructure
- Low speed Internet access
- High cost of Internet service
- Need for increased access to computer/Internet training
- Need for affordable Internet devices (computers, laptops, tablets, etc.)

To ensure all residents and businesses in the county have equitable access to reliable, high-speed broadband and technology tools, there are three components of Internet access—availability, affordability, and adoption—that must be considered. Reaching these three goals for everyone in the county is a challenge that has been highlighted and exacerbated by the digital opportunity and equity gaps exposed due to the COVID-19 pandemic. In Saline County, effective digital equity and digital literacy programs should be targeted for both rural underserved populations. The digital equity programs could address four issues:

- Making good quality Internet access affordable for all county households and businesses.
- Ensuring that the tools needed to access the Internet (e.g. computers, laptops, tablets, etc.) are affordable.
- Ensuring that the residents and businesses of Saline County have the knowledge and training needed to use Internet resources productively for business, personal, and educational use.
- Ensuring that there are adequate public computer/Internet access facilities available in the county for those individuals that may need it.

The State of Kansas has established the DOCK (Digital Opportunities to Connect Kansans) program to help improve the digital skills of state residents who have not yet been able to make productive use of Internet resources. By early summer of 2024, $2.8 million was awarded to fifteen organizations in the state that were helping Kansans to participate in the digital age and to help create economic opportunity for those citizens.

With respect to the last bullet time above, it is worth noting that the Salina Public Library is one of the best libraries we have ever visited. They have a excellent computer and Internet facilities, offer gaming machines to bring teenagers into the library, free WiFi Internet access, a "print from anywhere" service, a wide range of online courses (many of which are technology oriented), access to the Mango language learning programs, and keyboard/typing classes. The library also offers a wide range of other programs and services, many of which we have never seen in any other library. In our opinion, the Salina Public Library is a model for the modern library nationwide.

11.1 DIGITAL LITERACY INITIATIVES

Digital literacy programs should be designed to meet the needs of traditionally underserved populations to provide technology training (especially to older adults), job training, and employment related skills (e.g. common office applications like basic word processing, spreadsheets, email, web applications, etc.).

The goal of digital literacy initiatives is to increase employability of program participants, improve job-seeking skills, and create a more highly skilled, job-ready workforce in Saline County.

Basic literacy skills are a requirement to master digital literacy skills. Digital literacy classes should be free, and should be offered both online and in-person. There are a wide range of online digital literacy course materials, instructor guides, study guides, and online courses.

As noted in the previous section, the Salina Public Library has an excellent range of technology oriented learning opportunities.

11.2 DIGITAL EQUITY ACT OF 2021

The Digital Equity Act of 2021 provides $2.75 billion to establish three grant programs that promote digital equity and inclusion. These programs will fund projects that help ensure U.S. communities have the information technology capacity needed for full participation in society, democracy, and economy by promoting a diverse array of digital advancement projects.

These projects may range from providing digital literacy and digital skills education to low-income populations, improving the online accessibility of social services for individuals with disabilities, or more accurately measuring broadband access and adoption in rural communities.

Awards to the states were made in 2022. Local governments should check with the state agency administering these funds to determine if funds are still available.

The three programs are:

- The State Digital Equity Planning Grant Program is a $60M formula grant program for states, territories and tribal governments to develop digital equity plans. This program is administered by allocating funds to each state, and the governor of each state will appoint an administering agency responsible for distributing the funds. No cost sharing or matching funds are required to apply for this program.
- The Digital Equity Capacity Building Grant Program is a $1.44 billion formula grant program for states, territories, and tribal governments. As of late spring, 2023, this Federal program has not released a NOFA (Notice of Funds Availability).
- The Digital Equity Competitive Grant Program is a $1.25 billion grant program. It will fund annual grant programs for five years to implement digital equity projects. As of late spring, 2023, this Federal program has not released a NOFA (Notice of Funds Availability).

APPENDIX A: SERVICE PROVIDER DETAIL

If there is no information in the "One-time Fees," it does not necessarily mean there are no one-time fees. It just means that information on the one-time fees could not be found on the company's public website.

NOTE: Many ISPs do not provide upload speeds. This table indicates that no upload speed was discoverable by the abbreviation 'NA' (Not Available)

DSL Providers Saline County

	Internet Only-No Discount	Speed Mbps unless	Modem-Router	Data Inclu-ded	One Time Fees	Dis-counts
AT&T DSL-IPBB						
Internet Basic 5	$70.00	5/1		1.5 TB $10 mthly for each 50 GB	$99 Install	$60 for 12 months
Internet 10	$70.00	10/1		1.5 TB $10 mthly for each 50 GB	$99 Install	$60 for 12 mths
Internet 50	$70.00	50/10		1.5 TB $10 mthly for each 50 GB		$60 for 12 mths
EarthLink DSL						
12	$69.90	12/1	Included	Unlimited	$39.95 Install	
18	$79.90	18/1	Included	Unlimited	$39.95 Install	
Twin Valley Telephone						
<20	$59.99	18/1	$11.99		Free	
>20	$64.99	20/1	$11.99		Free Install	

Cable Providers Saline County

	Internet Only- No Discount	Speed Mbps unless noted	Modem-Router	Data Included	UNLIMITED	Video Per Month	Phone Per Month	Bundle Monthly- No Expiring Discounts if regular prices are known	DISCOUNTS
Cox Cable								Internet Price + 170 Channels @ $109 + Phone @$20	
100	$50.00	100/5	Included	1.25 TB	$60.00	$61-$146	$20.00	$179 + taxes & fees	None
250	$70.00	250/10	Included	1.25 TB	$60.00	$61-$146	$20.00	$199 + taxes & fees	None
500	$90.00	500/10	Included	1.25 TB	$40.00	$61-$146	$20.00	$219 + taxes & fees	None
GIG	$120.00	1 Gbps/ 35 Mbps	Included	1.25 TB	$40.00	$61-$146	$20.00	$249 + taxes & fees	$110 for 24 mths
Vyve Broadband							$9.95 for first year	Internet Price +Select Channels $190.09+ phone @$17	Six months discount
200	$67.49	200/20	$15 monthly	1 TB		$70-$190.09	$17.00	$274.58	$19.99
300	$77.49	300/30	$15 monthly	1.5 TB		$70-$190.09	$17.00	$284.58	$44.99
960	$117.44	960/50	Included	Unlimited		$70-$190.09	$17.00	$324.53	$79.99
Nex-Tech									
Gig	$69	1Gig/ 1Gig	Included	Unlimited		$30-$96	$20	$69 Internet + 125+ channels @ $96 + phone@	

Fiber Provider Saline County

	Internet Only- No Discount	Speed Mbps unless noted	Modem-Router	Data Included	Video Per Month	Phone Per Month	Fees One Times	Bundle Monthly- No Expiring Discounts if regular prices are known	Discounts
AT&T Fiber	Available only to new residential customers who switch from their current provider to AT&T Fiber (300 or higher) plan. Customer must provide valid proof of previous internet provider's Early Termination (ETF) charge dated no more than 60 calendar days prior to AT&T Fiber order. Reward Card Value: Amount based on customer's actual ETF from previous rounded up to the nearest $10 increment. Offer excludes taxes, service fees, return equip fees, or ETF incurred on services bundled with previous provider.								
300	$60.00	300/300	Router with WiFi included	Unlimited			Self Installation		$5 for paperless and auto pay. $50 extra off- $50 for ordering online. Extra $100 reward card for ordering online
500	$70.00	500/500	Router with WiFi included	Unlimited			Self Installation		$5 for paperless and auto pay. $100 Act Now reward card. Extra $50 reward card Extra $100 reward card for ordering online

	Internet Only- No Discount	Speed Mbps unless noted	Modem-Router	Data Included	Video Per Month	Phone Per Month	Fees One Times	Bundle Monthly- No Expiring Discounts if regular prices are known	Discounts
I Gig	$85.00	1G/1G	Router with WiFi included	Unlimited			Self Installation		$5 for paperless and auto pay. $100 Act Now reward card. Extra $50 reward card Extra $150 reward card for ordering online
2 Gig	$155.00	2G/2G	Router with WiFi included	Unlimited			$99 installation fee wauved- professional installation	Up to five WiFi extenders if technician determines they are needed- Active Armor Security Included	Extra $50 reward card Extra $150 reward card for ordering online
5 Gig	$255.00	5G/5G	Router with WiFi included	Unlimited			$99 installation fee wauved- professional installation	Up to five WiFi extenders if technician determines they are needed- Active Armor Security Included	Extra $50 reward card Extra $150 reward card for ordering online
Clearwave Fiber									
Fiber 100	$40.76	100/100	$10	Unlimited			$50		No contract

	Internet Only- No Discount	Speed Mbps unless noted	Modem-Router	Data Included	Video Per Month	Phone Per Month	Fees One Times	Bundle Monthly- No Expiring Discounts if regular prices are known	Discounts
Fiber 500	$50.76	500/500	$10	Unlimited			$50		No Contract
Fiber 1GB	$55.76	1 GIG/1 GIG	$10	Unlimited			$50		No Contract
Fiber 2GB	$125.77	2 GIG/2 GIG	$10	Unlimited			$50		No Contract
Home Communications, Inc									
100	$59.99	100/100		Unlimited		$9.00		No triple play	
250	$72.99	250/100		Unlimited		$6.00		No triple play	
500	$92.99	500/100		Unlimited		$6.00		No triple play	
Gig	$124.99	1000/100		Unlimited		$6.00		No triple play	
IdeaTek									
Basic 100	$49.95	100/100	$13.95			$25		No triple play	
Basic 250	$74.95	250/250	$13.95			$25		No triple play	$10 off when bundled with phone
Gigabit	$89.95	Gig/Gig	$13.95			$25		No triple play	
2.5 Gigabit	$139.95	2.5 Gig/ 2.5 Gig	$13.95			$25		No triple play	
Next-Tech Fiber									
	$69	1 gig/1 gig	Included	Unlimited	$66	$20	Waived for New Customer	Basic Cable $30 with fees $66 Deluxe Cable $90 with fees $136-$140	First Three Months Free. Bundle

	Internet Only- No Discount	Speed Mbps unless noted	Modem-Router	Data Included	Video Per Month	Phone Per Month	Fees One Times	Bundle Monthly- No Expiring Discounts if regular prices are known	Discounts
	$69	1 gig/1 gig	Included	Unlimited	$136-$140	$20	Waived for New Customer		price $185 does not include rebroadcast fee
Tri-County Telephone Fiber									
25 Mbps	$59.95	25/25	Unknown	Unknown	$25.95 to $138.95	$18.65	100 minutes LD $12	$196.55	Discounts included
50 Mbps	$69.95	50/50	Unknown	Unknown	$25.95 to $138.95	$18.65	100 minutes LD $12	$206.55	Discounts included
100 Mbps	$89.95	100/100	Unknown	Unknown	$25.95 to $138.95	$18.65	100 minutes LD $12	$221.55	Discounts included
250 Mbps	$119,95	250/250	Unknown	Unknown	$25.95 to $138.95	$18.65	100 minutes LD $12	$251.55	Discounts included
500 Mbps	$149.95	500/500	Unknown	Unknown	$25.95 to $138.95	$18.65	100 minutes LD $12	$281.55	Discounts included
1 Gbps	$199.95	1Gbps/ 1Gbps	Unknown	Unknown	$25.95 to $138.95	$18.65	100 minutes LD $12	$351.55	Discounts included
Twin Valley Telephone Fiber									
100	$64,99	100/100		Unlimited				No triple play	
Gig	$104.99	1Gbps/ 1Gbps		Unlimited				No triple play	
Wilson Communications									
Force 75	$62.95	75/75	$15.95	Unknown		$30.32		No triple play	

	Internet Only- No Discount	Speed Mbps unless noted	Modem-Router	Data Included	Video Per Month	Phone Per Month	Fees One Times	Bundle Monthly- No Expiring Discounts if regular prices are known	Discounts
Force 100	$79.95	100/100	$15.95	Unknown		$30.32		No triple play	
Force 275	$99.95	275/275	$15.95	Unknown		$30.32		No triple play	
Force 1G	$199.95	1Gbps/ 1Gbps	$15.95	Unknown		$30.32		No triple play	

Fixed Wireless (FWA) Providers Saline County

	Internet Only- No Discount	Speed Mbps unless noted	Modem- Router	Data Inclu- ded	Phone Per Month	Fees One Times
Kansas Broadband Internet	Installation $250 month to month no contract. One year contract installation is $160. Two year contract , installation is $79.					
Internet 10	$60.00	10/2	Must buy your own	Unlimited		Fee varies by contract
Internet 15	$70.00	15/3	Must buy your own	Unlimited		Fee varies by contract
Internet 30	$85.00	30/5	Must buy your own	Unlimited		Fee varies by contract
Internet 40	$100	40/7	Must buy your own	Unlimited		Fee varies by contract
Internet 60	$120	60/10	Must buy your own	Unlimited		Fee varies by contract
AT&T Fixed Wireless	Unable to verify AT&T Internet Air which is $60 monthly for variable download speed from 75 Mbps to 500 Mbps, upload speeds can be as low as 10 Mbps but also much higher. Cannot be ordered over the Internet but I was told every location with AT&T DSL is eligible. It is highly unlikely that is					
KwiKom Communications						
Essential	$55.00	10/2	Included	Unlimited	$25.00	
Basic	$75.00	20/4	Included	Unlimited	$25.00	
Family	$85.00	40/8	Included	Unlimited	$25.00	
Max	$105.00	60/12	Included	Unlimited	$25.00	
Mutual Telecommunicae tions	5% Coverage is in an unpopulated area along the county border south of Falun- no pricing available without address					
Nex-Tech						
1.5	$60.00	1.5/512Kbps		Includes 100GB, 200GB $20, 300GB $40		
3	$70.00	3/768 Kbps		Includes 125GB, 250GB $20, 500GB $40		
6	$80.00	6/1		Includes 150GB, 300GB $20, 500GB $40		

	Internet Only- No Discount	Speed Mbps unless noted	Modem- Router	Data Inclu- ded	Phone Per Month	Fees One Times
Nex-Tech	$65.00	10/3				Bundle Price $201- 50/6 Internet, Phone $20, TV Now Deluxe $96 Does not include Rebroadcast Fees
	$75	25/6				
	$85	50/6				
	$105	100/10				
Twin Valley Fixed Wireless						
50	$99.99	50/8	$11.99	Unlimited		No installation fee
25	$59.99	25/4	$11.99	Unlimited		No installation fee
10	$44.99	10/1	$11.99	Unlimited		No installation fee
Nextlink Internet						
NEXT25	$45.00	25/5	Included	Unlimited	$15.00	$99.00
NEXT50	$65.00	50/10	Included	Unlimited	$15.00	No installation fee
NEXT75	$75.00	75//10	Included	Unlimited	$15.00	No installation fee
NEXT100	$90.00	100/20	Included	Unlimited	$15.00	No installation fee
U.S. Cellular	$10 Credit for paperless					
	$59.99	10/1	Included	Unlimited		3 year con-tract-free $450 credit
Xnet Wifi						
100G	$85.00	Depends on cellular network used	One time payment $299.00	100 GB		Activation Fee $30
300G	$100.00	Depends on cellular network used	One time payment $299.00	300 GB		Activation Fee $30
Unlimited	$120.00	Depends on cellular network used	One time payment $299.00	Unlimited		Activation Fee $30

Satellite Providers Saline County

	Internet Only- No Discount	Speed Mbps unless noted	Modem-Router	Data Inclu-ded	Fees One Times	Bundle Monthly-No Expiring Discounts if regular prices are known	Discounts
HughesNet							
Select 100GB Priority	$79.99	50/5	$14.99 plus $99 lease setup	Unlimited but slows after 100GB	Installation Free with Lease. ETF up to $400	No triple play	$25 Discount for 12 months with 24 months
Elite 200GB Priority	$94.95	100/5	$14.99 plus $99 lease setup	Unlimited but slows after 200GB	Installation Free with Lease. ETF up to $400	No triple play	$25 Discount for 12 months with 24 months
Fusion 200GB Priority	$124.99	100/5	$14.99 plus $99 lease setup	Unlimited but slows after 200GB	Installation Free with Lease. ETF up to $400	No triple play	$25 Discount for 12 months with 24 months
Viasat							
Unlimited Bronze 12	$99.99	30/3	$15	Unlimited 35G Priority	Installation fee, $0, $50, $100,$300 or $599	No triple play	$30 Discount for 3 months with 24 months
Unlimited Silver 12	$149.99	35/3	$15	Unlimited 45G Priority	Installation fee, $0, $50, $100,$300 or $599	No triple play	$50 Discount for 3 months with 24 months
Unlimited Gold 12	$199.99	30/3	$15	Unlimited 65G Priority	Installation fee, $0, $50, $100,$300 or $599	No triple play	$50 Discount for 3 months with 24 months
Starlink							
	$120.00	150-30/8-20			$299 Equipment	No triple play	$200 regional credit for Kansas. 30 Day free trial

* Starlink service is currently available in Saline county. Early reports have been generally positive.

Latency is much lower than traditional geostationary satellite services like HughesNet and Viasat, but latency is still much higher than terrestrial fiber Internet connections.

* If pricing remains similar to what is being charged for early users, Starlink could be a very significant improvement for rural residents and businesses.

APPENDIX B: GLOSSARY

Active network: Typically a fiber network that has electronics (fiber switches and CPE) installed at each end of a fiber cable to provide "lit" service to a customer.

Asymmetric connection: The upload and download bandwidth (speed) are not equal. Cable Internet and satellite Internet services are highly asymmetric, with upload speeds typically 1/10 of download speeds. Asymmetric services are problematic for home-based businesses and workers, as it is very difficult to use common business services like two way videoconferencing or to transfer large files to other locations.

Backhaul: Typically refers to a high capacity Internet path out of a service area or locality that provides connectivity to the worldwide Internet.

Colo facility: Colo is short for Colocation. Usually refers to a prefab concrete shelter or data center where network infrastructure converges. A colo or data center can also refer to a location where several service provider networks meet to exchange data and Internet traffic.

CPE: Customer Premises Equipment, or the box usually found in a home or business that provides the Internet connection. DSL modems and cable modems are examples of CPE, and in a fiber network, there is a similarly-sized fiber modem device.

Dark fiber: Dark fiber is fiber cable that does not have any electronics at the ends of the fiber cable, so no laser light is being transmitted down the cable.

Fiber switch: Network electronic equipment usually found in a cabinet or shelter

Fiber Optic Splice Closure: See **FOSC**.

FOSC: Fiber Optic Splice Closure. Typically a water and air tight cylindrical container where fiber cable is split open to allow splicing (connecting together) of fiber strands for a drop to a premises.

FTTH/FTTP/FTTx: Fiber to the Home (FTTH), Fiber to the Premises (FTTP), and Fiber to the X (FTTx) all refer to Internet and other broadband services delivered over fiber cable to the home or business rather than the copper cables traditionally used by the telephone and cable companies.

Handhole: Handholes are open bottom boxes with removable lids that are installed in the ground with the lids at ground level. The handholes provide access to fiber cable and splice closures that are placed in the handhole. Handholes are also called **pull boxes**.

IP video: Video in various forms, including traditional packages of TV programming, delivered over the Internet rather than by cable TV or satellite systems.

Latency: The time required for information to travel across the network from one point to another. Satellite Internet suffers from very high latency because the signals must travel a round trip to the satellite in stationary orbit (22,500 miles each way). High latency makes it very difficult to use services like videoconferencing.

Lit network: A "lit"network (or lit fiber) is the same as an active network. "Lit" refers to the fact that the fiber equipment at each end use small lasers transmitting very high frequency light to send the two way data traffic over the fiber.

MST: Multiport Service Terminals are widely used in fiber to the home deployments to connect individual home drop cables to larger distribution cables on poles or in handholes. Pre-connectorized drop cables snap into the MST ports and do not require any splicing.

Passive network: Refers to infrastructure that does not have any powered equipment associated with it. Examples include wireless towers, conduit (plastic duct), handholes, and dark fiber.

Pull boxes: Pull boxes (also called handholes) are used to provide access to fiber cable and splice closures. They are called pull boxes because they are also used during the fiber cable construction process to pull the fiber cable through conduit between two pull boxes.

Splice closures: Splice closures come in a variety of sizes and shapes and are used to provide access to fiber cable that has been cut open to give installers access to individual fiber strands. Splice closures are designed to be waterproof (to keep moisture out of the fiber cable) and can be mounted on aerial fiber cable or placed underground in handholes. Also called **FOSC**s.

Splicing: The process of providing a transparent joint (connection) between two individual fiber strands so that laser light passes through. A common use of splicing is to connect a small "drop" cable of one or two fiber strands to a much larger (e.g. 144 fiber strand) cable to provide fiber services to a single home or business.

SCADA: Supervisory Control and Data Acquisition. Used by the electric utility industry and some other utilities (e.g. water/sewer) to manage their systems.

Symmetric connection: The upload and download bandwidth (speed) is equal. This is important for businesses and for work from home/job from home opportunities.

Virtual Private Network: A VPN creates a private, controlled access link between a user's computer and a corporate or education network in a different location. VPNs are often encrypted to protect company and personal data. VPNs usually require a symmetric connection (equal upload and download speeds) to work properly.

APPENDIX C: RESIDENTIAL QUESTION 24 - ADDITIONAL COMMENTS

- I use the Internet for Church work. The email account I use is a COX email account, but I just changed it to a Gmail account. It will take at least one month, because one of the parishes I serve only publishes my announcements monthly. I have changed my email with most of my accounts to Gmail, but am still working on it. We are planning on switching to a fiber connection in the near future. Thank you!
- Cancel the study, save some money.
- Fiber!
- On my phone but using my home wireless Internet
- My Internet service won't allow me to even have a computer
- Living outside of the city, good Internet service is just not available to us. I am retired, but use the Internet daily. My partner is still employed and must have Internet access when he is on call.
- Senior Fair
- I'm expecting to subscribe to Nex-Tech Fiber soon, it has been brought to the back of my garage.
- I am completing this survey because some Smolan residences are being asked to find new cable (tv) providers. Having reliable broadband services may give Smolan residences more choices for local tv providers instead of having to use dish type products.
- completing survey in written form
- I would like fiber to the home. Most of the problem is that AT&T owns the market place and territory to which I reside. They are obviously out of touch with the rural market. What we have now is leaps and bounds better then what has been available but I work in a technically advanced job and if I am working from home I sometimes have to limit the usage of the rest of the family if I am logged into multiple systems simultaneously.
- AT&T's system indicates that they have DSL broadband available for the town of New Cambria. This is incorrect, there is no landline broadband available, only various wireless providers. On a call they referenced outdated equipment. Since AT&T said broadband was available I requested Internet multiple times. They eventually removed only my address so I don't request it again. The rest of town still incorrectly indicates availability. We'll never get Internet without anyone knowing the correct service conditions.
- We just changed from Cox to Nex-Tech and are very satisfied with our service so far
- We have lived in Brookville for over 50 years and Wilson has always been our phone and Internet provider. There is no other choice here for affordable TV and Internet service. They dropped their cable TV portion of service and now we have to buy Hulu to get the channels we want to watch, which made our bill higher for TV watching than it was with Wilson's cable. Plus the added expense of faster Internet service to use Hulu. Can't win for losing with all this new technology.
- I won't get home Internet again unless the prices get much lower and the quality goes way up! What my household went through with Hughes net should be illegal.
- Saline county needs to start expanding fiber Internet outside of city limits. Our country kids are going to keep falling further behind or look for better more suitable options for reliable Internet. Just like electric and telephone lines were added a long time ago, Internet is now essential!!! Grants can be applied for to help offset the cost. Saline county can be at the forefront and be a leader or continue to fail its citizens and start to dwindle like these other small communities around Kansas!
- get the government involved and everyone will be screwed.
- Senior fair. He just got Internet last month. He doesn't know much about it.
- The data caps are too low

- My cox bill for Internet is supposed to be $90 but because I go over my limit it runs $250 a month. I am switching to Clearwave
- Senior Health Fair
- "I hope to see impactful provisions that target those who simply can't afford existing service. Salina is fortunate to have several wonderful organizations that offer access points, but as already stated - comprehensive and therefore higher-level solutions will be necessary to further reduce barriers faced by our working poor, low income, and fixed income neighbors. Please consider that Saline county had almost 4000 ACP subscribers when the program ended this year. I believe it is plausible that at least that many households are at risk of losing Internet access if they haven't already been without it.
- This initiative acknowledges a significant connection between Internet access and economic stability and growth, and I hope my thoughts along those lines may contribute to the wellbeing of our community.
- P.S. it makes me so happy that digital literacy and government engagement made it onto the list. :)"
- Question 22: Not really sure how to answer this question. I would have thought that with the newest competition in town that Cox would have lowered their prices to be competitive, or the two newest companies in town would try to beat Cox, but that hasn't happened yet.
- I am one severe wind storm from losing interest service. Ihe tower that delivers my signal is on I-70 and the Niles Road and if was damaged I would be without service for an unknown period of time with no alternatives to replace it.
- "Southeast of Saline & city of Gypsum Internet & cellular data is embarrassing. Often cannot access any cellular data,email,or social media on their network or even using my Verizon Cellular Data.
- For this reason I have leased my land to 110ft Nextlink Tower at my house. My house & shop are free to me & working fine on my home address Network. But 5 miles SouthEast. Gypsum & Southeast of Saline School are HORRIBLE Internet access. I think Southeast of Saline actually has fiber & limits their access to WiFi intentionally so visitors cannot password in. But Verizon Cellular Data should at least work in that black hole,but usually limited to maybe a phone call worth of data."
- I am not very knowledgeable about Internet lingo, and not able to really answer the questions well.
- It would be nice if different areas had options. Currently the area where I live only offers COX and Clearwave. I have not heard good things about Clearwave and Cox is expensive and I have not had the best experience with them. I would like options like Verizon or AT&T in my area.
- Answers indicate that I am very satisfied with current provider, but am nearly at the end of a two year contract. But by the end of the year, the price will double and the speed will halve. I will probably be looking for a new provider, hopefully someone who will not implement increased prices every year. Can't live without Internet connection, but price will soon become a problem.
- "I wish it was more affordable
- ridiculously priced"
- I currently have Cox Internet and I am waiting for Clear Wave to run fiber in my neighborhood. The minute Clear Wave is available I will dump Cox as quickly as possible. They have had the monopoly for far too long. Clear Wave is buried fiber, faster, more efficient and cheaper than Cox. Hopefully they will be installing fiber in my area soon!!
- Survey and speed test were completed using my hot spot at Salina Regional Hospital. The normal place we use the hotspot is at home in the country north of Salina. I plan to be at one of the broadband meetings today in Salina.
- "Need Internet access soon please!
- I leave near Schilling and Ohio. It's a bit ridiculous that we can't get reliable Internet service. (I know it's coming soon)"
- When weather is bad or sometimes even if it is too windy the service is not good. Would be great to have a fiber Internet service here, would make working from home a lot more reliable.
- Att fiber at daughter's house
- Cox Fiber at work

- It wasn't as bad until they ended the ACP. Now, I'll probably never be able to afford Internet on a fixed income
- Completing at work, I work for the county.
- We have been with Kansas Broadband here in New Cambria for years. We are satisfied, however we are open to underground cable Internet with faster service.
- Senior
- From June 2015 to January 2024 I had DSL Internet from AT&T. At first, I had 50 Mbps, then upped to 60 Mbps. A couple of years ago I inquired with AT&T about the availability of fiber. It was not available in my neighborhood but I was offered a no-charge upgrade to bonded-pair DSL at 75 Mbps ($80). It was an improvement but the fiber from Clearwave just blows DSL out of the water and does it for $30 less per month ($50). It is the only underground utility I have and so far it has been very reliable.
- Currently At &t is very slow even on our phones. AT&T is aware . Apparently many complaints and it has to do with towers. My daughter can't use it while at work or in the south part . AT& T says it's being looked at but many people have been going through this .
- I am happy with fiber we just got in our neighborhood. Waited 8 years for this!
- Our home has adequate service. Our office building and outside area has none. Located 2mi from house, Bavaria ks location.
- Starlink is great, but it is really expensive. But it is really the only option out here.
- Been waiting for fiber Internet my cox is 190 dollars a month
- The cost of having reliable Internet service poses a large financial burden on our family.
- Completed survey on cellphone using home wifi from cable type high speed Internet. I am very satisfied with my home Internet except price. Really need a more affordable option.
- I would certainly miss it if I didn't have good service!
- It is very frustrating that I am unable to get reliable high-speed Internet service in the center of the most technologically advanced nation in the world. The rest of the world seems to be light-years ahead of us in this area. Please help us get this done asap.
- "I need the Internet to connect with my doctors and nurses
- When I don't have access to Internet I cannot get a hold of emergency services. Almost cost me my life once. Somebody contacted the ems and let them on for me. Internet is very important to older disabled people. It is vital."
- We recently switched from Cox cable to Nex-Tech fiber primarily for the significant cost reduction. We were satisfied with Cox—no problem with speed or reliability. Nex-Tech was 40% less expensive. Had it for two weeks, is working fine. I would really enjoy it if I was a heavy/high speed user. As to question 22, govt should get out of the way, let the market work. Help keep residents informed.
- I live at Sundowner West and there are very limited options for high speed Internet. I currently use Starlink which is easily the fastest service we have seen but it is very expensive since you have to buy the equipment yourself.
- We were using our phones with AT&T as hotspots for cellular at our home and have a hotspot through them but on April 19 we stopped being able to get data to work at our house or anywhere in the South 9th Street business area including in the AT&T store! I spent hours taking on the phone and going to the store to get this resolved but since it looked okay from their computers they weren't taking care of it so I had to get Internet through Cox, my only option, again because my son couldn't do homework and I couldn't work on my computer. That didn't take care of me not having computer access with my hot spot for home health patients in the area that wasn't working though. Finally this month they sent someone to the tower. I asked them what I could've done different to get them to have acted faster. They said I did everything I could so basically they just aren't going to physically try to take care of a problem unless it continues for months even when their employees don't have a signal in their store! I can't buy out the phones on 3 of the 6 lines we have with them right now or I'd change providers. Now it works sometimes and sometimes it doesn't. It's still not completely resolved so yes, now I have Cox again my only option for true residential Internet at my location.

- Cox has such a monopoly - there are no other high speed options. They need true competition.
- "My survey responses have indicated that my family does not currently experience Internet/connectivity/ capacity issues. However, this has not always been the case. We have experience issues in the past with other Internet service providers. I believe Internet access is a necessity for families/households today. I believe that not everyone in our community has access to the service they need, because of many factors, including limited availability of service based on location, limited options for providers, especially AFFORDABLE service. Many households can't afford the cost of fast, reliable Internet service.
- My current Internet provider is great and I recommend Verizon."
- T-Mobile wireless
- "Look - Cox cable is TERRIBLE. They overcharge for crappy Internet that they oversell. The speeds are advertised as ""up to"" for a reason, and RARELY can I get those speeds. I'm looking into Nex Tech Fiber, but they haven't activated service in our area yet. Once they do, our neighborhood will be able to get 1 gig symmetrical speeds with no data cap for HALF the cost of Cox.
- Cox is a scam."
- I am suppose to have fiber buried later this year.
- I would like to know more about the fiber Internet.
- I was very disappointed that I only had one option for Internet access, but I don't believe government needs to be involved in all of these type of decisions. If it is for approving companies to build the fiber Internet cables, then I agree. But companies just need to be more competitive and affordable.
- Our service is good and we like having local people rather than some far away corporation. We are not subscribed for the fastest Internet they provide so some of these questions cannot be answered accurately. We hope to change to streaming TV from Dish satellite TV. We will definitely be moving to the fastest rate Kansas Broadband Internet can provide. Surely, Salina can get fiber to Saline County when we are getting this in a remote mountain home in New Mexico and a comparable city in Iowa.
- "I don't think the county should pay for Internet speed access, but it would be good if the county could help facilitate keeping high speed Internet access at an affordable cost.
- I suppose in certain cases where there are children that need access to school assignments such as was needed during the pandemic, that the government could help financially."
- completed from work
- They treat us like trash in the county. Our roads busy up our vehicles and we cannot have affordable Internet. In the county we still provide LOTS of money to Salina. Sadly we cannot be treated any better.
- Need more responsive customer service
- We need municipal fiber in saline county!
- I think it is important to have Internet in places that you might not think- like bus stops or some public parks since it is essential to day to day living and being able to access and know about services that can help
- Until HCI finally ran fiber two years ago, we were miserable here. We had Hughesnet and the speed was terrible and the data cap was worse. I talked to multiple communications companies to convince them to run fiber out here. (HCI and Nex-Tech maybe others). We heard at one point that the Land Institute that is very close to us, had been reporting that the Internet services in this area were fine and we didn't need upgrades!!! I have no idea if that is true, but going through COVID with Hughesnet was AWFUL. And the cellular signal for Verizon here is terrible by the way.... Although we are finally being serviced, I am very happy to see that the county is at least doing a survey. I tried for years to get someone to listen but obviously never reached the right person.
- We are just south of the city so we cannot get any services that are within city limits, but we are too far north to have access to other rural Internet providers. It's very frustrating.
- Kansas Broadband - they say they are broadband, but they are ABSOLUTELY terrible and cost a FORTUNE! We pay $104.99/month and the speed is terrible and doesn't work at least 8 days a month. It's garbage, but the only option we have that isn't dial up.

- Every time it rains the Internet goes out from anywhere to a couple of hours to a couple of days. The Internet options in this area are extremely unreliable. With both adults in the household working full time remote, it frequently puts us in a bad position.
- Been trying for 10 years for fiber to my residence in Rural saline county. Long overdue.
- There needs to be more hard wired reliable Internet options in the rural areas to help make things competitive and keep prices in check however HCI treats me well for a decent price.
- We had no idea this location 3.5 miles north of Salina would be so absolutely abysmal for Internet coverage. It was so close to town we didn't even think about asking before we purchased our home and it has been a constant struggle since we moved here in 2015. Bennington and Abilene have broadband and we have absolute crap for service. I understand Nextech was supposed to run fiber out to this area by March of 2024, but...crickets. I don't know how America can call itself first in the world for anything, and certainly not healthcare or technology when you have people with Ph.D.'s and professional degrees (CPA) who can barely work from home because they cannot access what they need to online. The average speed is terrible (less than 2mb tonight) and with the atrocious Kansas weather, the wind and storm knock out the service frequently. I do not blame Nextech for service disruptions as I feel they are doing their best to service their customers in a hostile environment.
- It's frustrating that Cox is allowed to charge so much more than other broadband providers when their upload speeds are 30 times slower and they impose an imaginary data cap. The going rate for Cox's Gigabit Internet is $170 for 940Mbps download, 35Mbps upload, and a 1280GB data cap. Meanwhile fiber providers in other parts of the town are charging anywhere from $69 to $80 for 1000Mbps download, 1000Mbps upload and no data cap. I get that it will take time for Fiber to reach everyone, I know it's been sitting un-terminated and dark in my front yard for two months. But, I feel like some sort of price cap should be enforced on Cox since they essentially have a monopoly on broadband in my neighborhood. Thank you!
- I feel all of the serviced available are not honest in their dealings.
- "I have had cox and AT&T in this county and never a single issue with AT&T once I got all set up and going 12yrs ago and took a year and moved away.. I had Nex-Tech in Hays and it was amazing so when I came back I got fiber from AT&T and best Internet service.
- When clear wave got installed in my neighborhood, it screwed Internet speed up and it wasn't in AT&T, it was because of clear wave messing with AT&T lines and boxes and I felt they really took the juice away by having to many options and then all fighting for satellite signals."
- It's important for senior citizens to have connectivity as our ability to travel declines.
- I am completing from my work computer because my Internet is not dependable at home
- Cox is good when it works. Its not reliable
- If high-speed (gigabit, or something less, but fast, aka 250+ mbps) Internet could be available in a price range under $40/mo, that would be an improvement. I could pay $60-$90 for that now, but 100 mbps is sufficient (although still with spotty reception in the house) at $45/mo. An extender mesh router might eliminate any spots, but that's another $10/mo with this provider, and the occasional slight disconnect doesn't warrant the expense.
- We pay a high price to have the Internet service we find useful. It seems we pay double what most people pay but if we use a slower speed we cannot use the devices we use daily without limiting use, having long wait times to load, or having usage problems.
- I am currently at work filling this out. So my Internet is whatever the county uses.
- I am moving soon, and one of the things I am most excited about is being able to get Nex-Tech fiber for the same price as I pay for Cox which is slow and not the most reliable. I even paid $600 for a wifi 6 router to try to make our current Internet better, and it made little difference.
- I am undecided whether the county/government should intervene in Internet options- depends if it increases mill levy
- I think Cox communications pretty much dominates the Internet here in Salina Kansas. They need more options in Salina Kansas that are a lot cheaper and that advertise more.
- "While my family's Internet needs are met and we are mostly satisfied with our service, we do feel strongly that action on the part of the county to provide Internet at low/no cost in our community is essential for

others. This would help increase equity in access to education, employment, and other opportunities for the good of our citizens. Access to local news and events would help build our community by allowing citizens to stay better informed, especially since the decline of the Salina Journal. Saline County could also attract new businesses by providing Internet access which, in turn, could lead to a notable growth in our economy.

- Thank you for your consideration on this important matter."
- Internet access is essential for success in today's world. We need to view it like plumbing and electricity: Every home and business needs good access for our communities to thrive.
- I think that we are in the process of getting new high-speed fiber optic to our home. I have signed up for it with NexTec.
- I don't feel that tax dollars should be used to subsidize any private business, but Internet can be viewed as infrastructure so anything that makes our issues with lack of technology or advanced Internet service should be considered. If red tape cutting/permit fast tracking is an option for fiber providers, please get that done. Contacting fiber Internet providers to understand why we don't have high speed gigabit fiber in all of Salina, needs to be made. I have a fiber line right in front of my house, but yet I can't get fiber Internet! It just blows my mind. I have two companies in fact with fiber line right in front of my house.
- I am waiting for the fiber optic to be in my neighborhood hope it is affordable
- "Recently switched from Cox to Nex-Tech, drastic improvement in about every metric (speed, price, reliability, satisfaction) with Nex-Tech.
- I work full time from home, spouse works part time via remote desktop. Both require quite a bit of bandwidth and reliability."
- income low, North Salina "RED ZONE" yet next tex puts a tower in my front yard, hard to get around, sinking ground. already have cancer, don't need a tower at my front door
- I am at work so I am not using my home Internet right now to complete this survey.
- I feel that Cox is going to price themselves out of the market if they keep raising prices. I know someone whose bill went up $40 per month with no notification. She is looking for another provider. And I will too if they do that to me.
- I have had cox Internet for years and never had any problems with it until last year when the service would go out and you practically had to pull teeth to find out what was wrong. I think the service could not keep up with all the Internet users. It has improved recently but is still not as good as it once was.
- I live one mile outside Salina city limits and cannot get reliable, fast and affordable Internet service.
- Basic Internet should be free to everyone. Current prices for both cellular hotspot and cable modem Internet are high. I have had problems with both buffering. I use the gigabit service from COX, not sure of the AT&T service.
- The Internet works OK because I am paying for the higher priced Internet. However, it is a strain on my budget. I was receiving the $30/month supplement & it ended.
- We are retirement age, although I still work part time. EVERYTHING requires electronic knowledge and access. No daily paper. TV is different. It all costs money-a lot of money. And for some older folks much of it is very confusing. If one makes a mistake it's hard to fix (sometimes it's just fat fingered & hit the wrong button-which button?) Is the problem with the service, equipment, or is it operator error? Can the helper be trusted? Technology is wonderful. It's great to have auto 'everything' like the kids have. But it is also good to be able to talk to a real person and get help from a trusted source when help or training is needed.
- We leave in a rural area. We have no access to a fiber optic option. The only phone available is AT&T and they have not made that available to this area.
- I already have Gigabit high speed fiber Internet and TV service from Nex-Tech
- I'll be switching to Nex-tech fiber as soon as they finish the final install. It's good to have another viable option for good Internet other than Cox. Finally.
- Way too expensive! Especially for Seniors and retired seniors.
- Continuity of service and local service is important to me. We started with landline telephone service when we moved to our rural home,, back when that was all there was.. HCI has done a fantastic job updating their

technology since the.. We have a fiber optic connection,, still have our lifeline service,, as well as Internet,, but We don't buy the cable subscription any more.

- Whatever type of Internet is in the future, it MUST be affordable with income.
- Twin Valley has good speed but it goes down multiple times each day normally between 6-10 times a day. They ran fiber to Bennington but not here. Nextech is running fiber out here but I did some research and they are definitely not my choice for providing Internet services.
- Older Salina residents need education assistance...help with maintaining computers...fighting spam...and cheaper costs!
- We need serious competition versus cox which charges too high and worse competition charges even higher. So many expensive options with faster Internet but no low price options for standard speeds. Please help Salina. It's effectively a monopoly for cox
- I had this done to my house a few months ago. Tore up my entire yard. Hit the water main, and sewage mains trying to lay their cables through my yard. Ended up destroying my hot water heater and finally was just reimbursed last month. Me and both neighbors still have massive dirt mounds from the installation in our front yards that the city refuses to take accountability for. The city should absolutely stay out of making "better and more affordable" services if its going to result in unfixed damages.
- I'm interested in high speed service but I don't have a ton to budget. As Internet is required to do pretty much everything in our society, affordable, affordable, affordable options are necessary as well as the speed. I get sooo tired of the sloowwwwness and spinning spinning spinning, so tiring. And don't tell me to clean my cache.
- My only options are Kansas broadband or starlink. KB has connection issues that sometimes interrupt working on the Internet. Starlink is unaffordable. The closest cell tower doesn't provide useful Internet or calls so I have to use WiFi boost to make calls. I'm in a bad dead zone for technology and I've considered moving because of it.
- Cox is a bunch of thieving monopolizing turds. Wreck their shit with some competition.
- Cox is an issue for my household and is expensive.
- Techniques change so fast I can't keep up
- Who's paying for this?
- Constant loss of signal from the repeater on top of the elevator. Lightening, winds, who knows what else knock out the repeater frequently. Also, the signal cannot get through the 100 year old trees to the south edge of town reliably.