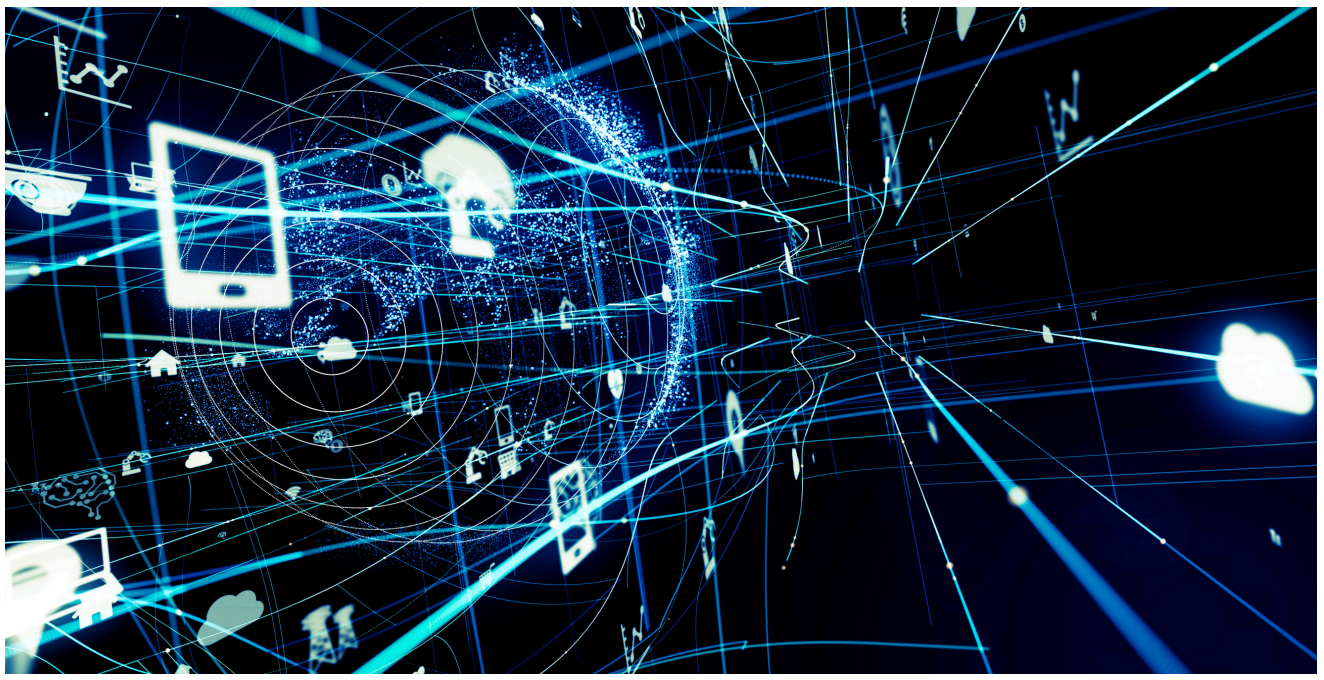

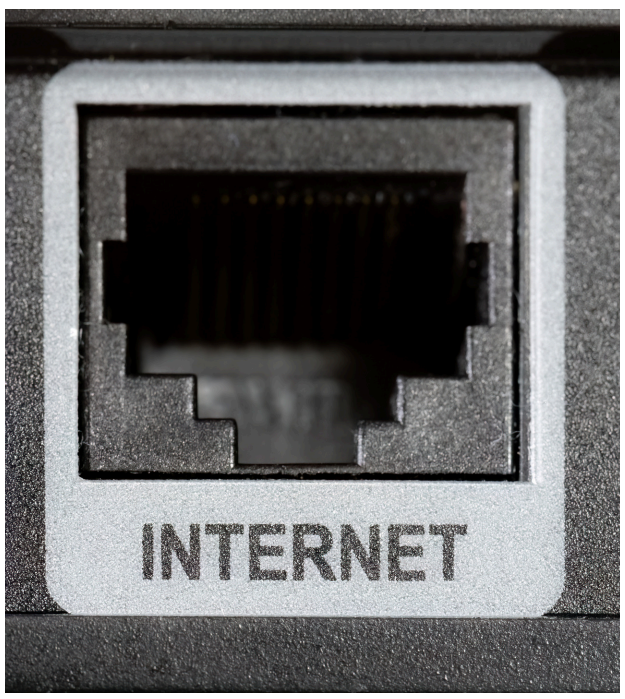

Broadband Plan

Stephenson County

Final Report

March 31, 2026

Broadband Plan

Stephenson County

Final Report

March 31, 2026

This document has been prepared by Region 1 Planning Council in collaboration with its member agencies, partnership organizations, and local stakeholders.

This document was prepared using state funds from the Illinois Department of Commerce and Economic Opportunity.

The contents, views, policies, and conclusions expressed in this report are not necessarily those of the above agencies.

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Table of Contents

Table of Figures

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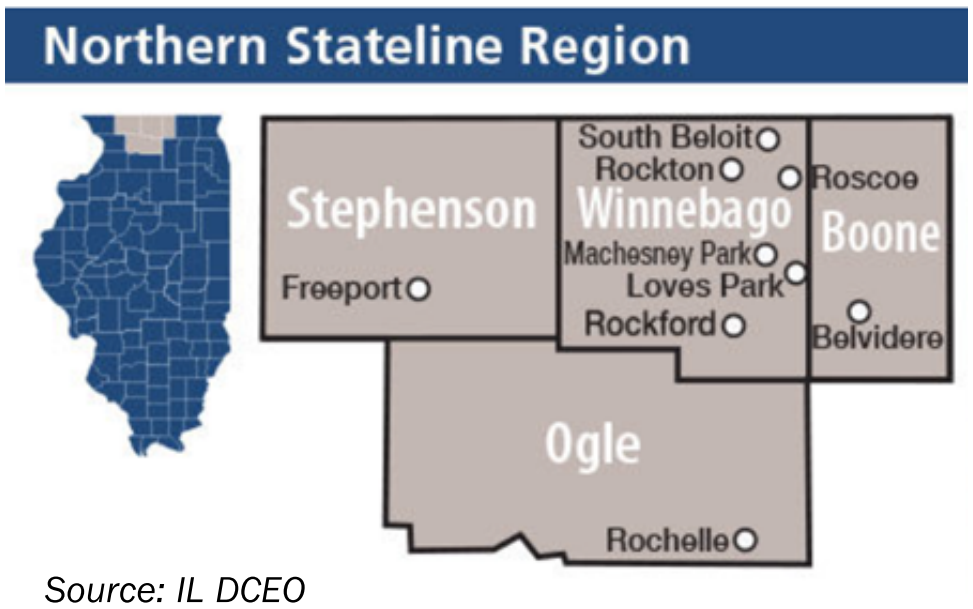
Introduction

Background & Purpose

The Region 1 Planning Council (R1) regional broadband assessment report identifies gaps in broadband infrastructure and digital equity assets to address the digital divide. This analysis focuses on the Illinois Department of Commerce and Economic Opportunity's (DCEO) Northern Stateline Region, which includes Boone, Ogle, Stephenson, and Winnebago Counties.[x] Funded through two digital equity grants – the DCEO's Digital Equity Capacity Kickstarter (DECK) program and the Illinois Broadband Lab/Illinois Innovation Network's Broadband Regional Engagement for Adoption + Digital Equity (READY) – the initiative is comprised of three phases: Public Survey, Gap Analysis, and Connectivity Solution Identification. This document examines broadband availability in Ogle County specifically, posing recommendations to address gaps in order to expand connectivity for residents, businesses, and public entities within the county.



Source: IL DCEO

The survey phase targeted residents and business owners across the four-county area, gathering insights on the current state of broadband infrastructure and digital equity resources. The full survey is available in Appendix B. Data from this survey were combined with federal and proprietary datasets to identify gaps in broadband infrastructure. These findings were further informed by stakeholders in each county, comprising representatives from government, education, and business sectors, who provided input on digital equity assets and broadband infrastructure needs.

The identified gaps were examined alongside publicly available FCC data. This data displays existing broadband infrastructure, allowing connectivity solutions to incorporate cost efficiency and technological feasibility.

Digital Divide

Broadband & Economic Development

Broadband is recognized as essential infrastructure, comparable to electricity, water, and sewer infrastructure. Communities with robust broadband access experience increased economic competitiveness by enabling residents and businesses to fully participate in the digital economy. Empirical research supports measurable returns on broadband deployment.

Source: Region 1 Planning Council

In the countries that encompass the Organisation for Economic Cooperation and Development (OECD), increases in broadband adoption and speed were associated with a 4.34 percent increase in Growth Domestic Product (GDP) between 2002 and 2016, with adoption contributing approximately 0.38 percent per year on average.[vii] A study of 34 OECD and G20 countries from 2008 to 2022 found that both fixed and mobile broadband availability and connection positively contributed to GDP per employed person.[v]

Impact modeling of U.S. broadband subsidy and investment programs, including the Broadband Equity, Access, and Deployment (BEAD) program, estimates the total potential contribution to U.S. GDP over five years at up to $127.3 billion, in addition to the creation of an estimated 230,000 jobs.[xi] These findings demonstrate that broadband deployment produces measurable economic benefits, as observed in regional and national economic data.

Stephenson County Economic Overview

Stephenson County is positioned to experience substantial economic benefit from expanded broadband access. The county's largest industries by employment include production operations, management and support operations, and office and administrative support operations, with an estimated 7,225 jobs across these three industries as of 2024.[i] Stephenson County contained 1,003 employer establishments in 2023, spanning the aforementioned industries in addition to financial operations, healthcare services, educational services, and sales occupations.[iii] Agriculture is also a significant industry in Stephenson County; the 2022 Census of Agriculture reported 998 individual farms spanning 305,770 acres within the county.

Source: Region 1 Planning Council

Business Community Impact

Broadband access enables growth and innovation through access to global markets, support for startups, and research and development opportunities. Without high-speed broadband, businesses are unable to link their businesses to the growing e-commerce industry, severely inhibiting their ability to purchase and sell goods for their businesses.

Source: Region 1 Planning Council

Broadband access enables growth and innovation through access to global markets, support for startups, and research and development opportunities. Without high-speed broadband, businesses are unable to link their businesses to the growing e-commerce industry, severely inhibiting their ability to purchase and sell goods for their businesses.

Access to broadband is also essential for many startups and entrepreneurs as it provides access to online tools and resources and funding platforms to launch their products and seek crowdfunding opportunities. Innovation, research, and development also enable businesses to enlist cloud computing, big data, and artificial intelligence to drive innovative practices, ultimately improving productivity.

Broadband expands access to remote work opportunities, allowing residents to access job industries that could otherwise be unavailable in the region.

A recent study released by the nonprofit Center on Rural Innovation (CORI) finds that rural communities with broadband adoption rates of over 80 percent experience 10 percent higher self-employment growth and 18 percent higher per capita income growth than communities that fall below the 80 percent adoption threshold.[xii] These increases can be attributed to the reduced reliance on physical proximity to urban centers for employment, as well as the ability for small businesses to access global markets and leverage online resources.

Educational Impact

Access to broadband and digital resources is critical to the current educational landscape. The COVID-19 pandemic both opened up opportunities for electronic learning and highlighted barriers to education – particularly in communities that have lacked economic opportunities. This shift to digital education occurred in K-12 and post-secondary education. It also created opportunities for upskilling for the workforce through online platforms, enhancing employability and adaptability in the changing economy.

Support Services Impact

Reliable broadband is also essential for access to support services that enhance quality of life and community resilience.

Financial Literacy

Online banking, digital payment systems, and financial literacy programs are increasingly moving to online platforms. Without reliable broadband access, individuals are excluded from opportunities to build credit, manage their finances securely, or access financial literacy programs.

Healthcare

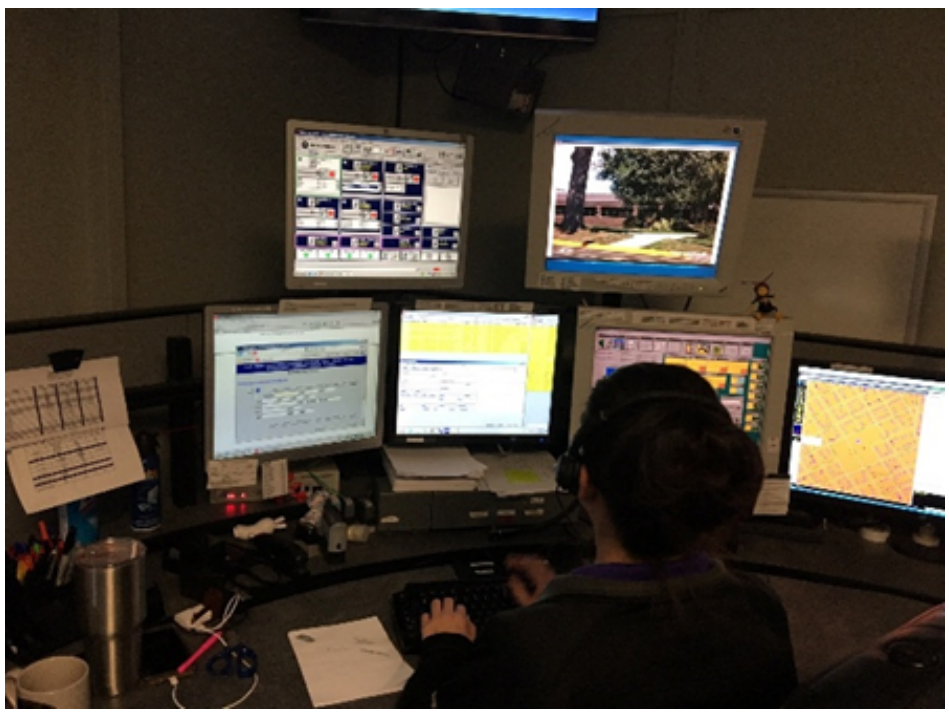
Telehealth service has become a common method of healthcare delivery, particularly in rural areas where specialty providers may not be available. Broadband access supports video consultations, remote patient monitoring, electronic health record access, and digital prescription services. Individuals in rural areas may face longer travel times for healthcare services.

Government Support Services

Many government resources, such as unemployment benefits and disaster assistance, are now offered primarily online. Broadband access ensures residents can take advantage of these programs. Lack of reliable connectivity creates barriers to engagement with essential public services.

Emergency Services

Efforts to modernize traditional emergency service infrastructure are underway. Next Generation 911, an ongoing, nation-wide initiative aimed at implementing internet-based 911 systems to replace analog infrastructure, continues to enhance the capabilities of emergency services. New internet-based systems allow for voice, photo, text, and video communication, improving capabilities of 911 services.[ix] Reliable connectivity is necessary for residents to take full advantage of these emerging public safety benefits.



Source: Region 1 Planning Council

Agricultural Productivity Impact

Agriculture remains a central economic driver in Northern Illinois, and broadband is increasingly vital to modern farm operations. A USDA-sponsored analysis of rural internet infrastructure examines the benefits of incorporating technology into agricultural operations. The study cites boosts in labor efficiency, increased efficiencies in resource allocation, and expanded market access as key drivers of technological adoption in agriculture.

Source: Region 1 Planning Council

Precision Farming

Broadband enables the use of advanced technologies such as GPS-guided equipment, soil sensors, and weather monitoring devices. These tools allow farmers to optimize planting, irrigation, and harvesting, reducing costs and improving crop yields. Precision technologies enhance labor capacity by automating tasks that require repetition and accuracy. Agricultural producers can employ automation to routine activities, and utilize expanded capacity to engage in markets and scale operations, "dramatically improving efficiencies and reducing the redundant manual tasks, enhancing capacity to organize and retrieve information, and enabling machines to read, manipulate, and act on data". [ii]

Market Access

Online platforms provide agricultural producers with access to new markets, enabling direct-to-consumer sales and connections with regional, national, and global buyers. Connectivity mitigates geographical constraints not only in commodity markets but also in labor markets.[xii] The effects of geographic remoteness and limited availability of technical expertise can be circumvented by recruiting from other geographic areas, "mitigating the effects of low unemployment, mismatched skills, or geographic remoteness by providing the option to recruit from other towns, cities, and States". [ii]

Resource Allocation

Connectivity through broadband enables agricultural producers to manage inputs more efficiently. Data analysis software, often used in conjunction with automated farming technologies, can review farming conditions and provide insights that optimize pesticide use, utilize water resources most effectively, or recommend ideal fertilizers for current conditions. [ii]

Federal & State Broadband Programs

Federal programs have played a critical role in expanding broadband infrastructure. Various programs have provided grant funding and technical support to promote broadband infrastructure development

Federal Communications Commission (FCC)

The FCC has historically administered universal service programs such as the Connect America Fund and the Rural Digital Opportunity Fund (RDOF), which provide subsidies to internet service providers (ISPs) to extend broadband to unserved areas. The FCC also oversees mapping efforts to track broadband availability, a key factor in targeting investments.

U.S. Department of Agriculture (USDA)

Through its ReConnect Program and Rural Utilities Service (RUS), USDA provides loans and grants to deploy broadband infrastructure in rural communities.[ii] These programs are significant for rural regions, ensuring that farms and rural residents can access internet services.

Broadband Equity, Access, and Deployment (BEAD) Program & Connect Illinois

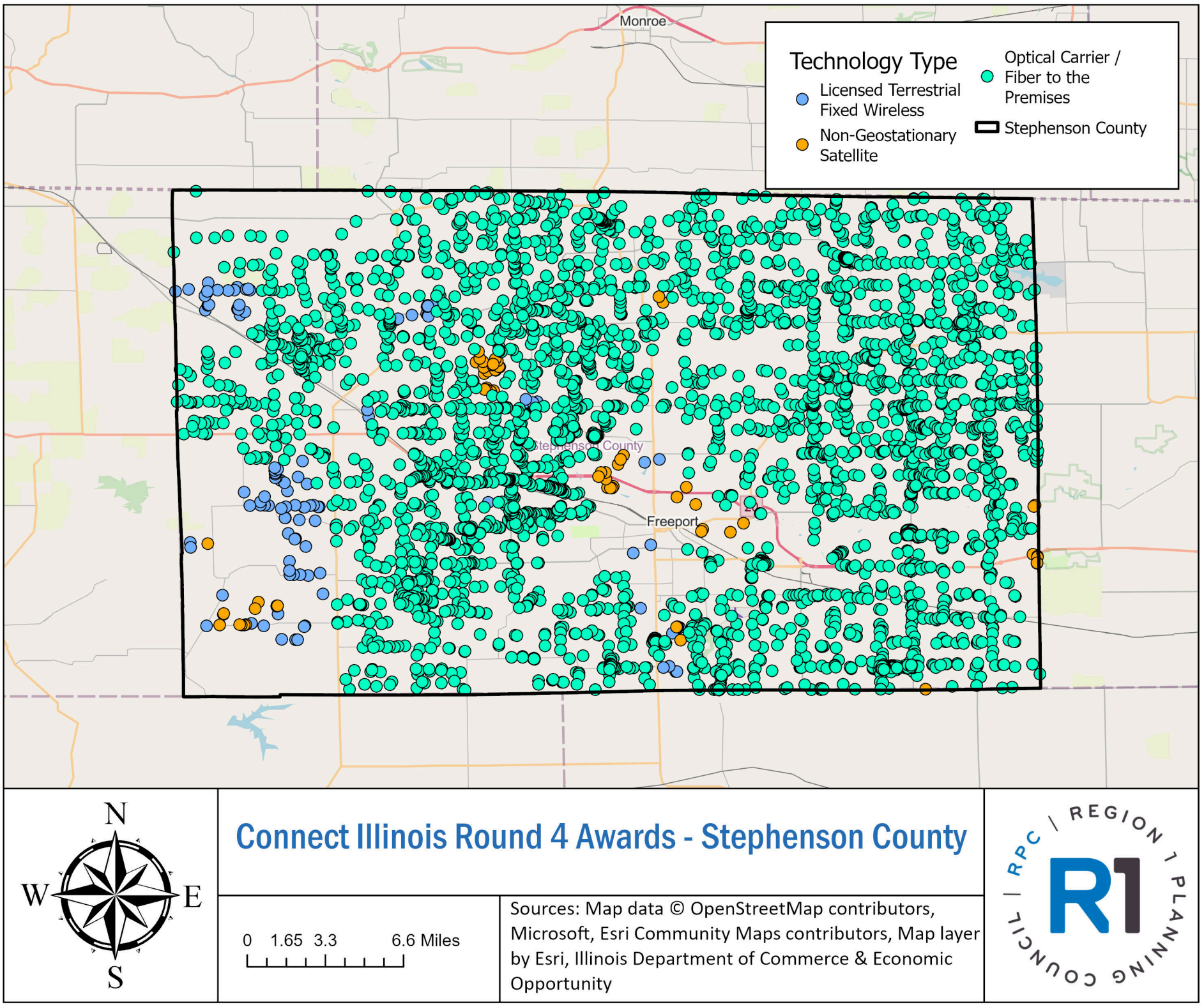
Authorized by the Infrastructure Investment and Jobs Act (IIJA) of 2021, BEAD represents the largest federal investment in broadband in U.S. history, with $42.5 billion allocated to states and territories. Administered by the National Telecommunications and Information Administration (NTIA), BEAD funds are designed to expand high-speed internet access, promote affordability, and enhance digital equity. [iv]

The Connect Illinois program employed BEAD funds to subsidize broadband infrastructure development. Internet service providers were awarded funds over four funding rounds to develop infrastructure and provide broadband access across the state. Connect Illinois awards spanned four broadband technology types: fiber, fixed-wireless, satellite, and cable. In fall of 2025, the IL DCEO announced provisional awards for the fourth and final round of funding. This round aims to connect over 160,000 unserved/underserved locations and incorporates a variety of technologies and local providers.[viii]

The round four funding proposal moved to a 90-day NTIA review and curing process, ensuring awards will implement a program that meets BEAD objectives. [iv]

R1 has engaged local internet service providers and municipal partners throughout the multiple funding rounds. Acting as a public-private liaison, R1 has communicated local connectivity priorities to providers and updated partners on provider development plans.

Figure 1: Connect Illinois Round 4 Awards



Source: Illinois Department of Commerce & Economic Opportunity

Previous Broadband Planning Efforts

A range of broadband planning and infrastructure development activities have taken place in the Northern Stateline Region. Both county-led planning work and statewide initiatives have been implemented to advance broadband access in the region.

In 2010, Winnebago County began upgrading its communications backbone network. The county partnered with an internet service provider to develop a new network with required bandwidth and reliability. This network upgrade ensured critical services could be carried out, and also implemented scalable technology. [xiii] The upgrade provides a framework for successful public-private collaboration in broadband development.

Other counties in the Northern Stateline Region have also implemented broadband development and planning initiatives. Boone and Ogle Counties participated in the Benton Institute's Broadband Breakthrough program, a planning initiative focused on understanding local access to broadband. Both counties implemented surveys under this program, targeting residents and businesses to better understand challenges to broadband access and establish priorities for expansion. These initiatives led to the formation of a community priority matrix for broadband development (Figure 2), a series of requirements for broadband speed, affordability, and support services that can be applied to broadband expansion in the Northern Stateline Region.

Stephenson County has seen project areas awarded BEAD funds across the multiple Connect Illinois funding rounds. In Connect Illinois Round 4, a total of 4,184 broadband serviceable locations were awarded funding. Internet service providers subject to awarded funds will begin building out infrastructure projects after a final NTIA review. [iv]

Figure 2: Community Support Matrix

Source: Region 1 Planning Council

Regional Broadband Planning

Planning Process

Funded through two digital equity grants, the State of Illinois DCEO's DECK program and the Illinois Broadband Lab/Illinois Innovation Network's READY program, Region 1 Planning Council has engaged in a broadband planning exercise in the Northern Stateline Region. The planning effort underwent four distinct phases.

Phase 1: Survey Gap Analysis

The first phase of the broadband planning process consisted of an analysis of existing survey data. Previous surveys seeking to identify broadband infrastructure have been implemented in recent years, but there were significant information gaps in survey data. While each county had varying experiences with broadband surveys and planning, Boone County had the most recent and applicable survey through its participation in the Broadband Breakthrough Program. The need for a comprehensive set of survey data spanning all four counties, in addition to the dynamic nature of broadband infrastructure, necessitated the creation of a new broadband and digital infrastructure survey. During this stage of the planning process, R1 staff assessed previous survey data, using it to inform the creation of the new survey and identify necessary information for the planning process.

Phase 2: Survey

The Digital Equity and Broadband Infrastructure Survey was launched in March, 2025. R1 staff engaged in targeted outreach to increase survey awareness and participation. The survey sought to identify available internet service providers, the speed and affordability of internet subscriptions, and internet uses among residents. The survey prompted individuals to provide an address of either a home or a business, allowing the survey responses to be mapped. The survey targeted both respondent-provided quantitative data and general anecdotes relating to internet access to establish a comprehensive understanding of regional connectivity.

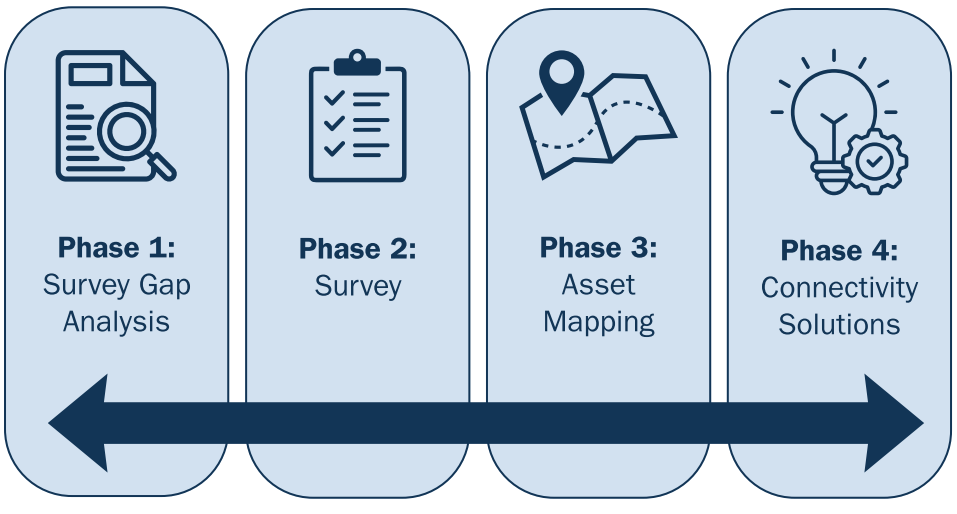
Phase 3: Asset Mapping & Gap Analysis

R1 staff began mapping survey data as responses were received. Three categories for connectivity gaps were identified and informed by survey results: speed, affordability, and infrastructure. The geographic points of the survey responses were recorded, allowing data to be mapped using geospatial data software. Responses indicating internet service speeds, plan pricing, and availability of internet providers allowed gaps in these categories to be defined geographically.

Phase 4: Connectivity Solutions

The identified gaps in broadband access were assessed, along with publicly available FCC data designating existing infrastructure, to determine the optimal solutions for expanding access. Fiber-optic cable has been established as the default preferred technology, a preference shared by local stakeholders. The analysis first assesses the feasibility of building out fiber-optic cable infrastructure in a given geography, considering factors including: existing infrastructure, topographical features, and cost of infrastructure buildout.

Figure 3: Broadband Planning Process



Source: Region 1 Planning Council

Broadband Technologies

Three broadband technologies – fiber-optic cable, fixed-wireless, and satellite – have been identified as viable solutions to provide connectivity in the Northern Stateline. The implementation of these technologies covers the range of infrastructure buildout within the region, providing solutions for both areas with extensive fiber-optic cable networks and areas with limited access to fiber-optic cables. Fiber-optic cable has been designated as the preferred technology type

Fiber-Optic Cable

Fiber-optic technology provides broadband by sending light electric signals through thin, glass fibers. These fibers are contained within protective layers to create cables that can then be installed underground or placed along utility poles. Fiber-optic cables can transmit information at the speed of light, allowing the technology to exceed the bandwidth and speeds of other broadband technologies.

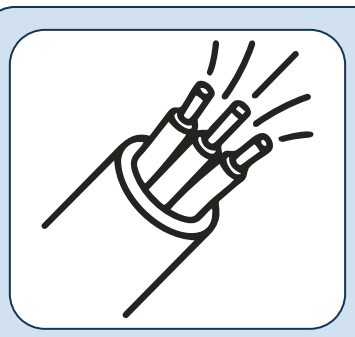
Fixed Wireless

Fixed-wireless technologies allow internet signals to be sent from a cellular tower to an antenna receiver situated on a building. This technology does not require the build-out of cables, but internet speed and reliability can be affected by weather or line-of-sight impediments.

Satellite

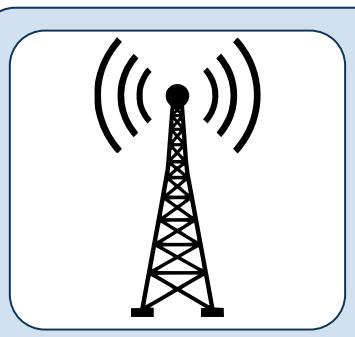
A receiver connects to satellites in low-earth orbit (LEO). Satellite internet can be accessed in remote areas, but the costs of receivers and subscription plans can be high. Connection can be weather sensitive and have high latency.

Figure 4: Broadband Technology Types



Fiber-Optic

- **Pros:** Fastest, most reliable technology. Fiber-optic cable has high longevity and capacity for scalability once cable is installed.
- **Cons:** Cable build-out can be hindered by cost or location



Fixed-Wireless

- **Pros:** Fixed-wireless receivers offer connection without a cable hookup, circumventing the need to lay cables.
- **Cons:** Connection can be interrupted by weather and line-of-sight obstructions between the receiver and cellular tower.

Satellite

- **Pros:** Connection does not require cable hookup, and can be accessed anywhere with a clear view of the sky.
- **Cons:** Subscriptions include high fixed costs, including receiver costs and congestion fees.

Source: Region 1 Planning Council

Gap Analysis

The broadband gap analysis utilized a multi-dimensional framework to evaluate regional connectivity through three primary lenses: infrastructure deployment, service performance (speed), and economic accessibility (affordability).

Methodology & Data Integration

The analysis was initially informed by Federal Communications Commission (FCC) hexagonal data, representing provider speeds, uptake rates, connection types, and serviceability. However, to address limitations in federal data, specifically regarding affordability, infrastructure suitability, and consumer barriers, R1 synthesized data with the following data sources:

American Community Survey (ACS) Adoption Rates: To identify demographic trends in connectivity.

Localized Survey Data:
User-reported pricing, availability, and speed tests embedded within the survey.

Connect Illinois Round 4 Awards:
All finalized BEAD-funded Project Area Units (PAUs) were integrated into the infrastructure and speed models. Since awardees are required to serve every unserved and underserved location within a PAU at a minimum of 100/20 Mbps, these areas are categorized as effectively served in future projections.

Gap Classifications

Gaps were classified into three categories: infrastructure deployment, service performance (speed), and economic accessibility (affordability) The FCC hexagonal broadband availability data was employed to inform initial gap formation and access data. This data represents the internet service provider speeds, uptake rates, connection type, and serviceability.

Because this data does not capture specifics on affordability, infrastructure suitability, or customer barriers to connection, R1 used survey responses and the Census Bureau (BOC) American Community Survey adoption rates to better identify the iterative gaps. Additionally, Connect Illinois Round 4 final awards were incorporated into both the infrastructure and speed gap analyses. Because BEAD programs require providers awarded a Project Area Unit (PAU) to serve every under- and un-served community within that PAU, it is assumed that the hexagon would be effectively served, meeting the definition of broadband (100 Mbps download / 20 Mbps upload).

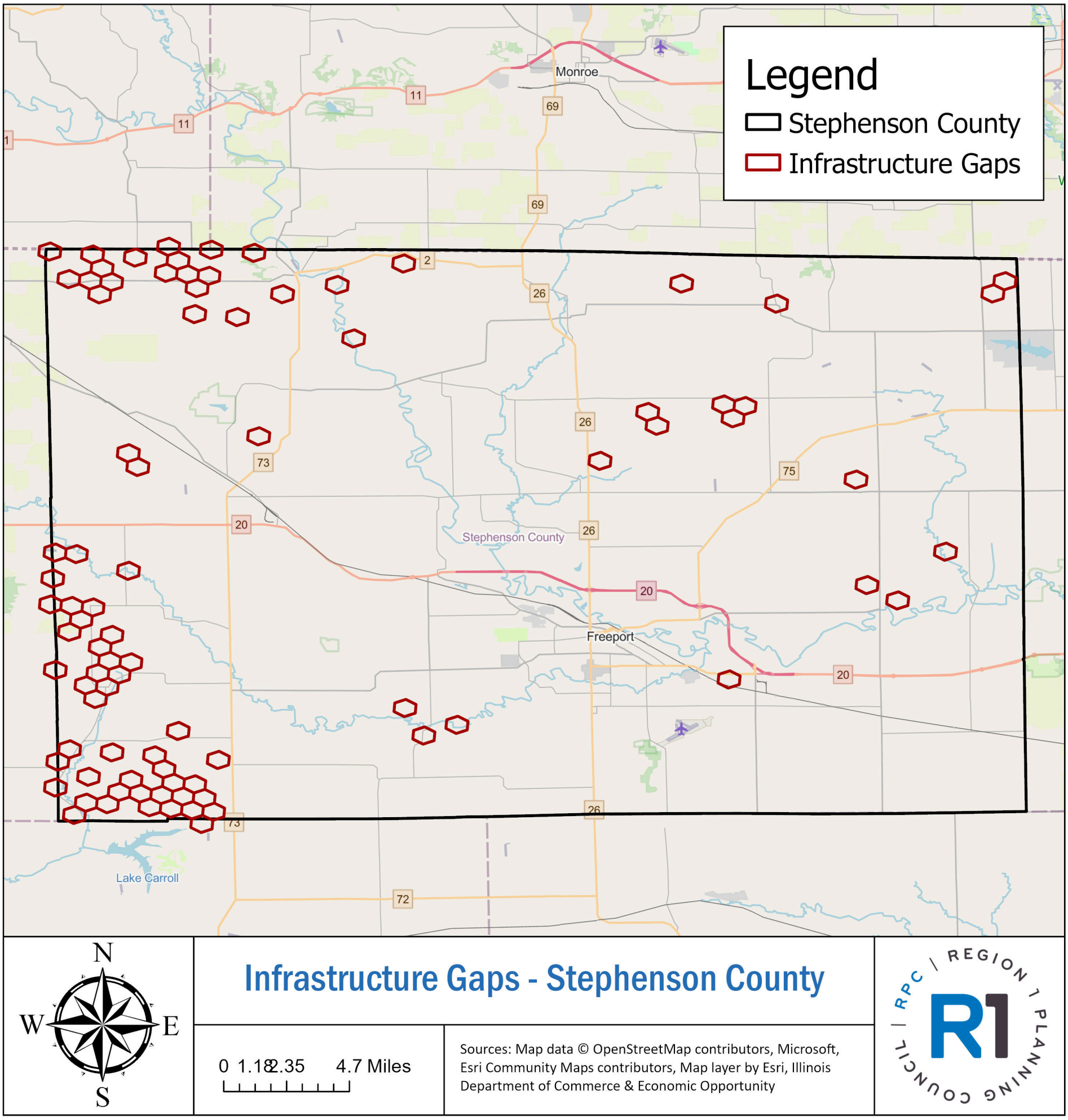
The initial iteration of broadband gaps were reviewed by community stakeholders who provided feedback indicating validation of the infrastructure, affordability, and speed maps. to supplement the data. After BEAD awards were finalized, these gaps were revised to include award data, reflecting the most up-to-date projection of broadband infrastructure. It is critical to note that broadband infrastructure is dynamic, with frequent upgrades to existing technology and expansions occurring frequently. Despite this, broadband remains a barrier to many residential and commercial buildings in rural areas of the Northern Stateline Region.

While broadband infrastructure is dynamic, characterized by frequent private-sector upgrades, it remains a significant barrier for residential and commercial development in the rural Northern Stateline Region. By filtering out areas already addressed by Connect Illinois Round 4, this analysis ensures that future regional solutions are non-duplicative and targeted.

Infrastructure Gaps

Infrastructure gaps identify areas where the physical capacity for high-speed internet is absent. A hexagon is classified as having an infrastructure gap if at least one Broadband Serviceable Location (BSL) is unserved, defined by speeds of less than 25 Mbps download / 3 Mbps upload. These gaps were cross-referenced with BEAD awards to ensure gaps reflect planned infrastructure deployment.

Figure 5: Stephenson County Infrastructure Gaps

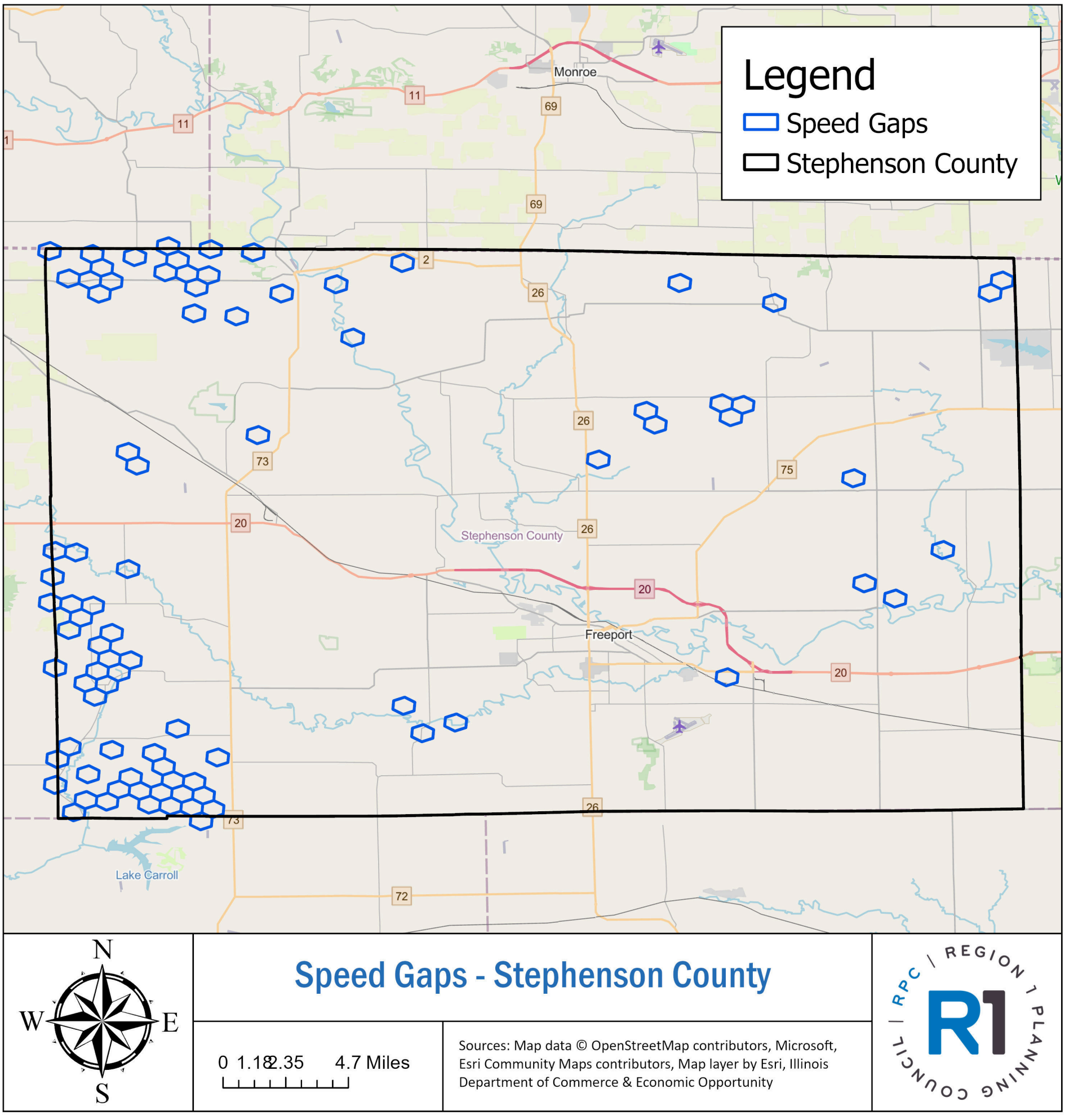


Source: Region 1 Planning Council

Speed Gaps

Speed gaps identify areas where infrastructure exists, but performance is insufficient for modern requirements. These underserved locations have access to speeds between 25/3 Mbps and 100/20 Mbps. While these areas have basic connectivity, they lack the bandwidth necessary for simultaneous remote work, telehealth, and distance learning. The analysis identified these gaps by spatially comparing FCC-advertised speeds against empirical results from the integrated survey speed tests.

Figure 5: Stephenson County Speed Gaps

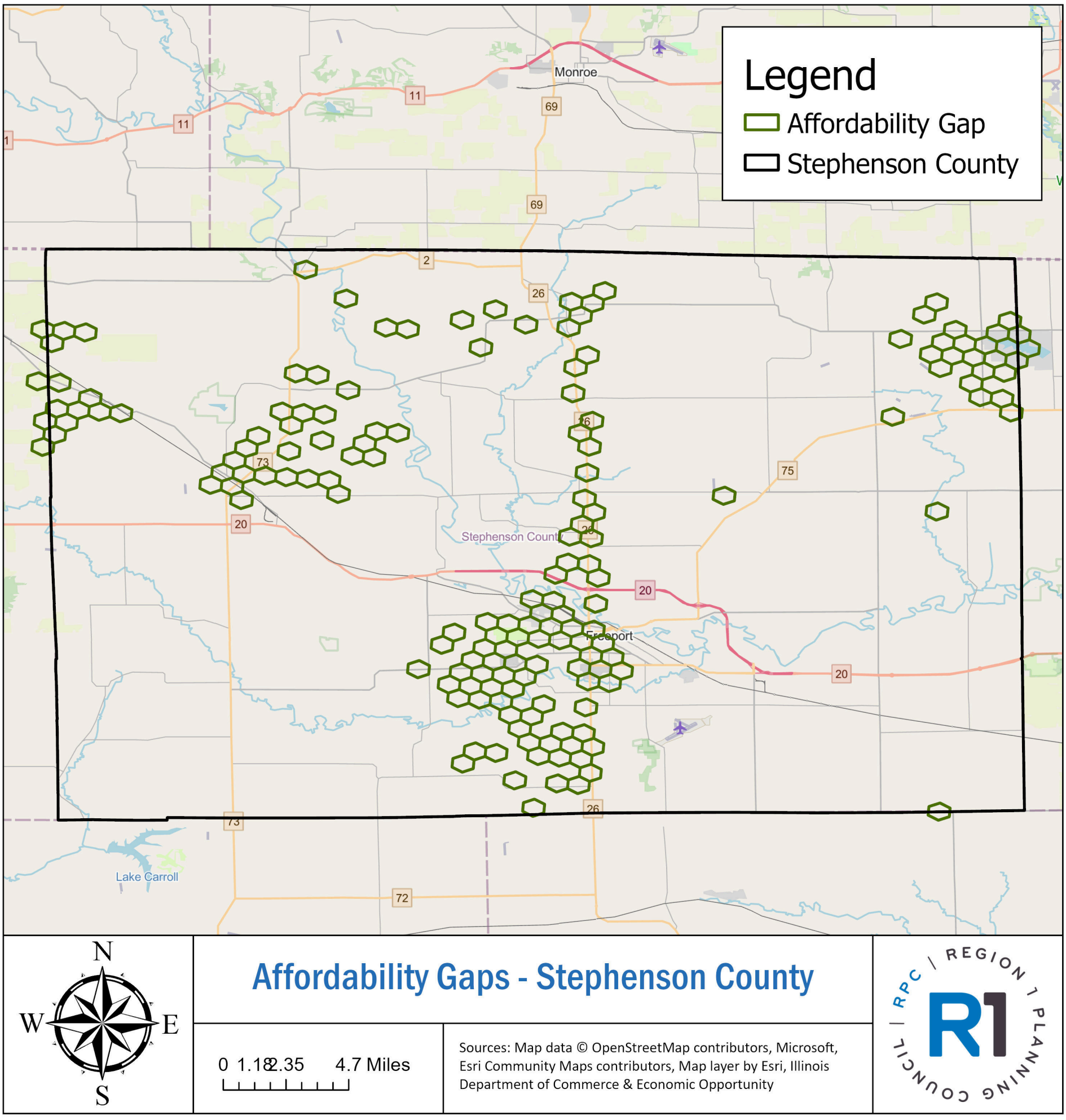


Source: Region 1 Planning Council

Affordability Gaps

Affordability gaps identify regions where infrastructure is present, but subscription rates remain low due to cost. This analysis utilized a 90 percent subscription threshold at the Census Tract level to identify these barriers. In these areas, low adoption rates correlate with lower-income demographics. This suggests that the digital divide in these communities is an economic hurdle rather than a technical one.

Figure 5: Stephenson County Affordability Gaps



Source: Region 1 Planning Council

Connectivity Solutions

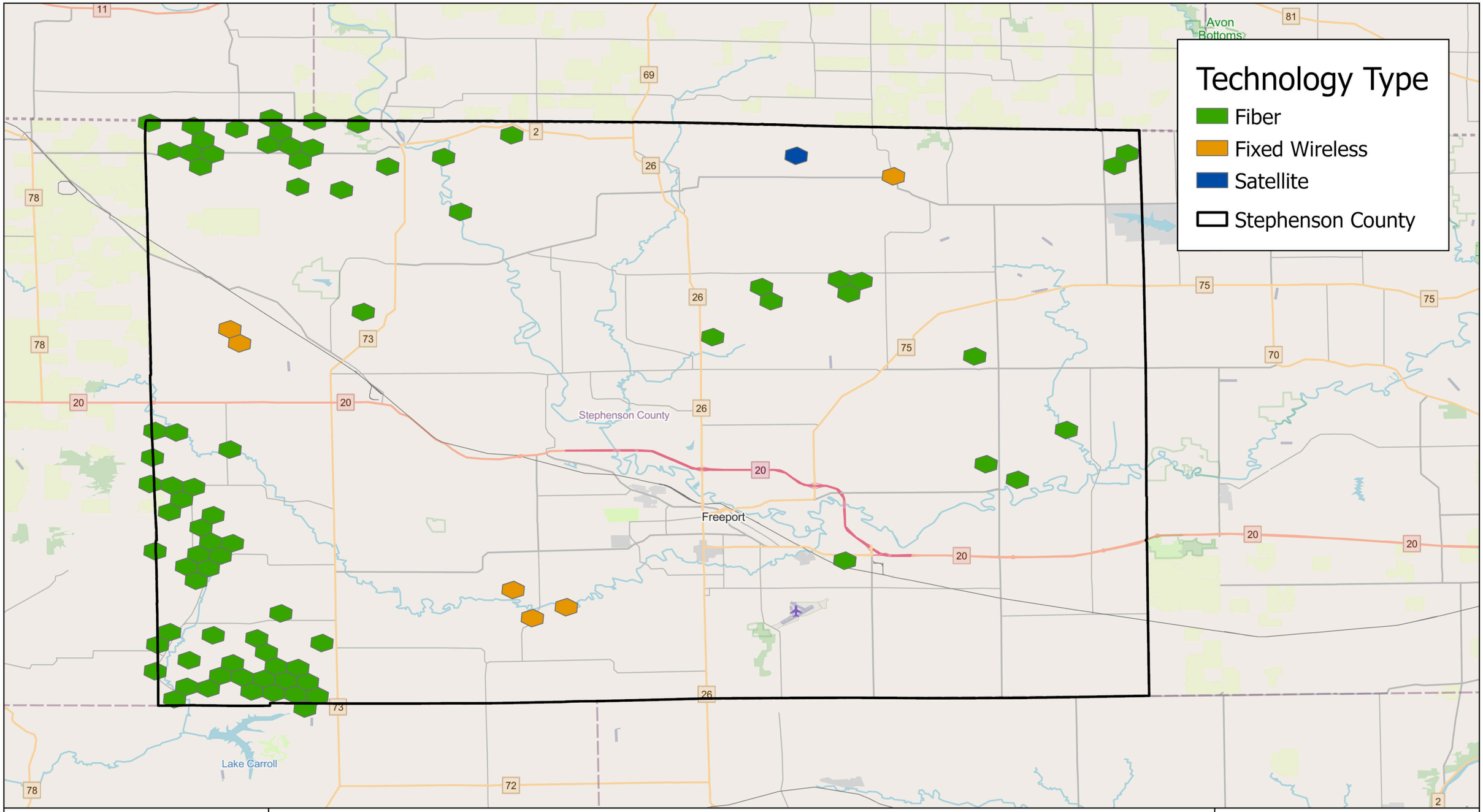
Connectivity solutions were identified using geospatial analysis of existing broadband infrastructure and gaps informed by the survey. A cost-benefit analysis of the implementation of the three designated broadband technologies was employed for each gap to assess the feasibility of infrastructure buildout. The methodology utilized an average cost of $27,100 per mile of fiber-optic cable, a value the Department of Transportation derived from statistical analysis of fiber-optic cable installation.[v]

Existing infrastructure in proximity to gaps was identified, and predicted extensions of service lines to end-users were mapped and measured. The underlying cost of fiber-optic cable extension per mile was analyzed alongside the number of end-users within service gaps. A three-end-user per mile of cable was set as the minimum requirement for a fiber-optic cable solution recommendation. For cases in which the number of end-users fell below this threshold, satellite and fixed wireless internet were examined as solutions.

Fixed-wireless was given preference over satellite connections in this analysis due to lower fixed costs. Satellite service necessitates fees for satellite receivers, modems, installation, and congestion fees – on top of monthly plan costs. While fixed-wireless technology also incurs installation receiver costs, initial startup fees are lower than those of satellite. Fixed-wireless service options within gaps were assessed using the FCC's Broadband Map to ensure minimum download and upload speed requirements were being met. The BEAD program's minimum download and upload speeds of 100 Mbps and 20 Mbps, respectively, were used as thresholds. If a gap could be serviced by a fixed-wireless provider that could meet these speed thresholds, fixed-wireless technology was designated as the connectivity solution recommendation.

The connectivity solution analysis provides technology recommendations for broadband infrastructure gaps. Multiple gaps are grouped into clusters, indicating a shared technology recommendation and cohesive fiber-optic cable buildout, if fiber is recommended. Infrastructure gap solutions list proximate internet service providers, estimated distance of fiber-optic cable installation, and relevant location information.

In addition to technology recommendations, strategies for promoting broadband expansion are set forth. Specific strategies for local governments, internet service providers, and residents highlight actionable steps to promote broadband expansion. These strategies are not only critical for addressing infrastructure gaps, but speed and affordability gaps as well.



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Infrastructure Solutions - Stephenson County

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Sources: Map data © OpenStreetMap contributors, Microsoft, Esri Community Maps contributors, Map layer by Esri, Illinois Department of Commerce & Economic Opportunity

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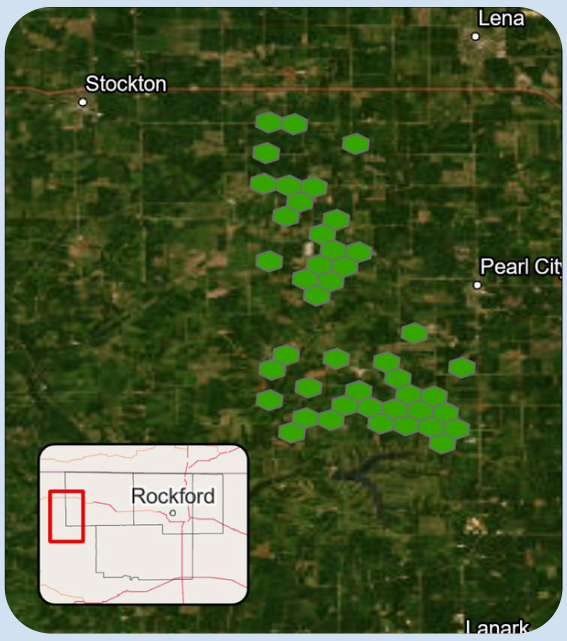
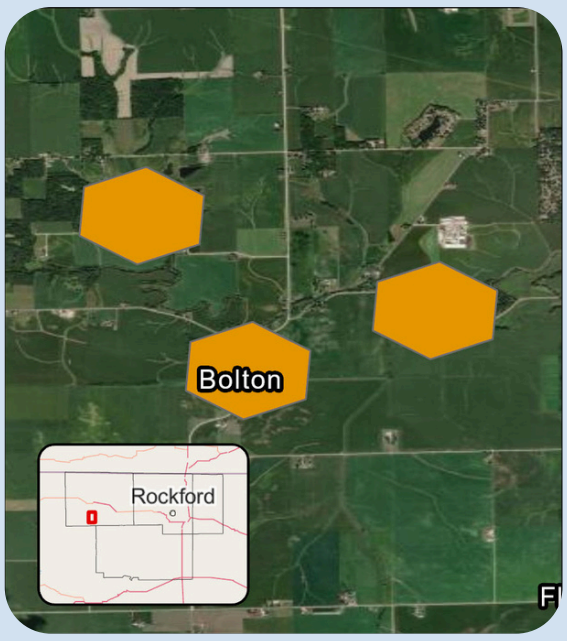


Southwest Stephenson Cluster

Recommended Technology: Fiber

Approximate Cable Installation Length: 16.7 miles

Additional Context: Large portions of southwest Stephenson County are unserved. A series of cable extensions totaling over 16 miles would address over 40 identified infrastructure gaps.

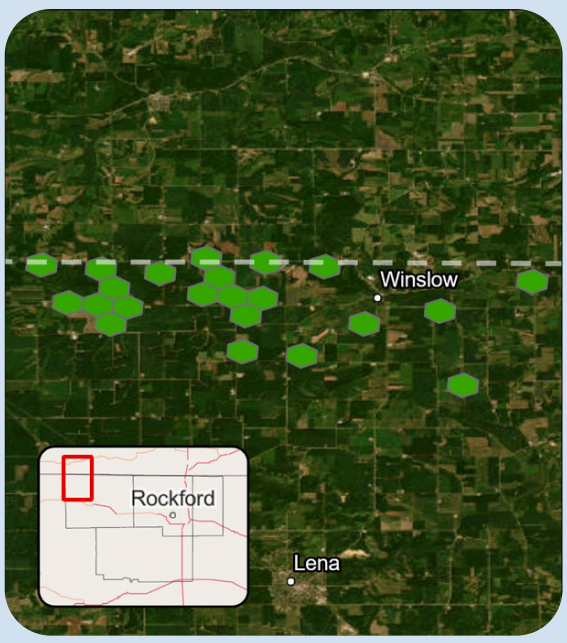


Yellow Creek Cluster

Recommended Technology: Fixed-wireless

Approximate Cable Installation Length: 7.6 miles

Additional Context: Limited nearby service cable and topographical challenges to cable installation make fixed-wireless the ideal connectivity solution for gaps situated near Yellow Creek.

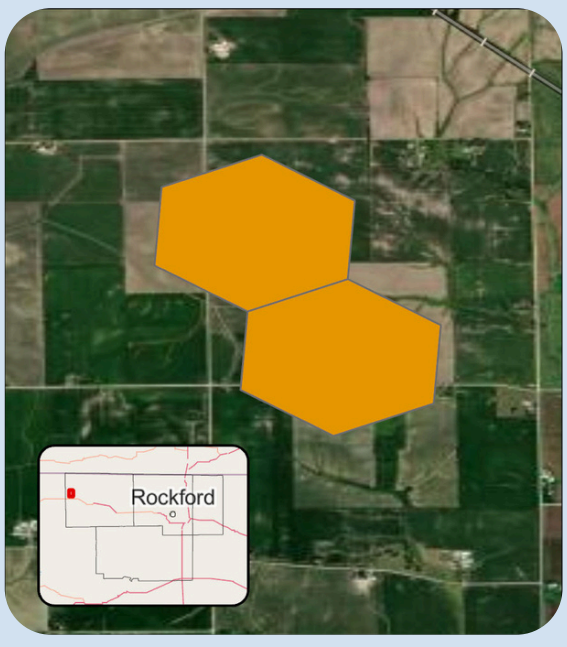


Northwest Stephenson Cluster

Recommended Technology: Fiber

Approximate Cable Installation Length: 8.4 miles

Additional Context: 8.4 miles of end-user extensions would provide service to multiple infrastructure gaps in northwest Stephenson County.

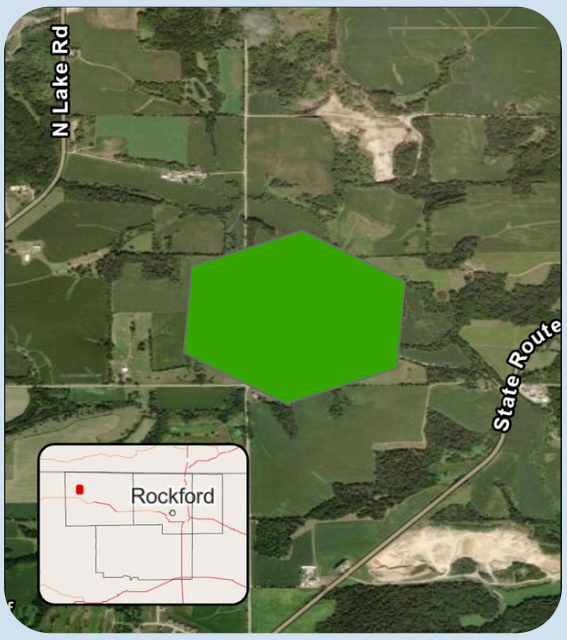


North Waddams Grove Road Gaps

Recommended Technology: Fixed-wireless

Approximate Cable Installation Length: 4.3 miles

Additional Context: Limited fiber-optic cable exists within a four-mile radius. Fixed-wireless provides the best connectivity solution for gaps.

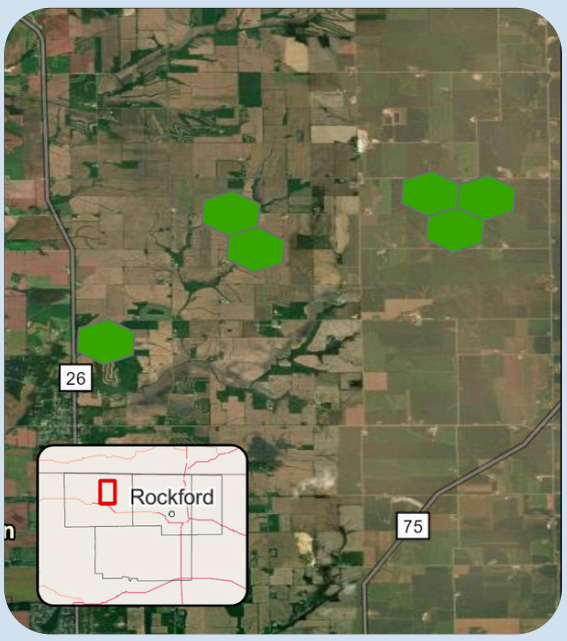


North Shippee Road

Recommended Technology: Fiber

Approximate Cable Installation Length: 0.9 miles

Additional Context: A 0.9 miles of end-user extensions from nearby service cables would connect multiple households along N Shippee Road.

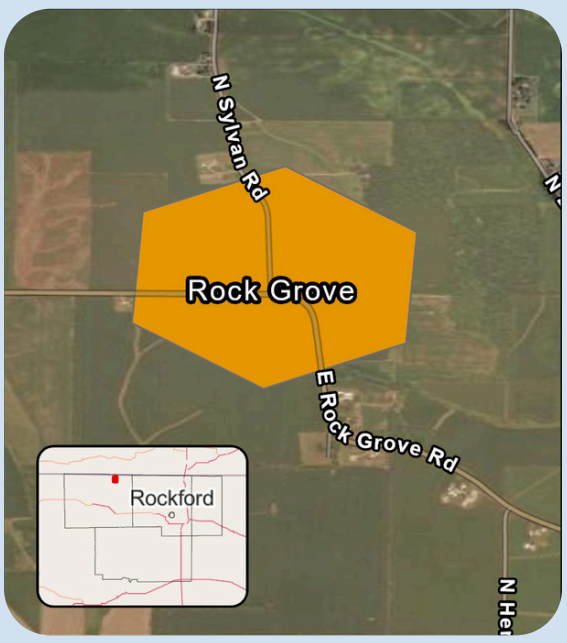


East McConnell Road Cluster

Recommended Technology: Fiber

Approximate Cable Installation Length: 3.3 miles

Additional Context: Approximately 3.3 miles of end-user extensions would provide fiber-optic cable connectivity to six infrastructure gaps along E McConnell Road.

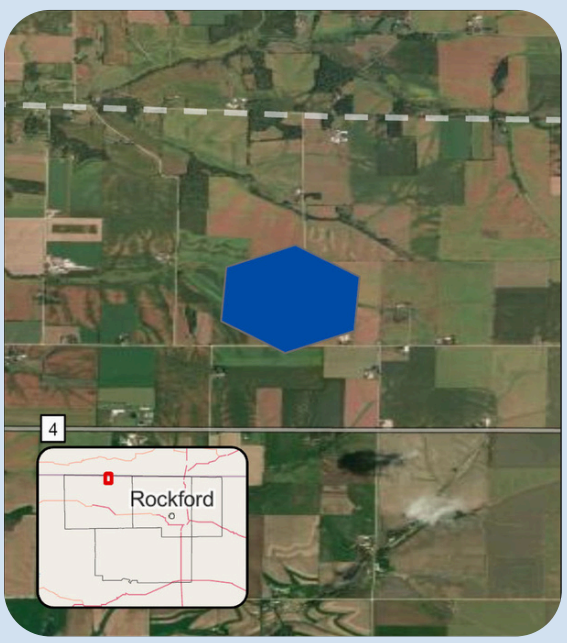


East Rock Grove Road Gap

Recommended Technology: Fixed-wireless

Approximate Cable Installation Length: 7.8 miles

Additional Context: Limited access to fiber-optic service cables exist within seven miles of gap. Fixed-wireless providers in area offer service that meets speed requirements.

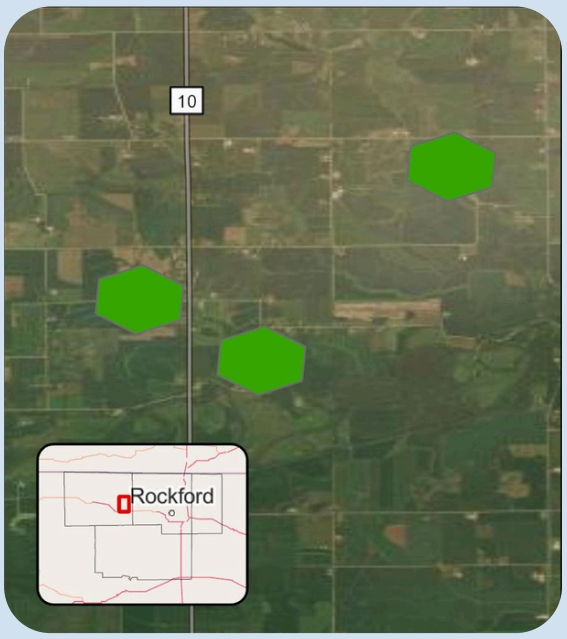


North Afolkey Road Gap

Recommended Technology: Satellite

Approximate Cable Installation Length: 2.2 miles

Additional Context: Limited access to fiber-optic cables and nearby fixed-wireless providers do not meet speed requirements. Satellite service offers best connectivity solution.

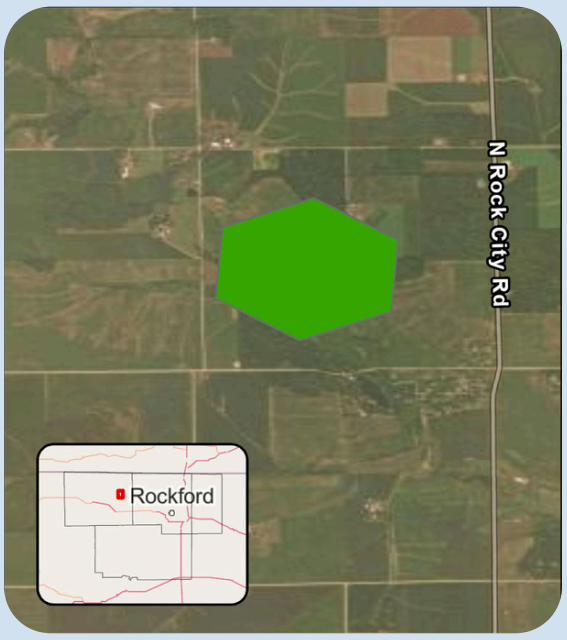


East Winneshiek Road Cluster

Recommended Technology: Fiber

Approximate Cable Installation Length: 3.2 miles

Additional Context: 3.2 miles of service extension would connect multiple end-users located along E Winneshiek Road and N Rock City Road.

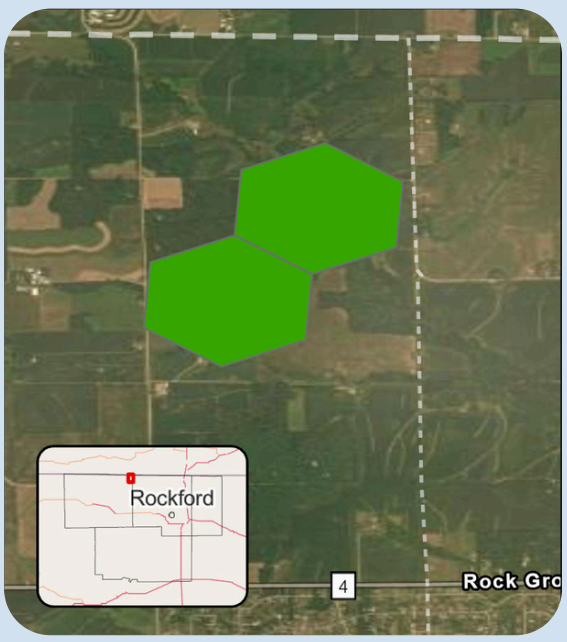


East Cedarville Road Gap

Recommended Technology: Fiber

Approximate Cable Installation Length: 1.1 miles

Additional Context: Approximately 1.1 miles of service extension would connect end-users located along E Cederville Road.

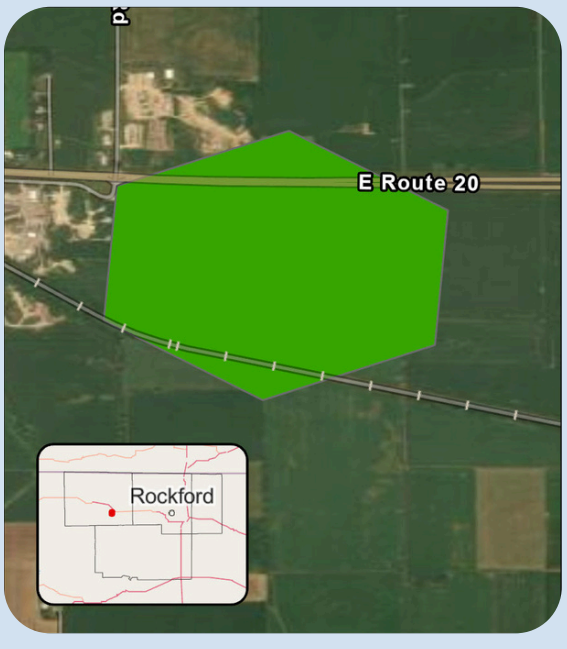


North Davis Road Gaps

Recommended Technology: Fiber

Approximate Cable Installation Length: 2.1 miles

Additional Context: Service extension along N Davis Road would connect multiple end-users at the N Davis Road and E Walnut Grove Road intersection.



Southeast Freeport Gap

Recommended Technology: Fiber

Approximate Cable Installation Length: 1.5 miles

Additional Context: Extension from existing service cables situated along S Springfield Road would connect nearby end-users.

Recommendations

Financing broadband infrastructure development is a critical step in addressing connectivity gaps. Unserved areas often present high fixed costs for infrastructure expansion. Preparedness for state and federal funding opportunities and the formation of public-private partnerships are strategies that allow local governments and other community stakeholders to address gaps in broadband infrastructure, speeds, and affordability.

Preparedness for Funding Opportunities

State and federal funding opportunities can assist in funding broadband expansion, particularly for rural or other hard-to-serve areas. The Connect Illinois broadband investment program, supported by federal BEAD funds, constituted the state's largest broadband grant program. Connect Illinois funds were reserved for private internet service providers, but certain funding rounds incorporated community support requirements, allowing local governments to provide input on infrastructure expansion, speed requirements, and affordability concerns. Similar funding opportunities, in addition to planning or capacity grants for local governments, can be offered by an array of federal and state organizations.

Preparedness for funding opportunities requires and understanding of connectivity gaps, an information need this study has sought to address. A local government or relevant stakeholder can utilize the identified gaps to establish a framework to compete for funds as broadband funding programs are offered. Prioritizing areas with demonstrated connectivity gaps allows for an efficient and compelling use of funds.

Public-Private Partnerships

Local governments can pursue public-private partnerships with internet service providers to expand infrastructure into unserved or underserved areas. Common frameworks for public-private partnerships include gap funding practices; a unit of local government provides a capital subsidy for infrastructure expansion, either utilizing grant monies or local funds, and internet service providers design, build, and operate the networks. This framework mitigates risk for local governments while providing financial incentive for private providers to expand service to unserved or underserved areas.[vi]

The formation of a public-private partnership necessitates a clear understanding of local connectivity needs, and may require grant funding for capital costs. The gaps identified in this study can be referenced to inform the formation of partnerships and bolster preparedness for funding opportunities.

Appendix A: References

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Appendix B: Survey

1) What type of internet user are you? If you operate a home business, please select "Home."*

( ) Home

( ) Business

( ) Farm / Agriculture Business

( ) Community / Public Building - Please Specify:
_____ *

( ) Other - Please Specify (Required):
_____ *

2) Please provide your complete property address. This will allow us to map infrastructure connectivity & will not be shared with external parties.*

Address: _____

City: _____

State: _____

Zip Code: _____

3) Please describe your existing internet access.*

( ) I have access and am subscribed to an internet company, excluding cellular phone or hotspot, at this location

( ) I have internet options from internet company, excluding cellular phone or hotspot, but am not subscribed

( ) I only have cellular internet or hotspot options. This includes internet offered through a cellular company.

( ) There are no providers that offer service at my location.

6) Please indicate the devices, excluding cellular phones, that you use at this location.*

Computers: _____

Tablets: _____

iPads: _____

Medical Devices: _____

Gaming Consoles: _____

Appendix B: Survey

7) How many smartphones do you have at this location?*

_____

8) Which internet companies offer service to your location? Please select all that apply.

[ ] Aircell Inc

[ ] E-Vergent

[ ] Fox Valley Internet

[ ] Frontier

[ ] i3 Broadband

[ ] Mediacom

[ ] Rise Broadband

[ ] Sharon Telephone Company

[ ] Spectrum

[ ] T-Mobile US

[ ] US Cellular Corp

[ ] Verizon

[ ] Xfinity

[ ] Other - Please Specify:

_____*

[ ] I do not know

9) Do you sometimes have to use your cellular data plan or another provider when your primary internet connection is not working? If so, please name the cellular provider.*

( ) No, I don't have to use my cell phone's data plan or alternate provider when my primary internet connection is not working.

( ) Yes. Please name the provider:

_____*

Appendix B: Survey

10) Please describe your level of satisfaction for the following internet service criteria:*

	Not Satisfied	Neutral	Satisfied
Affordability	[ ]	[ ]	[ ]
Speed	[ ]	[ ]	[ ]
Reliability	[ ]	[ ]	[ ]

11) Does at least one person at this location... (select all that apply)*

[ ] Operate a home business

[ ] Work at home, full- or part-time

[ ] Attend school online, full- or part-time

[ ] None of the above

12) Please tell us why you do not have fixed internet access at your location*

[ ] Do not need or want an internet subscription

[ ] No services are offered at my location

[ ] The price of available internet subscriptions is too high

[ ] The internet speeds are too low

[ ] The service is not reliable

[ ] Other - Please Specify (Required)

Appendix B: Survey

13) How are you currently, or hope to be using, your internet connection (select all that apply)*

	Currently using the internet to:	Hope to use the internet to:
Access Government Information (Taxes, Resources)	[ ]	[ ]
Communication (Emails, video calls, social media)	[ ]	[ ]
Education (K-12, higher education)	[ ]	[ ]
Entertainment (Video/music streaming, gaming)	[ ]	[ ]
Healthcare Information and Services	[ ]	[ ]
Banking & Financial Management	[ ]	[ ]
Working from Home (Home-business, telework)	[ ]	[ ]

Appendix B: Survey

14) How well does your current internet access support these functions?*

	Not Applicable	Poor	Good	Excellent
Access government information (Tax Information, Resources)	( )	( )	( )	( )
Communication (Emails, video calls, social media)	( )	( )	( )	( )
Education (K-12, higher education)	( )	( )	( )	( )
Entertainment (Video/music streaming, gaming)	( )	( )	( )	( )
Healthcare Information and Services	( )	( )	( )	( )
Banking & Financial Management	( )	( )	( )	( )
Working from Home (Home-business, telework)	( )	( )	( )	( )

15) In your opinion, are there sufficient internet service provider choices at your location?*

( ) Yes

( ) No

( ) I don't know

16) Please feel free to share anything else about your broadband service or need for digital equity programs.

_____

_____

_____

_____

Thank You!