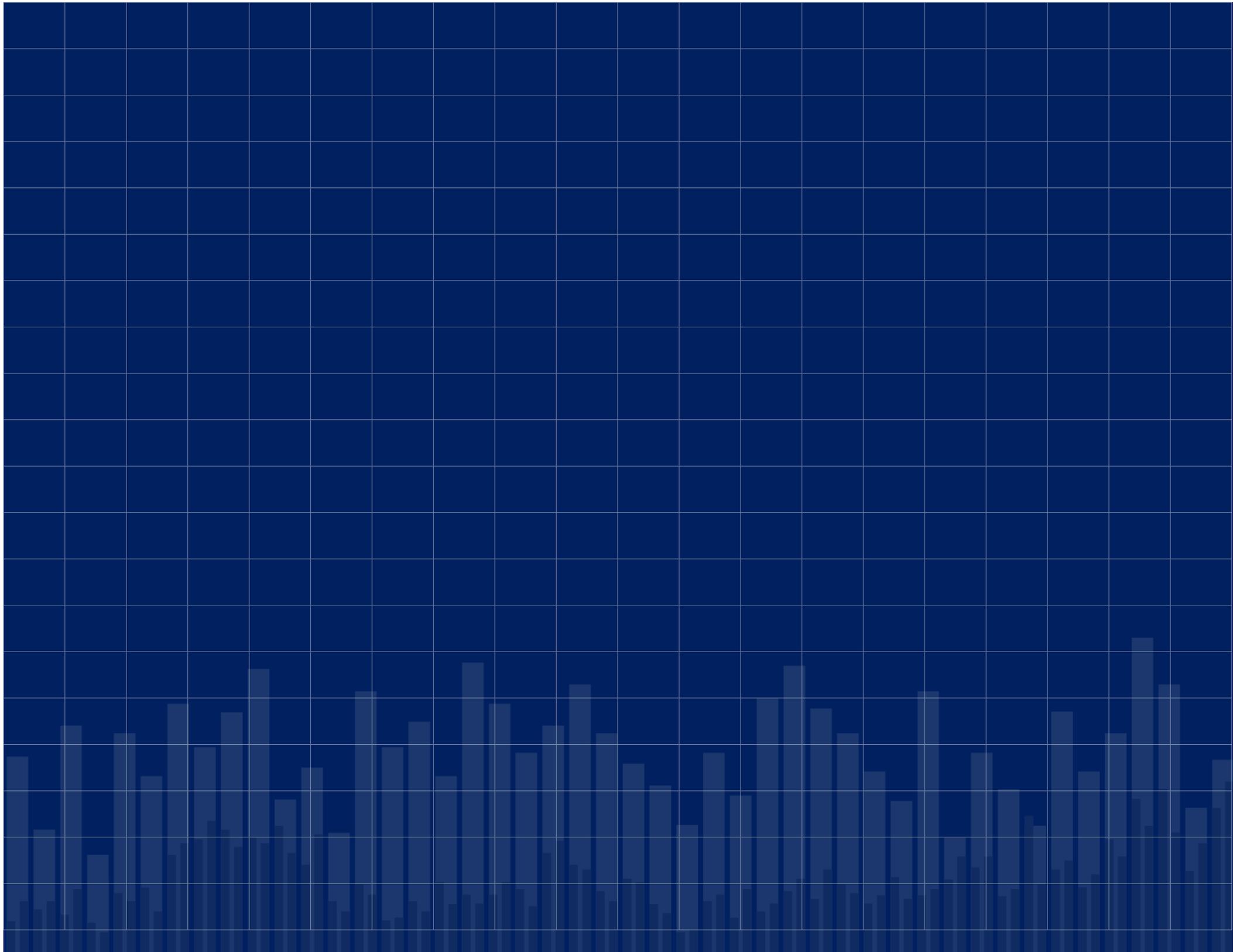


GREENE COUNTY
BROADBAND READINESS PLAN
ADOPTED- JUNE 16, 2020



CONSULTING TEAM

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design group

The logo for Taylor Siefker Williams design group features a stylized graphic on the right consisting of a green circle with a white diagonal line, set against a background of a grid and a red triangle.

YATES
ENGINEERING SERVICES LLC

The logo for Yates Engineering Services LLC features the word "YATES" in a large, bold, white serif font on a black background, with "ENGINEERING SERVICES LLC" in a smaller, white sans-serif font on a red background below it.

ACKNOWLEDGEMENTS

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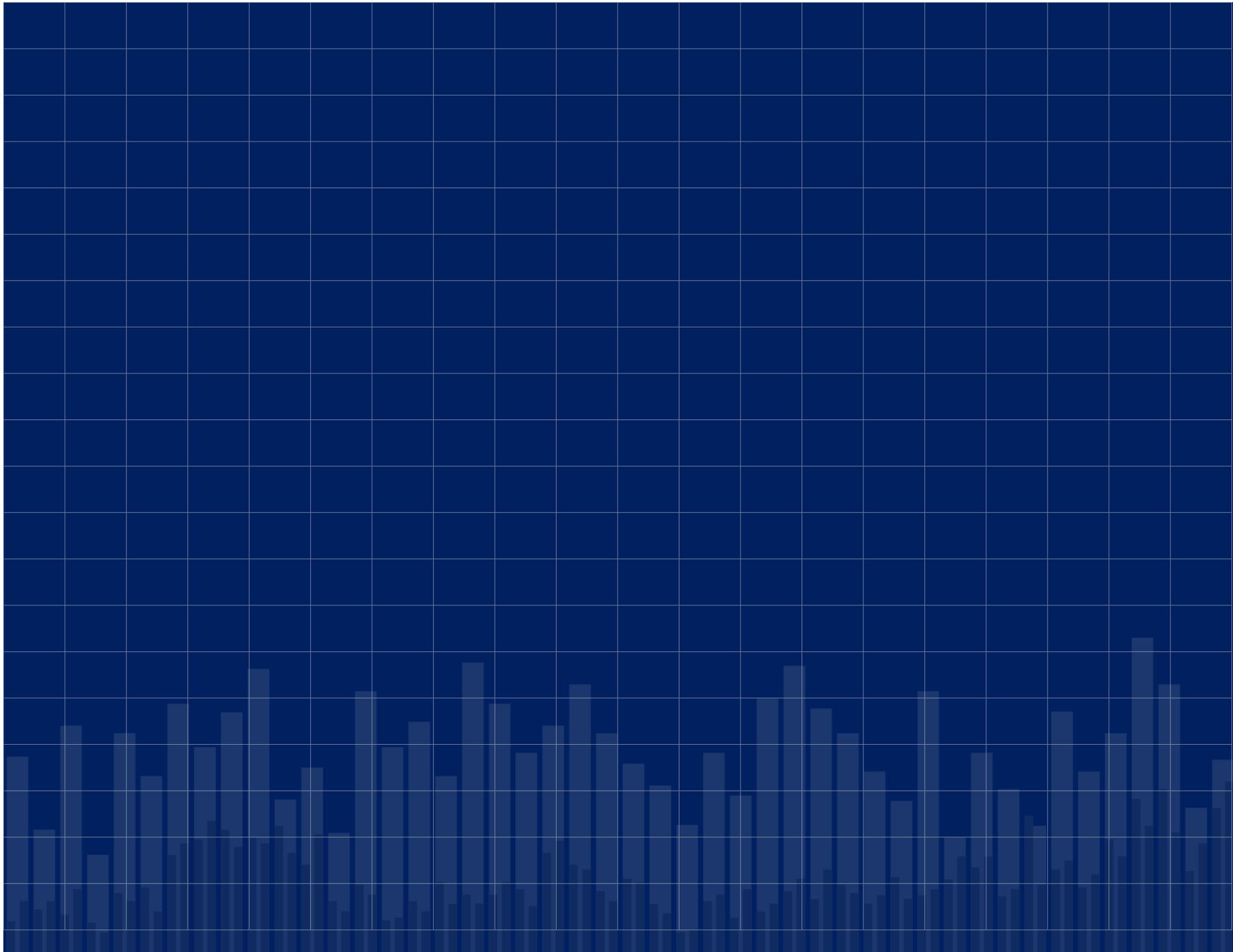
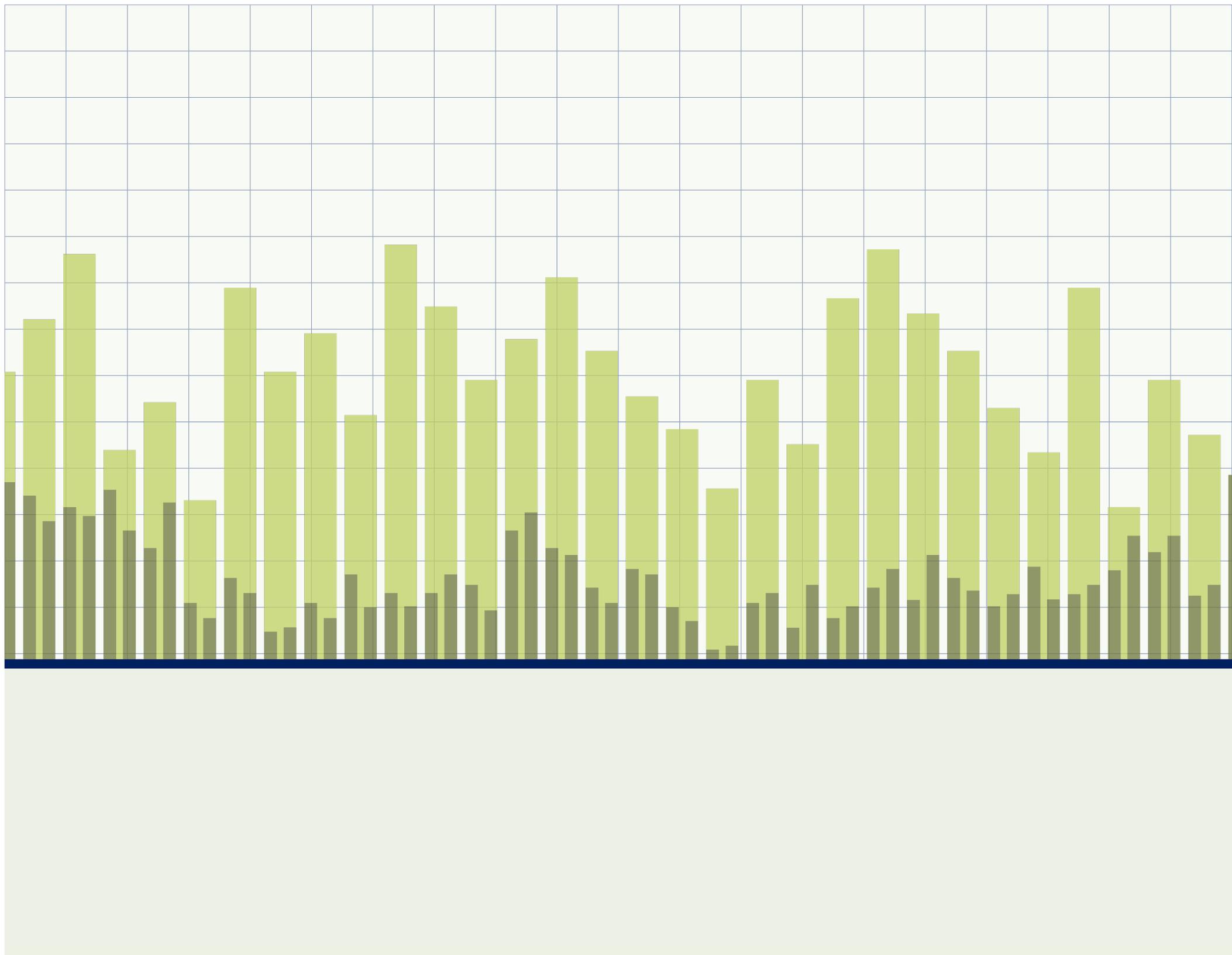
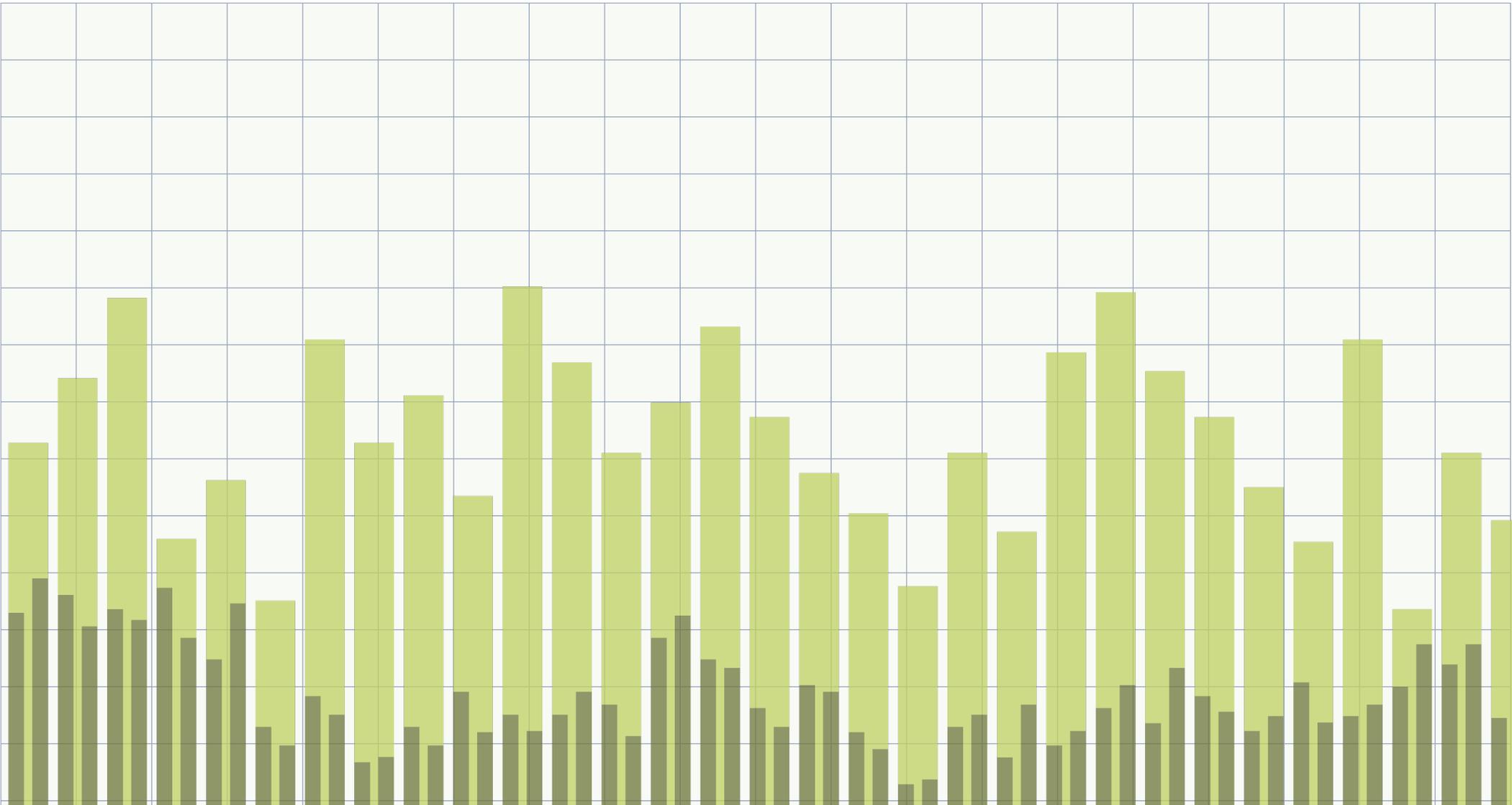


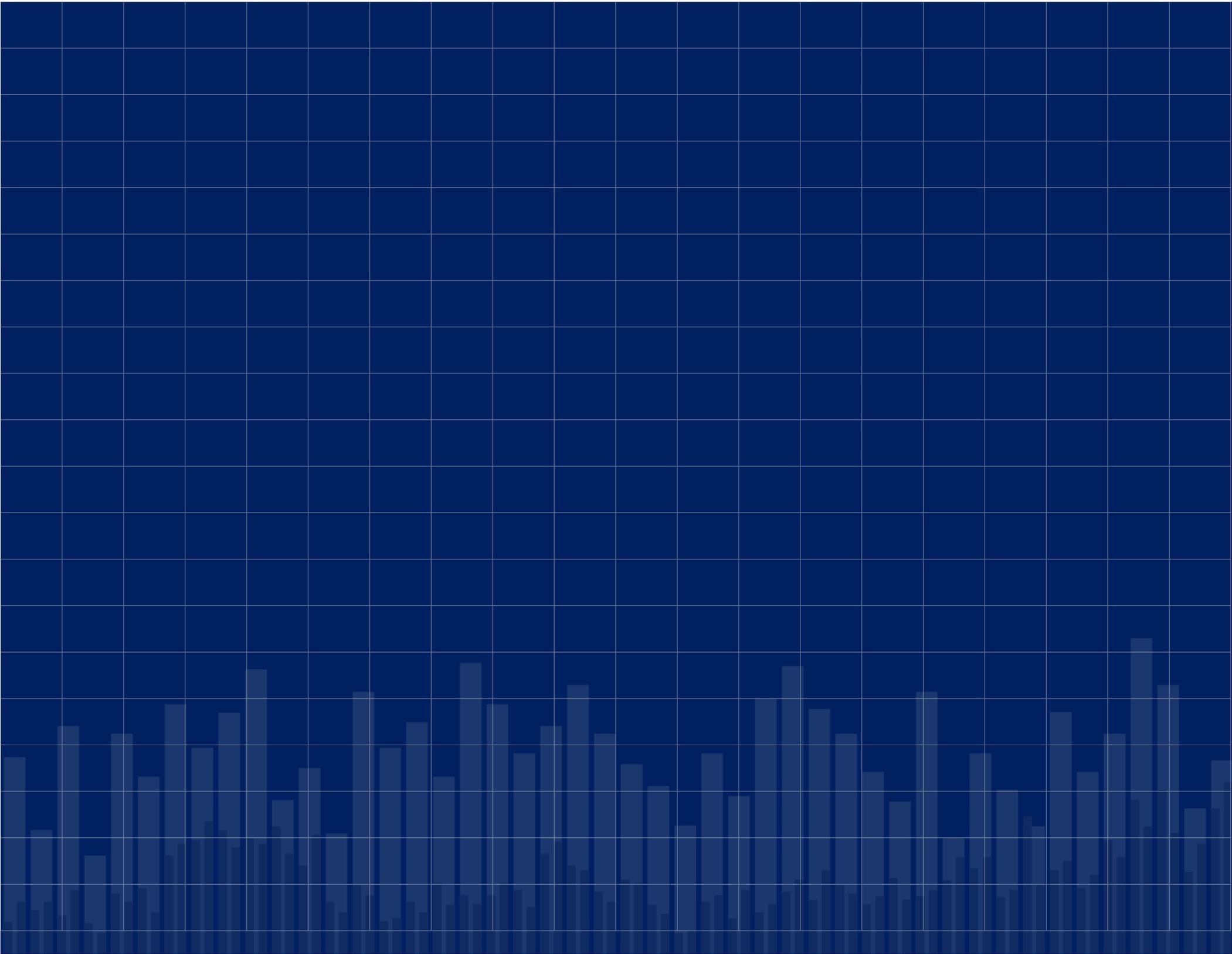
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Executive Summary





PURPOSE OF THE PLAN

In September 2018, Governor Eric Holcomb announced his infrastructure agenda for 2019, which included nearly \$1 billion in investment for infrastructure projects across the State of Indiana. The Next Level Connections program included not only physical connections, such as roads and trails, but highlighted the need for expanded broadband services throughout Indiana's rural communities. His draft agenda committed \$100 million for broadband infrastructure to assist in bridging the digital divide in the State's rural communities.

In addition to the State's Next Level Program, the Office of Community and Rural Affairs (OCRA) outlined their own program in September of 2018 to further assist rural communities develop strategic plans for enhancing broadband connectivity. The Broadband Readiness Pilot Program was established in an effort to identify how broadband infrastructure can be implemented statewide, with a focus on rural communities. As an initial phase of the Pilot Program, five communities were chosen as recipients including Dale, Indiana, Crawford County (English, Marengo and Milltown, Indiana), Marshall County (Bermen, Culver and La Paz, Indiana), Starke County (Hamlet, Knox and North Judson, Indiana) and Greene County (Bloomfield, Jasonville, Smith Township, Switz City and Worthington, Indiana).

Greene County Broadband Readiness Study provides a focused look at the demographic, socioeconomic and existing physical conditions of Bloomfield, Jasonville, Smith Township, Switz City and Worthington, Indiana and aims to identify a realistic, infrastructure deployment model to establish and improve access to and use of high-speed internet systems throughout the community. The plan not only outlines an infrastructure plan, but also identifies key strategies and measurable action items that both county and community leaders can use to reduce barriers to implementation, incentivize provider investment and develop public and private community programs to better link residents to the technology that is available.

SCOPE OF THE PLAN

Studies in the development of broadband generally focus only on the implementation of telecommunications services. In order to better understand and analyze the access, use and adoption of broadband systems, this study broadens the scope of attention by considering the existing condition of the community and the demographic, socioeconomic and physical challenges within each area that may inhibit the use and implementation of enhanced or new infrastructure systems. Additionally, this plan recognizes that high speed internet is a business and is provided by for-profit companies.

Process to Develop the Plan

In May of 2019, Greene County kicked off a 6-month process to complete the *Greene County Broadband Readiness Study*. The planning process consists of three key phases: information gathering, idea sharing and strategy development. This process is designed to produce a plan for the community by assessing existing community infrastructure assets and barriers, establishing a vision for the community and developing sound strategies and tools that would enable the county to improve broadband connectivity and adoption in the future. The process included the following:

Existing Conditions

This phase provided for the collection and analysis of demographic, socioeconomic and physical conditions within Greene County and the communities of Bloomfield, Jasonville, Smith Township, Switz City and Worthington, Indiana. Additionally, this phase of work outlined all known providers, subscription plans and technology types available to the studied communities. The 'Existing Conditions' phase featured one meeting of the Broadband Planning Committee and a community survey to gain input from the broader community.

Visioning and Idea Development

This phase provided for the identification of a long-range broadband vision for the community and a series of actionable goals that focused on service, technology, educational curriculum, partnerships and implementation. This phase of work also featured the development of a network plan that satisfied the community's goals and aspirational vision. The 'Visioning and Idea Development' phase featured one meeting of the Broadband Planning Committee, as well as a public open house.

Study Development and Adoption

This phase of work was dedicated to the development of a user-friendly Broadband Readiness Plan that outlined the long-term vision, the network plan and a series of actionable steps that would allow Greene County to move forward with implementation. The 'Study Development and Adoption' phase included two meetings of the Broadband Planning Committee.

Plan Organization

The *Greene County Broadband Readiness Study* was developed for county, city and town officials, decision makers, and service providers by defining the community's vision for broadband, the challenges that could inhibit the adoption of broadband and the business rational for improving the systems. The final plan outlines both deployment options and specific action steps, but is also intended to be a broader, guiding document for decision-making in both public and private arenas.

Aside from the Executive Summary, which provides an overview of the plan purpose, entire planning process and plan intent, the final *Greene County Broadband Readiness Study* is broken down into six key chapters.

Chapter One: General Background gives an overview of the demographic profile, economic base and current anchors in Greene County.

Chapter Two: Broadband Planning Committee introduces the Broadband Planning Committee and the effect that the group had on the direction and vision of the study.

Chapter Three: Existing Conditions features essential statistics and factors impacting broadband development within Bloomfield, Jasonville, Smith Township, Switz City and Worthington. This section analyzes the socioeconomic and physical factors that support and impact broadband in the region as well as the gaps and needs of broadband access.

Chapter 4: Broadband Deployment Options clearly outlines the future broadband vision and key goals along with measurable objectives.

Chapter 5: Broadband Deployment Options and Chapter 6: Action Items, respectively, present development options and action steps for successful development of broadband in Greene County and, more specifically, the communities of Bloomfield, Jasonville, Smith Township, Switz City and Worthington.

PLAN SUMMARY

By creating a demographic profile of Greene County and analyzing the existing infrastructure, administrative policies and available partnerships within the community, the unique access, use and adoption challenges can be determined for broader Greene County and each specific community included within this study.

To conduct the inventory and analysis featured within Chapter 1: Background Information and Chapter 3: Existing Conditions a series of resources were used including the following sources:

- 2017 American Community Survey, 2010 U.S. Census**
In addition to the decennial census (2010), the U.S. Census Bureau continually conducts dozens of other censuses and surveys, including the American Community Survey (ACS). The ACS is an ongoing survey that gathers information from a community through a small sample, rather than the large and extensive 10-year survey of which most are familiar.
- STATSIndiana, Indiana Population Projections**
These are the official population projections for the State of Indiana by county which were released in March 2018.
- Broadband Now and Indiana Broadband Map**
BroadbandNow and Indiana Broadband Map data derived from the latest FCC form 477 data.
- Rural Indiana Stats Digital Divide Index**
The digital divide index is a ranking criterion developed by Purdue University and evaluates a community's broadband readiness based on infrastructure and socioeconomic conditions.
- Purdue University, Center for Regional Development, Greene County Data Snapshot (January 2019)**
This report was produced for use by the Office of Community and Rural Affairs (OCRA).

In this technology driven age, a community's access and use of broadband technology has most recently been referred to as the ability of community to not only access broadband hardware and software but to then use the information and communication technologies available to them. To provide a thorough inventory and analysis of Greene County's broadband readiness the General Background and Existing Condition information was analyzed using three key categories: **Access, Use and Action**. Key takeaways found during the Existing Conditions phase of the planning process are as follows:

Key Takeaways: Access

Existing infrastructure does currently exist within the study area. The existing infrastructure, including cell towers of varying heights and electrical service lines and poles, could be used to facilitate the deployment of future system improvements.

As a whole, Greene County average speeds are being reported below the minimum FCC requirements of 25/3 Mbps, the individual communities outlined within this study also fall below the minimum requirements of the FCC.

	Incorporated Cities and Towns*					Greene County
	Bloomfield	Jasonville	Smith Township	Switz City	Worthington	
Average Max. Download Speeds	15 Mbps	15 Mbps	Data is counted as a part of broader Greene County	15 Mbps	15 Mbps	15 Mbps
Average Max. Upload Speeds	2 Mbps	3 Mbps		3 Mbps	2 Mbps	3 Mbps

* Median speeds for the incorporated cities and towns are reported at the Census block level as a component of the Digital Divide Index provided by the Rural Indiana Stats Digital Divide Index. Due to the nature of the Census block boundaries some areas may include unincorporated areas of Greene County as well.

While major portions of the County and the incorporated communities are able to connect and utilize broadband technologies, 21.1% of the County's population report that they have no access to broadband technology at a minimum speed of 25/3 Mbps.

Key Takeaways: Use

The digital lives of lower income and disabled populations is markedly different. The characteristics of age, educational attainment and disability all contribute to an area's use of broadband technology, a primary indicator of community readiness is income. Nearly 45% of the Switz City population falls below the poverty line, a percentage that is nearly four times higher than the county average. The communities of Bloomfield, Jasonville and Worthington have median incomes below that of broader Greene County and have higher percentages of their populations falling below the poverty line.

While Greene County's access to broadband infrastructure is contributing to the higher percentages of non-subscribing households (30% for the County), and the higher percentages of households with no computer device, the population's USE is likely being impacted by their income levels.

While providing physical infrastructure is necessary within the Greene County communities, identifying strategies to mitigate and overcome the area's population decline and to increase the residential household income will be critical to the success of the entire system.

Key Takeaways: Action

While not a densely populated area, there is a pool of potential subscribers (both commercial and residential) that could contribute to a provider return on investment. The planning process identified 344 anchor institutions which includes nearly 260 businesses and over 3,600 residential properties- all of whom would be considered potential users of enhanced broadband networks.

Smith Township has the lowest number of potential users with only 246 residential locations. Due to the significantly lower density in this area service to this area would likely only be financially feasible if service was established to the Bloomfield, Jasonville, Switz City and Worthington areas first.

Greene County, and the studied communities also have access to a wide array of partners and resources which will help ease the burden of implementing construction, programming and policy recommendations.

Together these three components of **Access, Use** and **Action**, in conjunction with the data and inventory highlighted within Chapter 1 and 3, outline a comprehensive picture of Greene County's readiness for broadband growth and adoption.

The broadband readiness analysis, when paired with the broadband vision and goals outlined in Chapter 04: Vision and Goals, serves as the foundation for the recommended deployment options, and policy and programming recommendations outlined in Chapter 05: Broadband Deployment Options and Chapter 06: Action Items. A highlight of those key goals and measurable strategies developed as a part of this effort is outlined on pages 8-9.

HIGHLIGHTS OF KEY GOALS, STRATEGIES & DESIRED OUTCOMES

The *Greene County Broadband Readiness Plan* outlines the overarching vision and action plan to establish and improve broadband connectivity for Bloomfield, Jasonville, Smith Township, Switz City and Worthington along with broader Greene County. In order to provide the specific action steps for all parties to move forward, the Plan must address a wide range of topics that reflect the Greene County community and the ways in which broadband technology will be used and leveraged in the future.

During the first meeting of the Broadband Readiness Plan Steering Committee, the group noted that the future broadband infrastructure network needed to be a driver for improving amenities for the local workforce, reinforcing current economic development efforts, and strengthening educational programming and curriculum. The group also intended to establish ways in which local partnerships could be established and strengthened, while also ensuring that the implementation of future infrastructure was efficient and effective for everyone involved. Ultimately Greene County's future broadband infrastructure network needed to be a driver in improving amenities for the local workforce, reinforcing current economic development efforts and strengthening educational programming and curriculum.

Through this planning process Greene County acknowledges that broadband infrastructure is an essential tool to improving the quality of life for residents and fostering an environment of economic development. Knowing that these improvements and long-term investments are valuable, Greene County is committed to working with its local partners to achieve the following service and implementation and policy goals.

1. Provide minimum broadband speeds of 25MBps/25MBps to all residents, businesses and anchor institutions within the incorporated cities and towns, while adapting to future needs as technology improves.
2. Foster growth and development by encouraging the development of fiber optic infrastructure in residential and existing employment areas, and activity and educational centers.
3. Leverage public works projects to support the cost-effective installation of broadband infrastructure.
4. Partner with providers to reduce barriers to broadband infrastructure investment by creating a streamlined permitting and inspection process.
5. Reduce barriers to broadband infrastructure investment by establishing clear communication channels as well as clear and direct permitting processes.
6. Expand local digital literacy by providing educational resources and tools to area residents.

Specifically, Greene County is prepared to complete the following measurable strategies in an effort to deliver fast, reliable and affordable broadband infrastructure:

STRATEGY	TIMEFRAME
Establish a cooperative Broadband Task Force, consisting of county and municipal leaders, County road and utility department heads, County and community stakeholders, utility providers and private internet service providers and meet on a regular basis.	0-2 Months
Identify a single point of contact for all broadband related matters including the coordination of potential and future broadband related infrastructure within public works projects.	0-2 Months
Establish a permitting procedure that allows for collaboration at all phases of project development and provides for a thorough project review prior to implementation.	0-2 Months
Adopt a Broadband Readiness Resolution at the county level that meets the requirements of the Indiana Economic Development Corporation's (IEDC) Broadband Ready Communities program.	0-2 Months
Apply for, and obtain certification through the IEDC Broadband Ready Communities program.	0-2 Months
Draft and adopt a 'Dig Once' policy to reduce implementation costs and procedural barriers.	3-6 Months
Identify and assist in the preparation and submittal of grants or other funding applications.	On going
Identify strategic public access points or coworking facilities throughout Greene County.	3-6 Months
Identify local financial and in-kind resources that can be made available to private utility and internet service providers to incentivize broadband implementation.	3-6 Months
Finalize the structure, organization and cost sharing details necessary to establish a Public Private Partnership.	6-8 Months
Draft and administer a Request for Proposal (RFP) to identify potential partnerships, timelines, plans and costs for broadband deployment initiatives.	6-12 Months

Following the implementation of broadband service and implementation and policy improvements, Greene County intends to leverage the increased service and administrative tools to achieve the following long-range economic development and educational goals:

1. Leverage broadband as an economic development tool to retain and attract new businesses and employees, support entrepreneurial growth, and increase telecommuting options in the County.
2. Provide a platform for enhancing and improving educational services through improved broadband services.

The aforementioned economic development and education goals are identified as key components in the 2019 Greene County, Indiana Quality of Place and Workforce Attraction Plan¹. The Quality of Place and Workforce Attraction Plan outlines projects related to aesthetics and beatification enhancements, connectivity infrastructure development, and community cohesion and support, which can all be integrated with, or complemented by, enhanced broadband service and increased local adoption rates. Information on how to move forward with leveraging broadband infrastructure within these key topic areas can be found in Chapter 6: Action Steps.

¹ The 2019 Greene County, Indiana Quality of Place and Workforce Attraction Plan can be accessed through the Regional Opportunity Initiatives website. <https://regionalopportunityinc.org/ready-communities/plans/>

KEY BROADBAND TERMS

Throughout this Broadband Readiness Plan, a series of key terms will be used to describe the network, technologies and implementation plan. The terms and definitions are included to ensure that this *Broadband Readiness Plan* can be understood and used by everyone.

The Federal Communications Commission (FCC) defines broadband as internet access that is a minimum of 25 Mbps download speed and 3 Mbps upload speed and is often noted as 25/3. However, definitions based on data transfer speed are not able to take into account the evolution in technologies and uses, therefore, definitions may fluctuate in the future as they have in the past. Specific definitions used throughout the report are outlined below.

General descriptions and definitions

Traditionally, internet speeds are measured in bits, with kilobits (Kbps, 1,000 bits per second) typically being the smallest measurement of speed and megabits (Mbps, 1,000,000 bits per second) being the most common measurement. As technology has increased in some areas, there are now offerings of gigabit (Gbps, 1,000,000,000 bits per second) internet speeds as well.

From a simple perspective, internet speed is just a measurement of how fast you can download (receive data) or upload (send data) information over the web. How fast information can be uploaded or downloaded is a key factor in determining the effectiveness of the system. Having a symmetrical system allows you to send and receive information at the same speeds.

The term 'broadband' has numerous meanings, most of which focus on speed. For the purposes of this Plan, broadband is defined as the high-speed, always-on internet connection and is the type of internet most consumers are now using.

Broadband services can be provided through any number of technologies including the following:

Digital subscriber line: Technology for the high-speed transmission of digital information over standard telephone lines; also known as DSL

Cable modem: Technology component that connects a computer or local network to broadband internet service through the same cable that supplies cable service

Fiber optic: Medium and technology associated with the transmission of information as light pulses along a glass or plastic strand or fiber

Fixed Wireless: Operation of wireless devices or systems in fixed locations such as residences and offices

Satellite: Process of transmitting and receiving data from a stationary satellite dish to an orbiting geostationary satellite.

Broadband over power line: Method of power line communication (PLC) that allows relatively high-speed, digital data transmission over the public electric power distribution wiring

Other pertinent terms that are used throughout this report include the following:

Middle mile: Network section that connects last mile networks to the backbone of the internet

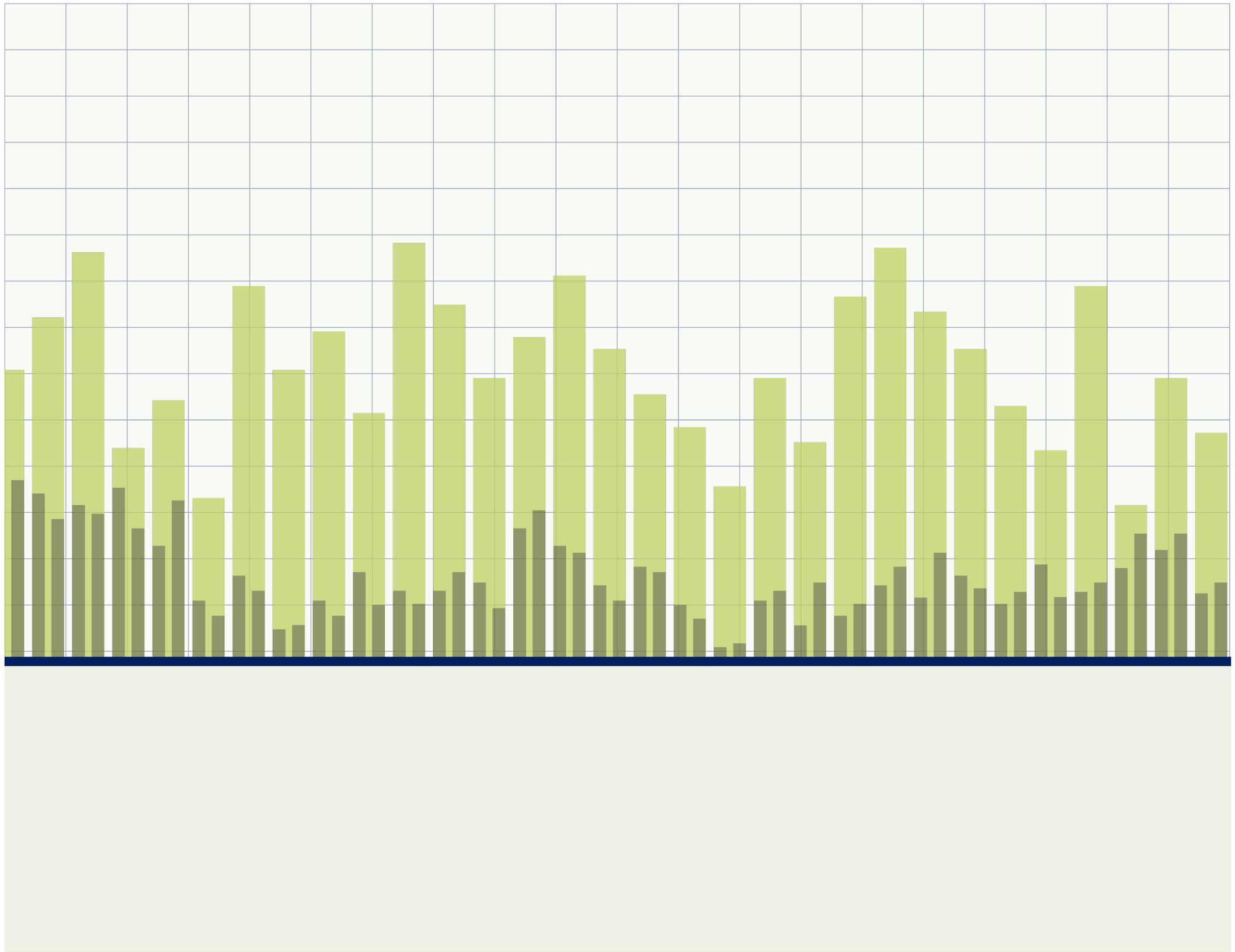
Last mile: Connection between network and home subscriber

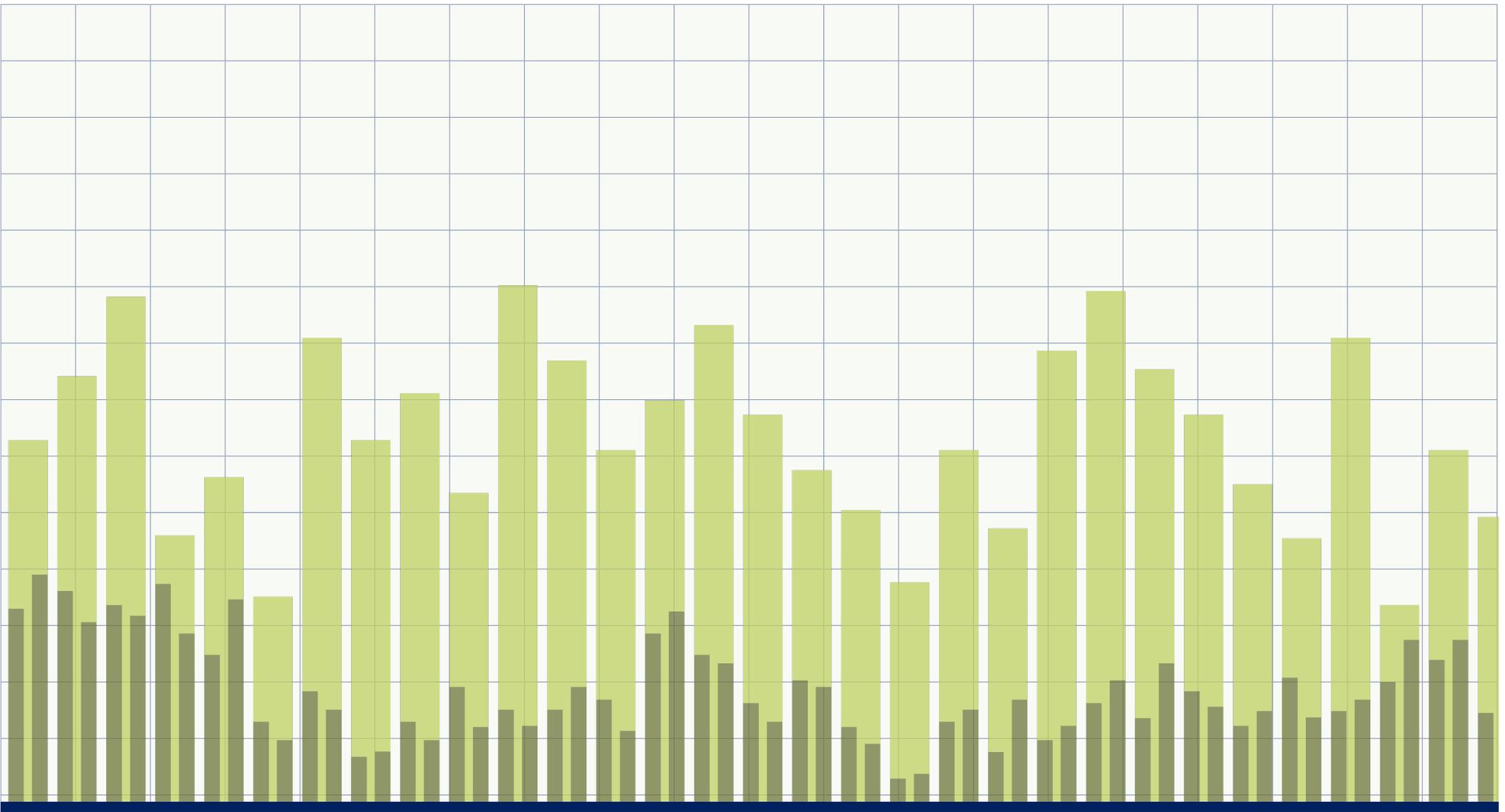
FTTH: Fiber-to-the-home

Open access: Separates physical network from the services

Dark fiber: Laid but not “lit”; left as unused until needed or desired

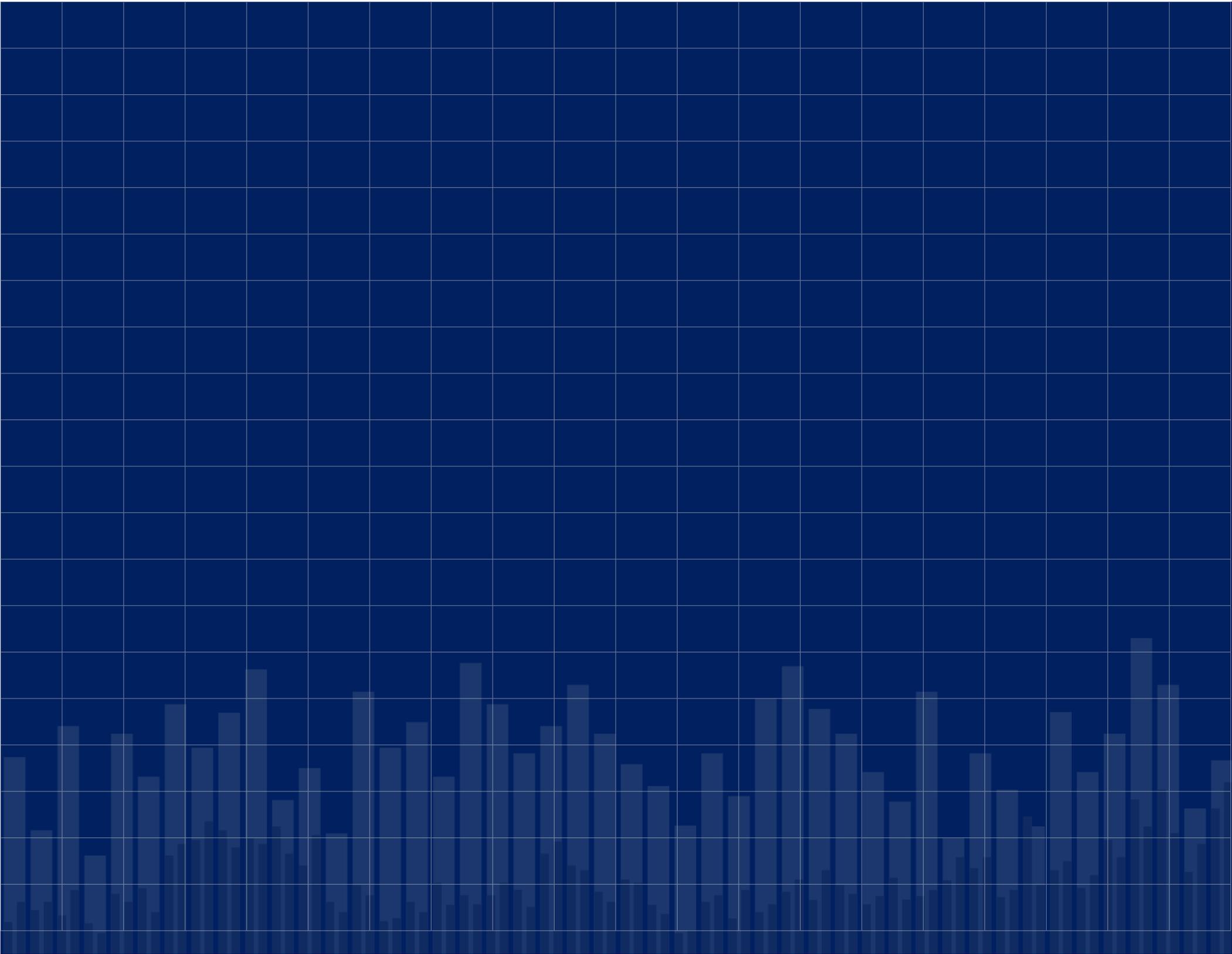
QOS: Quality of service





General Background







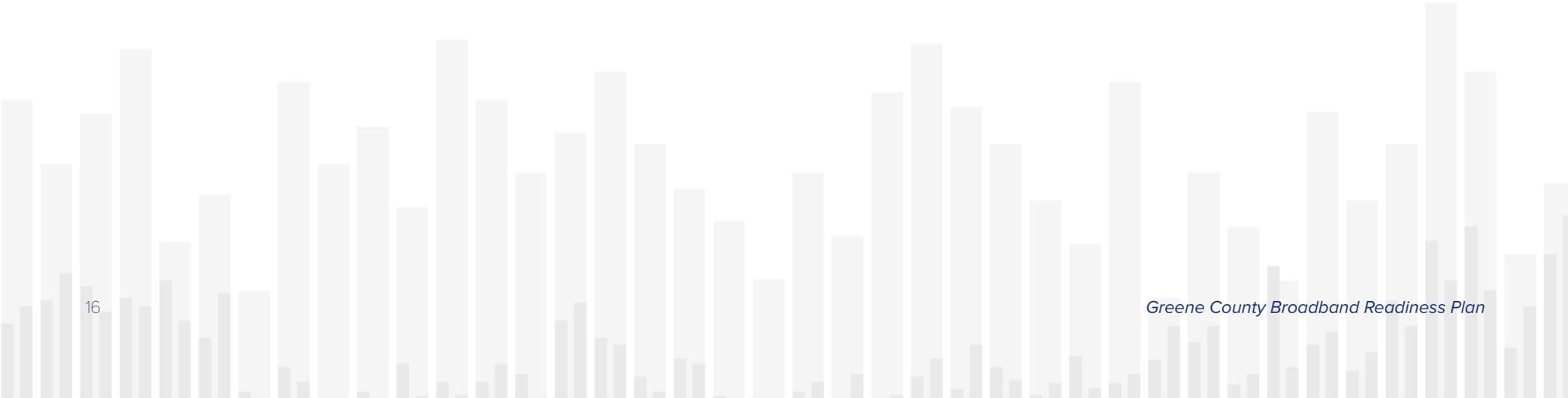
KEY POPULATION FEATURES

Creating a demographic profile of Greene County can shed light on the existing and potential subscribers of each community. This section is organized into seven key topics, including; population, age, income, disabilities, educational attainment, commuting patterns and existing economic base. Each section presents and assesses current trends, and notes important implications when it comes to digital literacy, use and implementation of broadband infrastructure.

For context purpose, data and information for Martin and Daviess Counties are included to give points of comparison and understanding to the Greene County and community-specific data. Additionally, each of the included communities have been presented separately so that certain trends can be seen at a more specific level. It is important to note that Smith Township, while included as a specific area of interest for this Plan, has been included within the broader Greene County demographic data tabulations. Smith Township spans two, five-digit zip codes and is encompassed within a larger Census Tract. These pre-defined boundaries make it difficult to tabulate demographic data for the township specifically.

Information used when making these analyses were drawn primarily from the following sources:

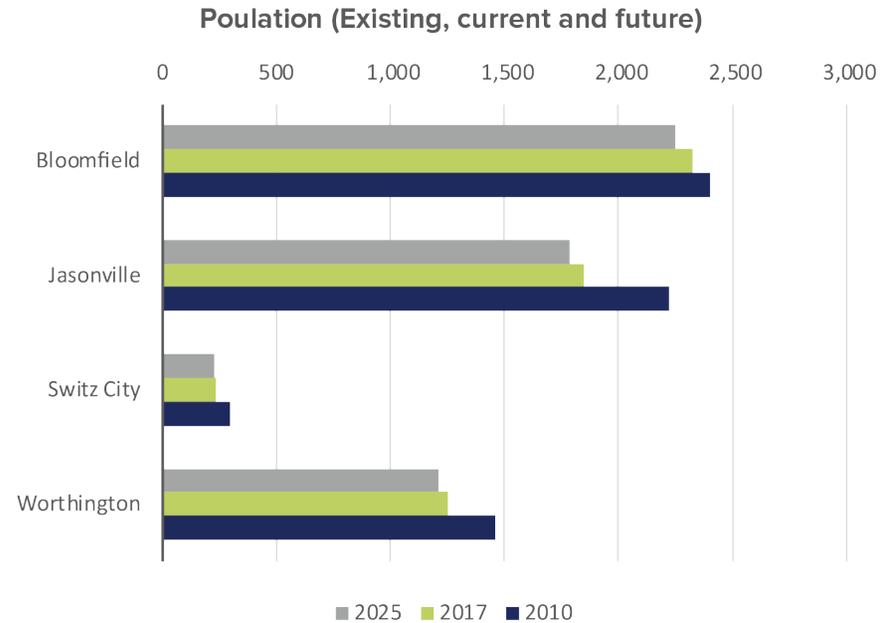
- **2017 American Community Survey, 2010 U.S. Census.** In addition to the decennial census (2010), the U.S. Census Bureau continually conducts dozens of other censuses and surveys, including the American Community Survey. The American Community Survey is an ongoing survey that gathers information from a community through a small sample, rather than the large and extensive 10-year survey of which most are familiar.
- **STATSIndiana, Indiana Population Projections.** These are the official population projections for the State of Indiana by county. Released in March 2018, the state’s official population projections by the Indiana Business Research Center have been updated based on the U.S. Census Bureau’s population estimates for 2015.
- **Purdue University, Center for Regional Development, Greene County Data Snapshot (January 2019).** This report was produced by the Purdue Center for Regional Development and the Purdue Extension Community Development Program for use by the Office of Community and Rural Affairs (OCRA).



Population

Greene County and the incorporated communities included in this study are shrinking.

Greene County, as well as the encompassing communities within, have historically declining populations and are projected to continue in decline. Greene County has declined by approximately 2.21% in population since 2010. While this is not a large decline, based on historical trends, the County is expected to lose an additional 1,116 people by 2025. The documented natural increase, which is calculated by taking the County's birth minus deaths, caused an increase in the total population from 2000 to 2010, but (as shown in the chart) contributed to a County population decline from 2010-2017. Domestic migration (number of people moving into the county minus moving out from the county to other parts of the state or the U.S.) caused major declines within Greene County in both the 2000 to 2010 and 2010 to 2017 periods. While Greene County, as a whole, is declining by a small percentage, Jasonville, Worthington, and Switz City are expected to have a significant decline in population. The surrounding counties of Martin and Daviess, which are home to NSA Crane, are projected to either stay relevantly the same or experience slight growth. Due to the overall population decline in Greene County, services providers may face difficulty securing the necessary densities needed to keep cost affordable in the county.



Source: 2010 data source, 2010 US Census; 2017 data source 2017 American Community Survey; 2025 data source STATS Indiana.

Components of Population Change (2000-2017)

Community	Natural Increase		International Migration		Domestic Migration		Total Population Change	
	2000-2010	2010-2017	2000-2010	2010-2017	2000-2010	2010-2017	2000-2010	2010-2017
Greene County	318	-290	33	19	-637	-701	-477	-987
Martin County	---	186	---	2	---	-349	---	-163
Daviess County	---	1,438	---	83	---	-42	---	1,459

Chart Source: 2010-2017 data from 2017 American Community Survey; 2000-2010 Greene County data was provided by Purdue University Center for Regional Development. Data for Martin and Daviess County was unavailable.

Age

Greene County and the incorporated communities are aging. The median age in Greene County is 42.8 years old, which is slightly older when compared nationally (37.8 years old). While the majority of the communities only saw a slight change in median age, Bloomfield and Worthington saw an increase of 8.8 years and 17.5 years respectively. However, Switz City's median age significantly lowered by over 8 years. The higher median age in Greene County is likely due to a large senior population and small percentage of young adults and/ or youth population.

Median Age

Community	2010	2017	Change (years)
Bloomfield	36.4	45.2	+8.8
Jasonville	35.4	35.6	+0.2
Switz City	41.6	34.4	-8.2
Worthington	32.7	50.2	+17.5
Greene County	41.2	42.8	+1.6
Martin County	42.1	42.0	-0.1
Daviess County	35.4	34.6	-0.8

Chart source: 2010 data source, 2010 US Census; 2017 data source, American Community Survey

2017 Greene County Population Pyramid

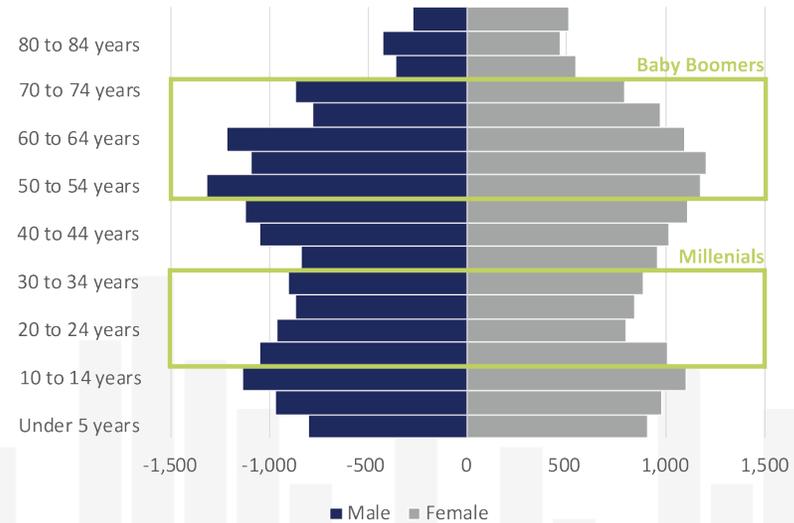


Chart source: 2017 American Community Survey

Technology, in particular the rapid evolution of how people communicate and interact, is another generation-shaping consideration. Baby Boomers grew up as television expanded dramatically, changing their lifestyles and connection to the world in fundamental ways. Generation X, as well as the oldest portions of the Millennial generation grew up as the computer revolution was taking hold and was forced to learn and adapt their digital skills as technology changed and evolved. Generation Z however has had technology as part of their lives from the beginning. The iPhone launched in 2007, when the oldest Gen Zers were 10. These individuals, who now range in age from 0-21 are digital natives and have used technology in nearly every aspect of their lives. While every generation has the ability to become digitally literate, Greene County's age distribution demonstrates both advantages and challenges when it comes to broadband adoption and use.

- **28% of Greene County's population is between the ages of 50-69 (Baby Boomer) and have spent the majority of their lives in a word without technology and broadband services.** While many have adapted to the digital age, segments of this population will need additional education and outreach to better understand the options, their use and their application to daily life. Broadband use and adoption is not an assumed necessity for this age demographic.

- **Nearly 19% of Greene County's population is between ages of 35-49 (Generation X) and have adapted their skills to the always changing age of technology.** This age demographic is not "digitally native", instead, they are "digital adopters," and these individuals can be instrumental when it comes to broadband implementation. It is also important to note that many county, municipal and community institution leaders fall within the Generation X age demographic. These are the individuals that will be responsible for the implementation of this plan and future initiatives and their ability and history of digital evolution is critical.
- **Nearly 25% of Greene County's population is under the age of 19. Using a device and a data source is a regular daily occurrence for these individuals.** When not using the digital platform for school research, testing and homework, they are using high speed systems for streaming TV shows and movies, and playing the latest online video game. Not only does Generation Z use data for entertainment and educational purposes, they are also creating more new online digital content and sending it out into the world. Finding a way to ensure that these individuals have the ability to access equipment and reliable, fast service will be critical to ensure that the population under the age of 19 has the tools they need to succeed both in and out of the classroom.

GENERATIONS DEFINED

Silent Generation:

Individuals born before 1945
(73+ years old currently)

Baby Boomer Generation:

Individuals born between
1946-1964 (54-72 years old
currently)

Generation X:

Individuals born between
1965-1980 (38-53 years old
currently)

Millennial Generation:

Individuals born between
1981-1996 (22-37 years old
currently)

Generation Z:

Individuals born between
1997 to present (0-21 years
old currently)

Race and Ethnicity

The number of Caucasian residents in Greene County decreased slightly from 2010 to 2017. Compared to Indiana and the United States, Greene County and the incorporated municipalities are drastically less diverse. Within Greene County's population, 97.9% of people identify as Caucasian, and 1.3% of people identified as Hispanic ethnicity. Ethnicity and Race are considered two different terms. Ethnicity refers to a person's origin. Race refers to a person's physical characteristics. Hispanics are individuals of any race whose ancestry is from Mexico, Puerto Rico, Cuba, Spain, the Dominican Republic, or any other Spanish-speaking Central or South American country. The incorporated municipalities have a comparable percentage of the population that identifies as Hispanic, but this is still lower than the state and national average.

2017 Race and Ethnicity

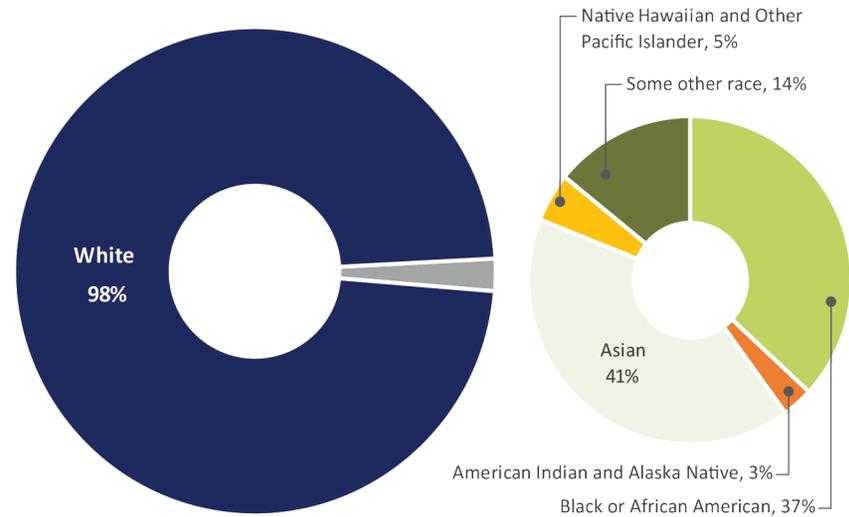


Chart source: 2017 data source, American Community Survey

Race and Ethnicity (2010-2017)

Community	Caucasian		Black or African American		American Indian and Alaska Native		Asian		Native Hawaiian/Pacific Islander		Other		Two or more races	
	2010	2017	2010	2017	2010	2017	2010	2017	2010	2017	2010	2017	2010	2017
Bloomfield	99.3%	94.8%	0.5%	0.34%	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	0.1%	0.26%	0.7%	4.56%
Jasonville	98.1%	100.0%	0.2%	0.0%	0.1%	0.0%	0.4%	0.0%	0.0%	0.0%	0.4%	0.0%	0.9%	0.0%
Switz City	97.3%	90.9%	0.7%	0.86%	0.7%	0.0%	0.3%	0.0%	0.0%	0.0%	0.7%	0.0%	0.3%	8.15%
Worthington	98.5%	97.4%	0.1%	0.0%	0.3%	0.32%	0.1%	0.24%	0.0%	0.0%	0.5%	2.00%	0.5%	0.0%
Greene County	98.1%	97.9%	0.1%	0.3%	0.3%	0.0%	0.3%	0.4%	0.0%	0%	0.3%	0.1%	0.9%	1.25%

Chart source: 2010 data source, 2010 US Census; 2017 data source, American Community Survey

Income and Poverty

The median household income in Greene County increased by \$8,545 from \$41,103 to \$49,648, which is lower than the median household income levels for the United States (\$57,652) and Indiana (\$52,182) as a whole. When compared to the region, Greene County has a higher median income than all of the communities (Bloomfield \$35,746, Jasonville \$32,215, Switz City \$22,500, Worthington \$35,104). Historically, the incorporated municipalities have had lowering median household incomes as well as per capita incomes. This could be correlated with the historically decreasing overall population. Except for Bloomfield and Switz City, all the communities have had lowered poverty rates since 2010. Higher poverty rates can correlate to the per capita income. This income is calculated by dividing the area's total income by its total population.

Poverty Rates (2010-2017)

Community	2010	2017
Bloomfield	14.5%	17.4%
Jasonville	28.9%	19.5%
Switz City	39.9%	44.2%
Worthington	24.1%	25.7%
Greene County	14.4%	12.9%
Martin County	13.0%	13.3%
Daviess County	12.3%	13.0%

Chart source: 2010 data source, 2010 US Census; 2017 data source, American Community Survey

Household Income (2010-2017)

Community	Median Household Income		Per Capita Income	
	2010	2017	2010	2017
Bloomfield	\$43,292	\$35,746	\$25,327	\$22,636
Jasonville	\$27,650	\$32,215	\$13,745	\$17,135
Switz City	\$30,536	\$22,500	\$17,072	\$14,903
Worthington	\$31,293	\$35,104	\$16,071	\$20,700
Greene County	\$41,103	\$49,648	\$20,676	\$24,744
Martin County	\$43,406	\$49,372	\$21,750	\$25,138
Daviess County	\$44,592	\$48,355	\$20,254	\$21,794

Chart source: 2010 data source, 2010 US Census; 2017 data source, American Community Survey

Disabilities

Around 20% of the Greene County and incorporated municipalities population are non institutionalized civilian with a disability. This is higher than the national average of 12.6% of the population. While the national average is lower than the communities, Worthington has a significantly higher percentage (27.1%) of the population that is living with a disability. The non-institutionalized population excludes people residing in institutions such as nursing homes, prisons, jails, mental hospitals, and juvenile correctional facilities. The American Community Survey uses six disability types for the inclusion of percentage of non-institutionalized civilian population with a disability including:

- Visual (blind or has serious difficulty seeing even when wearing glasses)
- Hearing (deaf or has serious difficulty hearing)
- Cognitive (serious difficulty concentrating, remembering, or making decisions because of a physical, mental, or emotional condition)
- Ambulatory (serious difficulty walking or climbing stairs)
- Self-care (difficulty dressing or bathing)
- Independent living (difficulty doing errands alone such as visiting a doctor's office or shopping because of a physical, mental, or emotional condition)

2017 Non-institutionalized Disabilities

Community	% of non institutionalized civilian population with a disability
Bloomfield	19.5%
Jasonville	18.8%
Switz City	21.9%
Worthington	27.1%
Greene County	18.4%
Martin County	17.8%
Daviess County	14.2%
United States	12.6%

Chart source: 2017 data source, American Community Survey

Educational Attainment

The incorporated municipalities and Greene County have increased in educational attainment levels of the population. While Bloomfield and Switz City underwent a slight decline in attainment levels, the populations are comparable to Greene County as a whole. Approximately 87.0% of the population in Greene County have a high school degree or higher. This is slightly lower than both the national average (87.9%) and the State (88.3%). Of the county's population, 14.5% hold a bachelor's degree or higher. This is significantly lower than the national average (30.9%) and state of Indiana (25.3%), but is comparable to the incorporated municipalities. However, Greene County and the incorporated municipalities are comparable or higher than the state and national attainment levels of the population that either have some college education or achieved an associate's degree.

2017 Educational Attainment

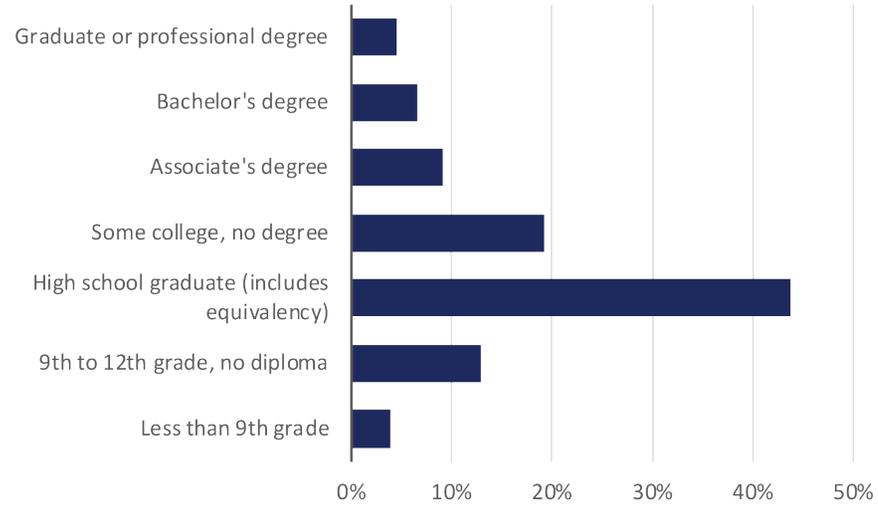


Chart source: 2017 data source, American Community Survey

Educational Attainment (2010-2017)

Community	HS Graduate 2010	HS Graduate 2017	Bachelors or Higher 2010	Bachelors or Higher 2017
Bloomfield	91.8%	81.4%	14.1%	13.0%
Jasonville	78.6%	82.5%	5.6%	10.6%
Switz City	82.4%	79.9%	2.6%	13.4%
Worthington	84.8%	82.6%	1.1%	8.5%
Greene County	83.2%	87.0%	11.1%	14.5%
Martin County	77.1%	83.5%	7.6%	11.0%
Daviess County	74.5%	74.1%	12.2%	14.2%
United States	85.0%	87.9%	27.9%	30.9%

Chart source: 2010 data source, 2010 US Census; 2017 data source, American Community Survey

ECONOMIC BASE

Commuting

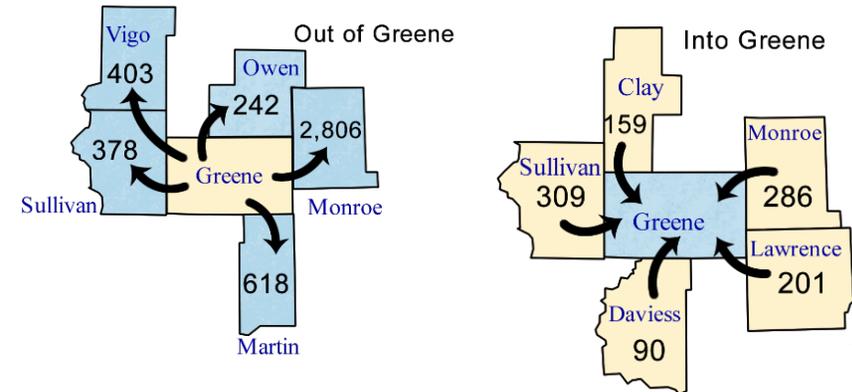
Of the workforce in Greene County (20,597 individuals), 28% work outside of the county. The top 5 counties that receive workers from Greene County include Monroe, Martin, Vigo, Sullivan and Owen County.

With 28% of the Greene County workforce commuting to work outside of the county, it is important to acknowledge these major employers and industries. Monroe County receives 13.6% of Greene county’s workforce. The top three major employers in Monroe County are in Bloomington and include Indiana University, Cook Group Inc, and Cook Medical. Similarly, Martin County receives 3.0% of the county’s workforce. The top three employers in Martin County are the US Naval Weapons Support Center (Crane), Crane Army Ammunition Activity (Crane), and United States Gypsum Corporation (Shoals). Vigo, Sullivan and Owen Counties, respectfully, receive 2.0%, 1.8% and 1.2% of Greene County’s working population.

Economy and Labor Force

The unemployment rate is declining in Greene County and incorporated municipalities. The labor force in a community is the number of people who are employed as well as the unemployed population over the age of 16 years old. Every municipality saw a decrease in the percentage of the population that is unemployed. Switz City experienced the largest change from 15.1% in 2010 to only 6.0%. In Greene County, the labor force is considered as 58.3% of the population. Similarly, around half of the population in the municipalities is also within the labor force: Bloomfield (54.1%), Jasonville (51.3%), Switz City (49.7%), and Worthington (51.8%).

Commuting Pattern Diagrams



Commuting Pattern Data Source: STATS Indiana

Unemployment Rates (2010-2017)

Community	Unemployment Rate 2010	Unemployment Rate 2017
Bloomfield	9.8%	6.2%
Jasonville	8.6%	4.1%
Switz City	15.1%	6.0%
Worthington	7.8%	6.8%
Greene County	9.8%	6.2%
Martin County	6.1%	4.2%
Daviess County	5.3%	5.4%

Chart source: 2010 data source, 2010 US Census; 2017 data source, American Community

Main industries

Greene County's employment and labor force is engaged in the educational services, health care and social services industries. The educational services and health care and social assistance sectors employ the greatest percentage of Greene County residents (20.6%). The manufacturing sector is the second largest industry employing 13.4% of Greene County residents, followed by the retail trade and public administration both at 10.6% of the workforce. While multiple industries saw growth, the public administration industry category, the professional, scientific, and management, and administrative and waste management services industry category, and the arts, entertainment, and recreation, and accommodation and food services industry category saw around 2% growth each.

While an industry refers to the service or product a business provides, an occupation is the type of job that a person does at a business. For example, accountants, in addition to working in accounting firms, may also work for mining companies, hospitals, state or local government, and a host of other industries. The US Census categorizes occupations by 5 categories:

- Management, business, science and arts occupations
- Service occupations
- Sales and office occupations
- Natural resources, construction and maintenance occupations
- Production, transportation and material moving occupations

In Greene County, the management, business, science, and arts occupation category accounts for 29.3% of the workforce. This correlates with the largest major industries of educational services and healthcare and social assistance and manufacturing.

Greene County's top 10 employers¹, determined by the number of employees includes the following: Walmart Supercenter (Linton), Greene County General Hospital, Glenburn Home (Linton), Linton-Stockton School Corp, Eastern Greene Schools, Shakamak Schools, and Eastern Greene High School, Shakamak Good Samaritan Center, Linton Stockton Elementary, and Eastern Greene High School.

¹ http://www.hoosierdata.in.gov/major_employers.asp?areaID=055

Greene County Top Industries

Industry Type	Number of Employees	% of Workforce
Agriculture, forestry, fishing and hunting, and mining	655	4.6%
Construction	1,118	7.8%
Manufacturing	1,912	13.4%
Wholesale trade	174	1.2%
Retail trade	1,508	10.6%
Transportation and warehousing, and utilities	959	6.7%
Information	202	1.4%
Finance and insurance, and real estate and rental and leasing	678	4.8%
Professional, scientific, and management, and administrative and waste management services	1,034	7.3%
Educational services, and health care and social assistance	2,942	20.6%
Arts, entertainment, and recreation, and accommodation and food services	1,023	7.2%
Other services, except public administration	530	3.7%
Public administration	1,513	10.6%

Source: 2017 American Community Survey

KEY ANCHOR INSTITUTIONS

Anchor institutions, including major employment centers, K-12 schools, libraries, museums, healthcare organizations and other not-for-profit community organizations providing support and services to citizens are increasingly being recognized as critical indicators and influencers of a community's socio-economic wellbeing. In recent years, these same anchor institutions have evolved into primary users and supporters of advanced technology improvements including broadband technology, infrastructure and educational programming. At times these institutions not only serve as advocates for improvements, but also can be a primary driver of the planning and implementation process.

The following represents a list of critical anchor institutions within the Greene County community. Many of these institutions likely have connectivity now and by ensuring that high-capacity broadband infrastructure is maintained and improved in the future, they can continue to be a catalyst for Greene County's digital literacy, broadband deployment, and ultimate adoption. Key anchor institutions include:

- **Bloomfield School District**

- Bloomfield Elementary School, Bloomfield, IN
- Bloomfield Junior, Senior High School, Bloomfield, IN

- **Eastern Greene Schools**

- Eastern Greene Early Learning Center, Bloomfield, IN
- Eastern Greene Elementary School, Bloomfield, IN
- Eastern Greene Middle School, Bloomfield, IN
- Eastern Greene High School, Bloomfield, IN

- **Greene-Sullivan Special Education Cooperative, Linton, IN**

- **Linton-Stockton School Corporation**

- Linton-Stockton Elementary School, Linton, IN
- Linton-Stockton Middle School, Linton, IN
- Linton-Stockton High School, Linton, IN

- **MSD of Shakamak Schools**

- Shakamak Elementary School, Jasonville, IN
- Shakamak Junior/ Senior High School, Jasonville, IN

- **White River Valley School District**

- White River Valley Elementary School, Worthington, IN
- White River Valley Middle School, Lyons, IN
- White River Valley High School, Switz City, IN

- **Bloomfield Eastern Greene County Public Library, Bloomfield, IN**

- **Linton Public Library, Linton, IN**

- **Greene County General Hospital, Linton, IN**

- Through the Greene County General Hospital, there are multiple satellite clinics including, My Linton Clinic, My Worthington Clinic, My Bloomfield Clinic, My Westgate Clinic, Greene County Health Clinic, My Virtual Clinic

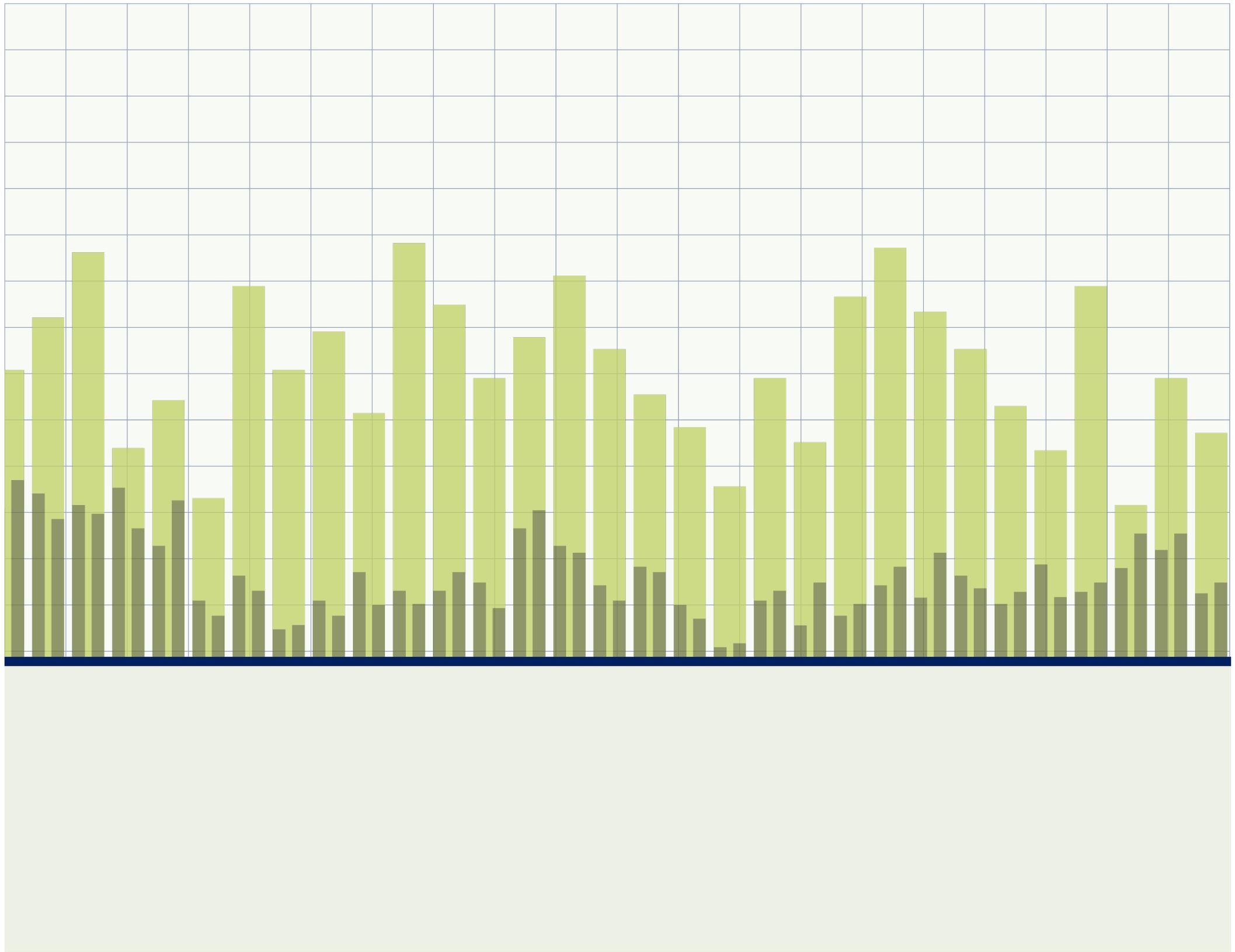
- **Purdue Extension – Greene County, Bloomfield, IN**

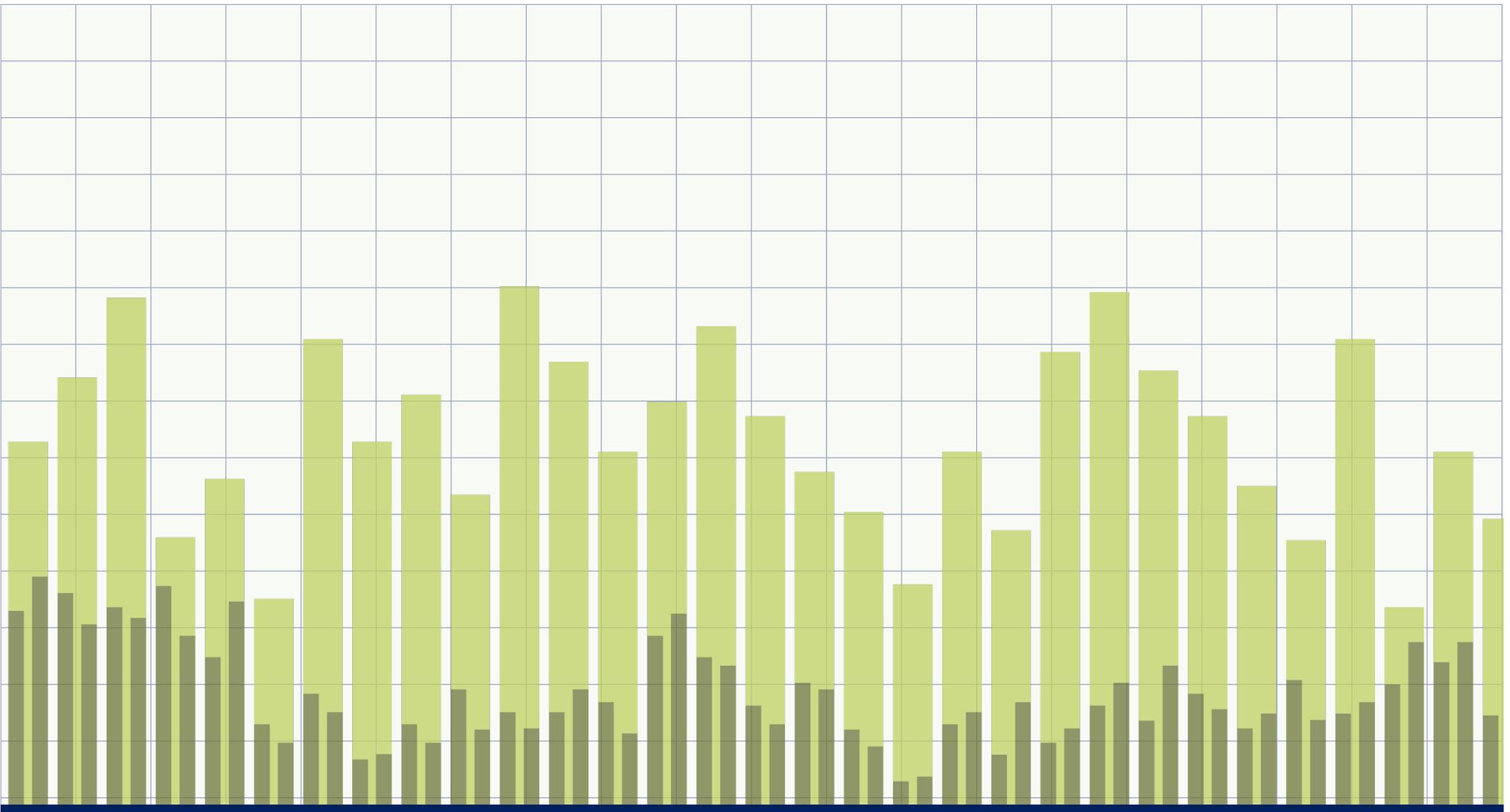
- **Greene County Foundation, Bloomfield, IN**

Given the role of each of the outline anchor institutions, within Greene County and the local community, broadband connectivity to each of these locations likely reaches and impacts a considerable portion of the residential population. By maintaining broadband connectivity to these institutions and by focusing improvements around these key anchors, the *Greene County Broadband Readiness Study* will continue to impact hundreds, if not thousands, of residents throughout Greene County.



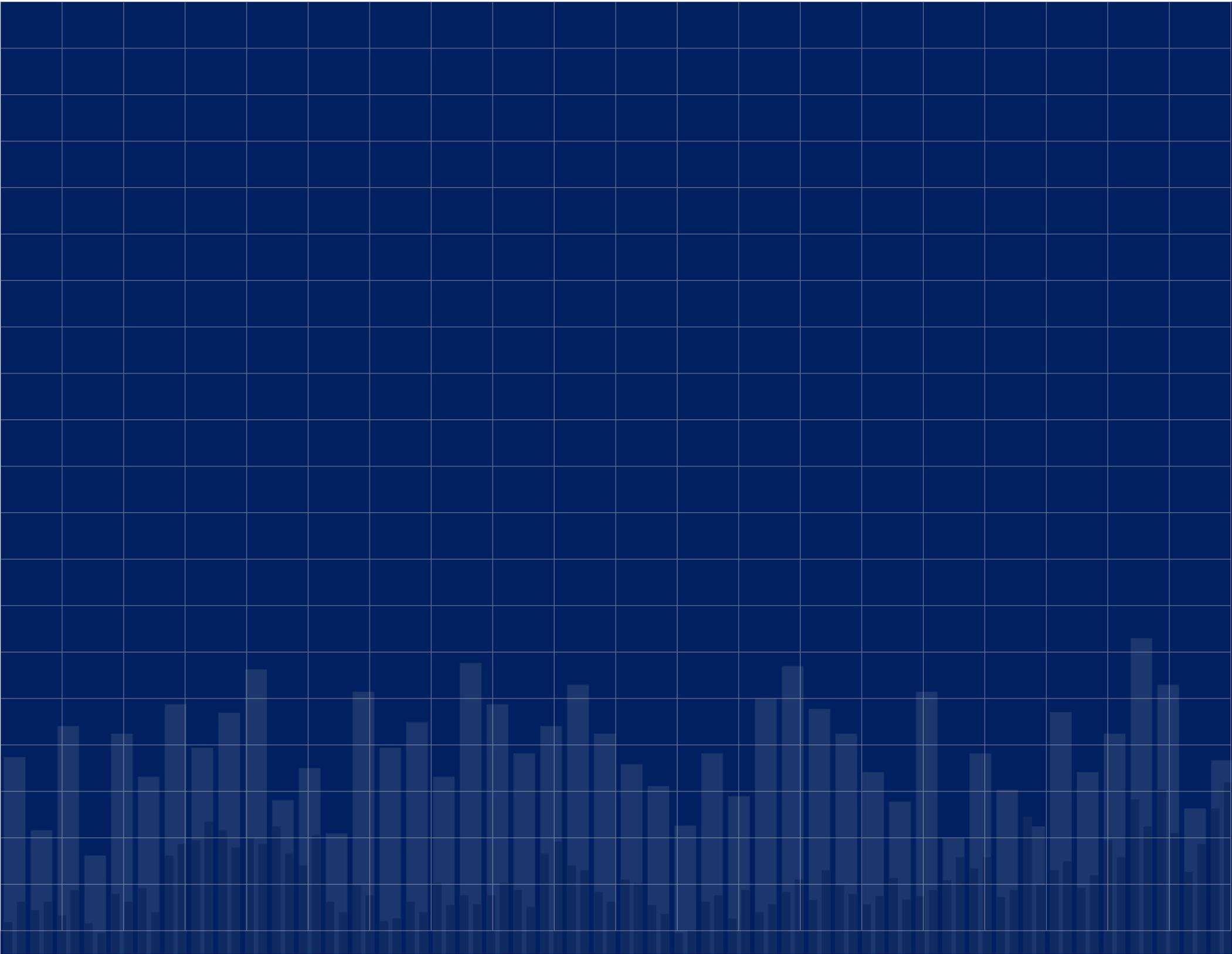
Clockwise from top left : American Legion (Worthington), Fire Station (Switz City), Switz City Town Hall (Switz City) and First Christian Church (Worthington).





**Broadband
Planning Committee**

2



BROADBAND PLANNING COMMITTEE

Brianne Jerrells, *Executive Director, Greene County Economic Development*

Bryan Woodall, *Switz City*

Bob Hacker, *Superintendent, White River Valley School District*

Cullen McCarty, *Executive Vice President, Smithville*

Dan Noel, *Superintendent, Shakamak School District*

Doug Childs, *CEO, Utilities District of Western Indiana REMC*

Ed Michael, *Greene County Commissioners*

Kyle Cross, *Greene County General Hospital Foundation*

Rick Graves, *Greene County Commissioners*

Sadie Davis, *Purdue Extension Greene County*

Suzanne Jackson, *Financial Director, Greene County Foundation*

THE ROLE OF THE BROADBAND PLANNING COMMITTEE

The planning process for the *Greene County Broadband Readiness Plan* was guided by the Broadband Planning Committee. This committee, comprised of a number of local volunteer leaders, organization members, business owners, and community members, represented the interests of greater Greene County in addition to the needs of the individual communities where they live and work. The Planning Committee was instrumental in guiding the consulting team during the planning process and the development of the plan's recommendations and final action steps. Specifically, the Planning Committee participated in the review, analysis and confirmation of existing data sets within the community, and served as a key participant in developing all aspects of the plan including the community outreach strategies, future service areas, deployment options and identified action steps. In addition to their plan development role, the members of the Broadband Planning Committee were responsible for being advocates for the communities and residents of Bloomfield, Jasonville, Smith Township, Switz City and Worthington and served as liaisons between the area, local providers, local community organizations (that could be involved in implementation) and Office of Community and Rural Affairs (OCRA) staff. Over the course of six months, the committee met four times to provide input and feedback, as well as guide the development of the plan. During the planning process the Broadband Planning Committee participated in the following key tasks and meetings:

- Purdue University Center of Regional Development Introductory Meeting: May 9, 2019
- Planning Committee Meeting #1: June 11, 2019
- Planning Committee Meeting #2: July 22, 2019
- Community Survey: August 12- September 23, 2019
- Planning Committee Meeting #3: August 28, 2019
- Community Open House: October 8, 2019
- Planning Committee Meeting #4: October 22, 2019

PROJECT MEETING AND ACTIVITY SUMMARIES

Purdue University Center of Regional Development Introductory Meeting: May 9, 2019

In partnership with the Indiana Office of Rural and Community Affairs, Roberto Gallardo, an Assistant Director with the Purdue Center for Regional Development, facilitated an orientation meeting for the Greene County Broadband Planning Committee. The presentation focused on outlining broadband terminology, technology, deployment models, possible barriers to implementation, and financial opportunities. Additionally, Roberto provided a demographic overview of Greene County and focused on demographic topics that could impact the use and adoption of broadband technology including population, age, educational attainment, income and occupations and industries. Planning Committee members were also given a handout listing general considerations for broadband plans.

Planning Committee Meeting #1: June 11, 2019

This kick off meeting of the Broadband Readiness Plan was facilitated by the consultant and provided a high-level overview of the planning process, the general study area and the plan's purpose. A demographic overview was provided of Greene County and the incorporated cities and towns included in the study area. In addition to providing a general overview of the process and the communities, the meeting focused on two key topics: existing broadband infrastructure and future aspirations.

Existing broadband infrastructure. For the purposes of this initial kick off meeting, the presentation on existing community assets (key broadband users) and existing conditions and providers focused only on Bloomfield, IN, the study area's most dense community. Using digital data and Google Earth, 1,459 potential subscribers were identified which includes 41 anchor institutions (churches, parks,

governmental buildings, utility providers and educational institutions), 119 businesses, and 1,299 residential locations.

Additional information on the known broadband providers within Bloomfield were also outlined for the committee. Full descriptions of the available plans, technology and service providers are outlined within Chapter 3: Existing Conditions.

Future broadband aspirations. The second half of the meeting focused on discussing the future condition of broadband services and infrastructure. The committee was asked a series of questions to help identify their unique definition of 'broadband', their preferred broadband technology and their preferred service speed. The group also used this portion of the meeting to discuss the roles of the county, cities and towns in future implementation, and how individual community organizations, institutions and businesses could be a partner or supporter in the efforts.

Planning Committee Meeting #2: July 22, 2019

The second meeting of the Broadband Planning Committee was facilitated by the planning consultant and focused on identifying the community assets (key broadband users) and existing conditions and providers for the communities of Jasonville, Smith Township, Switz City and Worthington, Indiana. A complete summary of these anchor institutions and the available plans, technology and service providers is outlined within Chapter 3: Existing Conditions.

The meeting also included a presentation on Greene County's vision for broadband and supporting goal statements that could be used to guide the rest of the planning process. By outlining the key take-away points from the discussion held during Planning Committee Meeting #1, a draft

vision was developed along with a series of supporting goal statements that included thoughts on service/ technology, workforce and economic development, education and curriculum and implementation steps.

In addition to the planning components, the planning consultant outlined the need for a community-wide survey and how the planning committee could assist with the deployment of the survey. A draft series of questions was distributed for review, along with an overview of the IEDC's Broadband Ready Community Certification and a draft outline for the final planning document.

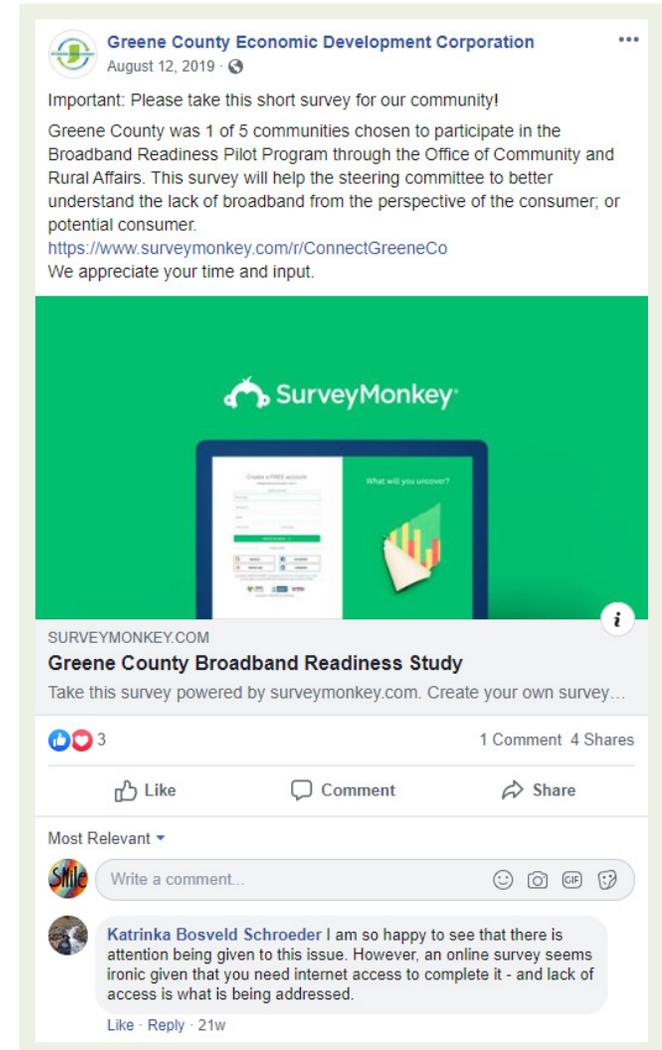
Planning Committee Meeting #3: August 28, 2019

The third meeting of the Broadband Planning Committee was facilitated by the planning consultant and focused on reviewing the draft broadband network plan and estimated construction costs. The network plan is outlined further in Chapter 5: Broadband Deployment Options.

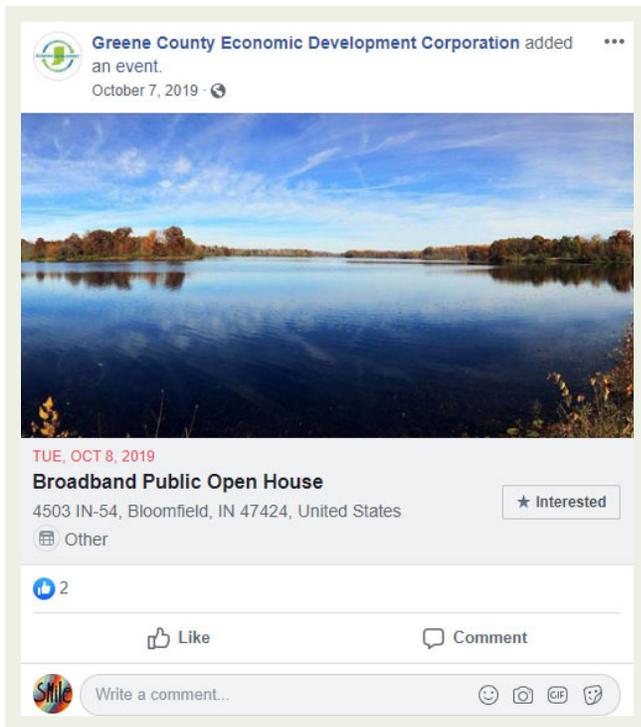
The meeting also included a presentation on the Plan's revised vision and goal statements and a preliminary review of the community survey. At the time of the third Broadband Planning Committee meeting the survey had 200 responses.

Community Survey: August 12- September 23, 2019

To provide a community specific check of previously reported data on broadband use, available technology and service speeds, a community-wide survey was done as a component of the planning process. Through the use of the Planning Committee, an online survey link was distributed across the county using press releases, newsletter notices, Broadband Planning Committee professional and social networks and existing social media channels. In addition to the online survey advertisements, members of the Planning Committee worked to provide hard copy versions of the survey at local community events and organizational board meetings, including the annual meeting of the Greene County Economic Development Corporation. The survey asked the community to provide detailed information on existing internet subscriptions, the type of technology being used, the monthly fees associated with the plan and their ultimate satisfaction with the providers. A speed test was also outlined in the survey to better assess the current speeds within the local community. While it is unclear how many Greene County residents received the survey link, 354 responses were received within the one-month active survey (August 12, 2019 to September 10, 2019) and



Community Survey advertisement provided by the Greene County Economic Development Corporation.



Community Open House advertisement provided by the Greene County Economic Development Corporation.

83% of those that responded completed the entire 13 questions. The information from the survey was forwarded to the Purdue University Center of Regional Development as a part of their ongoing research and was used to supplement findings for this planning process. A summary of the survey findings is included within Chapter 03: Existing Conditions.

Community Open House: October 8, 2019

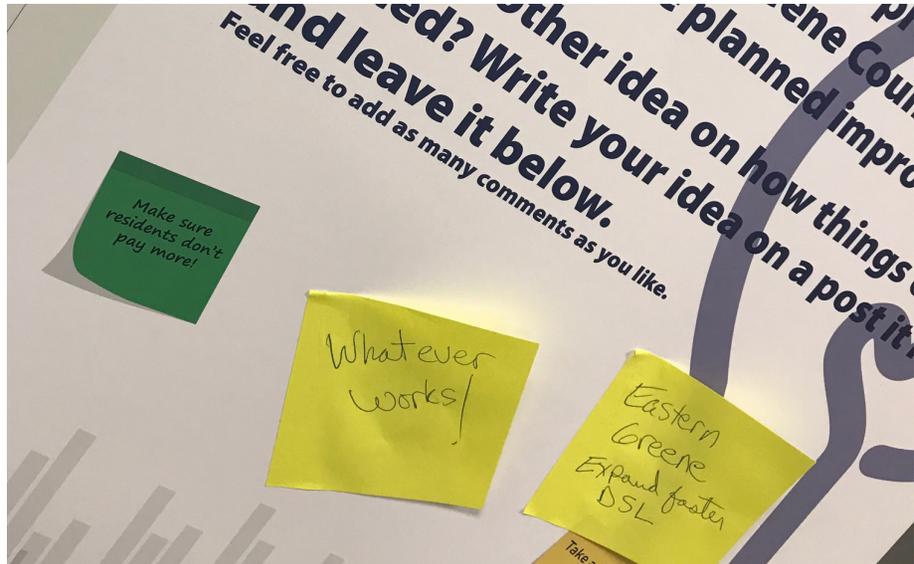
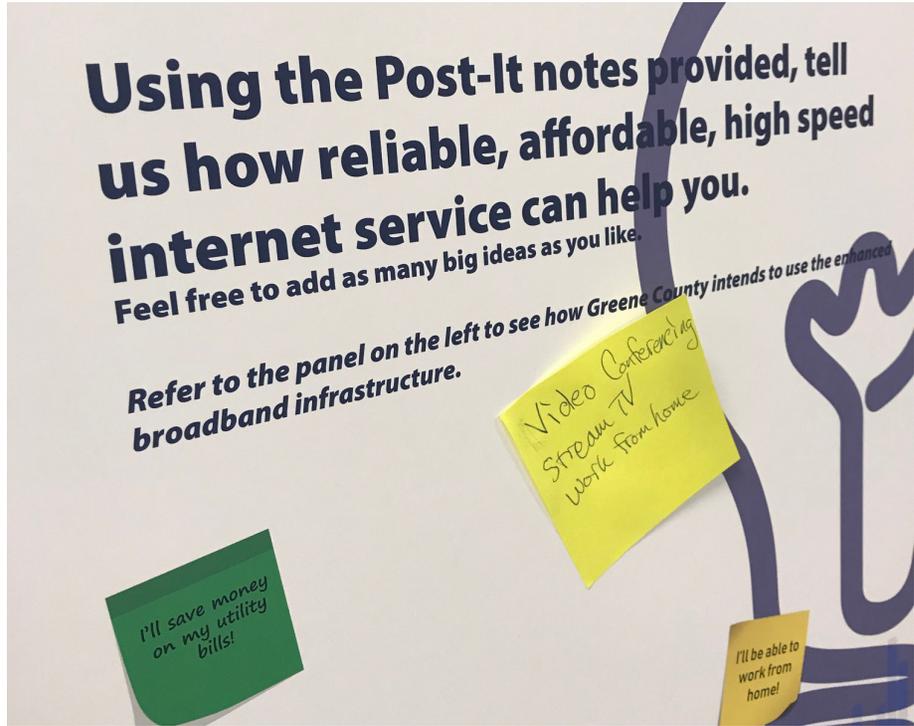
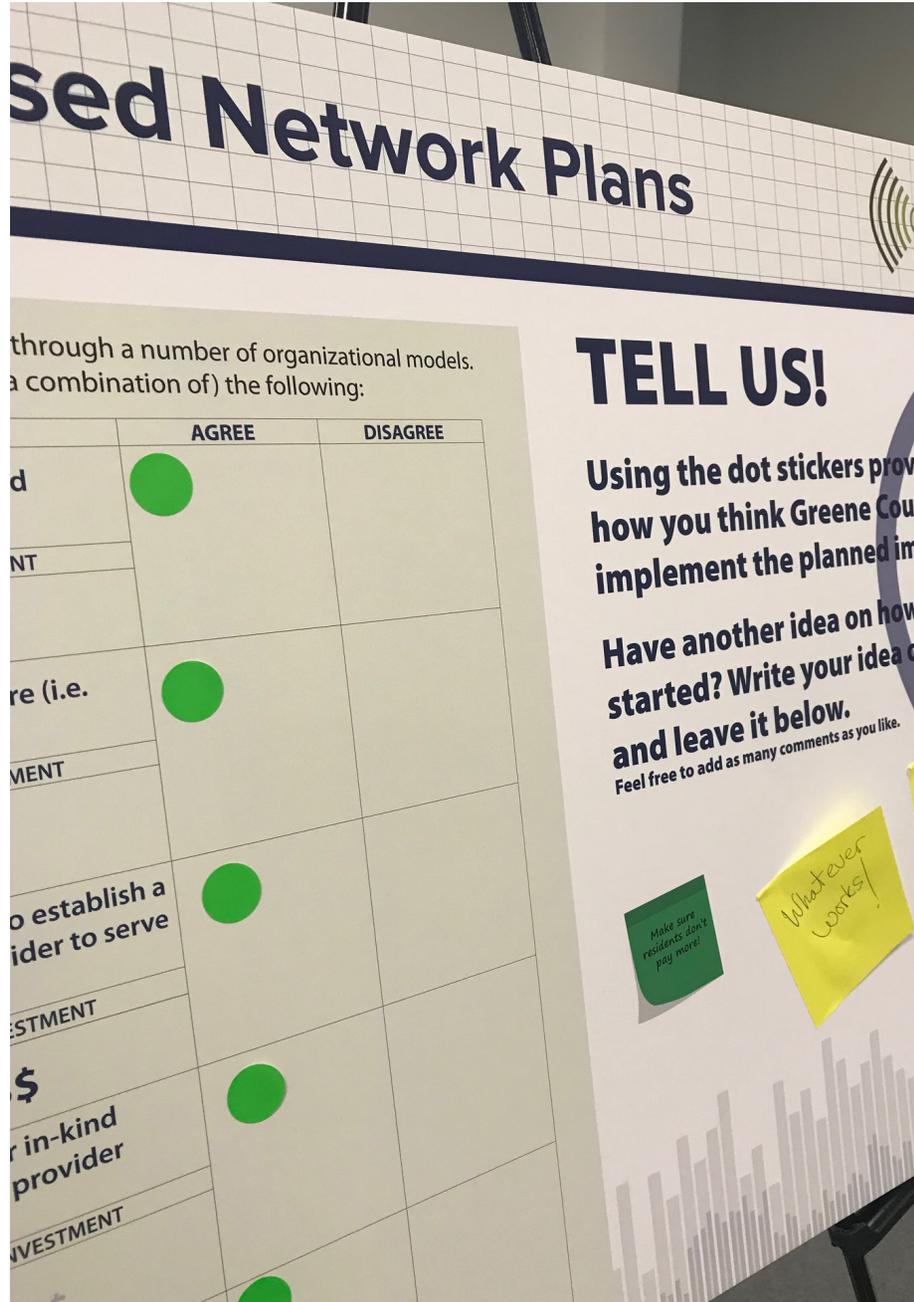
On Tuesday October 8, 2019, the project’s only public open house was held to allow for public interaction and input related to the Broadband Readiness Plan. Residents were given the chance to browse boards with information regarding demographics, existing broadband conditions, and the vision and goals, as they related to the new plan. Not only could attendees evaluate and make comments about the provided information, but they could also weigh in on the plan’s proposed vision, goals and deployment models.

While only one individual signed in during the open house, several others stopped by during the two-hours to review information and speak with members of the consulting team. Greene County residents were made aware of the public meeting through public press releases, local newsletter notices,

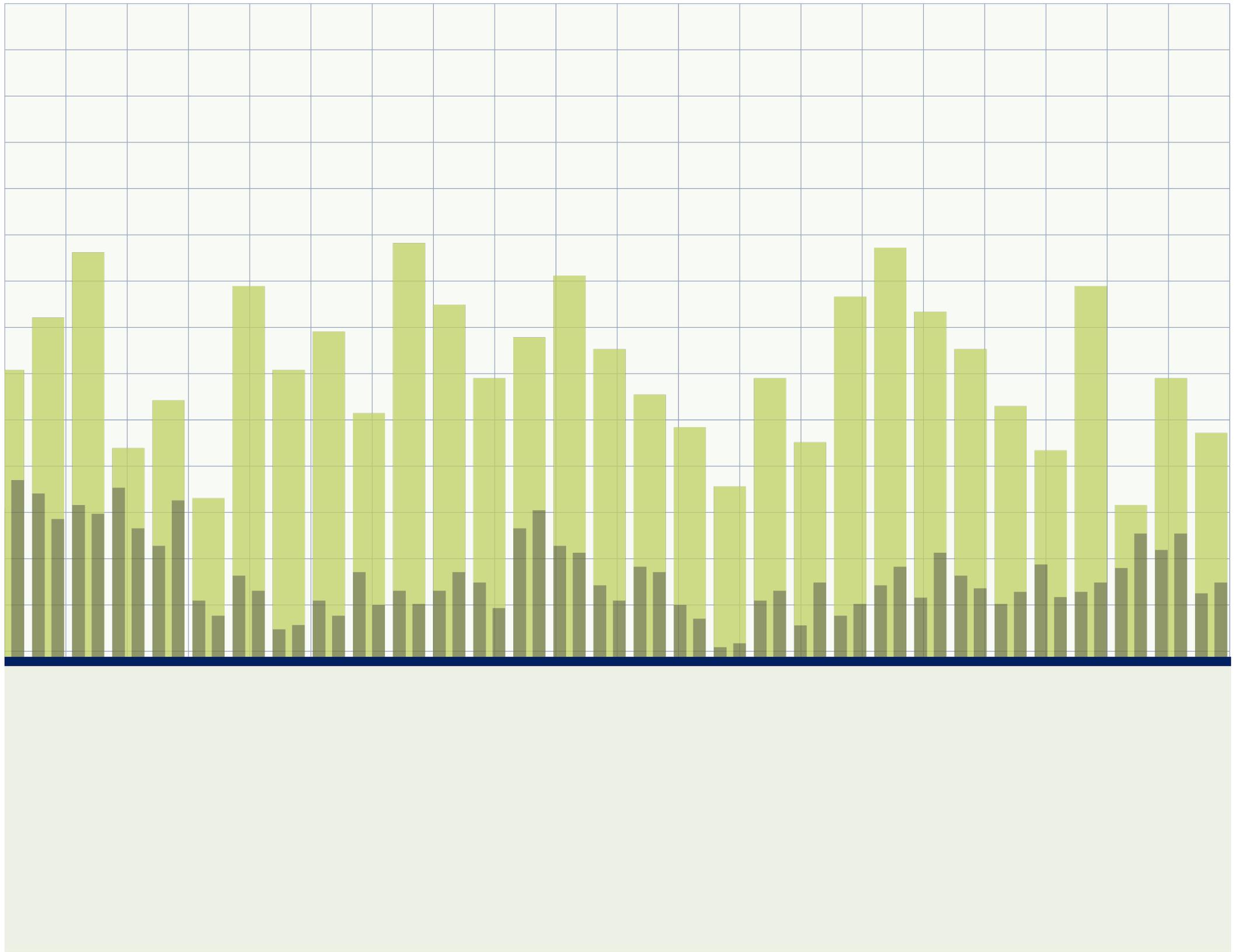
Broadband Planning Committee professional and social networks and social media outlets.

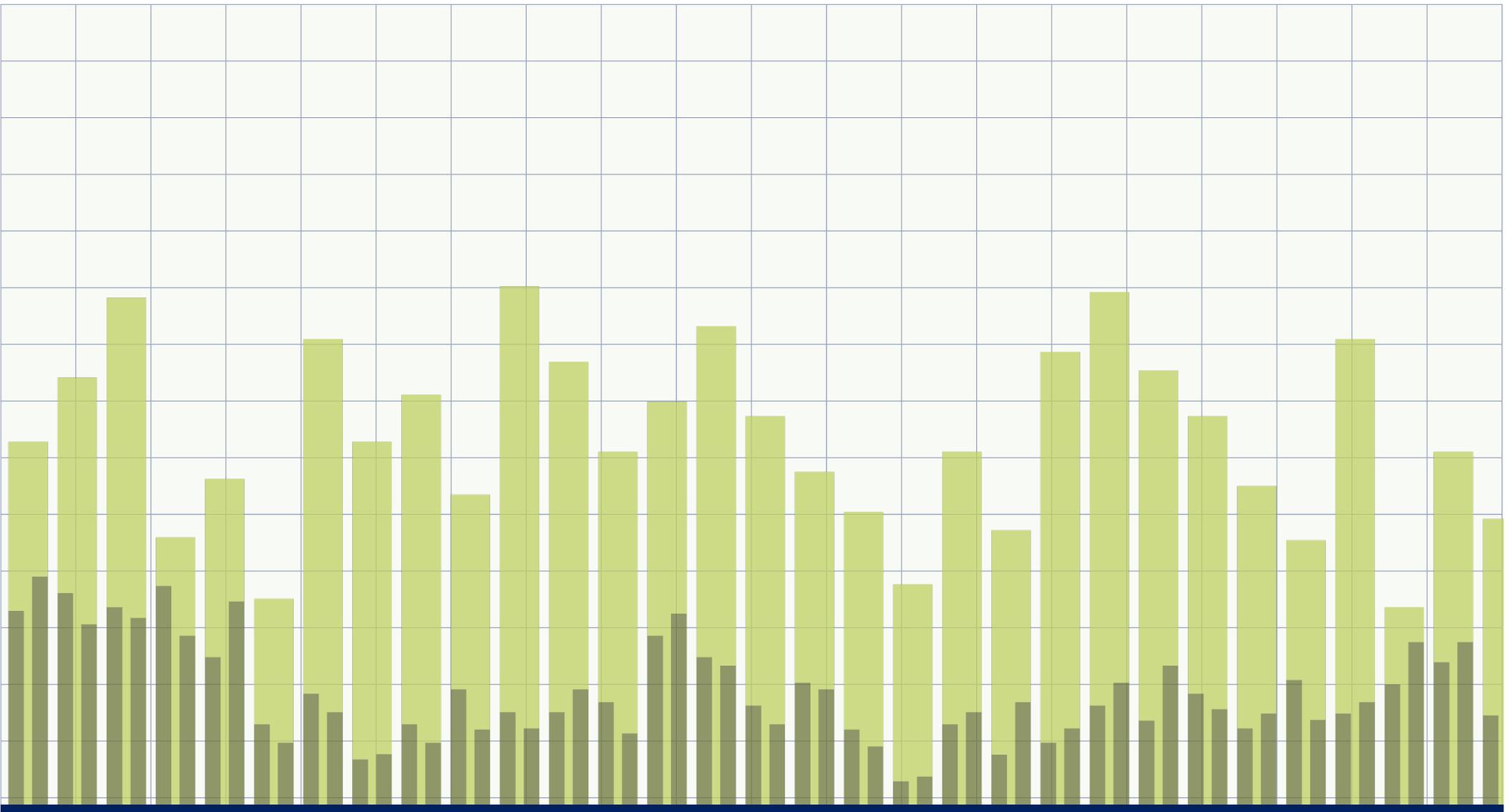
Planning Committee Meeting #4: October 22, 2019

The fourth Broadband Planning Committee meeting served as a final group review of the draft document before it’s submission to OCRA. The committee reviewed deployment options for fiber installation, detailing out what would work best for Greene County, and finalized action steps for the plan. Finally, the committee worked to provide any additional details and information that may have been missed or needed to be changed. Their final review helped wrap-up the document before the OCRA review and adoption.



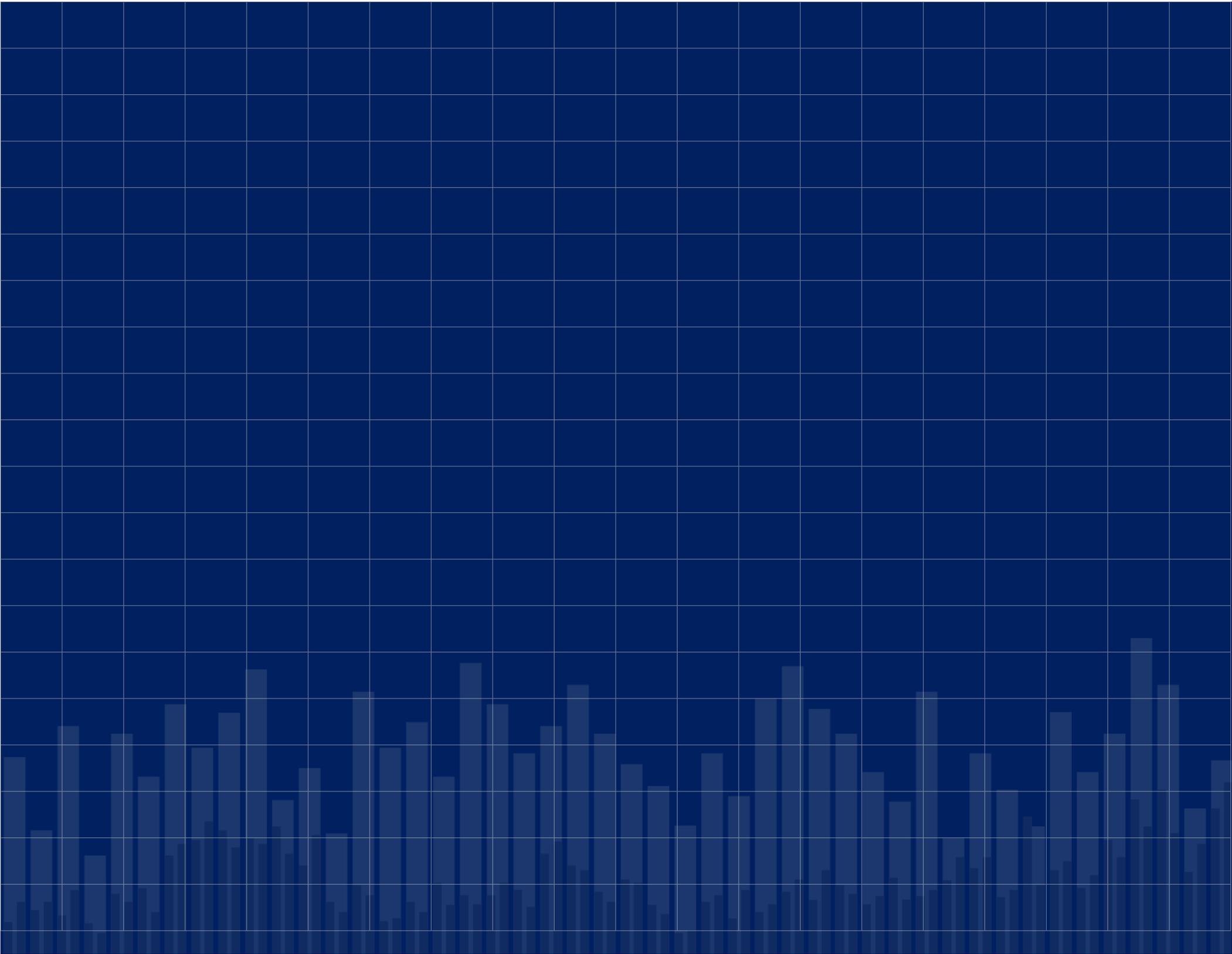
Input boards allowed attendees to weigh in on the plan's proposed vision, goals and deployment models.

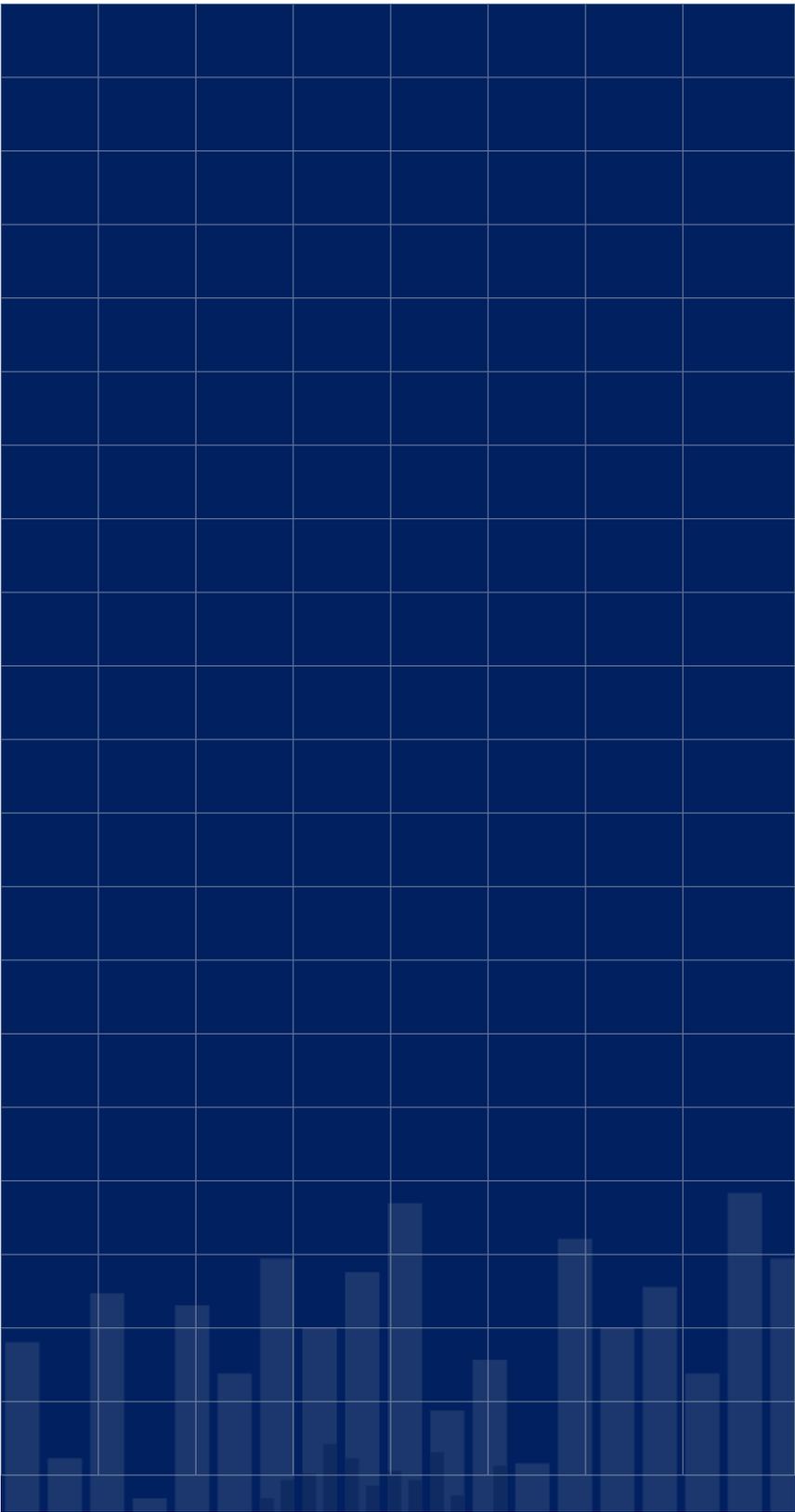




Existing Conditions

3





Unlike Chapter 1: General Background which outlined the demographic profile of Greene County and the incorporated Cities and Towns within the study area, this existing condition chapter seeks to identify the specific data, conditions and physical features that are, or could potentially be, impacting Greene County's ability to become a digitally inclusive community. In this technology driven age, a community's access and use of broadband technology has most recently been referred to as 'digital inclusion'. Digital inclusion is the ability of community residents, business owners and employees to not only access broadband hardware and software but to then use the information and communication technologies available to them. To provide a thorough analysis of Greene County's readiness including the communities of Bloomfield, Jasonville, Smith Township, Switz City and Worthington, this section is broken down into three key categories: **Access**, **Use** and **Action**.

Specifically, these three components outline the following:

Access. The ability to access broadband infrastructure has become a critical factor in nearly all aspects of life including employment, health care, recreation, education and shopping. Technology is at the center of nearly everything. While access can be impacted by a variety of demographic conditions, this portion of the chapter outlines the existing condition of broadband infrastructure within Greene County and the communities of Bloomfield, Jasonville, Smith Township, Switz City and Worthington. While individual sources are outlined within the ‘Access’ section, the majority of the data is sourced from Indiana service providers through the use of the Fixed Broadband Deployment Data from FCC Form #477 and is based on advertised availability and speeds from 2018. These various data sets are known to have a margin of error primarily from the self-reported nature of the information and the year in which it was submitted. Where possible, updated service provider information has been used as a supplement to show noteworthy service and infrastructure improvements within specific communities and areas.

‘ACCESS’ topics outline the existing broadband footprint including existing infrastructure, existing providers, available plans, advertised speeds and costs.

Use: It is one thing to have access to appropriate broadband infrastructure and another to be able to easily use what is provided. The use of existing, or future, infrastructure can be impacted by any number of demographic or socioeconomic conditions including age, income, race and education level. This portion of the chapter uses the demographic data outlined in Chapter 1: General Background to outline the challenges or barriers that may exist in accessing the county’s or local community’s existing or future broadband infrastructure. **“USE’ topics outline the socioeconomic factors that could affect, either positively or negatively, the use and adoption of broadband infrastructure.**

Action: Ultimately the readiness of a community depends on their ability to make improvements and upgrades in the future. Adoption or implementation of new programs, policies or capital improvements takes not only financial commitment but flexible policies, willing partners and long-term subscribers. While this section of the chapter documents the physical and policy constraints that could impact broadband capital improvement costs in the future, it also outlines the known partnerships that could be used to leverage future broadband investment. **‘ACTION’ topics outline the physical assets and resources that could impact the implementation, use and adoption of broadband infrastructure, either positively or negatively, including physical characteristics, subscriber locations and numbers, partnerships and ongoing provider improvement plans.**

Together these three components outline a comprehensive picture of Greene County’s readiness for broadband growth and adoption. Greene County’s readiness is further outlined on page 82 as an analysis that includes infrastructure gaps, needs of the target area and leverageable assets that could be used by Greene County officials and their partners in the future. The broadband readiness analysis, when paired with the broadband vision and goals outlined in Chapter 4: Vision and Goals, serves as the foundation for the recommended deployment options, and policy and programming recommendations outlined in Chapter 5: Broadband Deployment Options and Chapter 6: Action Items.

ACCESS

CURRENT BROADBAND FOOTPRINT

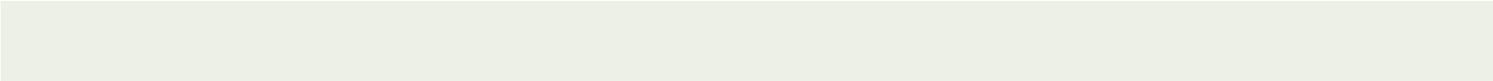
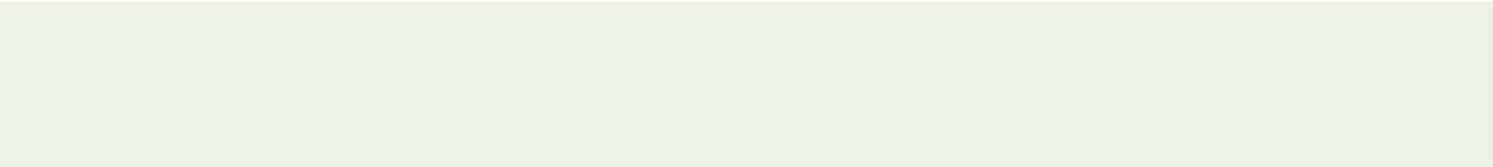
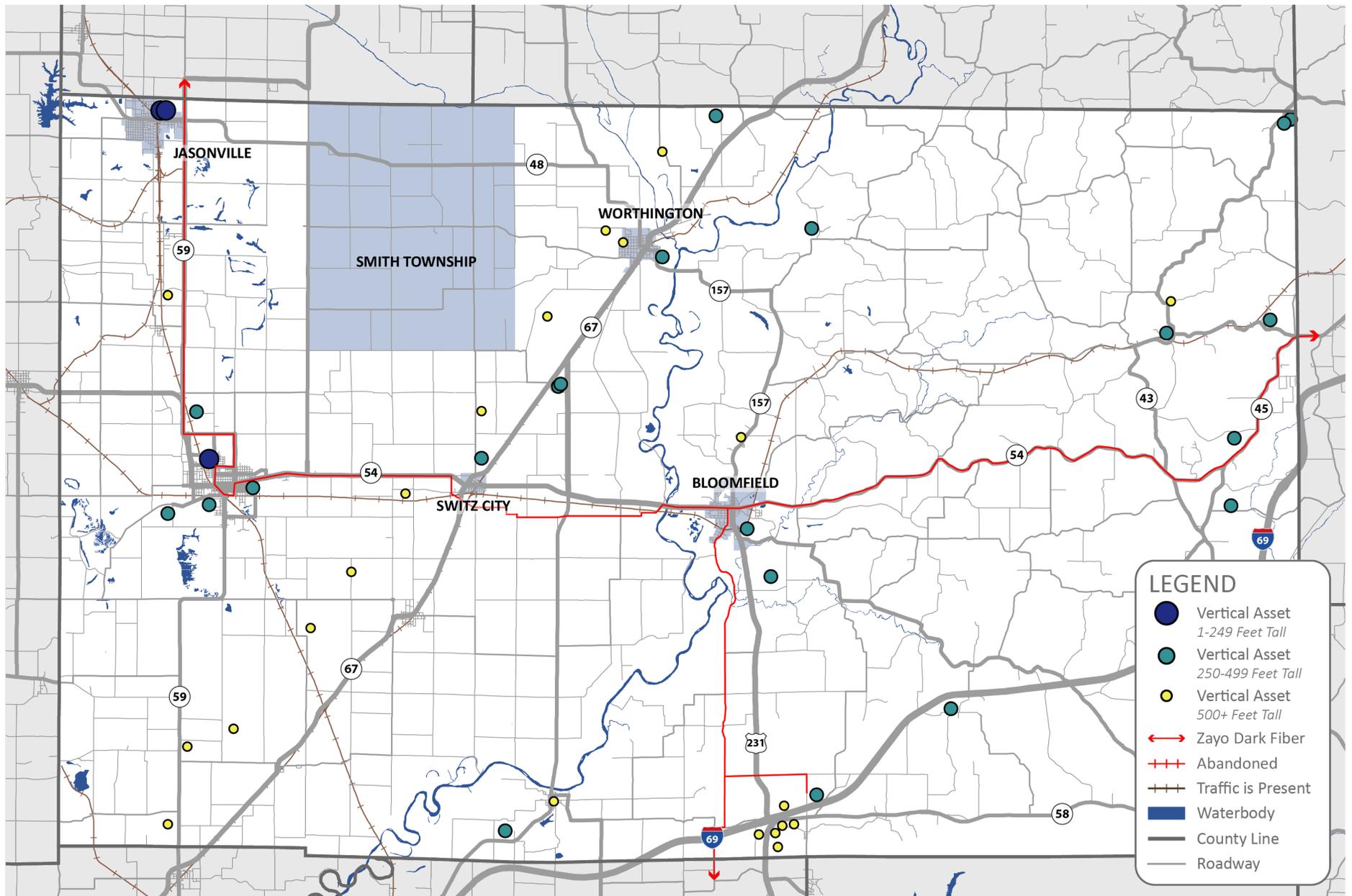
'ACCESS' topics outline the existing broadband footprint including existing infrastructure, existing providers, available plans, advertised speeds and costs.

EXISTING INFRASTRUCTURE

Greene County's current broadband infrastructure consists of provider specific lines and devices in addition to a series of vertical assets (cell or water towers) with varying heights. Additional, vertical assets that could assist in the implementation of broadband infrastructure are the service lines and equipment operated and maintained by the Utilities District of Western Indiana REMC. Within Greene County the REMC maintains and manages miles of existing electrical lines and utility easements. While their existing infrastructure assets are in varying conditions, the REMC continually plans for and implements upgrades and improvements. Partnering with the REMC to either share infrastructure or easements could allow for reduced broadband infrastructure costs, which would equate to a more affordable rate system.

Zayo has dark fiber cables throughout Greene County, but does not provide fiber broadband to residences, only to businesses. The existing line is located east of Jasonville and follows the SR 59 corridor alignment south to Linton. Within Linton, the fiber cable alignment turns east and follows the SR 54 corridor alignment through Switz City and Bloomfield. A second segment of Zayo fiber cable extends south from Bloomfield and appears to follow the County Road 25 E corridor alignment where it ultimately extends into Daviess County.

The County also features four primary rail corridors, with small spurs in select locations. Three of the primary lines bisect at least one of the studied communities. The fourth rail corridor runs north-south through the center of Greene County and is abandoned. While the corridor could provide opportunities for future easements, or could serve as a utility corridor, its proximity to the studied communities is less than ideal.



KNOWN PROVIDERS AND COVERAGE LIMITS

Using the Broadband Now¹, Indiana Broadband Map² and the Rural Indiana Stats Digital Divide Index³ known providers, reported speeds, data caps, price points and general subscriber levels were identified for the communities of Bloomfield, Jasonville, Smith Township, Switz City and Worthington. The data sets, while different in their search and visualization tools utilize self-reported, internet provider data which is submitted to the Federal Communications Commission. Form 477 paperwork, which is submitted twice a year, confirms basic data such as coverage area, available speeds, and costs. Information, of the provided tables and maps, include data reported through 2018 along with any coverage updates provided through direct reporting channels.

The databases include statistics provided by three key types of technology: Wired, Fixed Wireless, and Satellite.

- **Wired broadband** technology essentially means there is a physical connection to a physical location through a cable. There are three types of wired broadband connections: DSL, Cable and Fiber. DSL uses traditional copper wire telephone lines. Cable television companies traditionally provide service over coaxial cables and fiber systems (comprised of glass fiber strands) over which optical (light) signals are sent. Internet Protocol Broadband (IPBB) is a modified wired broadband technology that consists of a signal deployed along a fiber to a fixed terminal and then extends to the customer via a copper DSL line.
- **Fixed wireless** technology provides high speed internet access between two fixed points by using radio signals. Fixed wireless broadband services use transmission towers that communicate with one another and with the subscriber's location. These ground stations are maintained by internet providers, similar to cell phone towers.
- **Satellite** technology provides high speed internet access between two fixed points by using a satellite dish and a provider's orbiting satellite.

1 <https://broadbandnow.com/> BroadbandNow uses data provided by the FCC and ISP's at the Census block and tract level. The website utilizes a searchable database with information broken down by residential, business and mobile services.

2 <https://www.indianabroadbandmap.com/> The Indiana Broadband Map data is derived from the latest FCC form 477 data. The website uses digital mapping tools to show minimum coverage levels of 25/3Mbps by technology type.

3 <https://pcrd.purdue.edu/ruralindianastats/about.php>

Communities can be served by a number of providers through a number of technologies. BroadbandNow documented the following **Fixed Wired providers** within Bloomfield, Jasonville, Smith Township, Switz City and Worthington.

		Fixed Wired Providers						
Plan Details		AT&T	Endeavor Communications	Frontier	New Wave	Smithville	Smithville	Xfinity
Bloomfield	Technology	DSL & IPBB		DSL		DSL	Fiber Optic	Cable Internet
	Speed	5- 25 Mbps		6-45 Mbps		50 Mbps	1,000 Mbps	25- 1,000 Mbps
	Data Cap	0-1 TB		---		---	---	1 TB
	Price	\$30-\$50/ month		\$27.99-\$44.99/ month		\$45/Month	\$65/ Month	\$20-80/ month ¹
	Coverage	45%		4.5%		36%	4%	57%
Jasonville	Technology	DSL & IPBB		DSL	Cable Internet	DSL		
	Speed (Top)	100 Mbps		7-115 Mbps	15-100 Mbps	7-115 Mbps		
	Data Cap	1 TB		---	10-3,000 GB	---		
	Price	\$50/ month		\$19.99-\$139.99/ Month	\$30-\$45/ month	\$19.99-\$139.99/ Month		
	Coverage	81.5%		8%	82.7%	1.2%		
Smith Township	Technology			DSL				
	Speed (Top)			6- 45 Mbps				
	Data Cap			---				
	Price			\$27.99-\$44.99/ month				
	Coverage							
Switz City	Technology					Fiber Backed DSL		Cable Internet
	Speed (Top)					50 Mbps		1,000 Mbps
	Data Cap					---		1 TB
	Price					\$45/ month		\$110/ month ¹
	Coverage					59.6%		62%
Worthington	Technology		Fiber Optics	DSL	Cable Internet			
	Speed (Top)		25 Mbps- 1 GB	6-45 Mbps	15-300 Mbps			
	Data Cap		---	---	100-900 GB			
	Price		\$65.99-\$155.99/ month	\$27.99-\$44.99/ Month	\$30-\$80/ month			
	Coverage		8%	76.4%	54%			

¹Price includes promotional offers and autopay discount.

As noted previously, communities can be served by a number of providers through a number of technologies. BroadbandNow documented the following **Fixed Wireless providers** within Bloomfield, Jasonville, Smith Township, Switz City and Worthington.

		Fixed Wireless Providers			
Plan Details		Rise Broadband	King Street Wireless	Node 1 Internet	AT&T Wireless
Bloomfield	Speed (Top)	25- 50Mbps	1 Mbps	6 Mbps	10 Mbps
	Data Cap	---	---	---	430 GB
	Price	\$29.95-\$39.95/ Month	N/A*	N/A	\$60/ Month
	Coverage	97%	82%	32%	12%
Jasonville	Speed (Top)	25-50 Mbps	1 Mbps	10 Mbps	10 Mbps
	Data Cap	---	---	---	430 GB
	Price	\$29.95-39.95/ Month	N/A	N/A	\$60/ Month
	Coverage	100%	52%	78%	38.5%
Smith Township	Speed (Top)	Service is noted as being available but no additional information was provided			
	Data Cap				
	Price				
	Coverage				
Switz City	Speed (Top)	25 -50 Mbps	1 Mbps	10 Mbps	
	Data Cap	---	---	---	
	Price	\$29.95-\$39.95/ Month	N/A	N/A	
	Coverage	100%	84%	100%	
Worthington	Speed (Top)	25-50 Mbps	1 Mbps	10 Mbps	
	Data Cap	---	---	---	
	Price	\$29.95-\$39.95/ Month	N/A	N/A	
	Coverage	100%	81.6%	100%	

*Items marked as N/A did not have information available using BroadbandNow.

As noted previously, communities can be served by a number of providers through a number of technologies. BroadbandNow documented the following **Satellite providers** within Bloomfield, Jasonville, Smith Township, Switz City and Worthington.

		Satellite Providers	
Plan Details		ViaSat	HughesNet
Bloomfield	Speed (Top)	12-25 Mbps	25 Mbps
	Data Cap	12- 50 GB	10-50 GB
	Price	\$50-\$150/ Month	\$59.99-\$149.99/ Month
	Coverage	100%	100%
Jasonville	Speed (Top)	12-25 Mbps	25 Mbps
	Data Cap	12- 50 GB	10-50 GB
	Price	\$50-\$150/ Month	\$59.99-\$149.99/ Month
	Coverage	100%	100%
Smith Township	Speed (Top)	12-25 Mbps	25 Mbps
	Data Cap	12- 50 GB	10-50 GB
	Price	\$50-\$150/ Month	\$59.99-\$149.99/ Month
	Coverage	100%	100%
Switz City	Speed (Top)	12-25 Mbps	25 Mbps
	Data Cap	12- 50 GB	10-50 GB
	Price	\$50-\$150/ Month	\$59.99-\$149.99/ Month
	Coverage	100%	100%
Worthington	Speed (Top)	12-25 Mbps	25 Mbps
	Data Cap	12- 50 GB	10-50 GB
	Price	\$50-\$150/ Month	\$59.99-\$149.99/ Month
	Coverage	100%	100%

When mapped using the Indiana Broadband Map, which allows for a user to select a varying set of download and upload speeds and see reported coverage at the Census Block level, the same providers listed in the matrix above report having varying availability throughout the County. The mapping shown to the right and on the facing page utilizes three different speed indicators:

10/1 Mbps which is the minimum upload and download speed requirements for FCC Connect American Funding (CAF). The program aims to expand access to both voice and broadband services by providing funding to local telephone companies to subsidize the cost of building new network infrastructure or by implementing network upgrades where service is lacking;

25/3 Mbps which is the minimum upload and download speed requirements of broadband data as defined by the FCC; and

25/25 Mbps which represents a symmetrical system allowing information to be uploaded as fast as it is downloaded. As defined in Chapter 4: Vision and Goals, a symmetrical connection of 25/25Mbps is the desired future condition as defined by the Broadband Planning Committee.

Fixed Wired Coverage

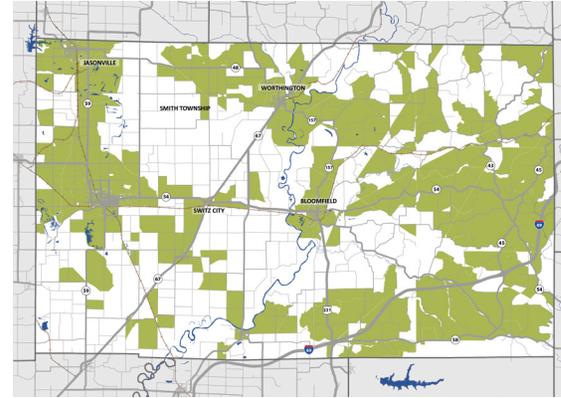


Figure 1:
Greene County fixed wired
Provider reported coverage at
10/1 Mbps speeds.

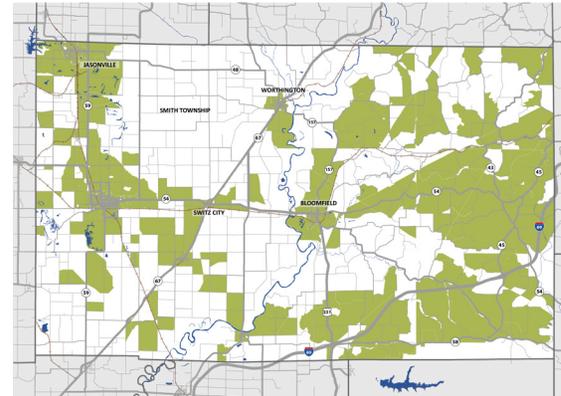


Figure 2:
Greene County fixed wired
Provider reported coverage at
25/3 Mbps speeds.

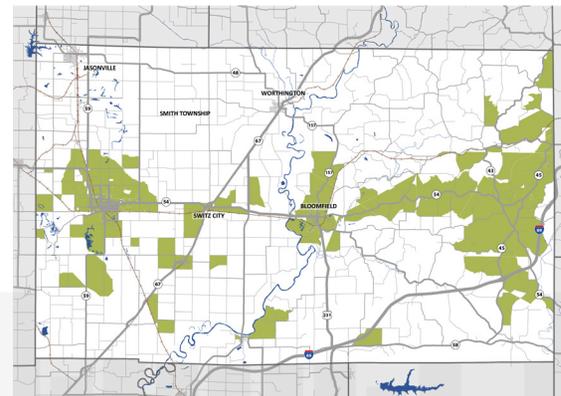


Figure 3:
Greene County fixed wired
Provider reported coverage at
25/25 Mbps speeds.

Fixed Wireless Coverage

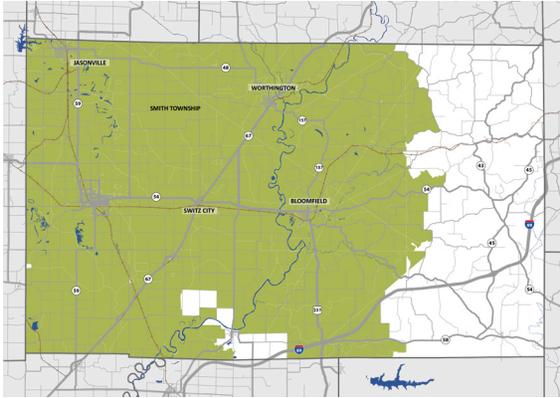


Figure 4:
Greene County fixed wireless provider reported coverage at 10/1 Mbps speeds.

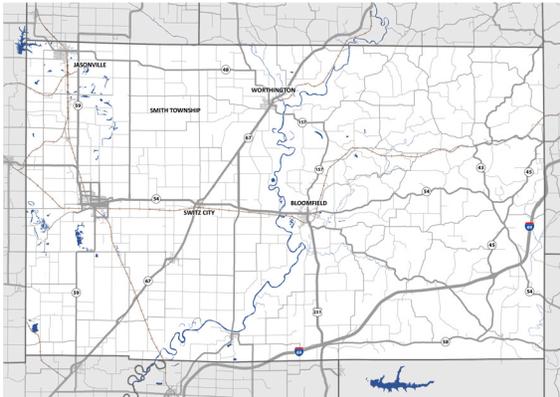


Figure 5:
Greene fixed wireless provider reported coverage at 25/3 Mbps speeds.

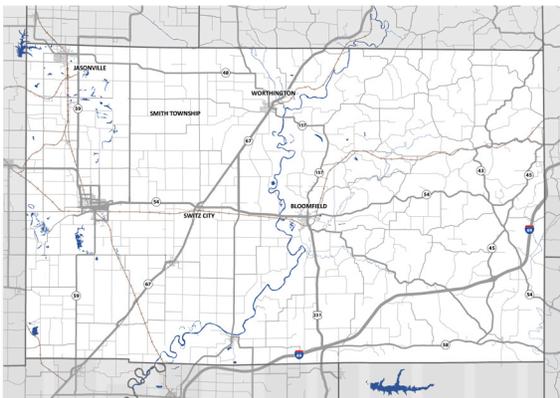


Figure 6:
Greene County fixed wireless provider reported coverage at 25/25 Mbps speeds.

Satellite Coverage

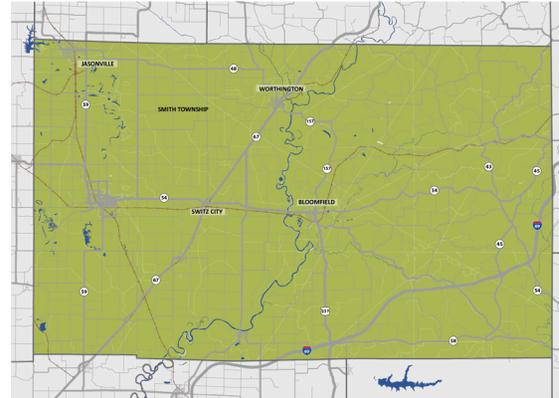


Figure 7:
Greene County satellite provider reported coverage at 10/1 Mbps speeds.

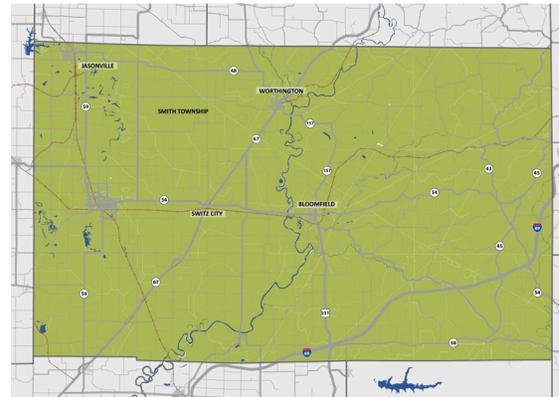


Figure 8:
Greene County satellite provider reported coverage at 25/3 Mbps speeds.

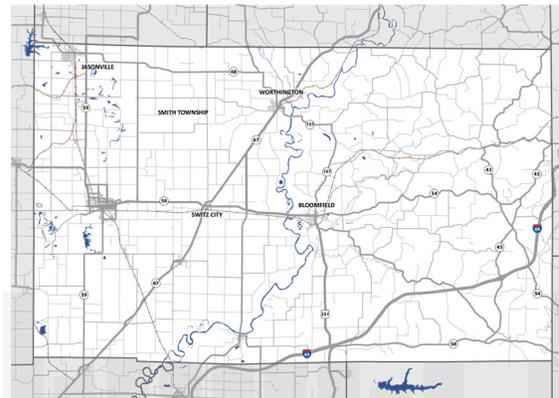


Figure 9:
Greene County satellite provider reported coverage at 25/25 Mbps speeds.

GENERAL SPEED AND USE

Based on the information reported by various internet providers through the FCC, the areas of Bloomfield, Jasonville, Smith Township, Switz City and Worthington are seeing some broadband connectivity although it is at varying speeds and for varying price points. In nearly all cases, the communities themselves are reportedly seeing average download speeds of 15 Mbps and average upload speeds no greater than 3 Mbps. While, as a whole, Greene County average speeds are being reported at nearly 140 Mbps upload and 7.3 Mbps download, well above the minimum FCC requirements of 25/3 Mbps, the individual communities outlined within this study area fall below the minimum upload and download speed requirements of the FCC.

The documented average speeds are a generalization and, as visualized in the preceding maps, indicate coverage from some areas and not others. The disparity in speeds and coverage ultimately equate to a portion of Green County residents having no access to minimum broadband infrastructure. Thirty-four percent (34%) of Worthington residents do not have access to broadband technology at the minimal speeds outlined by the FCC, while only 6.5% of Jasonville residents are without access.

	Incorporated Cities and Towns*					Greene County	Martin County	Davieess County
	Bloomfield	Jasonville	Smith Township	Switz City	Worthington			
Average Maximum Download Speeds	15 Mbps	15 Mbps	Data is counted as a part of broader Greene County	15 Mbps	15 Mbps	15 Mbps	24 Mbps	13 Mbps
Average Maximum Upload Speeds	2 Mbps	3 Mbps		3 Mbps	2 Mbps	3 Mbps	2 Mbps	1 Mbps
Population with no access to broadband at a minimum speed of 25/3Mbps	7.9%	6.5%		24.9%	34.1%	21.1%	40.5%	36.5%

* Median speeds for the incorporated cities and towns are reported at the Census block level as a component of the Digital Divide Index provided by the Rural Indiana Stats Digital Divide Index. Due to the nature of the Census block boundaries some areas may include unincorporated areas of Greene County as well.

It is also important to note that recent upgrades within the Switz City market are not reflected within the FCC's data. To further aide in the development of this planning process, Smithville, a local broadband technology provider, identified that Switz City commercial entities (White River Valley High School, the Greene County Fairgrounds, Purdue Extension and Greene County Foundation) are connected to their expanded fiber network. Based on the information provided by Smithville, 100% of Switz City is covered by a fiber network with speeds being reported above 20 Mbps. Due to this update, the data point outlining that nearly 25% of the Switz City population lacks broadband access is likely incorrect.



Figure 13:
During the planning process Smithville, a local service provider, created a map to show their updated service within Switz City. The blue polygon represents the area that is within 4,000 ft from the serving node with speeds inside this polygon being greater than 20Mbps.

The orange lines are fiber which provided service to the commercial entities, the school, and the fairground to the east..

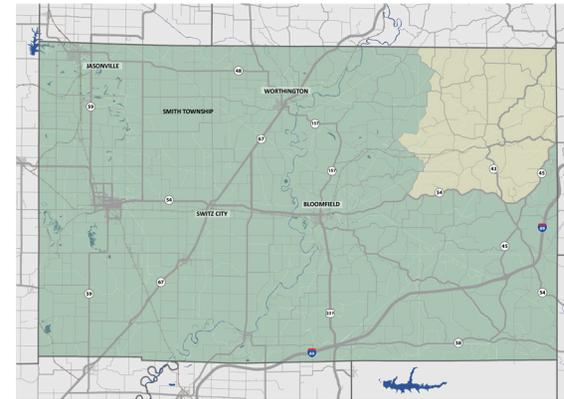


Figure 10:
Greene County median download speeds

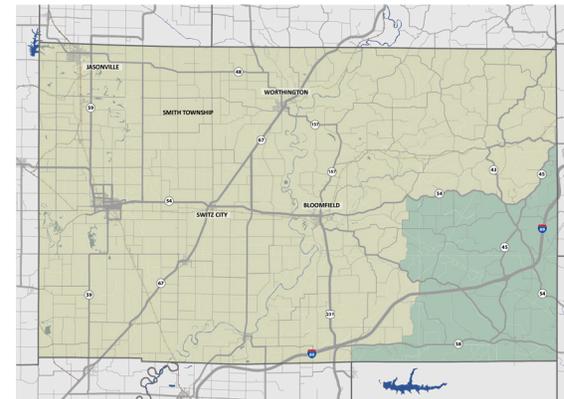
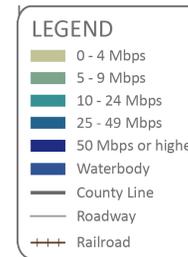


Figure 11:
Greene County median upload speeds

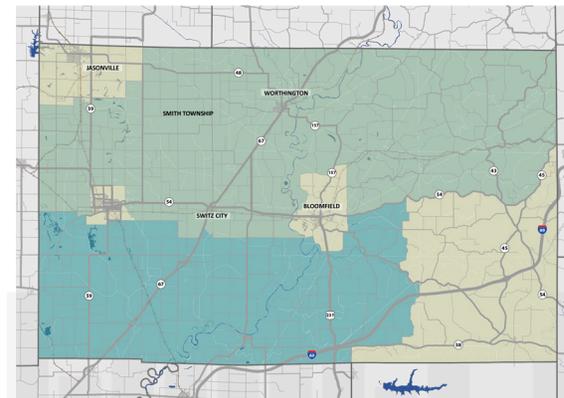
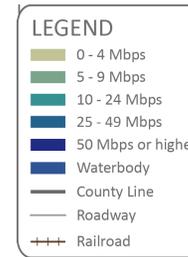
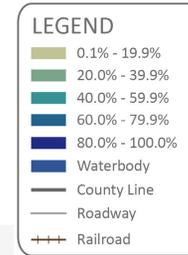


Figure 12:
Greene County population with no access to broadband at minimum speeds of 25/3 Mbps.



USE

SOCIOECONOMIC FACTORS IN THE TARGET AREA

'USE' topics outline the socioeconomic factors that could affect, either positively or negatively, the use and adoption of broadband infrastructure.

POPULATION LOCATION AND DENSITY

Providing a region with high speed, broadband infrastructure requires a huge investment, one that is almost always paid upfront through design, construction and inspection fees. Due to the considerable initial costs, broadband providers, like many developers and service providers, are leery of investing in areas that could pose reduced or no return on investment. Rural areas, like that of Bloomfield, Jasonville, Switz City, Smith Township and Worthington, are home to thousands but, in the minds of service providers, are communities that likely do not have the resources or customer base to either share or offset the fixed installation costs.

While the communities of Bloomfield, Jasonville, Switz City, and Worthington are all incorporated communities, they are classified as “rural” due to their population and density. The communities of Bloomfield, Jasonville, Switz City and Worthington have significantly higher population densities than that of broader Greene County, primarily due to their size and footprint. While the population is projected to decline in each of these communities, the implementation costs could be offset, in the long run, if the majority of the subscriber base (or users) can access the broadband technology and use it effectively.

Community Size and Population Density

Community	2017	Size	Population Density People per square miles
Bloomfield	2,403	1.38 sq. miles	1,741
Jasonville	2,324	1.31 Sq. miles	1,774
Switz City	233	.223 sq. miles	1,044
Worthington	1,252	0.81 sq. miles	1,545
Greene County	32,431	545.92 sq. miles	59.40

Source: Indiana MAP incorporated boundaries shapefile.

Population (Existing, current and future)

Community	2010	2017	2025	Projected Population Change (2010 to 2035)
Bloomfield	2,403	2,403	2,247	-5.35%
Jasonville	2,324	2,324	1,787	-23.09%
Switz City	403	233	225	-44.17%
Worthington	1,943	1,252	1,209	-37.78%
Greene County	33,084	32,431	31,315	-6.50%
Martin County	10,334	10,219	10,316	-0.01%
Daviess County	31,648	32,777	35,244	2.62%

Source: 2010 data source, 2010 US Census; 2017 data source 2017 American Community Survey; 2025 data source STATS Indiana.

SOCIOECONOMIC CONDITIONS

While Bloomfield, Jasonville, Smith Township, Switz City and Worthington all have numerous anchor institutions and potential residential subscribers available, it does not necessarily mean that residents and business owners within the community have the ability to use and subscribe to the services that are available to them. As providers review the cost per mile and the potential subscribers available to offset their investment, they are also noting the socioeconomic conditions that may make broadband use difficult for members of the community. Element such as population age, educational attainment, and median income all assist in outlining a community's ability to use the infrastructure that is available. Broadband use is often lower in communities with low incomes and low educational attainment levels. Whether the challenge stems from their industries, occupation, educational levels or income characteristics, the socioeconomic status of each community is a critical component when identifying how or if a community can increase their use of broadband technology.

As outlined in Chapter 1: General Background, **Greene County and the studied communities are aging.** The median age in Greene County is 42.8 years old, which is slightly older when compared nationally (37.8 years old). While the majority of the communities only saw a slight change in median age, Bloomfield and Worthington saw an increase of 8.8 years and 17.5 years respectively. **Greene County and the studied communities have comparable educational attainment levels.** While Bloomfield and Switz City underwent a slight decline in attainment levels, the populations are comparable to Greene County as a whole. Approximately 86.6% of the population in Greene County have a high school degree or higher. **Around 20% of Greene County and the studied communities are classified as non-institutionalized civilian with a disability.** The non-institutionalized population excludes people

residing in institutions such as nursing homes, prisons, jails, mental hospitals and juvenile correctional facilities and accounts for visual, hearing, cognitive and ambulatory disabilities. While the characteristics of age, educational attainment and disability all contribute to an area's use of broadband technology, a primary indicator of community readiness is income.

According to a study conducted by the PEW Research Center⁴, roughly 30% of individuals with a household income below \$30,000 a year do not own a smartphone. Of that same group, nearly 40% of individuals do not have a home broadband service and nearly 50% do not own a computer. In 2015, following a review of US Census Bureau data, 35% of lower-income households with school-age children were found to not have a broadband internet connection at home.

The median household income in Greene County is \$49,648, which is less than the median household income of the United States (\$57,652) and State of Indiana (\$52,182). While Greene County's median household income is above the \$30,000 threshold, Switz City falls below the mark considerably. Nearly 45% of the Switz City population falls below the poverty line, a percentage that is nearly four times higher than the county average. The communities of Bloomfield, Jasonville and Worthington have median incomes below that of broader Greene County and have higher percentages of their populations falling below the poverty line.

⁴ <https://www.pewresearch.org/fact-tank/2019/05/07/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption/>

While Greene County’s access to broadband infrastructure is contributing to the higher percentages of non-subscribing households and households with no computer device (30% and 23% respectively for the County and higher for some of the studied communities), the population’s USE is likely being impacted by their income levels.

Community	Median Household Income	Poverty Rates 2017	Percentage of Households with no internet access (Not subscribing)	Percentage of households with no computer device
Bloomfield	\$35,746	17.4%	31.2%	25.9%
Jasonville	\$32,215	19.5%	31.6%	25.4%
Switz City	\$22,500	44.2%	30.9%	23.1%
Worthington	\$35,104	25.7%	27.3%	21.6%
Greene County	\$49,648	12.9%	30%	23.0%

ACTION

SUPPORTING BROADBAND DEPLOYMENT

'ACTION' topics outline the physical assets and resources that could impact the implementation, use and adoption of broadband infrastructure, either positively or negatively, including physical characteristics, subscriber locations and numbers, partnerships and ongoing provider improvement plans.

PHYSICAL ASSETS & RESOURCES IMPACTING BROADBAND DEPLOYMENT

Expanding broadband infrastructure into Indiana's rural communities is projected to increase population, employment rates and local residential and municipal incomes. Additionally, projections show that the State will see nearly \$12 billion in net benefits, if improvements are made Statewide⁵. That return on investment does not come without substantial investment costs. As providers plan to switch or improve systems by transitioning from copper lines to more efficient and reliable fiber-optic systems, they tend to focus in the more profitable urban areas first. Despite the numerous improvements in technology and construction methods over the years, laying new line for wired internet services still requires a significant amount of manual labor. Communities and service providers must weigh the cost of every mile laid against the expected profits from those lines. This works against rural areas, with often greater physical implementation obstacles and fewer potential customers per mile. Physical constraints such as topography, geology, and natural features create obstacles to design and construction. Built works such as transportation corridors pose barriers due to their physical location and land ownership. Greene County and the outlined communities each have a unique set of implementation barriers to overcome, but they also have a series of unique opportunities and partnerships that can be leveraged to offset the physical constraints and increased capital costs.

Physical Constraints

Greene County's physical assets of topography, natural features and natural geology contribute to the character of the county and the incorporated cities and towns. While important to each individual area, these same physical assets present challenges to the deployment and advancement of broadband technology. Some assets serve as a barrier for construction, which drives capital costs higher, while others limit the effectiveness of various technology types.

⁵ <https://www.pcrd.purdue.edu/files/media/006-RPINsights-Indiana-Broadband-Study.pdf>

Greene County, like Monroe County and the City of Bloomington, is rich with geological resources that are most often considered a feature of Indiana's landscape. The limestone, sandstone, sand, gravel and bedrock deposits create the rolling terrain found throughout the area and contribute to the State's regional economy. However, these naturally occurring assets pose significant challenges in the development and deployment of wired broadband infrastructure. While Indiana's natural terrain of hills, ridges and bluffs can account for increased infrastructure costs due to the location of easements, rights of ways and utility corridors, the biggest impediment to construction and physical implementation is the presence of naturally occurring stone throughout Greene County and the studied communities. These layers of rock and stone, often times just a few feet below the soil surface, pose significant construction obstacles and require significant man-hours, equipment and effort to establish adequate trenches and utility placement.

In some areas of extreme topography and geology, wireless or satellite solutions may seem more efficient and affordable to deploy, but the same natural terrain, geology and landscape features pose a different set of challenges. When using wireless systems, the elevation difference between two areas becomes critical, as does the line of sight. While vertical infrastructure can be used to accommodate the necessary heights and distances, any amount of natural terrain or vegetation can block those signals, causing reduced speeds or service interruptions.

While the individual communities of Bloomfield, Jasonville, Switz City and Worthington are fairly flat and without major areas of vegetation, the portions of the county that connect these areas, including Smith Township, feature rolling topography and wide areas of natural vegetation with layers of naturally occurring stone, gravel and sand making them difficult to navigate and connect.



“For people to benefit from the Internet, they need to use it, not merely have access to it. Yet, the trend in policy is toward expanding broadband networks, not promoting their adoption. The best mix of policies will certainly vary depending on local needs, but the key to helping local economies is getting more people connected to the Internet, not merely increasing availability.”

Will Reinhart, Director of Technology and Innovation Policy; American Action Forum

Image: Greene County Tulip Trestle

Railroad and Transportation Corridors

Greene County is one of Indiana's largest counties and includes 550 square miles of land area. The County's population is dispersed through seven incorporated cities and towns including Bloomfield, Jasonville, Switz City and Worthington. The communities are well connected to one another through a variety of state routes including SR 59, SR 57, US Highway 231 and SR 43 that travel north-south and SR 48, SR 67 and SR 58 that travel east-west. Additionally, within each municipality there are a series of smaller, locally owned and maintained corridors. Generally speaking, the State routes that connect the identified communities are rural roadways, featuring two travel lanes with side swales or open ditches. Local transportation corridors within each of the communities often feature two to four travel lanes, concrete curbs and sidewalks, and/or potential utility/ grass areas on either side of the roadway. The transportation corridors, whether state or local or rural or more urban, present challenges to implementation, because of the coordination and negotiation that must occur.

The transportation corridors are either maintained by the State of Indiana, Greene County or a local municipality. Arrangements must be made prior to construction to determine appropriate routes, construction methods and maintenance agreements. The implementation costs associated with rural and urban areas differ, primarily due to the presence of existing structures, pavements, and adjacent utility corridors. While implementation in both rural and urban areas are feasible, urban construction often results in higher capital costs.

Implementation along transportation corridors may be manageable, however, the existing rail corridors provide additional challenges for the Greene County communities. Bloomfield, Jasonville, Switz City and Worthington are all bisected by an active railroad corridor. Just like transportation corridors, railroad corridors create physical obstacles

within each community. Rail rights of ways have the added challenge of having multiple owners and operators. The communication channels between state, county and local officials is often times hindered due to location, leadership and willingness to negotiate and collaborate. Crossing rail road rights of ways may prove to be a frustrating and costly endeavor for the Greene County area, as deployment and implementation moves forward.



Image: Railroad crossing within Switz City, Indiana

PHYSICAL ASSETS & RESOURCES TO SUPPORT BROADBAND DEPLOYMENT

Potential Subscribers

To better identify the way infrastructure improvement costs could be mitigated or returned to service providers, each community's end users has been classified into four primary categories:

Anchors. Institutions, including major employment centers, K-12 schools, libraries, museums, healthcare organizations and other not-for-profit community organizations providing support and services to citizens, are increasingly being recognized as critical indicators and influencers of a community's socioeconomic wellbeing. Anchor institutions have evolved and will continue to be primary users and supporters of advanced technology improvements including broadband technology, infrastructure and educational programming. At times, these institutions can not only serve as advocates for improvements, but can also be primary drivers of the planning and implementation process. The anchor institutions outlined for each community include those users who already have reliable, high speed internet services, but this category is also indicative of smaller-scaled, local businesses who are or could be a critical component of the community's infrastructure backbone. Also included within this classification are sites that historically were home to a local business. Within each of the Greene County communities, ongoing efforts are focused on community reinvestment, redevelopment and renewal, and specific areas within each area are primed for new and expanded business development. Across the Greene County communities there are 344 anchor institutions identified. The following pages identify the individual anchor institutions within each of the studied communities.

Potential Residential Subscribers. While anchor institutions are generally the heavy users of an infrastructure system, residential subscribers contribute to the system's return on investment significantly. Residential subscribers within this category account for

each existing, or planned, residential development site within the community. Across the Greene County communities there are 3,662 potential residential subscribers identified. The following pages identify the areas of residential subscribers within each of the studied communities.

Future Subscribers. The focus of this study is providing infrastructure improvements within the municipal boundaries of Bloomfield, Jasonville, Smith Township, Switz City and Worthington. When improvements are made to these areas, adjacent businesses, residential sites and anchor institutions can ultimately be serviced by the network at lower costs. These additional subscribers are not included in the initial deployment models and estimated costs but can be used to further offset initial investments.

Non-Subscribers or Vacant Land. Within each community there are portions of land that are either undeveloped or unfit for future development. These areas impact the implementation due to their physical characteristics but cannot contribute to the system's return on investment because they are unlikely to ever be developed. Within the Greene County communities, these parcels of land are typically comprised of road or rail rights of ways, cemeteries, utility facilities or areas of significant topography and natural features. Across the Greene County communities there is an estimated 1,670 acres of land that will remain undeveloped due to the location and/or physical characteristics of the property. The following pages identify the areas and acreages of vacant land within each of the studied communities.



Image: General Greene County terrain



Clockwise from top left: Bloomfield Public Library, local business, Bloomfield High School and a local church.

Potential Subscribers: Bloomfield

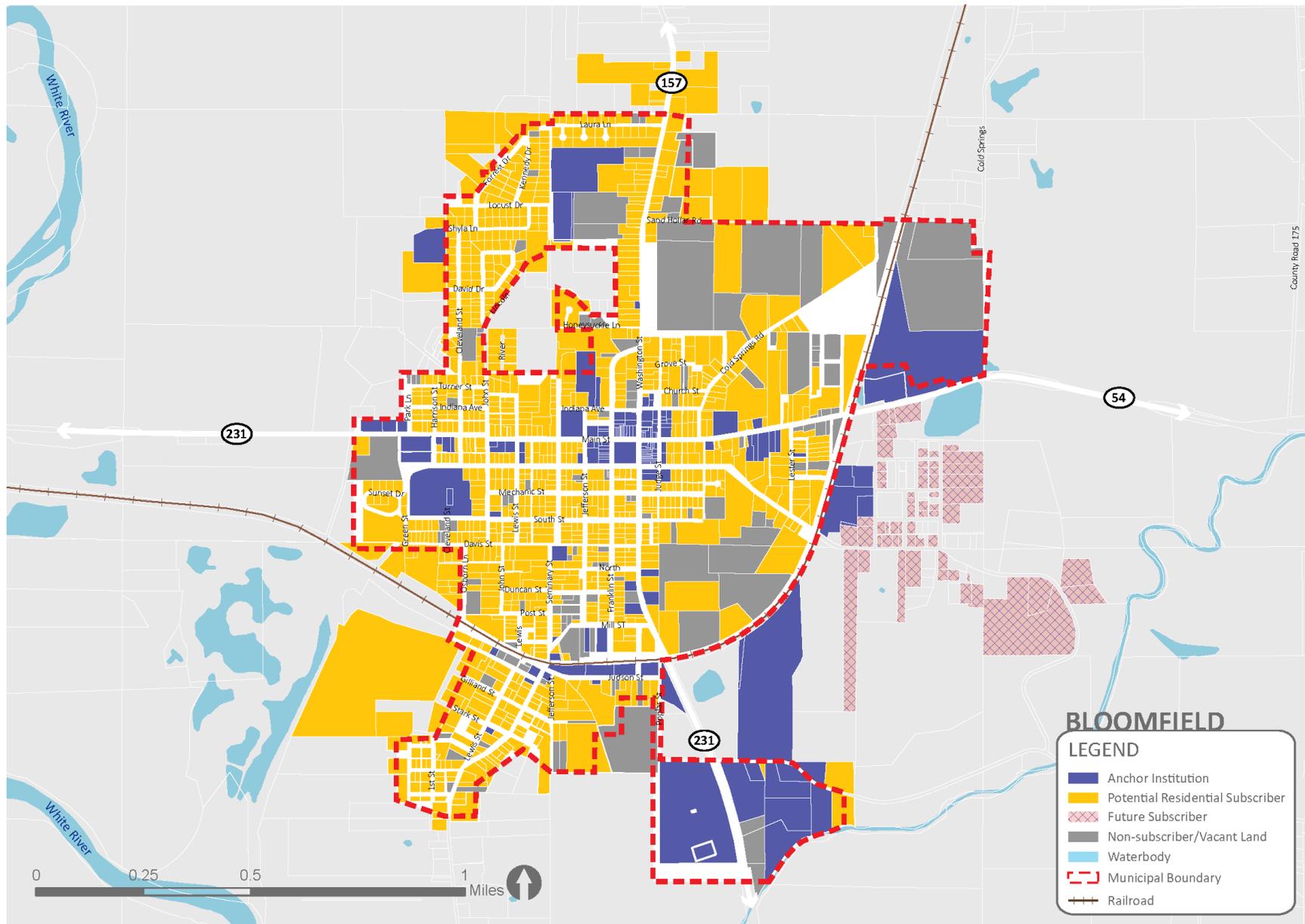
Bloomfield has a total of 1,460 potential subscriber locations including the following:

160 anchor institutions including:

- Bloomfield Elementary School, Bloomfield, IN;
- Bloomfield Junior, Senior High School, Bloomfield, IN;
- Eastern Greene Early Learning Center, Bloomfield, IN;
- Eastern Greene Elementary School, Bloomfield, IN;
- Eastern Greene Middle School, Bloomfield, IN;
- Eastern Greene High School, Bloomfield, IN;
- Bloomfield Eastern Green County Public Library, Bloomfield, IN;
- My Bloomfield Clinic;
- Religious institutions;
- Purdue Extension – Greene County, Bloomfield, IN;
- Greene County Foundation, Bloomfield, IN;
- City and County offices; and
- Nearly 120 existing and former businesses

1,300 Potential Residential Subscribers, 42 of these consist of future homes sites

Estimated Vacant Land: 170 Acres





Clockwise from top left: Local storefront, local church, Jasonville police department facilities and municipal water tower.

Potential Subscribers: Jasonville

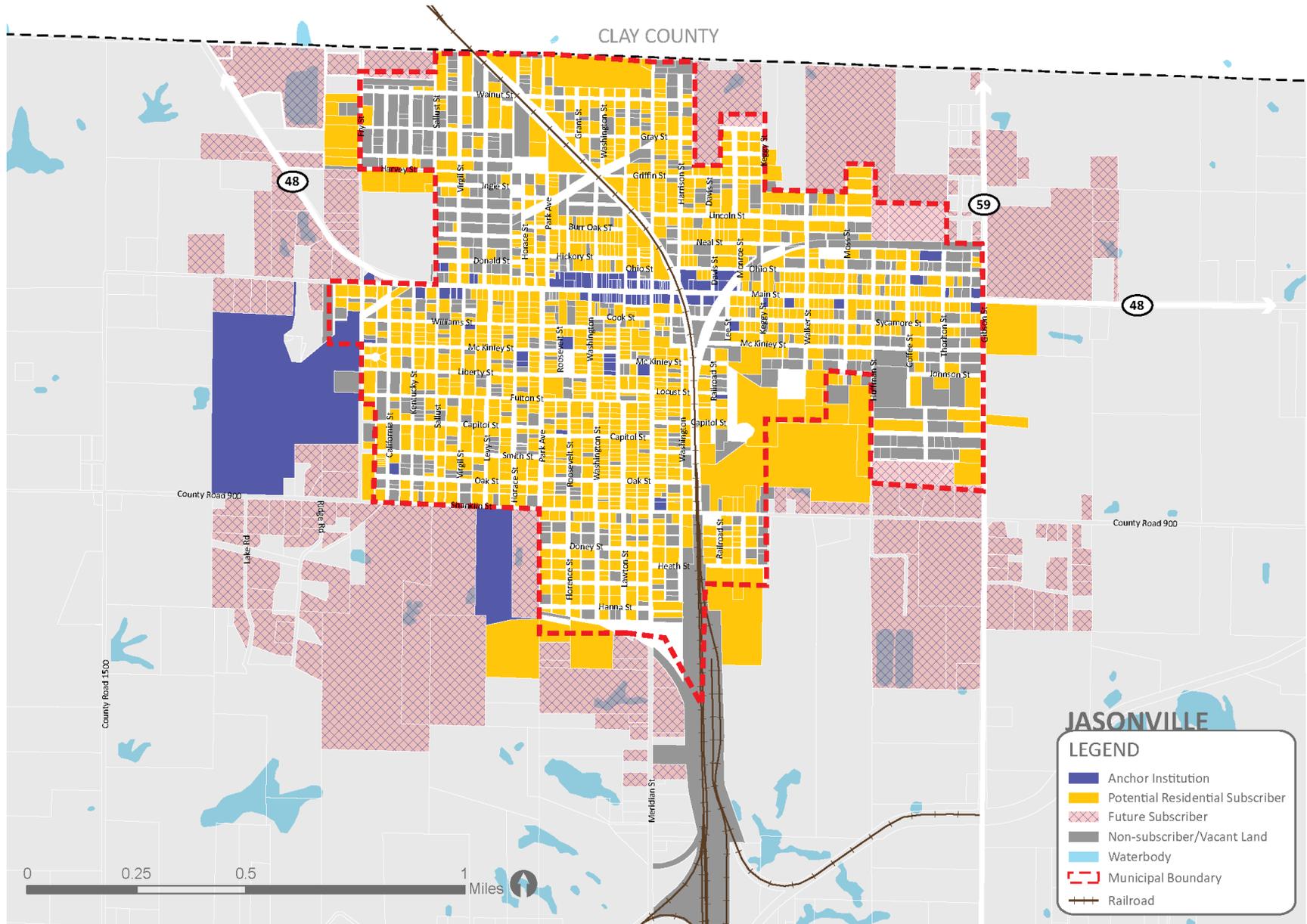
Jasonville has a total of 1,290 potential subscriber locations including the following:

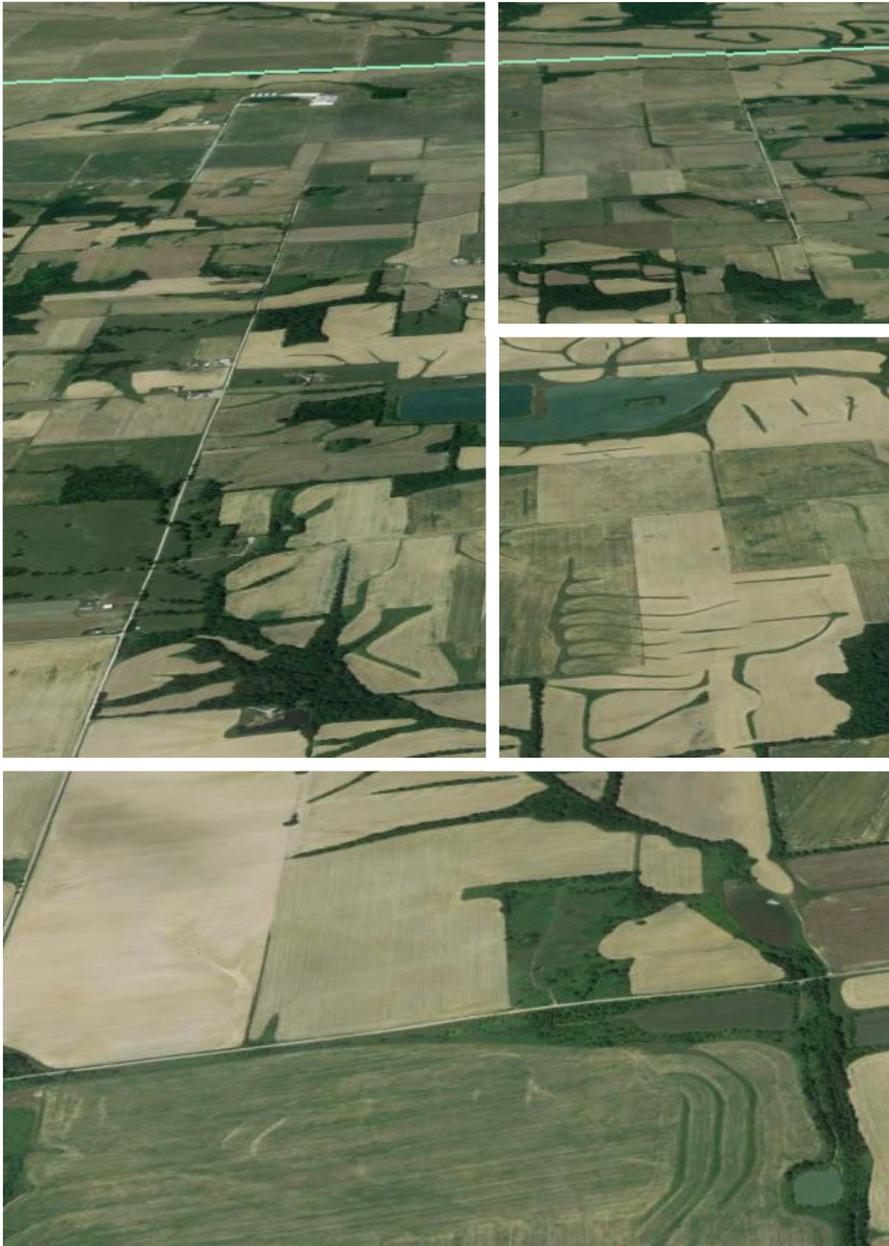
85 anchor institutions including:

- Shakamak Elementary School, Jasonville, IN
- Shakamak Junior/ Senior High School, Jasonville, IN
- Community and fraternal organizations;
- Religious institutions;
- City offices; and
- 63 existing and former businesses

1,205 Potential Residential Subscribers

Estimated Vacant Land: 190 Acres





Smith Township Google Earth aerial image.

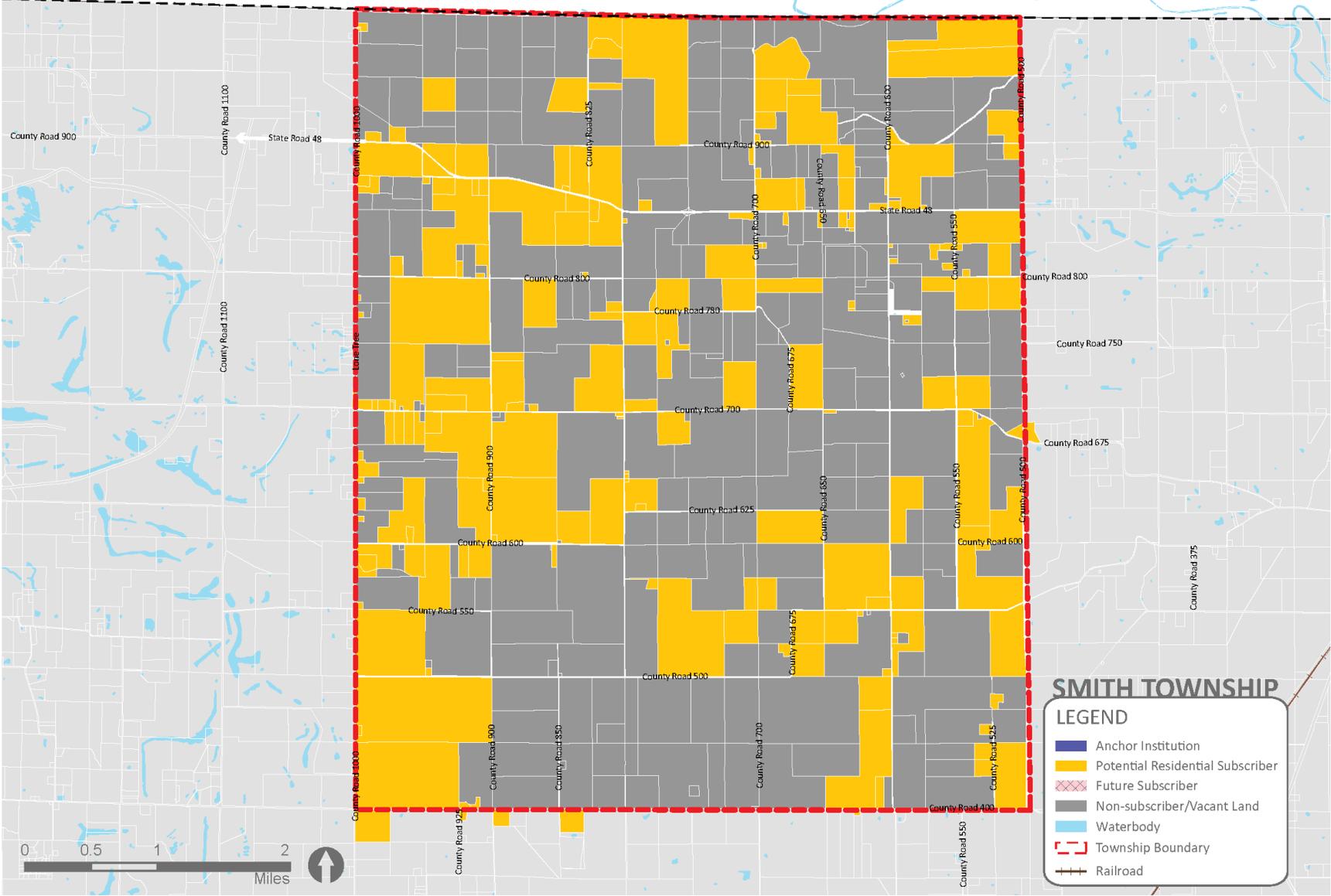
Potential Subscribers: Smith Township

Smith Township has a total of 246 potential subscriber locations including the following:

246 Potential Residential Subscribers

Estimated Vacant Land: 1,115 Acres

OWEN COUNTY





Clockwise from top left: Greene County 4-H Building, local church, Switz City Fire Department facilities, White River Valley High School.

Potential Subscribers: Switz City

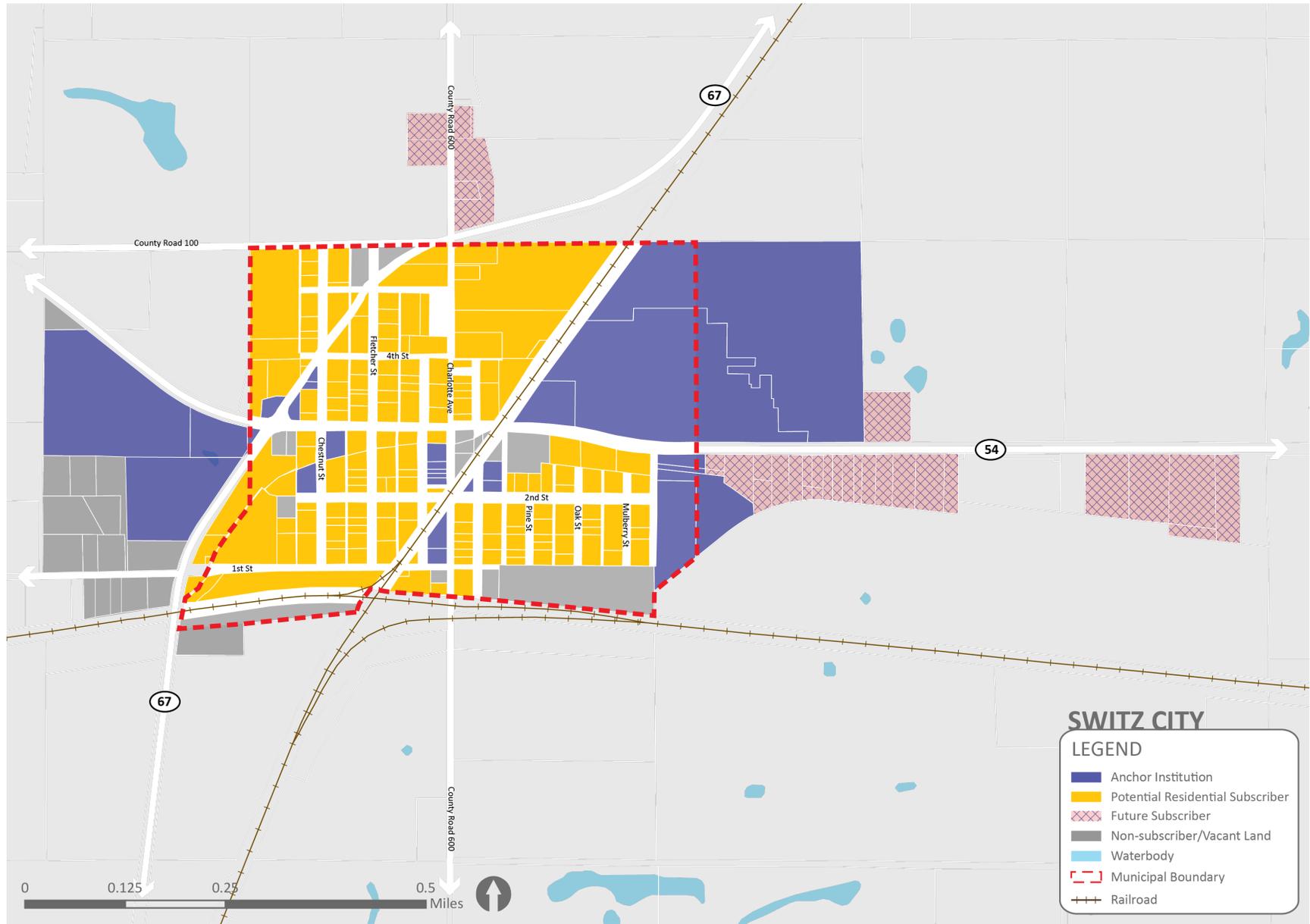
Switz City has a total of 170 potential subscriber locations including the following:

16 anchor institutions including:

- White River Valley High School, Switz City, IN
- Community and fraternal organizations;
- Religious institutions;
- City offices; and
- 12 existing and former businesses

154 Potential Residential Subscribers

Estimated Vacant Land: 35 Acres





Clockwise from top left: Worthington Public Library, Worthington Elementary School, local storefront.

Potential Subscribers: Worthington

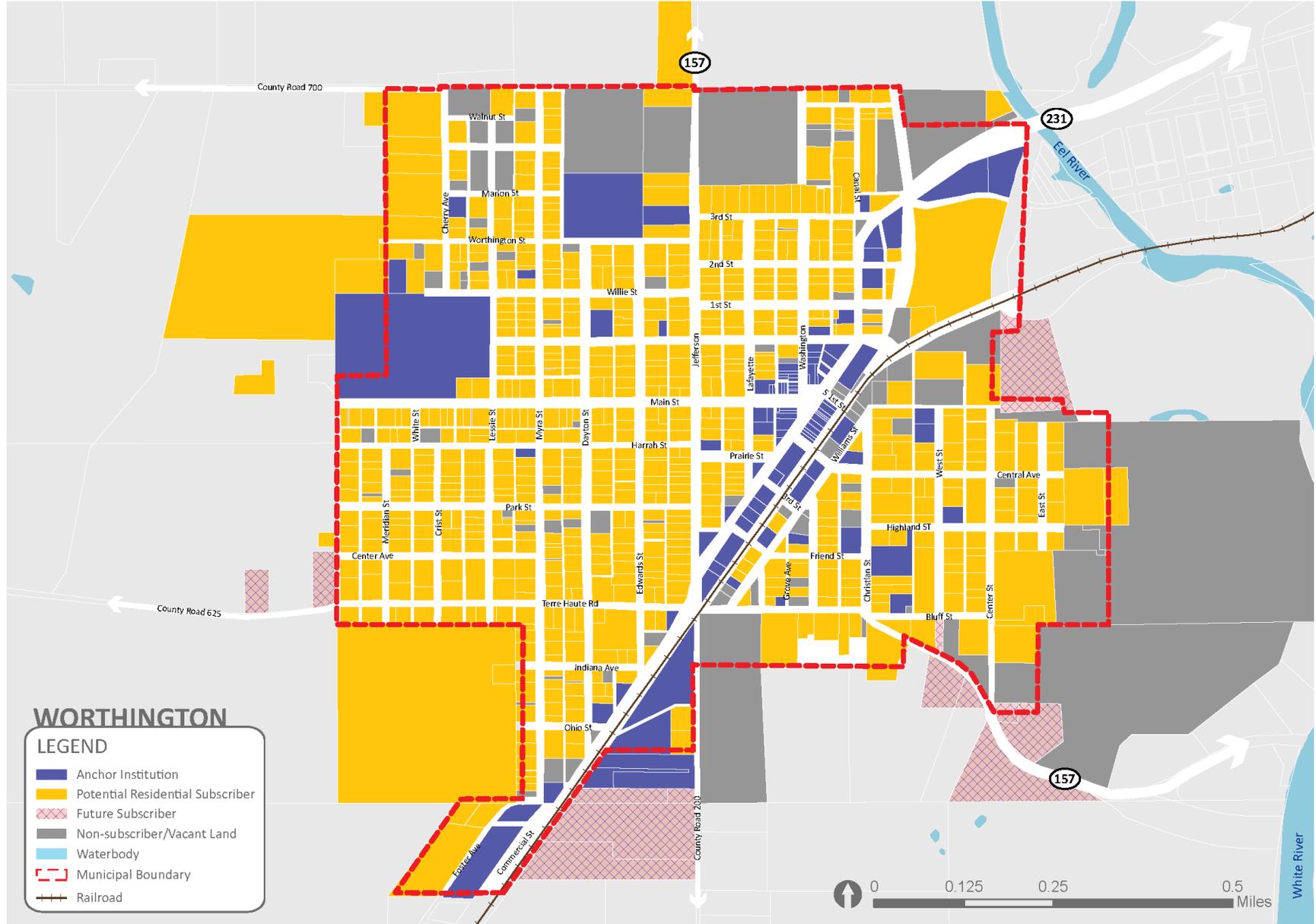
Worthington has a total of 840 potential subscriber locations including the following:

83 anchor institutions including:

- White River Valley Elementary School, Worthington, IN
- Community and fraternal organizations;
- My Worthington Clinic
- Religious institutions;
- City offices; and
- 63 existing and former businesses

757 Potential Residential Subscribers

Estimated Vacant Land: 160 Acres



WORTHINGTON

LEGEND

- Anchor Institution
- Potential Residential Subscriber
- Future Subscriber
- Non-subscriber/Vacant Land
- Waterbody
- Municipal Boundary
- Railroad



White River

POTENTIAL PARTNERS AND RESOURCES

While identifying ways that service providers can capture a return on their initial investment is critical to the long-term implementation and maintenance of a system, being able to identify ways in which the initial capital investment can be shared is also a priority. Neither Greene County, nor the individual cities and towns, need to carry the responsibility of providing this infrastructure alone. Instead, there are a series of organizations, service providers and implementation programs that can assist in the development and implementation of high-speed internet technology.

Providers

The communities of Bloomfield, Jasonville, Smith Township, Switz City and Worthington are currently served by 11 known providers through a variety of technology types. While the existing service varies, the fact that there are current providers in the area speaks to the potential of the Greene County community. As a component of the planning process, the marketed service options were outlined and efforts were made to identify significant system upgrades that were recently implemented or planned for future implementation. While not all of the outlined providers participated, a few notable projects were outlined for the area.

- AT&T- This large regional telecom company currently provides service to portions of Bloomfield and Jasonville. Companywide, AT&T is in the early stages of testing and developing Project LightGig, a broadband deployment model that utilizes existing power grids and low-cost devices to deliver internet services. To date, AT&T has not advertised these two communities as being targets for their LightGig fiber deployment schedule.
- Endeavor- This local, independent broadband company has deployed fiber within their nearby footprint and currently provides service within Worthington. It was noted that there is an opportunity to expand fiber into the Worthington community due to proximity.
- Frontier– In 2018-2019 Frontier upgraded to VDSL fiber fed cabinets within their Worthington market. Fiber-to-the-cabinet enhancements will be the extent of the company’s investment at this time.
- Smithville– This local, independent broadband company has deployed fiber within their nearby footprint and provides service to Bloomfield, Jasonville and Switz City. As noted in previous sections, since the FCC’s 2018 data was provided, Smithville has invested in fiber technology throughout Switz City. Currently the entire community has service available through Smithville’s fiber lines with reported speeds being greater than 20Mbps. Due to the proximity of both Bloomfield and Jasonville, expansion of Smithville’s fiber system is considered a potential opportunity. In addition to Smithville’s investment in Switz City, the company also submitted an application for consideration as a part of the 2018 NextLevel Grant process. The application focused on deploying a fiber-to-the-cabinet system to better serve northeastern Greene County. While the project did not focus on any of the identified Greene County communities included within this planning study, their commitment to the Greene County market and their interest in expanding their service footprint is notable.

Organizations and Companies

Implementation is not solely the responsibility of the private service providers. Various Greene County and local businesses and organizations can also participate in the implementation process by providing shared resources, right of way or educational programming. The following departments, organizations and businesses were identified during the planning process as being potential partners for deployment and implementation.

Greene County Highway Department is responsible for the maintenance and upkeep of all county roads and rights of ways. At regular intervals, the Greene County Highway Department also plans for the improvement and reconstruction of the County's transportation corridors. These are the same corridors that connect the County's incorporated areas to one another. By integrating broadband infrastructure planning at the County level, necessary infrastructure can either be provided or accommodated via conduits as roadways are improved.

Local Public Utility Companies and Commissions vary throughout the area but can be critical partners in deployment and implementation. Utility companies often have primary utility lines adjacent to roadway corridors or within city, town or county right of way. As these companies and commissions improve their individual utility systems, accommodations can be made to install broadband technology or allow for it to be added in the future by placing conduit within the utility easements they maintain. Coordinated planning is key for these shared utility projects.

Community service institutions such as schools, health care providers and public libraries can all play a vital role in the deployment of broadband technology. While not a driver of built work, these community service institutions are primary users of broadband and are also educational outlets for the rural communities of Greene County. Providing the infrastructure is only one piece of the digital divide puzzle. Greene County and the areas included in the study will need to continue to find ways to educate their population and provide programs that further support the area's digital literacy initiatives.



Top: Greene County Foundation offices.
Bottom: Greene County General Hospital



Utilities District of Western Indiana REMC is a member-owned cooperative governed by a board of directors who represent the membership in their individual districts. While the cooperative is focused on providing quality electrical service to its members, their mission statement is also rooted in teamwork, efficiency and financially competitive services. Within Greene County, the REMC maintains and manages miles of existing electrical lines and utility easements. While their existing infrastructure assets are in varying conditions, the REMC continually plans for and implements upgrades and improvements. Partnering with the REMC to either share infrastructure or easements could allow for reduced broadband infrastructure costs, which would equate to a more affordable rate system.



Naval Support Activity (NSA) Crane is a United States Navy installation located approximately 35 miles southwest of Bloomington, Indiana and predominantly located in Martin County, but small parts also extend into Greene and Lawrence counties. The base is the third largest naval installation in the world by geographic area and employs approximately 3,300 people, many of whom likely live within Greene County. While NSA Crane has a limited physical footprint within Greene County the Broadband Planning Committee outlines the potential to partner with NSA Crane as opportunities arise. To date, collaborative conversations have occurred between NSA Crane and Greene County officials specifically related to regional growth, land use assessments and the health and safety of surrounding residents and workers.

The Indiana Exchange Carrier Association (INECA) and its member companies are dedicated to the promotion of state-of-the-art telecommunications facilities and services throughout rural Indiana. The purpose of INECA is to advocate for its member companies on federal and state issues, to educate government leaders, as well as the public at large, on the importance of modern telecommunications to rural communities and to ensure that voice, broadband and video services, comparable to those available in urban and suburban areas, are available in the rural areas of Indiana at affordable prices. Groups that are present in Greene County are S & W Tel Co and Smithville Tel Co.

Top: UDWI Offices

Bottom: NSA Crane campus

Financial Resources

There are various forms of funding that could be used to implement broadband infrastructure improvements, within the Greene County communities, including state/federal grants, redevelopment funds, service provider investment and local community funds.

State Federal Grants

Next Level Connections (NLC): The Next Level Connections program included not only physical connections such as roads and trails, but highlighted the need for expanded broadband services throughout Indiana's rural communities. The program, implemented through a series of grant programs, intended to slowly capture the billions of dollars in economic benefits to these rural communities by providing reliable and affordable high-speed internet technology⁶. The initial program was directed towards service providers, allowing them to apply for grants for infrastructure improvements within identified 'unserved' market segments. An unserved area, for this program, was defined as a census block that , at the time of application, does not have at least one broadband provider offering actual speeds of at least 10 Mbps download and 1 Mbps upload, or an area where there is no potential provider for the census block that has been designated through a federal funding program to deploy that minimum level of service by a specified date. Statewide, over 37,000 census blocks were identified as eligible for the program. Within Greene County there are over 200 census blocks identified as 'unserved' however, the eligible census blocks are located outside the boundaries of the five areas studied as a part of this planning effort.

- **Broadband ReConnect Program (USDA):** A program which provides grants and loans for costs of construction, improvement, and/or acquisition of facilities and equipment needed for underserved areas.

⁶ <https://www.pcrd.purdue.edu/files/media/006-RPINsights-Indiana-Broadband-Study.pdf>

- **CAF Funding:** A multi-phased program that provides support to service providers for the construction of modern networks in unserved and underserved areas.
- **Community Connect Grants (USDA):** A program that helps fund broadband deployment in rural communities where it is not yet economically viable for the private sector to deliver service in areas without speeds of at least 10 Mbps / 1 Mbps.
- **Distance Learning and Telemedicine Grant (USDA):** Helps rural communities use telecommunications to connect with each other and the world, helping teachers and medical service providers better reach their students and patients.
- **Rural Broadband Access, Telecommunications Infrastructure Loans and Guarantees (USDA):** These loans provide rural broadband funding for construction, improvement and/or acquisition of facilities and equipment needed to provide increased broadband service.

Local Funding

- **Property Leasing:** The County can work with their municipal partners to provide a no-cost or low-cost lease of town-owned properties for a provider to place a cabinet or other equipment.
- **EDIT/TIF/General Fund:** The County can work with their municipal partners to provide funding over a set number of years to offset a provider's upfront or on-going costs.
- **Video Franchise Fees:** The County can work with their municipal partners to commit to reinvest these fees into broadband infrastructure over a set number of years.

- **Long Term Bonds:** A primary tool for funding large investment projects of this scale is through municipal bonds or general obligation bonds. Bonds are debt securities issued by a state, municipality, county or special purpose district (such as a public school or airport) to finance capital expenditures.

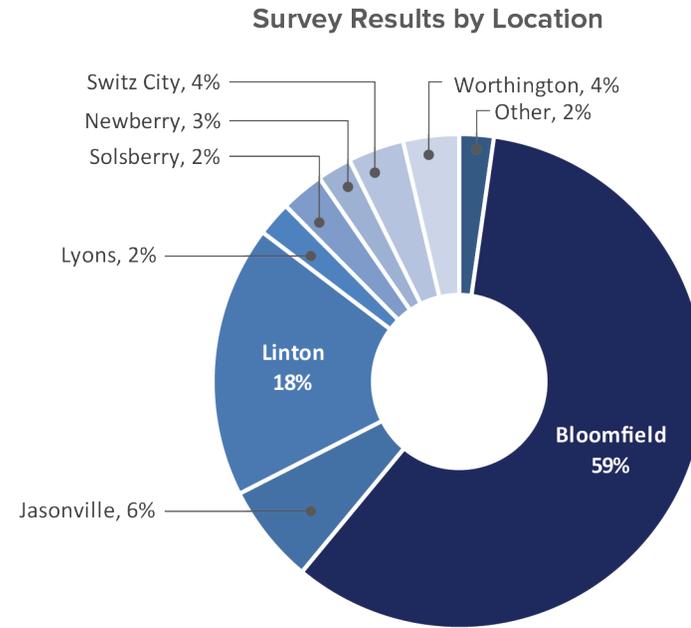
Generally speaking, bonds are sold by the county to bond investors, subject to voter approval of separate bond questions, as a way to generate revenue for capital projects. Following resident approval, bonds generally must be sold within a distinct timeline and then fully spent on capital (brick and mortar) projects, not on daily operations or maintenance. Following the sale and expenditure of the issued bonds, the county would then be required to pay back the money at a designated rate and payment schedule.

In-kind Resources

Local residents, business owners and county employees can volunteer to support the private service provider's online registration for new subscribers. Many local service providers have online materials that allow volunteers to educate, promote and help neighborhoods sign up for the new service.

COMMUNITY SURVEY RESULTS

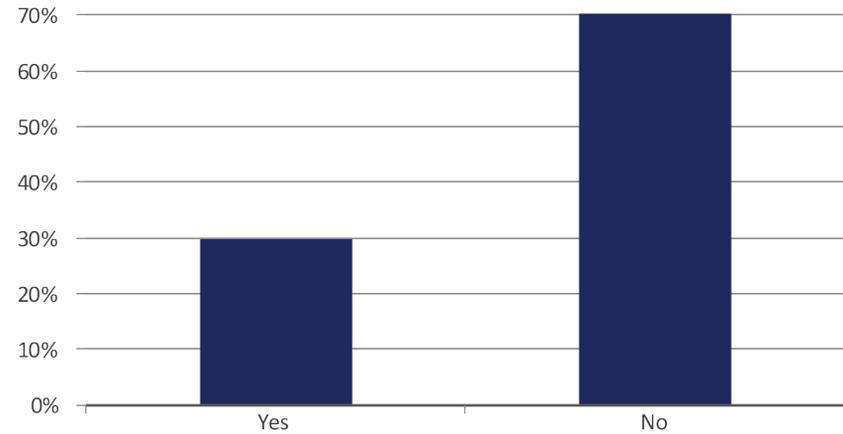
To provide further insight into the existing conditions of Greene County's broadband service, availability and speed, a community-wide demand survey was administered for two months beginning in August of 2019. The survey, primarily administered through a digital weblink, featured 13 questions about preferred method of internet access, current costs and speeds, preferred digital devices and acceptable monthly costs for broadband infrastructure. The survey link was shared on various community social media channels, at community organization board meetings and through personal social networks. In total, 354 individuals responded to the survey and 83% of those that responded completed the entire 13 questions. Of the 354 respondents, 59% reside in Bloomfield and 18% in Linton. The remaining 23% reside in Jasonville (6%), Switz City (4%), Worthington (4%), and a combination of Dugger, Elnora, Lyons, Newberry, Sanborn, Solsberry, Springville and Washington.



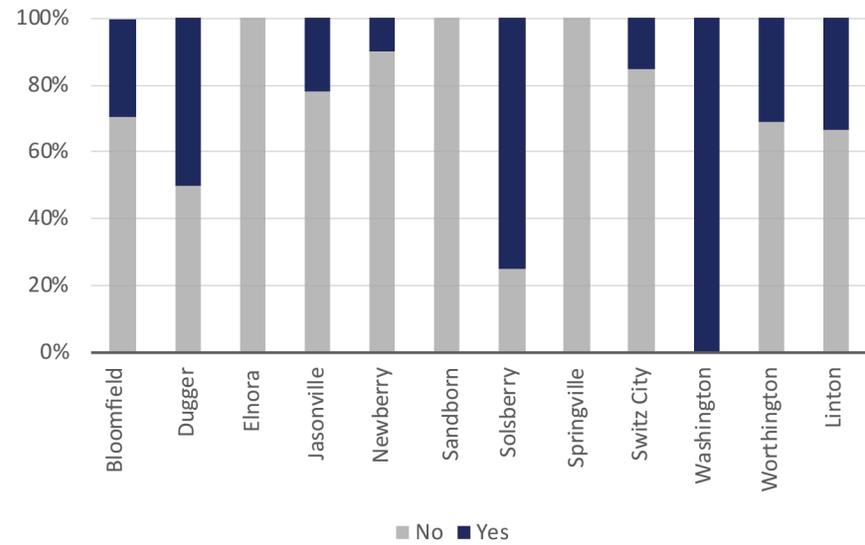
Home Based Businesses

Two specific questions focused on the existence and opportunity for home-based businesses within Greene County. Of those that responded 70% indicated that they did not have a home-based business or worked from home. Those that responded 'NO' were asked whether they would be able to have a home-based business or work from home if they had better broadband technology. Of the 270 respondents, 57% responded that yes, they would be able to work from home, if they had better technology available to them. Those that reported that they would be able to work from home include residents from all surveyed communities, not just one particular area.

Do you have a home based business, or work from home?



Location of possible home based businesses



■ No ■ Yes

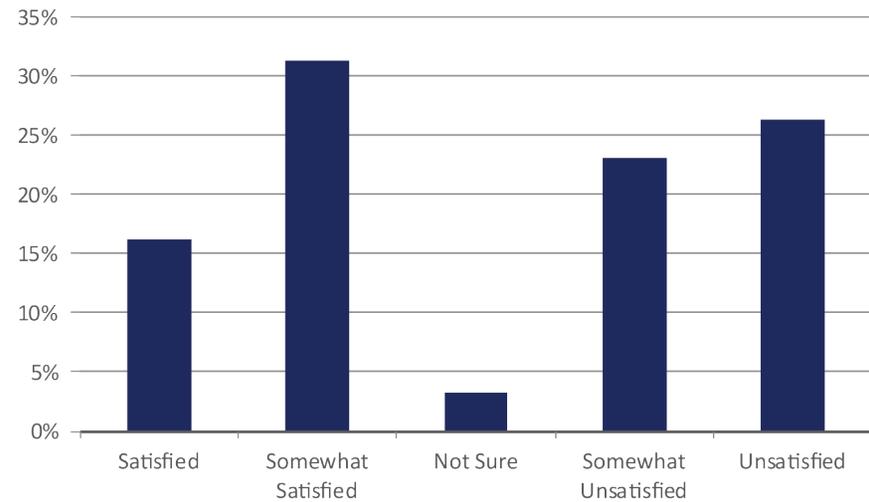
Current Access

Nearly 90% of the survey participants indicated that they pay a monthly subscription fee to have internet access in their home. A small percentage (3%) indicated that they have access but do not pay a monthly fee and 7.7% of participants indicated that they did not have internet access currently. Of the individuals who reported they did not have internet access, 61% reside in Bloomfield. Additionally, for those that indicated that they did not have internet access, nearly 19% identified that the lack of availability in their area was the primary cause for not having a subscription. For those individuals who reported having access, 28% use a cable modem, 18% have a digital subscriber line (DSL), 16% use a cellular data plan and 15% have satellite service. Only 1% of respondents indicated that they have fiber optic infrastructure and of those individuals 66% live in Bloomfield.

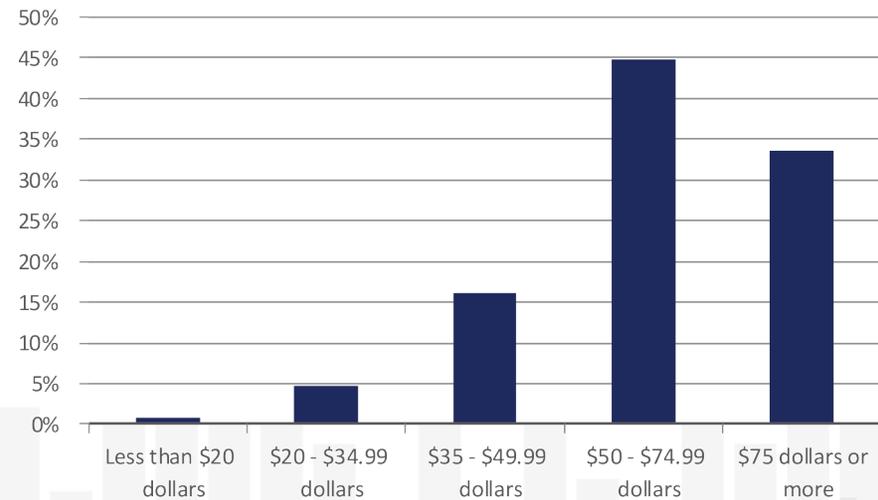
Service Satisfaction

When asked if residents were happy with their current internet access, the responses were nearly split evenly with 47% indicating that they were satisfied to some degree and 49% indicating that they were unsatisfied. The level of satisfaction did not appear to be specific to any individual geography but did seem to correlate to monthly subscription prices. Nearly 80% of the respondents pay more than \$50 a month for their internet subscription, and nearly 34% pay more than \$75 per month. Of those that pay more than \$75 per month, 53% indicated that they are unsatisfied to some degree. In contrast, for those individuals who pay less than \$50 per month, nearly 60% indicated that they are satisfied with their service. As outlined previously, 7.7% of the survey respondents indicated that they did not have a current internet subscription. Of those individuals, 8% remarked that available service was too slow, and 6% indicated that the available service was too expensive. These responses, paired with the satisfaction survey, would indicate that service speeds and price are dominant drivers in ultimate service satisfaction.

How satisfied are you with your current internet access?



How much do you pay for internet every month?



BROADBAND GAPS AND NEEDS

Based on the existing conditions presented within this chapter, broadband gaps and needs were identified according to the primary categories of study (Access, Use and Action) outlined previously. While only five specific areas were studied as a part of this effort, all of Greene County should be considered during broadband deployment and subsequent action steps to ensure that the County can provide access to all residents, businesses and stakeholders.

Greene County's digital divide index score is 69.72. The digital divide index is a ranking criterion developed by Purdue University and evaluates a community's broadband readiness based on infrastructure and socioeconomic conditions. The digital divide index score (DDI) ranges between 0 and 100, where a lower score indicates a lower divide. The score not only outlines a community's comprehensive number, but instead reviews Infrastructure/ Adoption and Socioeconomic information separately. In reviewing Greene County's DDI score, the socioeconomic score indicates that the area's demographic and socioeconomic characteristics greatly contribute to area's digital divide. While there are specific elements related to the area's ACCESS, USE and ACTION, there are a variety of resources and opportunities that can be used to assist in the deployment of broadband infrastructure. Additionally, those same resources can be used to then leverage broadband technology to improve the area's population, educational programs, workforce development efforts and overall community success. Key takeaways to consider are as follows:

Key Takeaways: Access

Existing infrastructure does currently exist within the communities of Bloomfield, Jasonville, Switz City and Worthington. The existing infrastructure, including cell towers of varying heights and electrical service lines and poles, could be used to facilitate the deployment of future system improvements.

While not included in the 2018 FCC data, Switz City commercial entities, including the White River Valley High School, Greene County Fairgrounds, Purdue Extension and Greene County Foundation, all have direct fiber connectivity through Smithville. The majority of the Switz City community is within 4,000 feet of the fiber serving node and has reported speeds of greater than 20 Mbps.

As a whole, Greene County average speeds are being reported below the minimum FCC requirements of 25/3 Mbps (15 Mbps upload and 3 Mbps download), and the individual communities outlined within this study also fall below the minimum requirements of the FCC. Portions of the county, especially within the eastern segment, fall below the NLC program requirements and have areas that are currently 'unserved' meaning they do not have at least one broadband provider offering actual speeds of at least 10 Mbps download and 1 Mbps upload, or is an area where there is no potential provider for the census block that has been designated through a federal funding program to deploy that minimum level of service by a specified date. These areas within eastern Greene County may take priority over the communities studied as a part of this effort.

While major portions of the County and the incorporated communities are able to connect and utilize broadband technologies, 21.1% of the County's population report that they have no access to broadband technology at a minimum speed of 25/3 Mbps.

Key Takeaways: Use

The digital lives of lower income and disabled populations is markedly different. The characteristics of age, educational attainment and disability all contribute to an area’s use of broadband technology, and a primary indicator of community readiness is income. Nearly 45% of the Switz City population falls below the poverty line, a percentage that is nearly four times higher than the county average. The communities of Bloomfield, Jasonville and Worthington have median incomes below that of broader Greene County and have higher percentages of their populations falling below the poverty line.

While Greene County’s access to broadband infrastructure is contributing to the higher percentages of non-subscribing households (30% for the County), and the higher percentages of households with no computer device, the population’s USE is likely being impacted by their income levels.

While providing physical infrastructure is necessary within the Greene County communities, identifying strategies to mitigate and overcome the area’s population decline and to increase the residential household income will be critical to the success of the entire system.

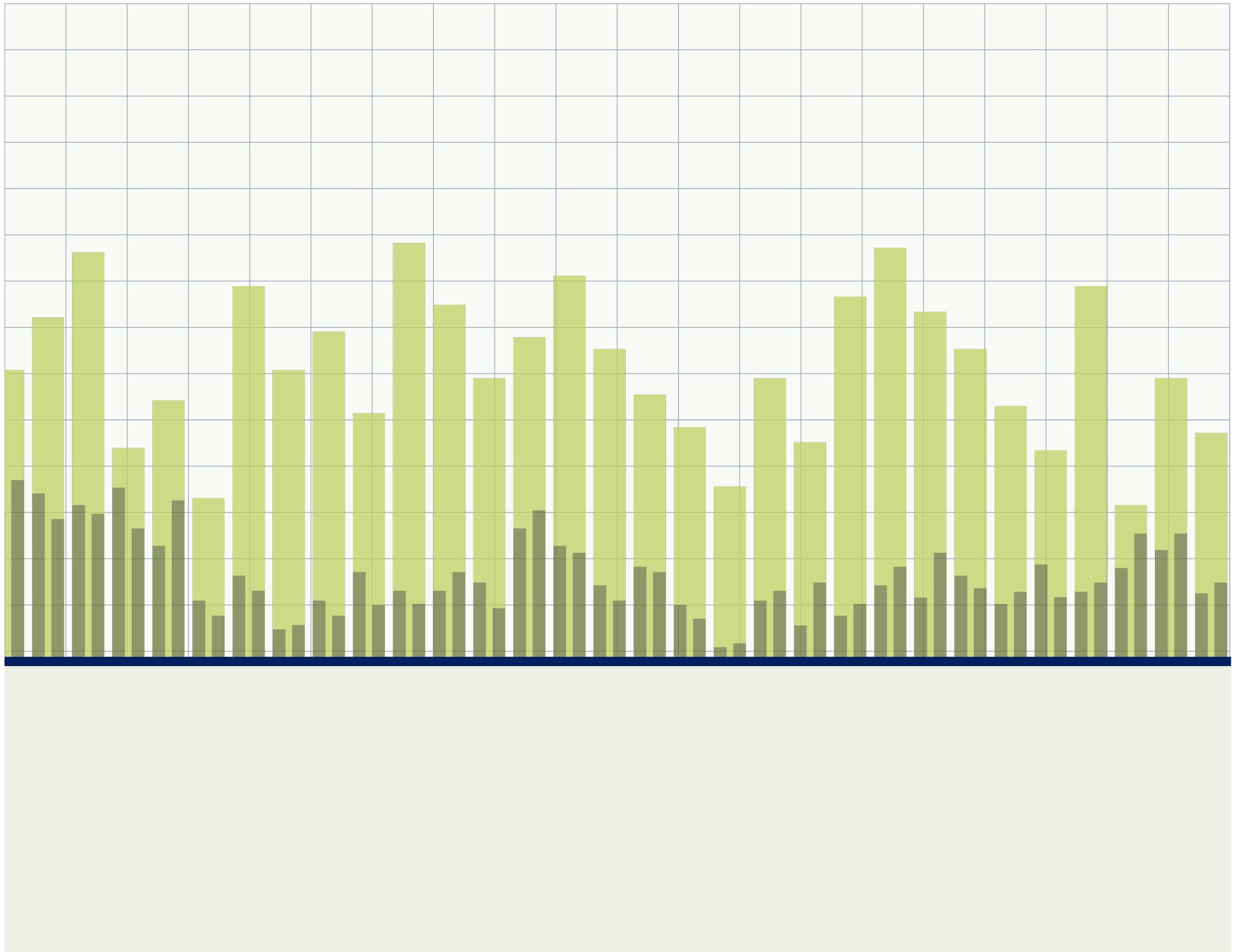
Key Takeaways: Action

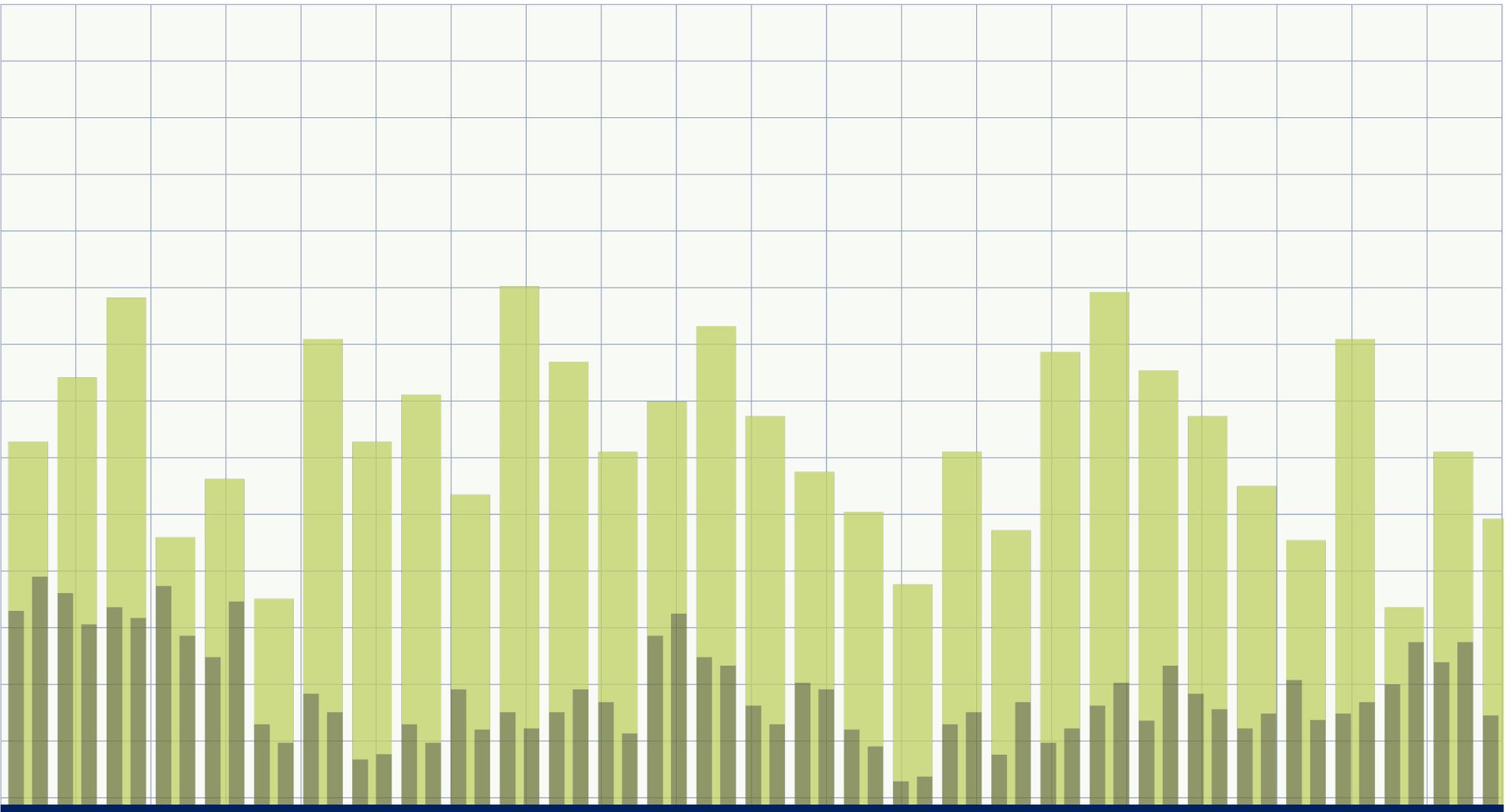
While not a densely populated areas, Bloomfield, Jasonville, Switz City and Worthington do have a pool of potential subscribers (both commercial and residential) that could contribute to a provider return on investment. The planning process identified 344 anchor institutions, which includes nearly 260 businesses and over 3,600 residential properties- all of whom would be considered potential users of enhanced broadband networks.

Smith Township has the lowest number of potential users with only 246 residential locations. Due to the significantly lower density in this area, service would likely only be financially feasible if it was connected to the Bloomfield, Jasonville, Switz City and Worthington areas first. Once reliable high-speed internet infrastructure is in place for the outlying communities, additional infrastructure could be added to serve Smith Township.

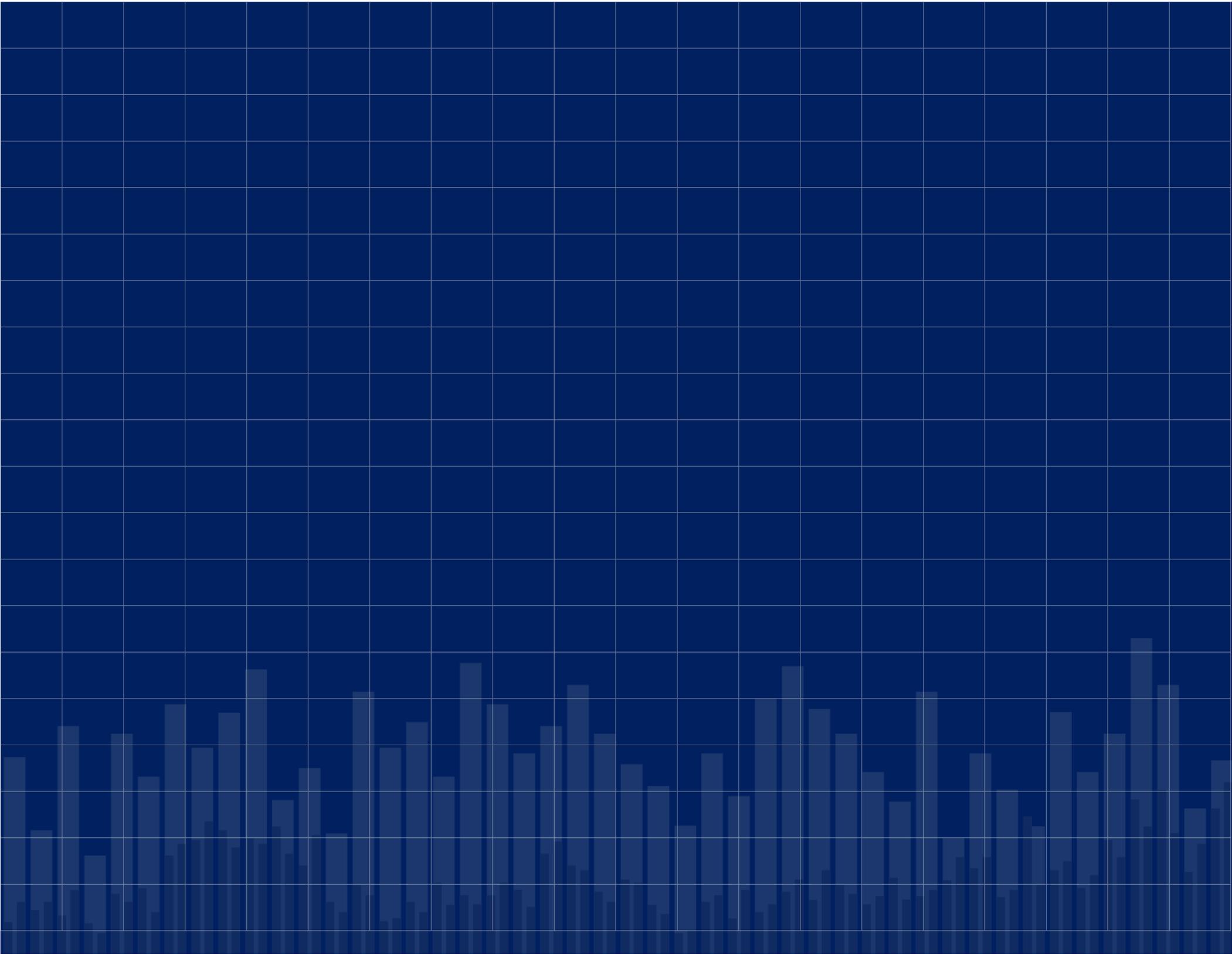
In addition to the commercial and residential users, several providers currently serve the area and few have recently expanded service. Since 2016, Smithville has been able to expand their footprint to establish fiber infrastructure for Switz City, which now provides an opportunity for service for the entire community. Smithville has also shown continued interest in the Greene County area by planning for and submitting an application for the 2018 Next Level grant program which, if selected, would assist in establishing service to Greene County’s more remote and isolated areas.

Greene County, and the studied communities also have access to a wide array of partners and resources, which will help ease the burden of implementing construction, programming and policy recommendations.





**Broadband
Vision and Key Goals** **4**





BROADBAND VISION

During a long-range planning process, community residents and plan leaders came together to establish a strong, aspirational vision for the community. Vision statements are traditionally thought of as an overarching and forward-looking perspective that sets the stage for the goals and strategies identified within the plan. Generally, the community's vision statement needs to capture the image of the future and reflect the thoughts and aspirations of the community. Vision statements are not limited to only broad, overarching plans; they have the ability to be crafted for any long-range planning effort no matter the focus or scale.

Knowing that broadband improvements will require investment and collaboration over a series of years, the *Greene County Broadband Readiness Plan* seeks to establish a common vision for the county, the included cities and towns and all existing and future service providers. The outlined vision was created by the Broadband Planning Committee members for the purpose of this broadband readiness plan. The vision and the supporting goals and measurable strategies are intended to guide planning and investment over the next five to ten years and are designed to be flexible so that the county can accommodate varying growth patterns, as well as included new and advanced technologies.

Greene County's Vision for Broadband

Acknowledging that broadband infrastructure is an essential tool to improving the quality of life for residents and fostering an environment of economic development, Greene County, through cooperative partnerships and innovative solutions, will deliver fast, reliable and affordable broadband infrastructure to the residents, business owners, and educational, financial and government institutions within the communities of Bloomfield, Jasonville, Smith Township, Switz City and Worthington, Indiana.

KEY GOALS AND MEASURABLE STRATEGIES

The *Greene County Broadband Readiness Plan* outlines the overarching vision and action plan to establish and improve broadband connectivity for communities within Greene County. In order to provide the specific action steps for all parties to move forward, the Broadband Readiness Plan must address a wide range of topics that reflect the Greene County community and the ways in which broadband technology will be used and leveraged in the future.

The measurable strategies outlined within the plan are the action steps necessary to establish fast, reliable and affordable broadband connectivity throughout Bloomfield, Jasonville, Smith Township, Switz City, Worthington and broader Greene County. The strategy statements are recommendations for both physical improvements and policy objectives that specifically support the service and implementation and policy goal topics outlined here.

The strategy statements included within the plan are not simply aspirational statements, but instead they are designed to be realistic and measurable steps to guide the community toward its future goals and overall vision. By establishing strategies that can be measured, Greene County leaders and broadband providers can better gauge improvement and overall network success over the course of the next five to ten years.

Greene County's commitment to broadband improvement and local adoption:

Through this planning process, Greene County acknowledges that broadband infrastructure is an essential tool to improving the quality of life for residents and fostering an environment of economic development. Knowing that these improvements and long-term investments are valuable, Greene County is committed to working with its local partners to achieve the following service and implementation and policy goals.



SERVICE

1. Provide minimum broadband speeds of 25Mbps/25Mbps to all residents, businesses and anchor institutions, within the incorporated cities and towns, while adapting to future needs as technology improves.
2. Foster growth and development by encouraging the development of fiber optic infrastructure in residential and existing employment areas, and activity and educational centers.



POLICY

3. Leverage public works projects to support the cost-effective installation of broadband infrastructure.
4. Partner with providers to reduce barriers to broadband infrastructure investment by creating a streamlined permitting and inspection process.
5. Reduce barriers to broadband infrastructure investment by establishing clear communication channels as well as clear and direct permitting processes.
6. Expand local digital literacy by providing educational resources and tools to area residents.

Specifically, Greene County is prepared to complete the following measurable strategies in an effort to deliver fast, reliable and affordable broadband infrastructure. Specific information on how to move these measurable strategies forward is outlined within Chapter 6.

Strategy	Timeframe
Establish a cooperative Broadband Task Force, consisting of county and municipal leaders, County road and utility department heads, County and community stakeholders, utility providers and private internet service providers that meet on a regular basis.	0-2 Months
Identify a single point of contact for all broadband related matters, including the coordination of potential and future broadband related infrastructure within public works projects.	0-2 Months
Establish a permitting procedure that allows for collaboration at all phases of project development and provides for a thorough project review, prior to implementation.	0-2 Months
Adopt a Broadband Readiness Resolution, at the county level that meets the requirements of the Indiana Economic Development Corporation's (IEDC) Broadband Ready Communities program.	0-2 Months
Apply for and obtain certification through the IEDC Broadband Ready Communities program.	0-2 Months
Draft and adopt a 'Dig Once' policy to reduce implementation costs and procedural barriers.	3-6 Months
Identify and assist in the preparation and submittal of grants or other funding applications.	On going
Identify strategic public access points or coworking facilities throughout Greene County.	3-6 Months
Identify local financial and in-kind resources that can be made available to private utility and internet service providers to incentivize broadband implementation.	3-6 Months
Finalize the structure, organization, and cost sharing details necessary to establish a Public Private Partnership .	6-8 Months
Draft and administer a Request for Proposal (RFP) to identify potential partnerships, timelines, plans and costs for broadband deployment initiatives.	6-12 Months

LEVERAGING BROADBAND IN THE LONG TERM

During the first meeting of the Broadband Readiness Plan Steering Committee, the group noted that the future broadband infrastructure network needed to be a driver for improving amenities for the local workforce, reinforcing current economic development effort, and strengthening educational programming and curriculum. The group also intended to establish ways in which local partnerships could be established and strengthened, while also ensuring that the implementation of future infrastructure was efficient and effective for everyone involved. Ultimately Greene County's future broadband infrastructure network needed to be a driver in improving amenities for the local workforce, reinforcing current economic development efforts and strengthening educational programming and curriculum.

While the goal statements above are specific to the end use of the broadband system, the idea of supporting workforce, education and local curriculum is rooted within a variety of ongoing Greene County initiatives, including the recent *2019 Greene County Quality of Place and Workforce Attraction Plan*. For additional information on how Greene County can move forward on the outlined measurable strategies and the supporting goals around workforce, economic development and education, refer to Chapter 6: Action Steps.

Greene County's commitment to workforce, economic development and education:

These broad topics of workforce, economic development and education become the foundation for how broadband infrastructure could be used and leveraged to improve any number of demographic and socioeconomic challenges facing the County. Following the implementation of broadband service improvements, Greene County intends to use the increased broadband service to achieve the following goals:



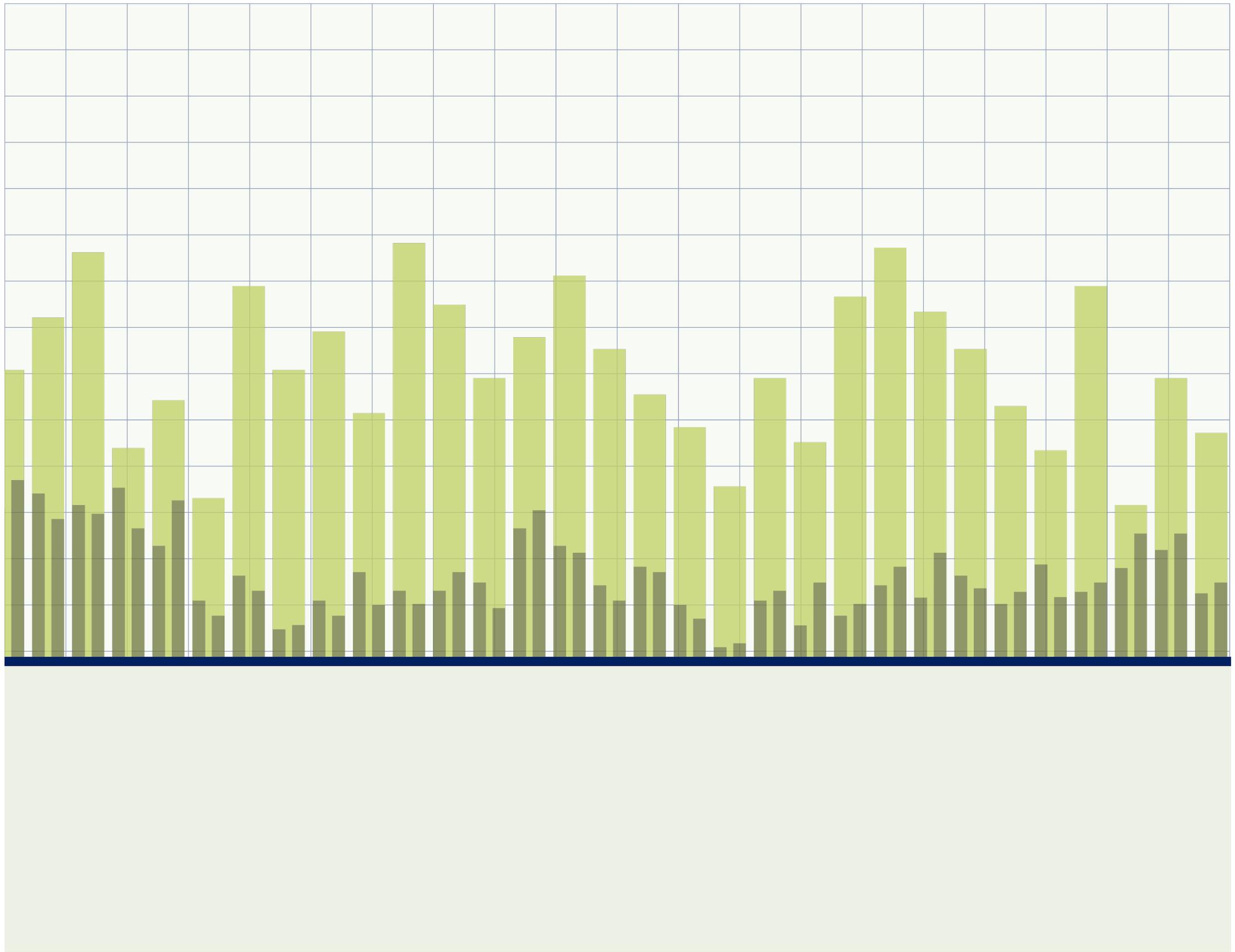
**WORKFORCE
& ECONOMIC
DEVELOPMENT**

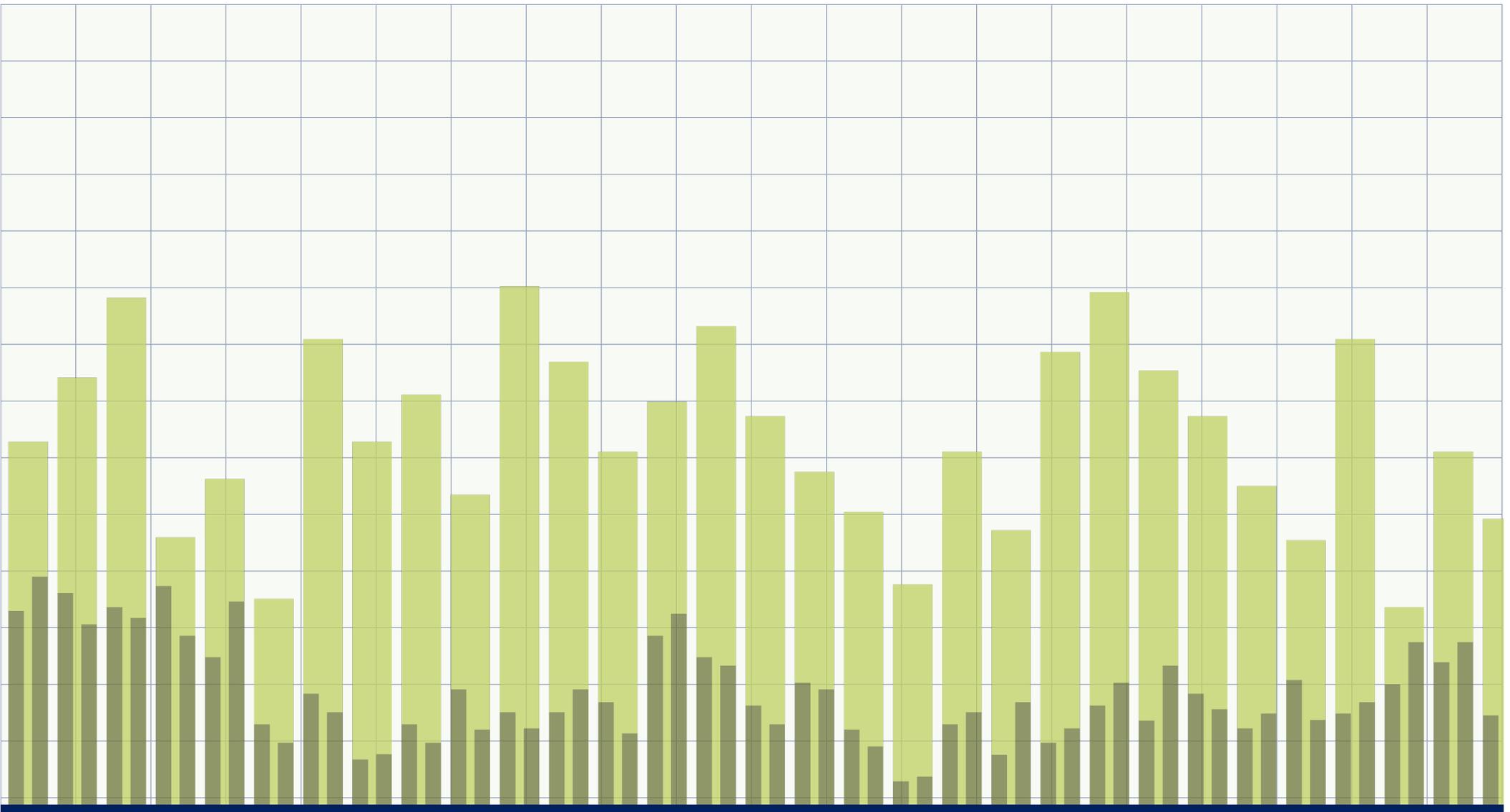
1. Leverage broadband as an economic development tool to retain and attract new businesses and employees, support entrepreneurial growth and increase telecommuting options in the County.
2. Provide a platform for enhancing and improving educational services through improved broadband services.



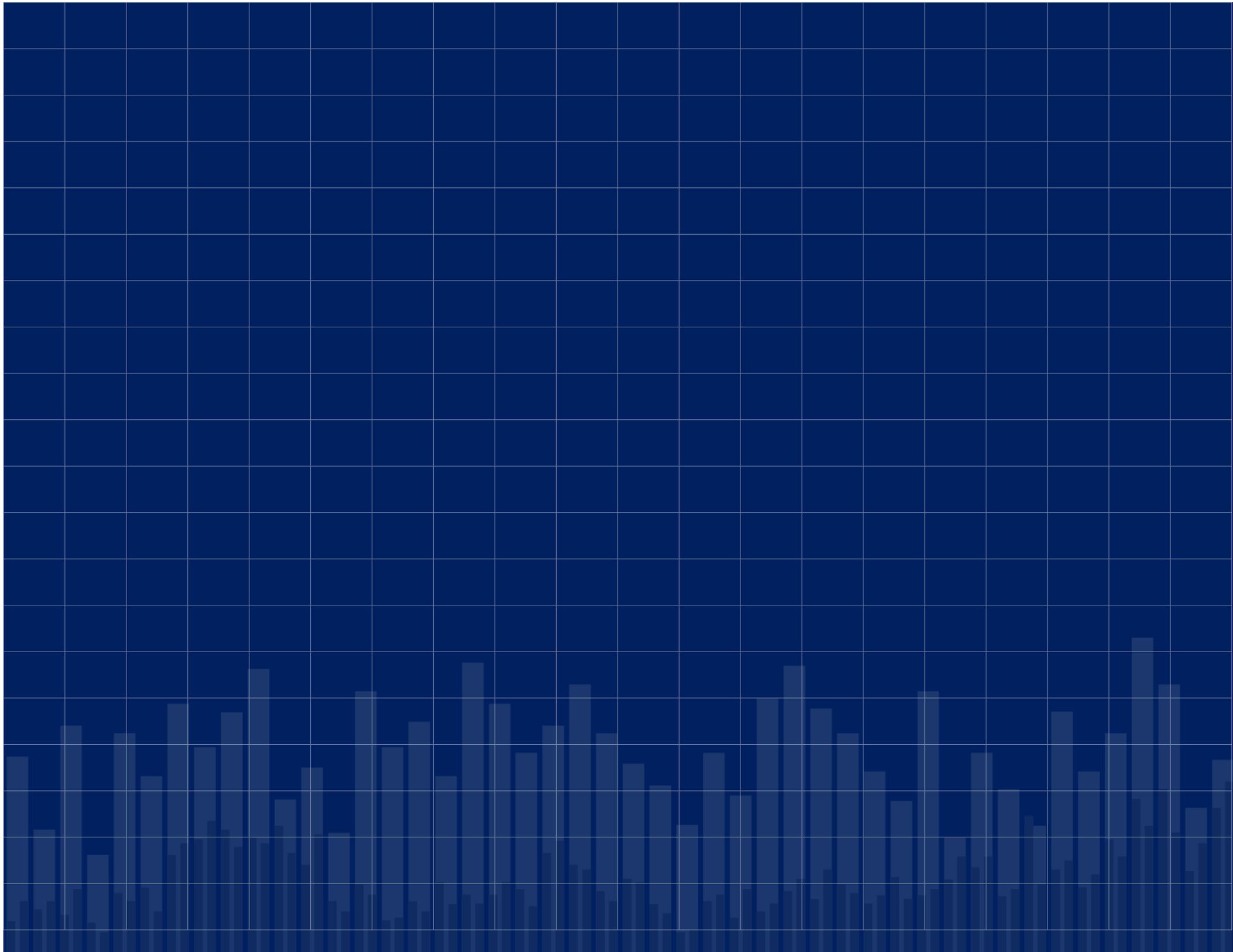
EDUCATION

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**Broadband
Deployment Options** **5**





How broadband system improvement is enhanced, expanded and established within a community is reliant on a number of technology types, administrative procedures and funding models. By combining different technologies with different administration and funding models, communities have an infinite number of deployment models or implementation models to consider. This 'Broadband Deployment Options' chapter outlines the available technology types, and administrative and financial models available to Greene County and the studied communities. Additionally, this chapter includes a set of final deployment model recommendations. The recommendations were determined based on the unique conditions present within Greene County and the studied communities, and the community's long-range vision for broadband infrastructure.

SELECTING A PREFERRED TECHNOLOGY

The term ‘broadband’ has numerous meanings, most of which focus on speed. As identified earlier, for the purposes of this Plan, broadband is defined as the high-speed, always-on internet connection and is the type of internet most consumers are now using. That high-speed, always-on connection can be provided through any number of infrastructure systems including the following, which were reviewed and analyzed as options during the planning process:

LOW ORBIT SATELLITES

How does it work?

Satellite internet access is internet access provided through communication satellites. Modern consumer grade satellite internet service is typically provided to individual users through geostationary satellites that can offer relatively high data speeds. Typically, a consumer can expect to receive (download) at a speed of about 500 Kbps and send (upload) at a speed of about 80 Kbps.

What are the benefits?

The provider infrastructure costs are minimal since the infrastructure is focused on singular devices such as a satellite dish instead of networks of wires. Satellite services provided easy connections to subscribers that are scattered over a relatively large area, including rural areas.

What are the challenges?

The equipment costs are predominately borne by the subscriber, or end user. In addition to higher costs, the service speeds can lag, based on the signal latency, which can hinder certain tasks and applications. Service subscriptions often feature data caps, which further limit what an end subscriber can use. Satellites are also highly susceptible to weather conditions and environmental features such as terrain and vegetation.

FIXED WIRELESS

How does it work?

Wireless broadband connects a home or business to the internet using a radio link between the customer’s location and the service provider’s facility. Wireless broadband can be mobile or fixed.

What are the benefits?

Wireless technologies using longer-range directional equipment provide broadband service in remote or sparsely populated areas where DSL or cable modem service would be costly to provide. The infrastructure investment is traditionally lower than that of wired systems and speeds are generally comparable to DSL and cable modem.

What are the challenges?

Fixed wireless options share service with surrounding users meaning that during peak traffic periods of the day the available bandwidth for each user will be reduced, resulting in lower speeds than what providers advertise. Additionally, signal strength decreases with distance and is affected by weather conditions and natural features such as terrain and vegetation.

WIRED: DIGITAL SUBSCRIBER LINE (DSL)

How does it work?

DSL, in general, is a wired technology that transmits data over copper telephone lines that are already installed in homes and businesses. DSL broadband provides fast transmission speeds from hundreds of Kbps to million per second (Mbps). DSL speeds and availability depends on how close your home or business is to a telephone company facility.

What are the benefits?

DSL systems require relatively low investment costs and implementation of new service lines is the least disruptive for the end users.

What are the challenges?

Similar to fixed wireless technology, Digital Subscriber Line (DSL) technology options share service with surrounding users. Since the bandwidth can be shared among several users, during peak traffic the available bandwidth for each user will be reduced, resulting in lower speeds than what providers advertise.

DSL technology is heavily asymmetrical meaning that upload speeds are generally much lower than download speeds. The asymmetrical service speeds may hamper new services including videoconferencing and teleworking.

While the implementation costs of the physical line are relatively low, there is a higher investment in active equipment, which has a limited life span of approximately 5-10 years.

WIRED: FIBER

How does it work?

Fiber optic technology converts electrical signals, carrying data, to light and sends the light through transparent glass fibers about the diameter of a human hair. Fiber transmits data at speeds far exceeding current DSL or cable modem speeds and can typically provide speeds as high as 100 gigabytes per second. Variations of the technology run the fiber all the way to the customer's home or business, to the curb outside or to a location somewhere between the provider's facilities and the customer.

What are the benefits?

Fiber broadband systems have an extremely high level of transmission rates and symmetry, making it easier to achieve both high upload and download speeds. In addition to consistently high speeds, the systems are less susceptible to interference caused by weather, terrain and/or tree cover. For rural areas, where customers are often spread out over large distances, fiber systems would exhibit minimal speed/ service differences across the system. Additionally, fiber systems offer the most flexibility in meeting future technology demand and capacity.

What are the challenges?

Fiber broadband systems have high investment costs due to the high costs of design and engineering for excavation and piping.

ADMINISTRATIVE AND FINANCIAL MODELS

Broadband infrastructure can be led and funded through a number of organizational models. Both the administration and cost of broadband infrastructure can be led by local municipalities, but there are also opportunities to reduce oversight and capital costs by sharing responsibilities with providers, community organizations and utility companies. In order to identify the administration and cost sharing opportunities specific to Greene County municipalities, the following administrative and financial models were reviewed during the planning process:

POLICY ONLY

How does it work?

In the public-policy-only model, a municipality utilizes its public policy tools to influence how broadband services are likely to develop in its community. It creates and modifies public policies to streamline the processes of designing, constructing and managing broadband infrastructure within its specific jurisdiction. Examples of policies and standards include joint “climb once” and “dig-once policies”, as well as trenching and boring policies. The permitting process and fee structure can also be established to clearly identify the review timeline, process and payment structure associated with broadband projects.

Who is involved?

County or municipal government leaders

What are the benefits?

Public policy improvements are often focused on ways to improve access to public right of way, establish an affordable and efficient permitting process, and identify preferred construction practices and placement methods. Communities that have established public policies are often more attractive to potential service providers, since the barriers to implementation have been reduced or eliminated.

What are the challenges?

The public policies are not a financial incentive and will not offset service provider expenses. Policy development and adoption require the cooperation of internal municipal departments/leaders working together. Depending on local political parties and views, adopting new policies can be a challenge.

PRIVATE INTERNET SERVICE PROVIDER EXPANSION

How does it work?

This model of deployment relies on any one private service provider to plan for and fund a system expansion themselves. Internet service providers can utilize grant funding to help incentivize these expansion plans, especially expansion into rural or unserved areas, but they are still the sole responsible party for the project's implementation.

Who is involved?

Internet service providers

What are the benefits?

When system expansions are left to the service provider alone, the primary municipal benefit is increased service with little to no costs to the municipality. Residents also may see a benefit of multiple options depending on if more than one service provider chooses to expand within the municipality.

What are the challenges?

Service providers are a for-profit company, and will likely work to implement systems that align with their company's financial goals. In some instances, corporate goals may not be in alignment with community needs, allowing segments of the population, anchor institutions and entire communities to remain unserved.

PUBLIC- PRIVATE PARTNERSHIP

How does it work?

A public-private partnership is a contract between a local government and a private organization, in which the two parties negotiate terms to pool resources and share the risk and reward of a project. Public-private partnerships are often used to plan, fund, build and maintain infrastructure systems.

While public facilitation efforts can be leveraged in a public-private partnership, these agreements typically accommodate a shared level of investment. Municipalities often contribute money to the implementation program, or provide their existing built assets (water and cell towers and/or buried conduit) to lessen the capital costs for the service provider.

Who is involved?

County or municipal government leaders; Internet service providers

What are the benefits?

Through a public-private partnership, municipalities and service providers can negotiate a plan to bring broadband service to a community in a way that neither party would be able to do alone. Each party can use what resources they have to leverage a larger investment, while remaining comfortable and limiting overall risk.

What are the challenges?

With any partnership, identifying the right partner and negotiating the right deal are the primary challenges. Public-private partnerships must come to an agreement on a number of critical elements such as network access rights, project incentives, project responsibilities, revenue and cost sharing and required service areas and speeds, before moving forward with implementation. These negotiations can lengthen the timeline of a project and, if negotiations are unsuccessful, could halt the progress of any specific initiative.

RURAL UTILITY COOPERATIVE

How does it work?

This modified public-private partnership takes advantage of the preexisting utility cooperative model to build and maintain the broadband infrastructure system. A rural utility cooperative would be a true business model, requiring all organizations to come together to build infrastructure and provide service under the umbrella of an LLC or a 501c3 organization.

While public facilitation efforts can be leveraged in a public-private partnership, these agreements typically accommodate a shared level of investment. Municipalities and utility companies often contribute money to the implementation program, or provide their existing built assets (water or cell towers, buried conduit, and/or electrical easements and infrastructure) to lessen the capital costs for the service provider. In Indiana, specifically, the Facilitating Internet Broadband Rural Expansion (FIBRE) Act allows established electric cooperatives to utilize their existing easements for fiber infrastructure deployment.

Profits made on infrastructure services can be collected by the LLC or 501c3 organization and returned back to the community through endowment funds or localized investments.

Who is involved?

County or municipal government leaders; Internet service providers; Utility providers

What are the benefits?

Just like a public-private partnership, rural utility cooperatives allow municipalities, utility owners and service providers to negotiate a plan to bring broadband service to a community in a way that neither party could be able to do alone. Each party can use what resources they have to leverage a larger investment, while remaining comfortable and limiting overall risk.

What are the challenges?

While utility cooperatives have been around for decades, the use of these groups in the deployment of broadband infrastructure is a relatively new concept. This means there is little precedent or case studies from which to learn.

Rural utility cooperatives must come to an agreement on a number of critical elements such as network access rights, project incentives, project responsibilities, revenue and cost sharing and required service areas and speeds before moving forward with implementation. These negotiations can lengthen the timeline of a project and, if negotiations are unsuccessful, could halt the progress of any specific initiative.

Since the deployment of broadband infrastructure would be a secondary utility system, provided to a separate service market, the partners within the Rural Utility Cooperative would need to have significant resources to support both broadband deployment and the needs of other established utility systems and utility users.

DEPLOYMENT RECOMMENDATIONS

Determining the right technology and administrative/financial model is key to the success or failure of a municipal broadband project. The selection of an appropriate model should be based on factors that include the stage of broadband development, the local environment, the municipal funding capacity, its organizational capabilities and the desired benefits to the community.

Knowing that Greene County and the communities of Bloomfield, Jasonville, Smith Township, Switz City and Worthington all have unique factors that impact their broadband readiness, it is recommended that Greene County and the local municipalities move forward with the following deployment recommendations:

Preferred Technology

While Greene County welcomes the deployment of any of the outlined technology options, in order to align with the community broadband vision, it is recommended that Greene County focus their resources on the deployment of fiber infrastructure within Bloomfield, Jasonville, Smith Township and Worthington. Additionally, if applicable, Greene County will support the upgrade of existing fiber infrastructure within Switz City to ensure that all residents have access to reliable, high speed service.

Priority Areas

It is recommended that fiber deployment begin in the denser communities of either Bloomfield or Jasonville. Both communities offer advantages in density, number of anchor tenants and installation methods. While there are still challenges within each community, the advantages provide for lower costs per premise in both communities. Whether deployment begins in Jasonville or not, Greene County should negotiate with the appropriate internet service provider to ensure that the project includes service to Smith Township when Jasonville deployment occurs. Based on the rural location of Smith Township and the incredibly low density, this area will need to be included with Jasonville work to offset costs and maximize the return on investment to service providers.

Once service is established in Bloomfield and Jasonville, expansion can continue to the west and east to reach Worthington and Switz City. Greene County's broadband vision is that each community is not only served, but is physically connected to one another. As service is established within each community, Greene County should also work to ensure that all adjacent property owners, between the studied municipalities, are given access to the infrastructure when it is installed. To supplement the areas not reached by the proposed fiber network and to facilitate the connection of each community to one another, existing electrical lines and poles, water and cell towers and the Zayo dark fiber line should be evaluated to determine if they would benefit broadband system in either a wired or wireless solution. Although fiber technology is optimal, low density development and difficult topography could prevent that from occurring along the SR 48, SR 67, SR 54 and County Road 1000 W corridors needed to connect Jasonville, Smith Township, Switz City, Worthington and Bloomfield. Providing infrastructure for wireless service along these corridors could still serve as an enhancement to the system.

Implementation Costs

As a component of this planning effort, a conceptual network plan was created for each of the studied communities. The conceptual plans were generated by the planning consultant and represent the best network plan for each specific area. The following pages outline the preferred network plan, associated costs and projected number of users for each community. While illustrated as a simple line, the conceptual design accounts for the use of both aerial and direct buried installation methods based on proposed placement and surrounding conditions.

As a whole, the total estimated costs for installing fiber option infrastructure throughout the studied communities is \$10,326,330. An additional \$30,420-\$61,120 is estimated for the connections between the various communities. The lower price accounts for the implementation of aerial infrastructure, while the higher price accommodates direct burial of broadband infrastructure.

This cost opinion encompasses all infrastructure and equipment costs including the drop required at each private property. Additionally, the

outlined costs account for the soft costs of implementation such as the design and construction management of each community project. The cost opinion does not take into account existing assets such as the Zayo dark fiber line, or abandoned rail right-of-way that could be used as a vehicular for implementation. Those assets and coordination efforts would only provide cost savings to the amounts listed above and on the following pages.

Revenues and Long-Term Return on Investment

Whether public or private funds are used for implementation, the broadband infrastructure improvements will need to ensure that the investor receives a return on their capital investment in the long run. To better identify the potential return on investment within each of the studied communities, a high-level analysis of estimated fees vs. costs was conducted for each area. The return on investment analysis assumed two primary pieces of information: monthly subscription fees and user adoption rates.

Estimated Design and Construction Costs

Community	HH	Main Line	Drop	Cabinet/Hub	Equipment	Engineering Design	Construction Management	Total	Cost per Premise
Bloomfield	1,460	\$1,227,325	\$993,955	\$87,970	\$90,000	\$153,125	\$136,350	\$2,688,735	\$1,965
Jasonville	1,205	\$890,210	\$915,690	\$94,595	\$22,500	\$164,635	\$119,665	\$2,207,295	\$1,620
Smith Township	246	\$2,464,930	\$249,085	\$23,650	\$22,500	\$167,980	\$141,700	\$3,069,845	\$11,903
Switz City	170	\$219,560	\$484,420	\$17,025	\$11,250	\$22,610	\$24,815	\$779,680	\$4,440
Worthington	840	\$657,275	\$617,220	\$64,320	\$22,500	\$100,865	\$118,595	\$1,580,775	\$3,328
TOTALS	3,921	\$5,459,300.00	\$3,260,370.00	\$287,560.00	\$168,750.00	\$609,215.00	\$541,125.00	\$10,326,330.00	\$2,633

Monthly Subscription Fees: For the purposes of this return on investment analysis, a monthly subscription fee of \$75.00 was used. This monthly fee was determined based on surrounding fiber provider offerings. As an example, within Monroe County (Greene County’s eastern neighbor), fiber subscriptions offering speeds of 100/100 are available for \$70-75 per month. This amount is also consistent with those introduced by Google for similar services. While monthly subscription fees can be set at any amount, the market tolerance is also a factor in final fee identification within a community. To ensure that a \$75 per month amount fit the tolerance of Greene County residents, the amount was compared to the responses received as a part of the Community Survey outlined within Chapter 3. Based on the responses received as a part of this effort, 33.58% of survey participants are paying more than \$75 per month currently, with nearly 45% paying anywhere from \$50-\$74.99 per month. Of those that pay more than \$75 per month, 53% indicated they are unsatisfied to some degree. Nearly 22% of the community survey respondents also indicated that they would be willing to pay \$70 or more per month for fast and reliable internet service.

User Adoption Rates: To ensure that the return on investment timelines were not unrealistic or overly aggressive, a community wide adoption rate of 30% was used in the calculations. Generally speaking, a private internet service provider should be able to capture 30% of the potential subscribers within any given community as a baseline and incrementally increase the percentage at a minimum of 5-year increments (i.e. 30% adoption from years 0-5, 50% adoption from years 5-10 etc.). These lower percentages account for the rate at which local residents’ transition from one provider to another and the slow incremental increase accounts the providers ability to increase the awareness of their product and offerings.

The return on investment analysis did not account for yearly operation and maintenance costs, primarily because these rates are typically proprietary information and based on specific provider/ company goals and metrics. Additionally, the 30% adoption rate was calculated as a flat, consistent percentage and was not escalated or increased. Any efforts conducted to presubscribe or enhance local awareness of products and services would only help to increase annual gross revenues and reduce the return on investment timelines outlined above.

Estimated Return on Investment Analysis*

Community	HH	Assumed Subscribers (30% subscriber rate)	Monthly Subscriber Fees	Annual Gross Revenue	Total Implementation Costs	Estimated Return on Investment Timeline
Bloomfield	1,460	438	\$75.00	\$394,200	\$2,688,735	6.8 Years
Jasonville	1,205	361	\$75.00	\$324,900	\$2,207,295	13.5 Years
Smith Township	246	73	\$75.00	\$65,700	\$3,069,845	---
Switz City	170	51	\$75.00	\$45,900	\$779,680	16.9 Years
Worthington	840	252	\$75.00	\$226,800	\$1,580,775	6.9 Years
TOTAL SYSTEM	3,921	1,176	\$75.00	\$1,058,400	\$10,326,330.00	9.75 Years

* Due to the fact that it is recommended that Smith Township infrastructure be installed in conjunction with Jasonville, the return on investment timeline was calculated as a combined effort.

The following pages outline the preferred network plan and include information on estimated implementation costs, projected number of users, and a list of potential funding sources. **For specific information on deployment action steps refer to Chapter 6: Action Items.**

Potential Subscribers

Bloomfield has a total of 1,460 potential subscriber locations including the following:

- 160 anchor institutions**
- 1,300 Potential Residential Subscribers,**
- 42 of these consist of future homes sites**

Potential Costs

Mainline	\$1,227,325
Drops	\$ 993,955
Cabinet/ System Hub	\$ 87,970
Equipment	\$ 90,000
Engineering Design	\$ 153,125
Construction Management	\$ 136,350
TOTAL COSTS	\$2,688,735

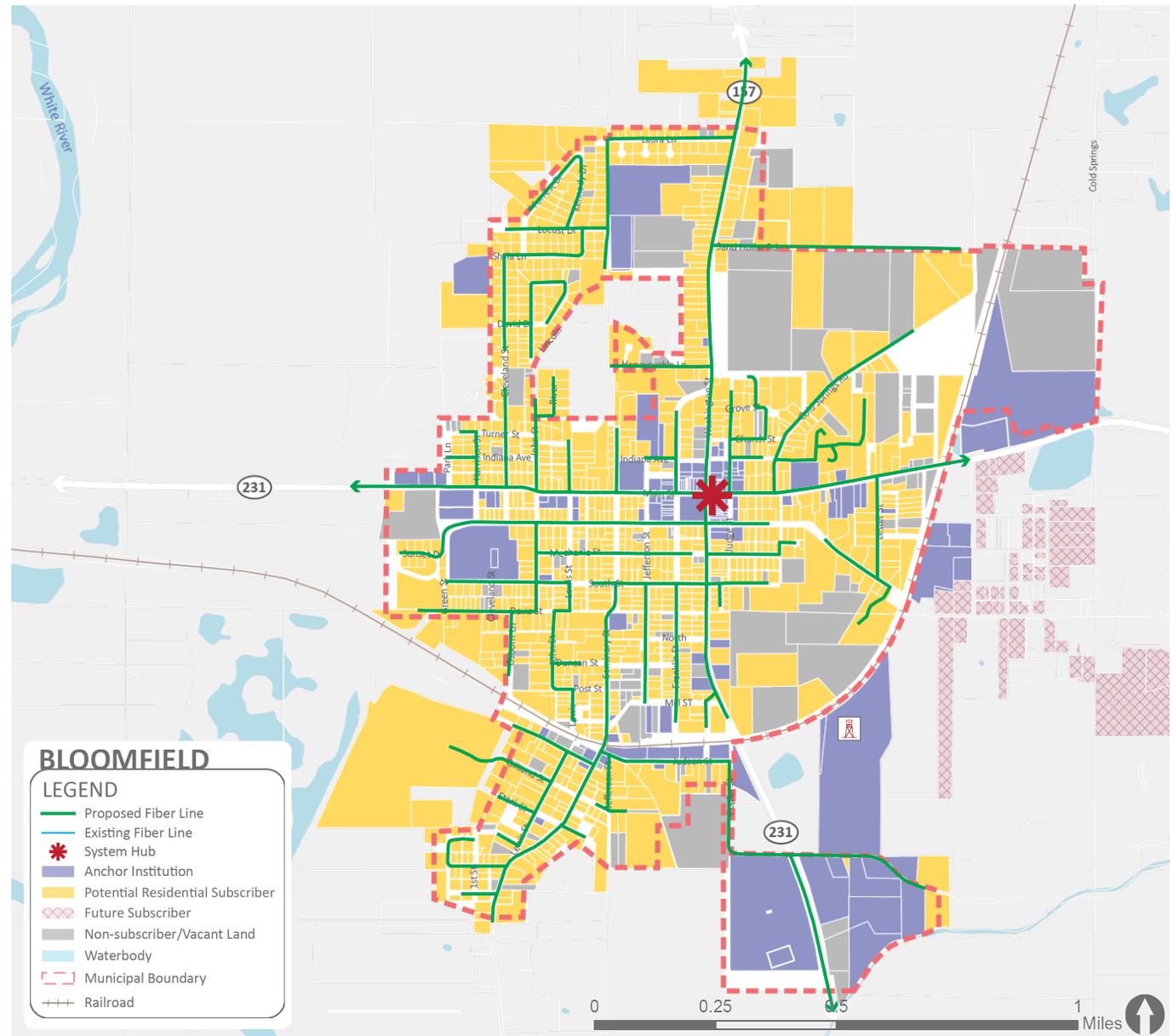
TOTAL COST PER PREMISE \$ 1,965

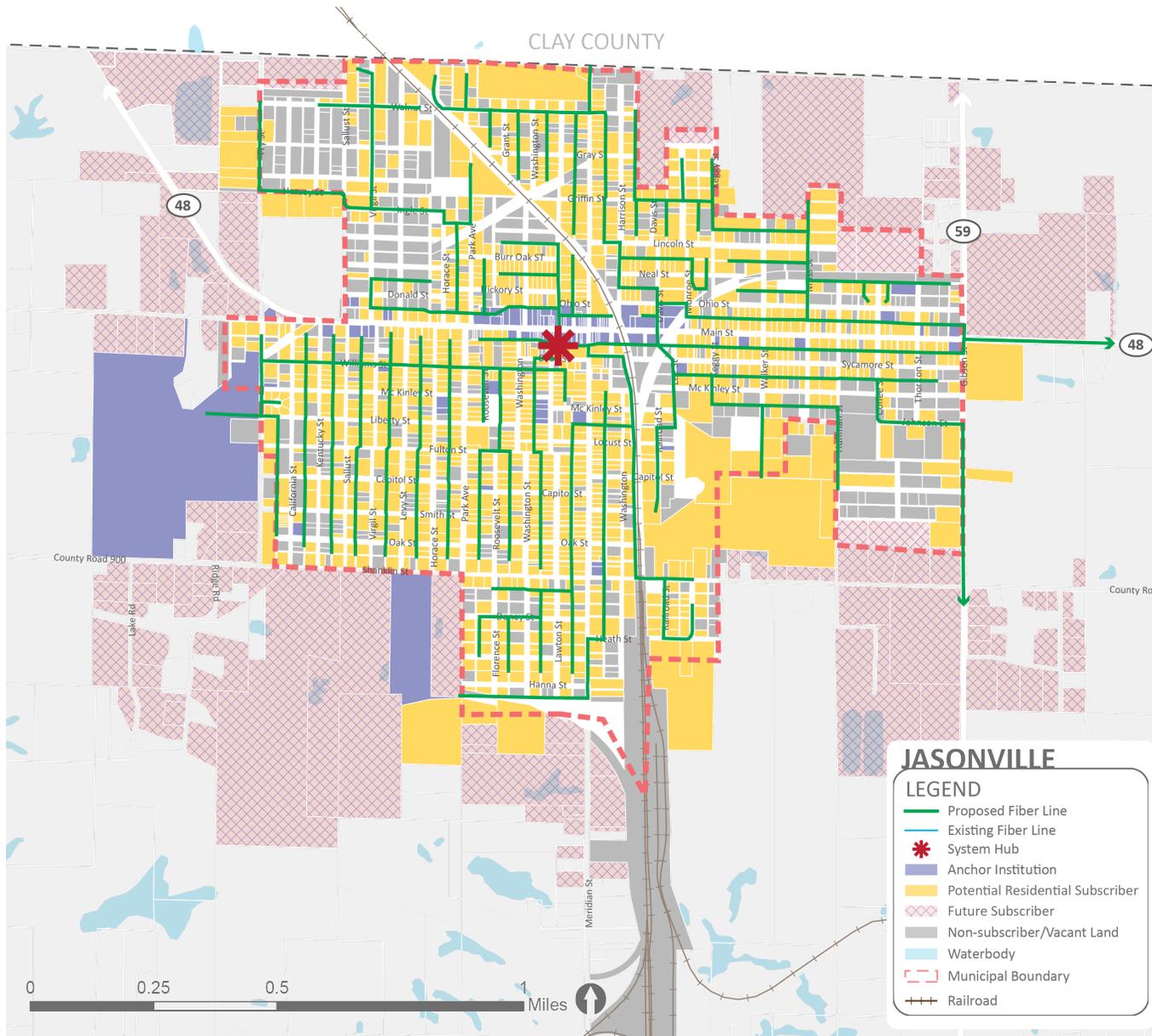
Assumed Subscribers (30% subscriber rate) 438

Monthly Subscriber Fees \$75.00

Annual Gross Revenue \$ 394,200

Estimated Return on Investment 6.8 Years





Potential Subscribers

Jasonville has a total of 1,290 potential subscriber locations including the following:

- 85 anchor institutions**
- 1,205 Potential Residential Subscribers**

Potential Costs

Mainline	\$ 890,210
Drops	\$ 915,690
Cabinet/ System Hub	\$ 94,595
Equipment	\$ 22,500
Engineering Design	\$ 164,635
Construction Management	\$ 119,665
TOTAL COSTS	\$2,207,295

TOTAL COST PER PREMISE \$ 1,620

Assumed Subscribers (30% subscriber rate)	361
Monthly Subscriber Fees	\$75.00
Annual Gross Revenue	\$ 324,900

Estimated Return on Investment 13.5 Years*

* Due to the fact that it is recommended that Smith Township infrastructure be installed in conjunction with Jasonville, the return on investment timeline was calculated as a combined effort.

Potential Subscribers

Smith Township has a total of 246 potential subscriber locations including the following:

246 Potential Residential Subscribers

Potential Costs

Mainline	\$2,464,930
Drops	\$ 249,085
Cabinet/ System Hub	\$ 23,650
Equipment	\$ 22,500
Engineering Design	\$ 167,980
Construction Management	\$ 141,700
TOTAL COSTS	\$ 3,069,845

TOTAL COST PER PREMISE \$ 11,903

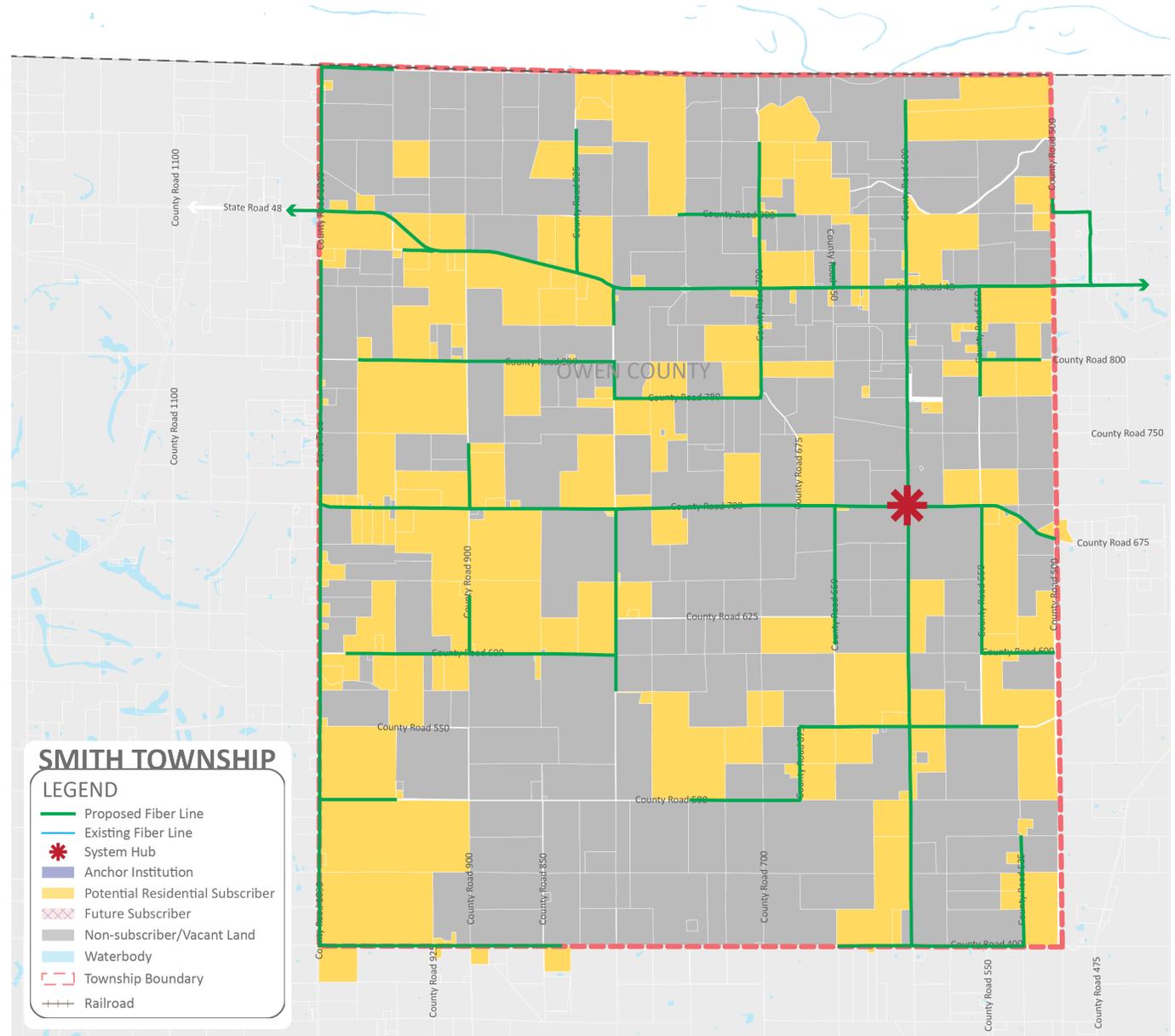
Assumed Subscribers (30% subscriber rate) 73

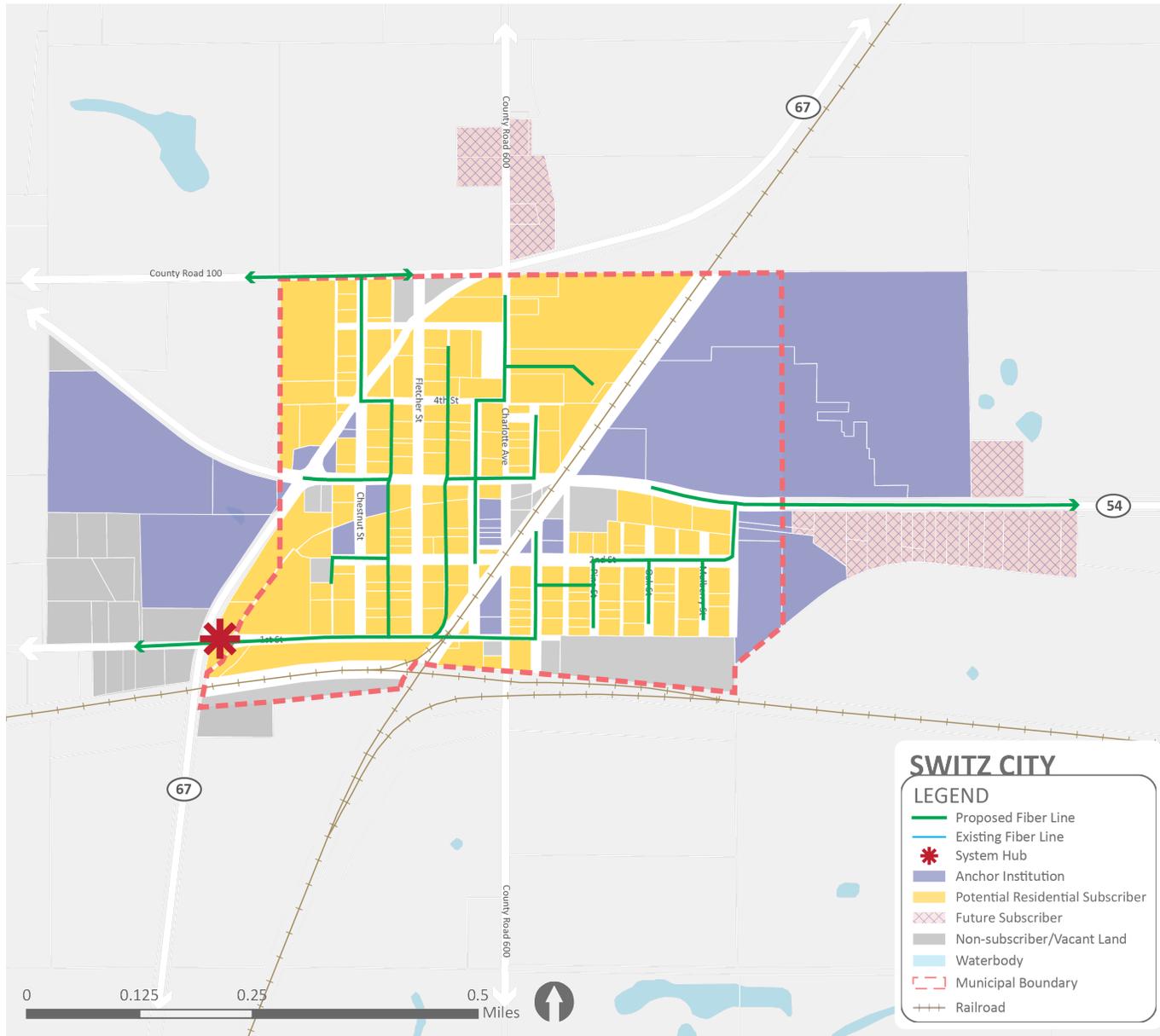
Monthly Subscriber Fees \$75.00

Annual Gross Revenue \$65,700

Estimated Return on Investment 13.5 Years*

** Due to the fact that it is recommended that Smith Township infrastructure be installed in conjunction with Jasonville, the return on investment timeline was calculated as a combined effort.*





Potential Subscribers

Switz City has a total of 170 potential subscriber locations including the following:

16 anchor institutions

154 Potential Residential Subscribers

Potential Costs

Mainline	\$ 219,560
Drops	\$ 484,420
Cabinet/ System Hub	\$ 17,025
Equipment	\$ 11,250
Engineering Design	\$ 22,610
Construction Management	\$ 24,815
TOTAL COSTS	\$ 779,680

TOTAL COST PER PREMISE \$ 4,440

Assumed Subscribers (30% subscriber rate) 51

Monthly Subscriber Fees \$75.00

Annual Gross Revenue \$45,900

Estimated Return on Investment 16.9 Years

Potential Subscribers

Worthington has a total of 840 potential subscriber locations including the following:

83 anchor institutions

246 Potential Residential Subscribers

Potential Costs

Mainline	\$ 657,275
Drops	\$ 617,220
Cabinet/ System Hub	\$ 64,320
Equipment	\$ 22,500
Engineering Design	\$ 100,865
Construction Management	\$ 118,595
TOTAL COSTS	\$ 1,580,775

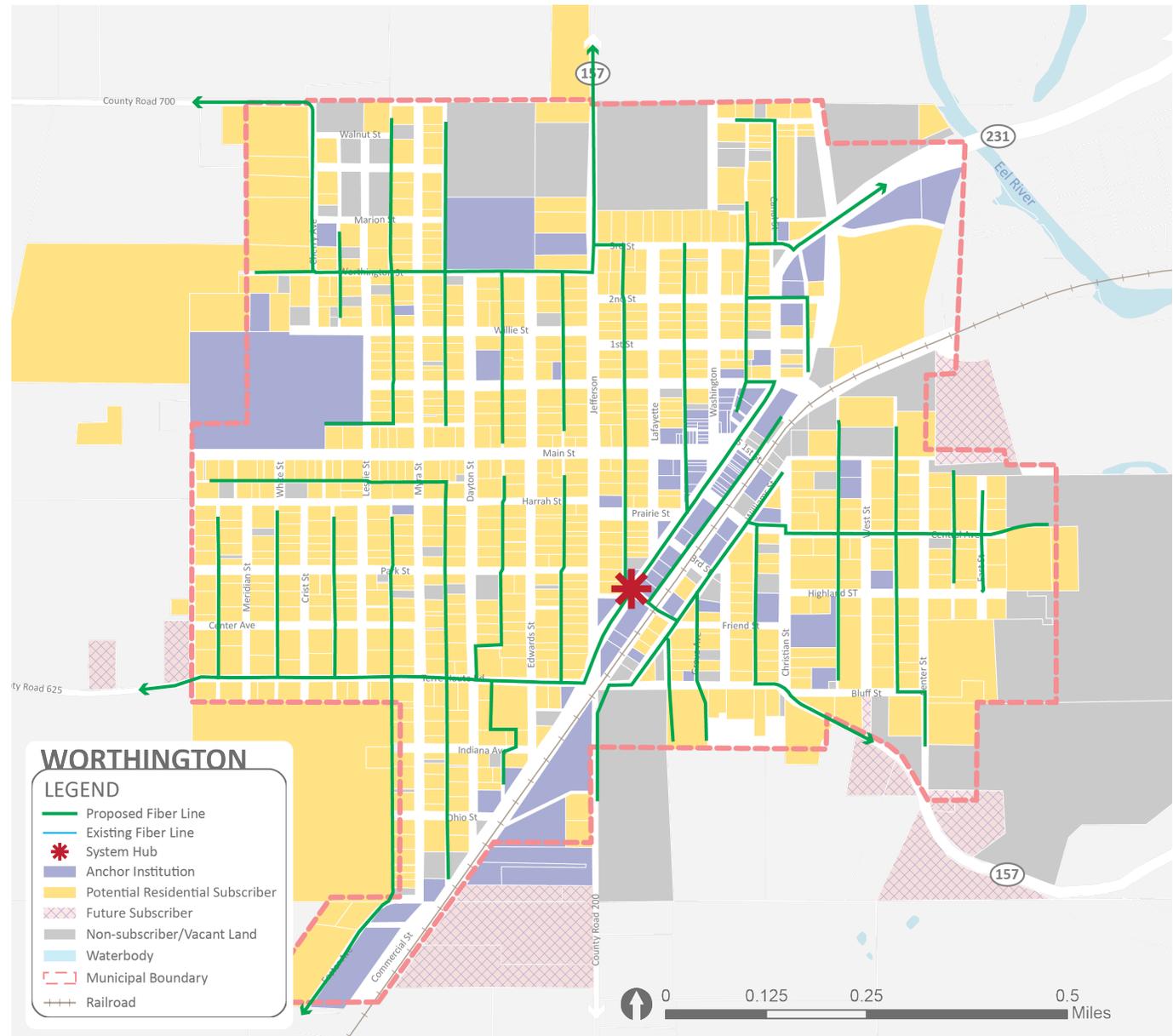
TOTAL COST PER PREMISE \$ 1,745

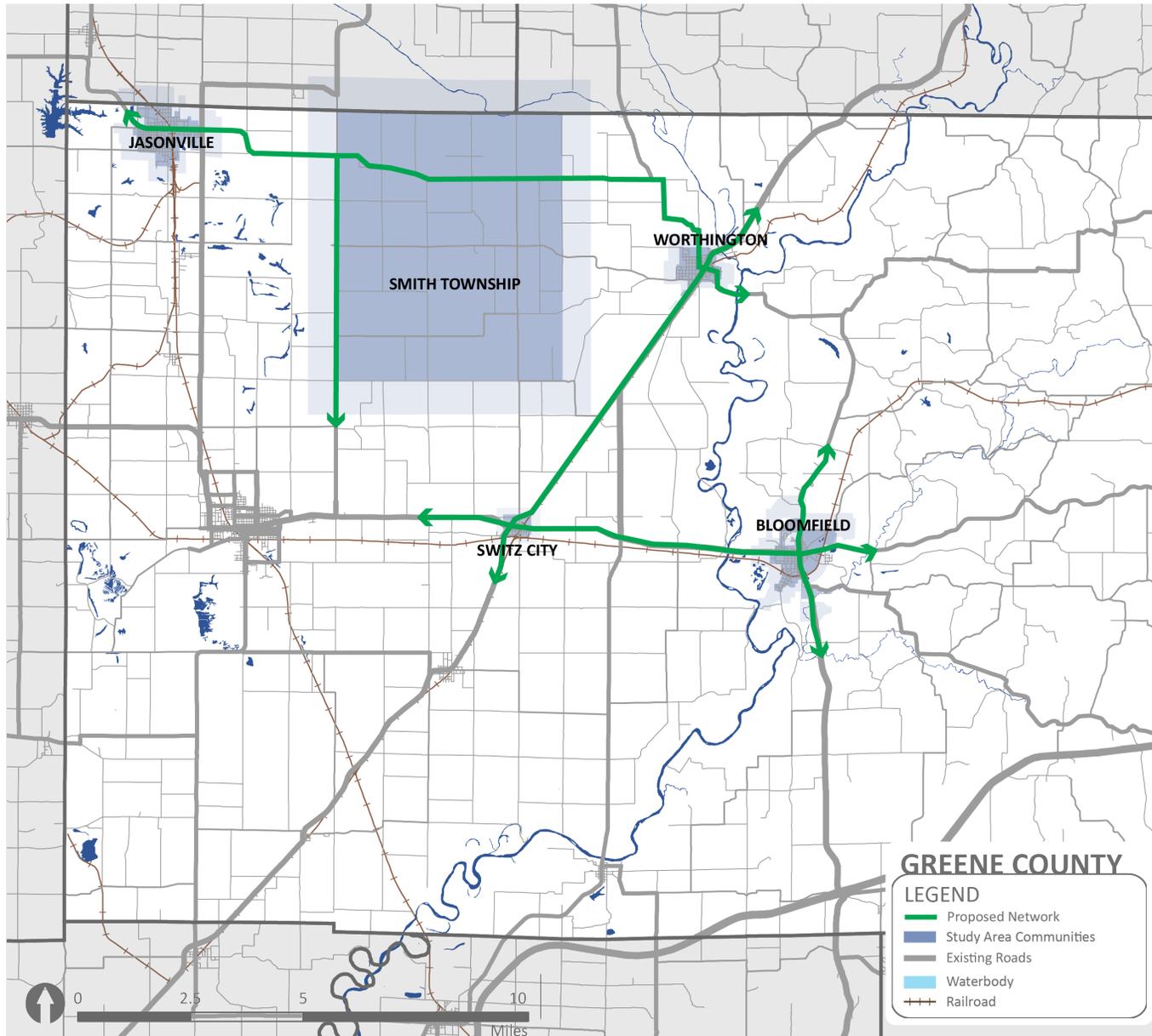
Assumed Subscribers (30% subscriber rate) 252

Monthly Subscriber Fees \$75.00

Annual Gross Revenue \$226,800

Estimated Return on Investment 6.9 Years





Community Connections Potential Costs

Bloomfield to Switz City	5.4 miles
Switz City to Worthington	6.0 miles
Worthington to Smith Township	4.0 miles
Smith Township to Jasonville	3.1 miles

TOTAL DISTANCE 18.2 miles

TOTAL COST (Aerial infrastructure) \$30,420 per mile

TOTAL COST (Buried infrastructure) \$61,220 per mile

Administrative and Financial Methods

Improving the physical infrastructure within Greene County will necessitate a flexible and collaborative set of action steps and processes. While each of the administrative and financial method options are feasible as a single approach, Greene County, and the studied communities, would benefit from a multi-faceted approach that improves the current regulatory environment, utilizes resources and assets currently held by Greene County or their community partners, and accounts for the interests of local private service providers.

Based on the broadband vision and goals outlined in Chapter 4 and the current administrative and financial conditions within Greene County, the following administrative and financial deployment steps are recommended.

1. Policy Updates and Private Internet Service Provider Expansion

As a priority, Greene County should work to improve their public policy tools and processes in an effort to reduce implementation barriers countywide. Additionally, County representatives should work to facilitate private service provider-led investments in Bloomfield, Jasonville and Worthington by identifying local financial and in-kind resources that the County can make available to private utility and internet service providers to incentivize broadband implementation.

Policy Updates

To ensure that there are minimal policy or regulatory barriers to broadband implementation, **Greene County should work to create an efficient and streamlined process by which to review and provide comment on future broadband infrastructure projects.**

The Indiana Economic Development Corporation's (IEDC) Broadband Ready Communities Program outlines a flexible review framework that should become the basis for Greene County moving forward.

By applying for certification with the Broadband Ready Communities Program, Greene County will be prompted to establish a digital submittal portal, a thorough and timely review process, as well as a single point of contact for broadband inquiries. While investment in broadband infrastructure is not guaranteed to immediately follow once Greene County obtains the certification, reducing the regulatory hurdles that deter investment is a key step towards creating an environment ripe for broadband investment.

While Greene County and the studied communities do not have a traditional permitting process or development code, there are improvements that can be made to local public policy to further encourage and incentivize the deployment of broadband infrastructure. **Greene County should work to establish a Dig Once Policy that would apply to both county-led and private-developer-led improvement projects.** A Dig Once Policy establishes that both public and private excavators will coordinate with local government on the installation of fiber conduit whenever ground will be broken in the public right-of-way. By adopting this policy, public and private projects would incur a nominal increase in project expenses to ensure that conduit was laid during construction. Greene County, as the owner of this conduit, could then offer it as an in-kind resource to private service providers or arrange a purchase/lease agreement to the service provider for their infrastructure expansion project.

While Greene County does not have a process by which to enforce this policy currently, adopting a Dig Once Policy is still considered to be a critical first step in deploying future broadband infrastructure. Adopting the policy now will ensure that Greene County will lead by example, incorporating new conduit as a component of their capital improvement projects. Having the policy will also ensure that on any

privately led project the conversation of broadband infrastructure can be addressed and planned for appropriately.

While the policy improvements and Broadband Ready Certification will greatly reduce the actual or perceived barriers to broadband implementation within Greene County, facilitating private service provider investment will also take assets and resources including capital investment. While Greene County has limited capital resources to assign to any broadband infrastructure project, the county, and any of the community organization partners, can assist private service providers in their expansion plans. **As a priority, it is recommended that Greene County, along with their allied community partners, continue to engage in an open dialogue with private service providers about their future plans for the area, their specific concerns and their specific project needs.** In addition to sharing information on the local needs, Greene County should be prepared to assist in the development of state and/ or federal funding applications to help facilitate private service provider expansions. State and Federal Grant programs are outlined in greater detail within Chapter 3.

Additionally, as outlined in Chapter 3, Smithville submitted an application but did not get funded in the first round of Next Level Connections (NLC). While the project focused on northeastern Greene County, and was unfortunately not successful, Smithville is still committed to working with Greene County to improve its broadband access. To prepare for the next round of NLC grant awards, the county should work towards strengthening their application.

2. Public- Private Partnership Agreement

In the event that private service provider investment is slow to gain momentum, it is recommended that Greene County officials and local allied organizations identify a strategic set of resources and assets that could be leveraged in a public- private partnership deployment model. A public-private partnership is a contract between a local government and a private organization, in which the two parties negotiate terms to pool resources and share both the risk and reward of a project. By utilizing the public-private partnership model, Greene County can leverage their limited and strategic resources into a larger long-term investment.

In Kind Resources/ Local Match Opportunities

During the planning process, the Broadband Planning Committee outlined that the capital resources available for any broadband infrastructure project is limited. While the group outlined that capital resources were minimal, they also understood the importance of investing in themselves and the broader community.

It is recommended that Greene County work with their allied community organizations to identify and confirm a set of community assets and in-kind resources that could be made available to private service providers. These assets and resources are intended to be used to reduce implementation costs and encourage subscribership across the community. The following opportunities were identified during the planning process as potential resources or offerings:

- **Assets, Easements or County-Owned Property**

As a private service provider designs the final fiber network, they will need locations for equipment and/or easements for new conduit. If the County or an allied community organization owns property or assets that could be useful, it could be leased to the provider at a low cost or no cost to demonstrate the public-private partnership. Any conduit installed as a part of the implementation of a Dig Once Ordinance would be applicable under this category.

- **Marketing and Customer Service**

Similar to the resources provided under ‘Volunteer Labor,’ existing community partners could provide enhanced customer service or marketing efforts to further assist a private service provider’s local effort. While there are several cross overs to the services offered by general volunteers, there are local organizations that have established marketing departments and customer service departments that could be used in more specific roles.

- **Public Wi-Fi Spots or Computer Portals**

Because Greene County has higher poverty rates and lower household incomes levels, broadband use in a residential household may be limited in some areas. By providing free public Wi-Fi access points within either public parks or community buildings, the County’s residents would have increased access and an increase in their local quality of life. These Wi-Fi spots could be used by students, residents or visitors and are important since cell service throughout the county is not reliable. Additionally, a computer portal(s) could also be provided in a public building so those who cannot afford a computer can still access the internet. Ideally, at least one key public location would be established within each of the study area communities. Establishing these locations will require partnership with local community anchor institutions including local schools, libraries and medical facilities.

- **Volunteer labor**

Local residents can volunteer to support the private service provider’s online registration for new subscribers. Many local service providers have online materials that allow volunteers to educate, promote and help neighborhoods sign up for the new service. Volunteers do not receive any commission or service, but this local advocacy helps to increase adoption rates and therefore allows the provider to expand service faster and more efficiently. Since Greene County has a high instance of baby boomers (ages 50-75), education on the broadband infrastructure is critical to ensuring subscriber retention and adoption. Using provided information, volunteers can work to educate new subscribers on advanced technology and how it can be used throughout the home.

- **Subscriber Assistance**

Knowing that a segment of Greene County’s population has limited income, identifying and establishing a subscriber assistance program could be critical to broadband adoption county-wide. There are existing programs that county residents can use to offset their internet service bill and, while Greene County does not need to establish a program, they can use their resources to educate their residents on the opportunities. As a starting point, Greene County should review and, as appropriate, promote the Lifeline program. Lifeline is a federal program that lowers the monthly cost of phone and internet services, allowing eligible residents the opportunity to get at least \$9.25 towards their service. Lifeline eligibility requirements are tied to income and household size and on average equates to an income level of \$34,000 for a family of four. Lifeline assistance is also tied to specific service providers. While Greene County can work to educate residents, they can also work to collaborate with known service providers in the area to broaden the offerings across the county.

- **Financial Assistance**

While it is understood that capital resources are limited, the county could also include some form of cost sharing with the private service provider so that it could recover those commitments in the future. Limited financial assistance from the county could include:

General Funds

This could be a small incentive offered from local funds such as EDIT or other discretionary funds.

Video Franchise Fees

While not available to the county specifically, incorporated cities and towns can levy a franchise fee from cable providers for services within their municipal boundaries. While these fees are not likely substantial, they can provide a consistent funding stream. The County could work with Bloomfield, Jasonville, Switz City and Worthington to commit to reinvest these fees (or equal dollar amounts), over a set number of years, into additional fiber infrastructure that could be used by private service providers. This would limit up-front investment by the county and incorporated cities and towns but could show a long-term commitment to a provider by supplementing infrastructure costs.

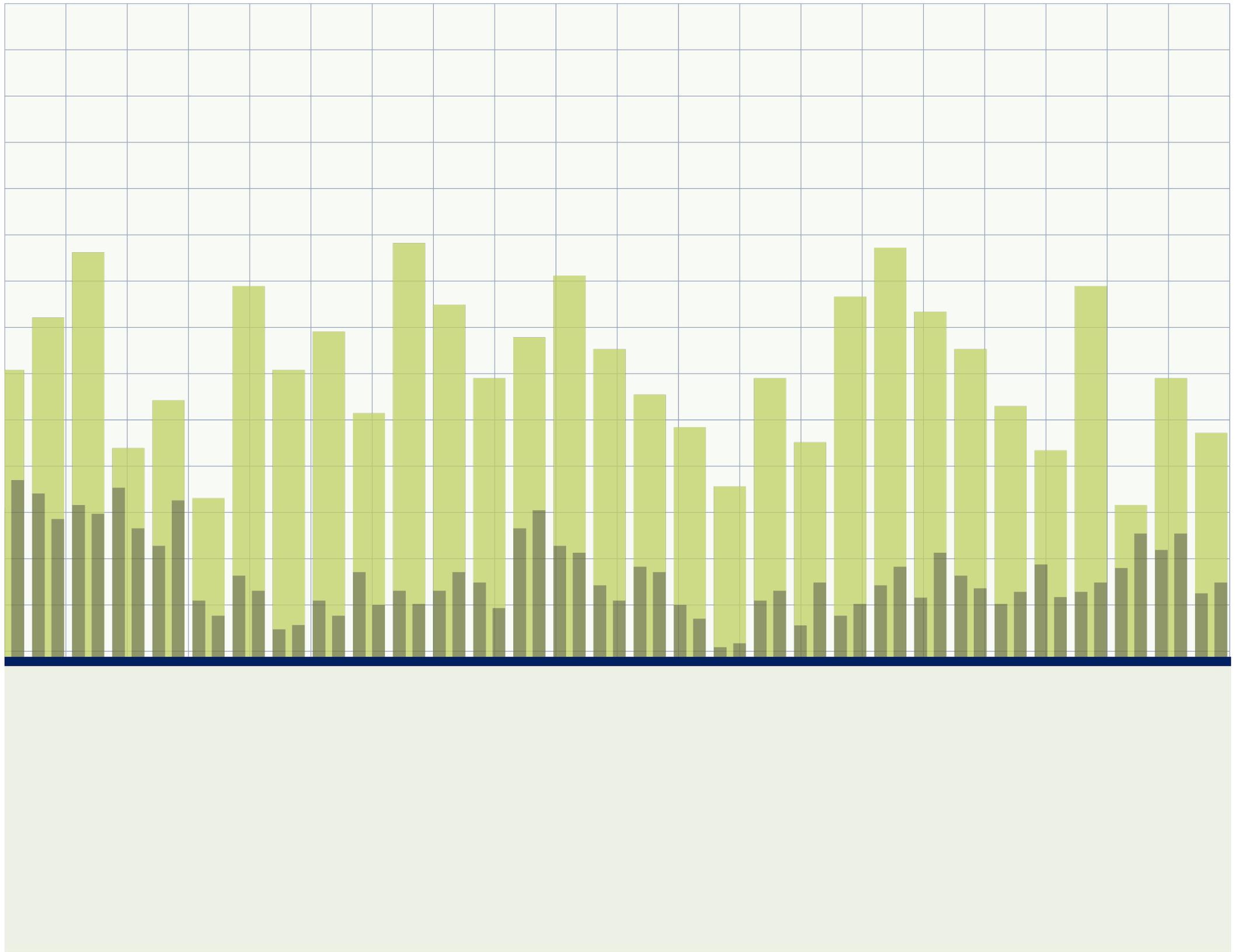
General Obligation Bonds

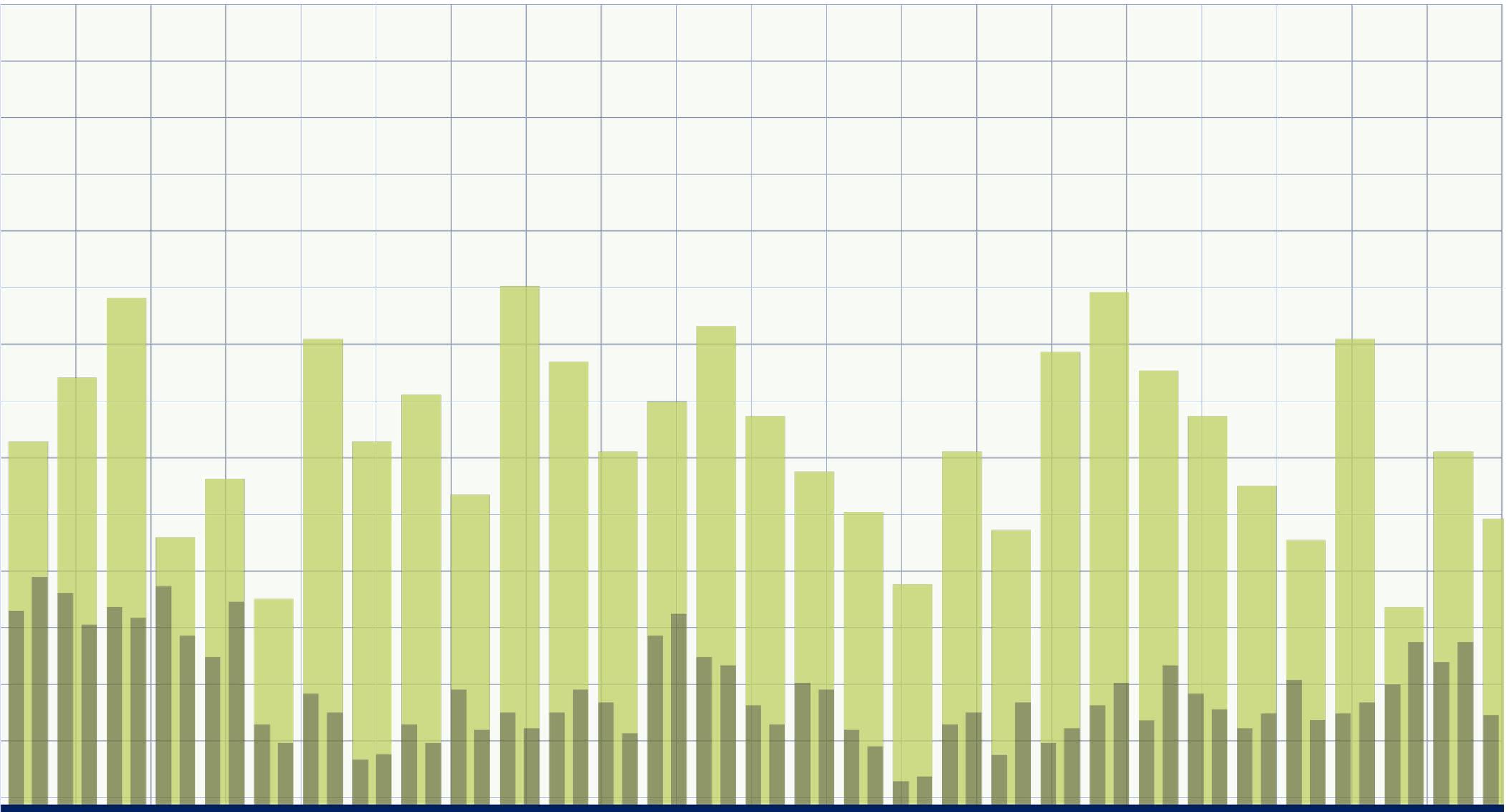
Bonds are generally paid back over a long-term schedule, allowing the county to recoup investment and use collected fees/ revenue to pay back the bonds on time. With bonds paying for the implementation of infrastructure, the county would be the owner of the new fiber optic infrastructure and could either commit to establishing themselves as an internet service provider or lease the infrastructure to local providers who would then provide service to county residents. County governments are

not equipped to become service providers, so if Greene County chooses to use this deployment scenario it is recommended that they establish a process by which they can lease the installed fiber optic infrastructure to private service providers. These long-term lease agreements would then provide the county with a revenue stream that could be used to pay off bond debt.

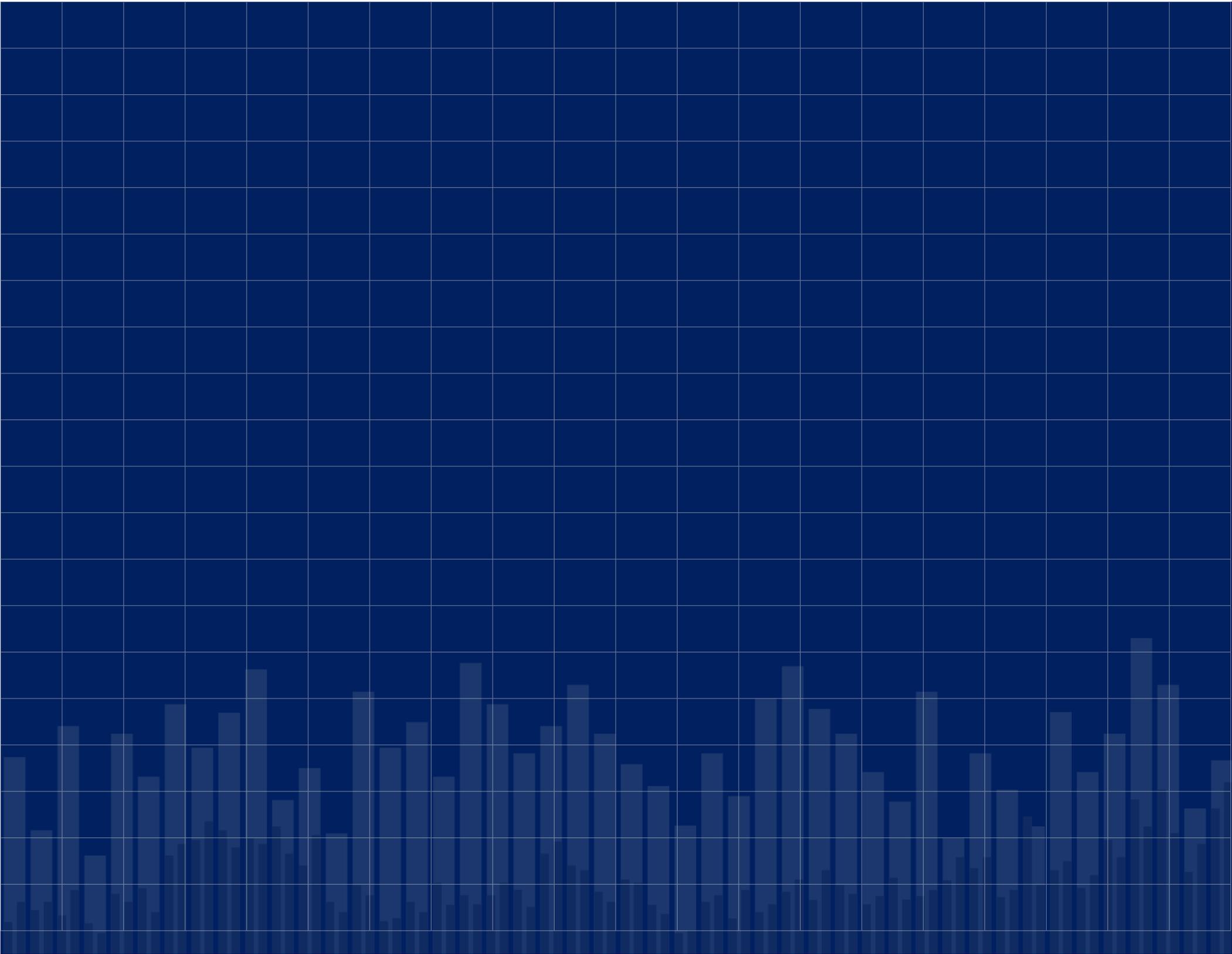
Following the identification of available assets and resources, **it is recommended that Greene County work to develop and publish a Request for Proposal that focuses on the service needs of one community at a time.** As identified previously, due to density, available users and implementation methods, the RFP should focus on either Jasonville or Bloomfield as a priority. By working in these communities first, deployment and implementation will likely have a higher success rate. At a minimum, the RFP should outline any studies or work done to date, the county's long-term vision for broadband, a synopsis of the county's general demographic condition, the goals of the project, any project specific requirements and the incentives being offered by the county. A model RFP is included within Appendix 'C'.

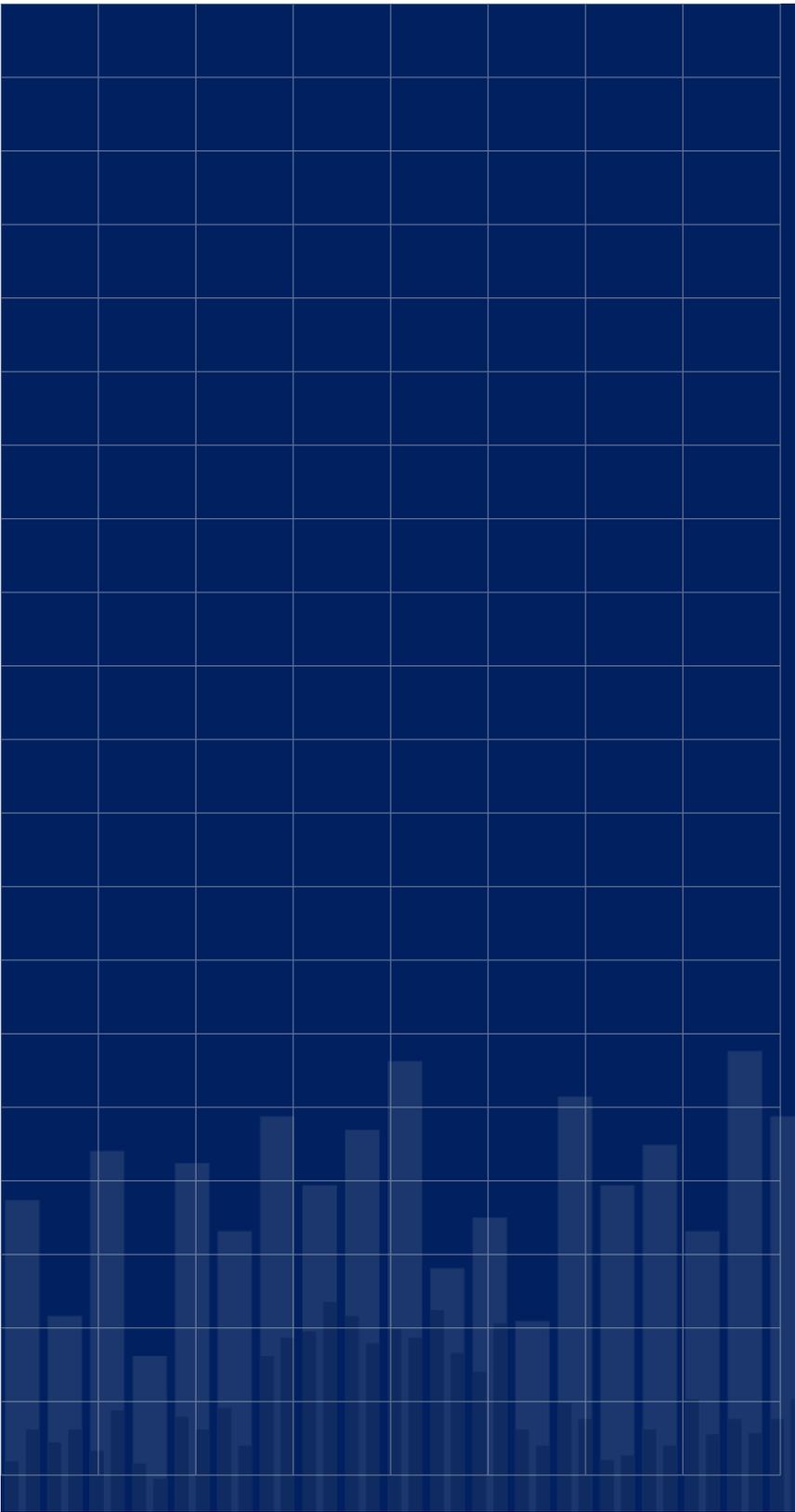
For specific information on deployment action steps refer to Chapter 6: Action Items.





Action Steps 6





Implementation is not a one-time event; instead, it is a series of both large and small wins over the course of time. The implementation of fast, reliable and affordable broadband infrastructure will require the collaboration of public and private entities including residential and commercial properties owners. The establishment of these cooperative groups, and the tasks that they in turn implement, are often identified as ‘critical path strategies.’ Critical path strategies are the high-priority action steps that any community should use to move towards their common goals and future vision. Using the Deployment Model Recommendations outlined in Chapter 5, a series of ongoing, short-term and long-term action steps were identified that individually and together will assist in improving the broadband infrastructure within Greene County. While some initiatives will take place over a long period of time, a focus has been placed on both short-term and ongoing initiatives to help Greene County maintain the momentum gained during this *Broadband Readiness Plan* process.

The critical path strategies identified as being critical to the implementation of broadband systems are outlined in the following summary matrix. To better identify the appropriate next steps, each critical path strategy is outlined in greater detail to provide guidance on the action steps, responsible parties, general timeframe, necessary pre-requisites and estimated costs.

Since many of the proposed strategies are focused internally on the county’s organizational structure and processes, providing opportunities for public engagement should be an important component of implementation. All of the identified strategies will benefit from informing the public of changes, improvements and anticipated impacts and benefits, along with a timeline for when the public can expect to see physical change across the communities. Creating and implementing a public outreach process, prior to the implementation of these strategies, should allow Greene County residents time to prepare, educate themselves and speak out on initiatives, all of which should mitigate negative public reaction in the long run.

Following the completion of these eleven action steps and the implementation of reliable, fast broadband service, the Greene County Broadband Task Force should convene to determine applicable next steps that focus on leveraging the new broadband technology to improve upon the County’s workforce, education and curriculum as identified in Chapter 4: Broadband Vision and Key Goals.

Strategy	Timeframe
Establish a cooperative Broadband Task Force, consisting of county and municipal leaders, County road and utility department heads, County and community stakeholders, utility providers and private internet service providers that meet on a regular basis.	0-2 Months
Identify a single point of contact for all broadband related matters, including the coordination of potential and future broadband related infrastructure within public works projects.	0-2 Months
Establish a permitting procedure that allows for collaboration at all phases of project development and provides for a thorough project review, prior to implementation.	0-2 Months
Adopt a Broadband Readiness Resolution, at the county level that meets the requirements of the Indiana Economic Development Corporation’s (IEDC) Broadband Ready Communities program.	0-2 Months
Apply for and obtain certification through the IEDC Broadband Ready Communities program.	0-2 Months
Draft and adopt a ‘Dig Once’ policy to reduces implementation costs and procedural barriers.	3-6 Months
Identify and assist in the preparation and submittal of grants or other funding applications.	On going
Identify strategic public access points or coworking facilities throughout Greene County.	3-6 Months
Identify local financial and in-kind resources that can be made available to private utility and internet service providers to incentivize broadband implementation.	3-6 Months
Finalize the structure, organization, and cost sharing details necessary to establish a Public Private Partnership .	6-8 Months
Draft and administer a Request for Proposal (RFP) to identify potential partnerships, timelines, plans and costs for broadband deployment initiatives.	6-12 Months

ACTION STEPS

1.0	Establish a cooperative Broadband Task Force, consisting of county and municipal leaders, County road and utility department heads, County and community stakeholders, utility providers and private internet service providers and meet on a regular basis.
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SUMMARY

Work with identified project partners and project supporters to assemble an ad hoc leadership task force that will guide development and implementation of a series of broadband topics. It is recommended that the task force consist of at least one key leader from each of the incorporated communities. Additional members should be chosen to best represent local department heads, utility providers and critical anchor institutions. Representatives from private internet providers are also encouraged to participate. Members of the task force should be passionate about Greene County, be able to collaborate, and should be able to communicate with local leaders. **The primary purpose of this task force is to oversee the implementation of the action items outlined within this Chapter.**

PRE-REQUISITES	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
None	Greene County Town of Bloomfield City of Jasonville City of Switz City Town of Worthington Bloomfield School District Eastern Greene Schools Linton-Stockton School Corporation MSD of Shakamak Schools White River Valley School District Greene County General Hospital Purdue Extension Greene County Community Foundation Utilities District of Western Indiana REMC Private Internet Service Providers	0-2 Months	Low	Establishment of Broadband Task Force Number of meetings per quarter

ACTION STEPS

2.0	Identify a single point of contact for all broadband related matters including the coordination of potential and future broadband related infrastructure within public works projects.
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SUMMARY

Following the organization of the Broadband Task Force, the group should identify one point of contact for broadband matters, including ongoing coordination initiatives, project development and project deployment. The primary point of contact should be prepared to represent the needs and aspirations of Greene County and all of the incorporated cities and towns. **The primary point of contact will be charged with ensuring that broadband initiatives are included in future site development projects and future road and utility projects. Additionally, the primary point of contact will ensure that ongoing community programming initiatives consider the use and impact of broadband technology and infrastructure.**

PRE-REQUISITES	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
Strategy 1.0	Broadband Task Force	0-2 Months	Low	Selection of a primary point of contact

ACTION STEPS

3.0	Establish a procedure that allows for collaboration at all phases of project development and provides for a thorough project review prior to implementation.
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SUMMARY

In partnership with Greene County leaders, the Broadband Task Force should outline a procedure for the review and approval of broadband projects. The process should ensure that materials can be submitted electronically either through a web-based form or through a county email system. In addition to the digital submittal, the procedure should account for a 10-day turnaround time (business days). Within the 10 business days, the governing body should respond to the applicant with an approval or rejection notice. **The Broadband Task Force and the primary point of contact should be involved in the development of the procedure to ensure that process information is shared in a reliable and consistent manner. Greene County leaders are responsible for the implementation of the electronic submittal and the execution of the 10- day review process.**

PRE-REQUISITES	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
Strategy 1.0	Broadband Task Force Greene County Town of Bloomfield City of Jasonville City of Switz City Town of Worthington	0-2 Months	Low	Establishment of procedure Establishment of digital submittal process Execution of a 10-day review process

ACTION STEPS

4.0	Adopt a Broadband Readiness Resolution at the county level that meets the requirements of the Indiana Economic Development Corporation’s (IEDC) Broadband Ready Communities program.
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SUMMARY

Using the Indiana Economic Development Corporation’s (IEDC) model ordinance as a guide, Greene County should pass an ordinance that clearly outlines the selection of a single point of contact for broadband project matters, the establishment of a 10-day review process with the ability to submit applications via digital technology and the assurance of a timely inspection process following implementation. Additionally, the ordinance needs to ensure that permit costs are in line with existing county processes. **Greene County leaders are responsible for the drafting, review and adoption of the Broadband Readiness Resolution.**

The final, approved resolution should be included under Appendix ‘A’ for future reference and use.

PRE-REQUISITES	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
Strategy 1.0 Strategy 2.0 Strategy 3.0	Broadband Task Force Greene County Town of Bloomfield City of Jasonville City of Switz City Town of Worthington	0-2 Months	Low	Adoption of ordinance

ACTION STEPS

5.0 Apply for, and obtain certification through the IEDC Broadband Ready Communities program.

SUMMARY

The Broadband Ready Communities Development Center was created as a tool to encourage broadband development throughout Indiana by serving as an information resource and certifying local communities as being broadband ready. The purpose of the certification is to encourage broadband investment by implementing a simple application and permitting process. To receive the certification, local governments must provide broadband projects with a single point of contact and a guarantee that applications will be approved or rejected within 10 business days after they are filed. **The Broadband Task Force primary point of contact should submit an online application using the information and tools found here: <https://www.iedc.in.gov/programs/capital-access-program/broadband-ready-communities-development-center/apply>**

The final approved application, and associated certification letter should be included under Appendix 'A' for future reference and use.

	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
The final approved application, and associated certification letter should be included under Appendix 'A' for future reference and use.	Broadband Task Force Indiana Economic Development Corporation (IEDC)	0-2 Months	Low	IEDC Broadband Ready Community Program Designee

ACTION STEPS

6.0	Draft and adopt a ‘Dig Once’ policy to reduce implementation costs and procedural barriers.
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SUMMARY

The ‘Dig Once’ measure is a public policy that would require the installation of additional utility conduit when implementing sidewalk, roadway and utility corridor improvements. During the development of the ‘Dig Once’ policy, the Broadband Task Force should work to identify a project prioritization process to ensure that consistent priorities are identified when dig once opportunities emerge, and that resources are not wasted in building conduit that is unlikely to be used. Additionally, during the policy development phases, officials should work to identify a standard specification for work to identify conduit size/ capacity, access and preferred layout. **The Broadband Task Force should collaborate with private internet service providers during the development of the ‘Dig Once’ policy to ensure that the final policy does not become an unintended challenge to implementation. Additionally, the Task Force should work with the County Attorney on the final language and adoption process.** A model Dig Once Ordinance is included in Appendix ‘B’ of this document.

PRE-REQUISITES	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
Strategy 1.0	Broadband Task Force Greene County Attorney Private Internet Service Providers	3-6 Months	Low	Drafting of Dig Once policy Adoption of Dig Once policy

ACTION STEPS

7.0

Identify and assist in the preparation and submittal of grants or other funding applications.

SUMMARY

As outlined in Chapter 5, a priority should be placed on facilitating private internet service provider expansion throughout Greene County. **To assist in this effort, Greene County and the Broadband Task Force should be prepared to assist in the identification of grants and funding sources and participate in the preparation and submittal of specific funding applications.** While the development of new or modified public policies and the identification of available resources is not directly tied to this action step, finalizing these efforts before undertaking this action step could result in more efficient timelines, reduce costs and strengthen partnerships, which could then result in more successful funding applications.

PRE-REQUISITES	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
<p>Strategy 1.0</p> <p>Strategies 8.0 and 9.0 can be used in this process but are not pre-requisites</p>	<p>Broadband Task Force</p> <p>Private Internet Service Providers</p>	<p>Ongoing</p>	<p>Low-Medium</p>	<p>Identification of grant or funding application</p> <p>Submittal of funding application</p>

ACTION STEPS

8.0 Identify strategic public access points or coworking facilities throughout Greene County.

SUMMARY

While improving the broadband infrastructure within the incorporated cities and towns will provide additional broadband access options to local businesses and residents, broadband adoption could be impacted by the local demographics, income levels and educational attainment levels. Not every resident in Bloomfield, Jasonville, Smith Township, Switz City or Worthington will be able to afford the service available to them, so providing opportunities for these individuals to access and utilize the new infrastructure is critical to the overall quality of life in Greene County. To assist in this effort, the Broadband Task Force should work with appropriate stakeholders to identify at least one strategic location within each community where free Wi-Fi and computer portals can be used by the general public. While these locations will need infrastructure or equipment to function, these investments can be leveraged as a part of a broader incentive package for private service providers.

PRE-REQUISITES	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
Strategy 1.0	Broadband Task Force Greene County Private Internet Service Providers	3-6 Months	Low	Identification of strategic locations Identification of resources and/ or equipment needed for each location

ACTION STEPS

9.0

Identify local financial and in-kind resources that can be made available to private utility and internet service providers to incentivize broadband implementation.

SUMMARY

While a number of partner organizations, available infrastructure assets and funding mechanisms were identified within this study, the final selection of which financial and in-kind resources the county will utilize is a broader topic of discussion that was outside the scope of this effort. While Greene County was the sponsor of this effort, some municipalities were excluded from the analysis and some unstudied areas of the County could likely have a higher demand and need for internet service than those outlined here. The final selection of resources, especially those resources tied to capital investment, should be based on specific projects, service areas and municipal partnerships.

Each member of the Broadband Taskforce represents a different organization, each with a unique set of resources. When working to create partnerships with a service provider, determining what resources could be provided is important, since these items could be used to offset or supplement implementation costs. Both the county and service provider can benefit from this, and it may increase the chance of a successful partnership and broadband infrastructure installation. While financial resources are always a priority, Greene County and its partners could also offer in-kind services, material, equipment or labor, which the county commits to the provider if fiber installation occurs. These often help lessen barriers for installation. The Broadband Task Force should work with appropriate stakeholders to identify a list of assets and resources that could be used to facilitate the implementation of broadband infrastructure. It is recommended that the Task Force also coordinate this effort with private internet service providers to better define the real and useable resources Greene County has to offer.

The final determination of applicable resources should be made by the Greene County Commissioners. Using the list of available assets and resources, the Commissioners should best identify those tools that align with the project. The selection of final tools should also take into consideration any requests and/ or suggestions made from private internet service providers to ensure that county investments match their anticipated needs.

PRE-REQUISITES	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
Strategy 1.0	Broadband Task Force Greene County Private Internet Service Providers	3-6 Months	Low- Medium	Creation of financial and in-kind resources listing

ACTION STEPS

10.0 Finalize the structure, organization and cost sharing details necessary to establish a Public Private Partnership.

SUMMARY

In the event that private service provider investment is slow to gain momentum, as outlined in Chapter 5, it is recommended that Greene County officials’ partner with a private service provider to implement broadband infrastructure within key communities. By forming a collaborative partnership with a local service provider, Greene County officials can work to leverage existing public policy improvements and available financial and in-kind resources that are available through the county and their community partners. The creation of this Public Private Partnership should come after all other action items are completed, although the process to review and establish necessary cooperative agreements could begin immediately. **While the Broadband Task Force should be involved in discussions, Greene County, private service providers and supporting legal teams will need to champion this task.**

PRE-REQUISITES	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
Strategy 1.0 Strategy 2.0 Strategy 3.0 Strategy 4.0 Strategy 5.0 Strategy 6.0 Strategy 7.0 Strategy 8.0 Strategy 9.0	Broadband Task Force Greene County Greene County Attorney Town of Bloomfield City of Jasonville City of Switz City Town of Worthington Private Internet Service Providers	6-8 Months	Medium	Creation of organizational structure Creation of cost/ revenue sharing model Establishment of a Public Private Partnership

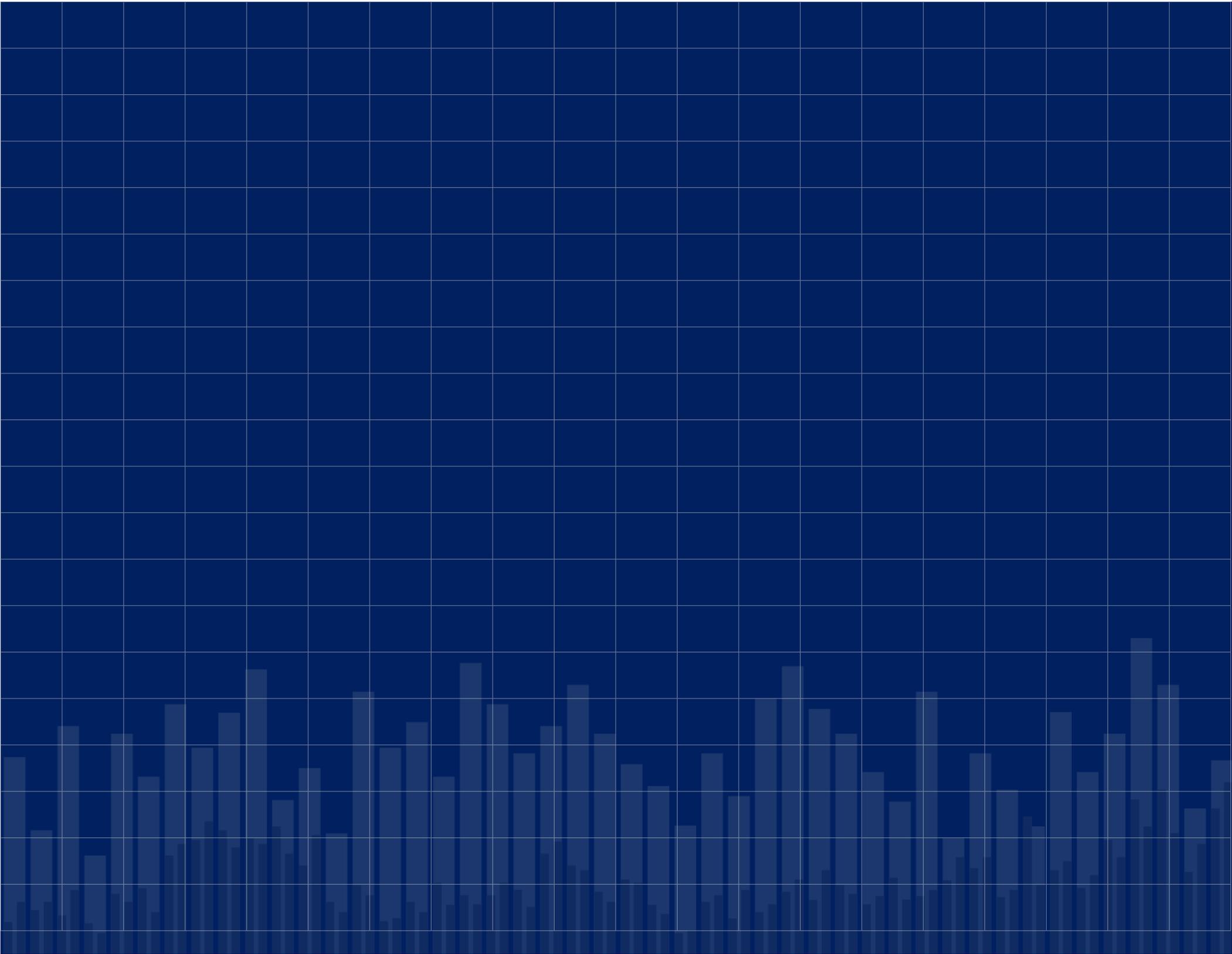
ACTION STEPS

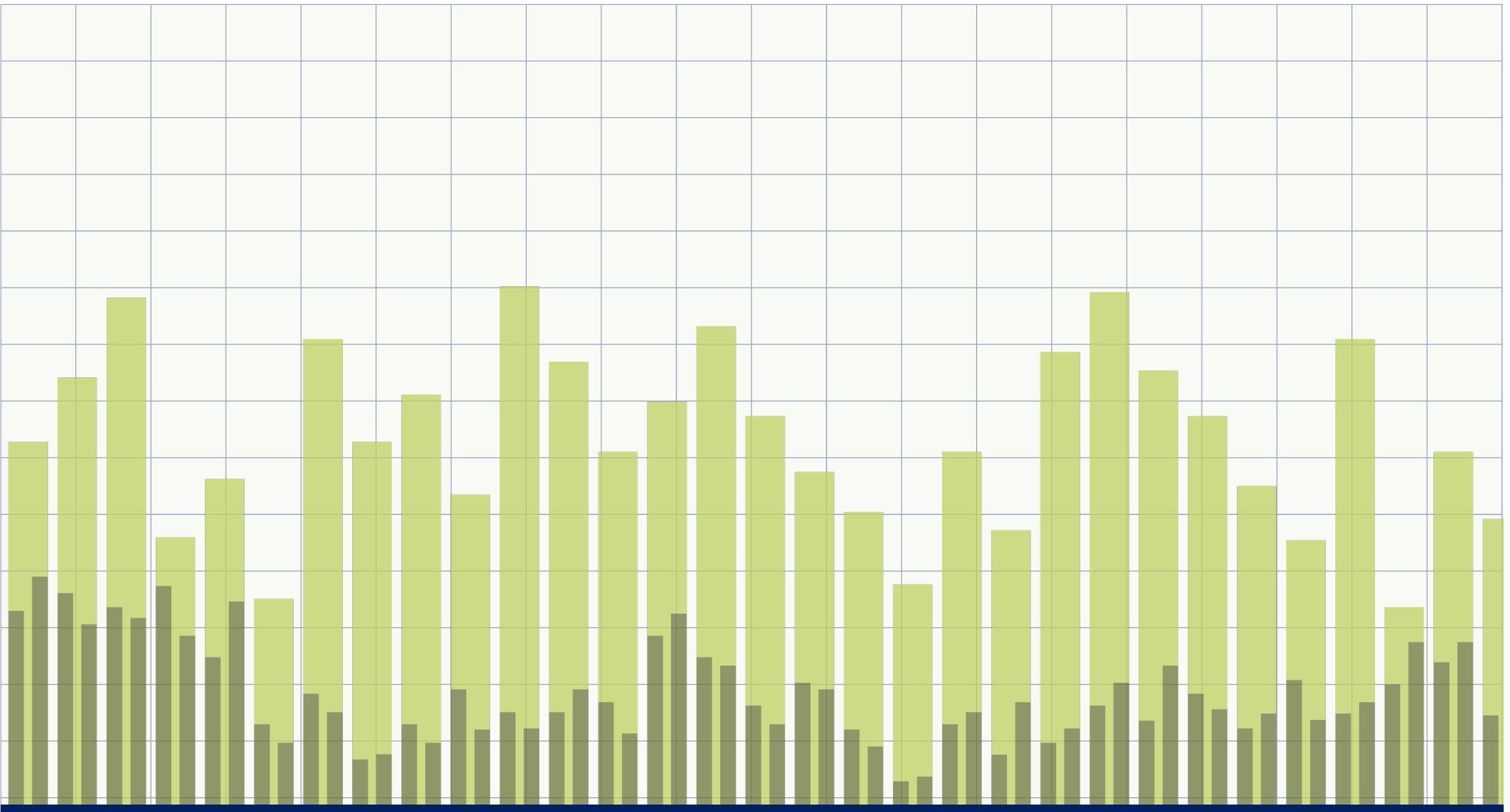
11.0	Draft and administer a Request for Proposal (RFP) to identify potential partnerships, timelines, plans and costs for broadband deployment initiatives.
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SUMMARY

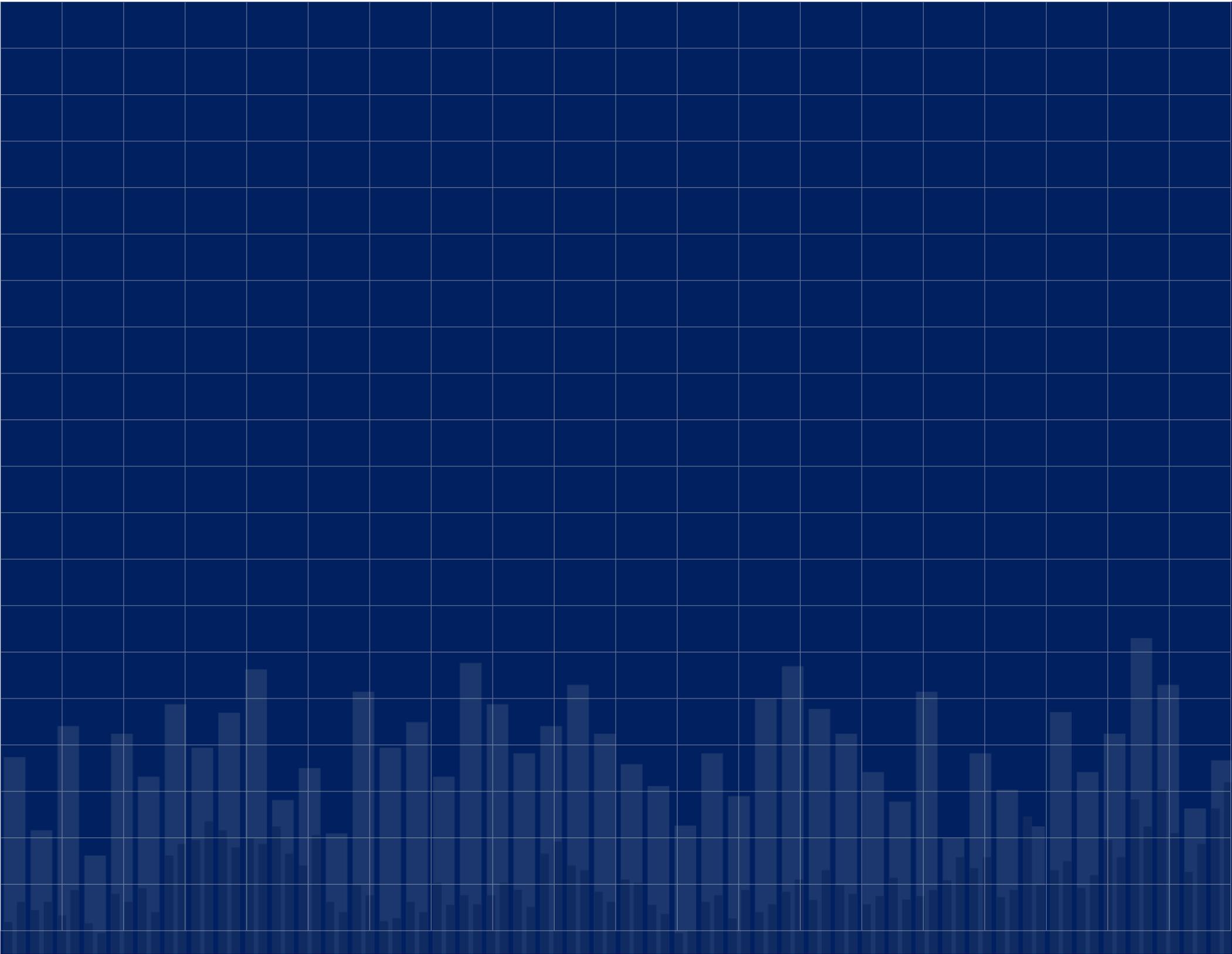
If private internet service providers are reluctant or otherwise slow to expand within Greene County, it is recommended that Greene County issue a Request for Proposal to identify applicable plans and costs for broadband deployment initiatives. **With the support of the Broadband Task Force, and their allied community partners, Greene County would lead the development, review and ultimately publication of the Request for Proposal process.** The Request for Proposal would utilize the information included in the Broadband Readiness Study and the outcomes of each of the identified critical path strategies to create an incentive package available to private internet service providers. Using the information and resources provided, service providers could then establish an applicable plan that includes costs and timelines for specific areas. A model RFP is included in Appendix ‘C’ of this document.

PRE-REQUISITES	PARTIES TO INVOLVE	TIME FRAME	ESTIMATED COST	MEASURING SUCCESS
Strategy 1.0 Strategy 2.0 Strategy 3.0 Strategy 4.0 Strategy 5.0 Strategy 8.0 Strategy 9.0 Strategy 10.0	Broadband Task Force Greene County Private Internet Service Providers	6-12 Months	Medium- High <i>(depending on identified funding and resources)</i>	Issuance of RFP Number of RFP submittals





Appendix **A**





BROADBAND READY COMMUNITY CERTIFICATION

The certification as a Broadband Ready Community communicates that Greene County has completed the steps to significantly reduce potential barriers to the expansion of broadband services in the area. The Greene County Commissioners approved an resolution required under the minimum requirements under IC 5-28-28.5-7 on February 18, 2020. The application was submitted to the Indiana Economic Development Corporation (IEDC) on February 25, 2020 to gain approval for Greene County to be certified as a Broadband Ready Community and approved on March 12, 2020.

RESOLUTION NO. 2020-02
GREENE COUNTY COMMISSIONERS
RESOLUTION ESTABLISHING PROCEDURES IN BROADBAND READY
COMMUNITY

WHEREAS, the Greene County Commissioners (“Commissioners”) seek to promote private investment in broadband infrastructure; and

WHEREAS, the Commissioners seek Greene County (“County”) to be designated as a Broadband Ready Community pursuant to IC 5-28-28.5-1 et seq.; and

WHEREAS, IC 5-28-28.5-7 requires that the county establish a procedure to review applications and to issue permits for projects in order to be certified as a broadband ready community,

NOW THEREFORE, the Commissioners resolve as follows:

Section 1. Definitions:

- A. As used herein, "permit" means any local permit, license, certificate, approval, registration, or similar form of approval required by policy, administrative rule, regulation, ordinance, or resolution with respect to a project.
- B. As used herein, "project" means the construction or deployment of wireline or wireless communications facilities to provide communications services (as defined in IC 8-1-32.5-3) in a unit.

Section 2. Notwithstanding any other provision of the County’s ordinance, regulation, policy or practice, the following shall apply to a project:

- A. The Commissioners unit shall:
 - i. appoint a single point of contact for all matters related to a project;
 - ii. establish procedures to allow all forms, applications, and documentation related to a project to be filed or submitted and signed by electronic means;
 - iii. review and approve or reject all applications for a permit related to a project within ten (10) business days after an application is filed or submitted;
 - iv. assure that after an application is approved pursuant to subsection (a)(3), any inspections, including any additional necessary approvals, related to a project will occur in a timely and expeditious manner.

Section 3. The Commissioners shall adopt adequate processes and procedures to implement the provisions of Sec. 2. Processes and procedures established hereunder may not do the following:

- i. Require an applicant to designate a final contractor to complete a project;
- ii. Impose a fee to review an application or issue a permit for a project;
- iii. Impose a seasonal moratorium on the issuance of permits for a project;
- iv. Discriminate among communications service providers or utilities with respect to any action described in this section or otherwise related to a project, including granting access to public rights-of-way, infrastructure and poles, river and bridge crossings, and any other physical assets owned or controlled by the County.

So resolved this 18th day of February, 2020.

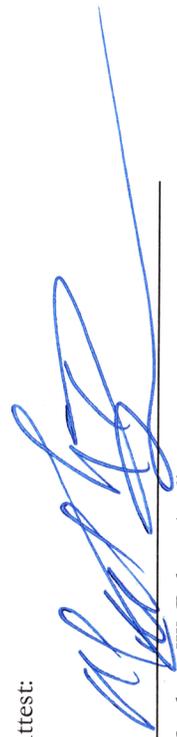
BOARD OF COMMISSIONERS OF THE
COUNTY OF GREENE, INDIANA, by:


Nathan L. Abrams, President


Rick Graves, Commissioner


Edward L. Michael, Commissioner

Attest:


Matthew W. Baker, Auditor



VIA EMAIL

March 12, 2020

Nathan Abrams
President, Greene County Commissioners
1 E. Main Street Bloomfield, IN 47424
Via email to Brianne Jerrels at brianne@insidegreenecounty.com

Re: Broadband Ready Community Certification for Greene County

Mr. Abrams,

The Indiana Economic Development Corporation (“IEDC”) has reviewed your application for certification as a Broadband Ready Community. Based upon our review of the application and pursuant to Ind. Code § 5-28-28.5, I am pleased to inform you that the IEDC hereby approves your request and certifies Greene County as a Broadband Ready Community. The certification is effective as of the date of this letter.

Becoming certified as a Broadband Ready Community sends a signal to the telecommunications industry that Greene County has taken steps to reduce barriers to broadband infrastructure investment by establishing a permit procedure in compliance with Ind. Code § 5-28-28.5-7. Please note that in order to maintain the certification, Greene County has an affirmative duty to notify the IEDC of any changes to the permit procedure or single point of contact in a timely manner.

The IEDC is pleased to support the investment in broadband infrastructure within Greene County by certifying it as a Broadband Ready Community, and we look forward to working with you to ensure success and continued employment growth in your community. Please contact me at MWasky@iedc.IN.gov or 317-232-8833 if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Mark Wasky".

Mark Wasky
Vice President, Innovation & Strategic Initiatives

Mr. Nathan Abrams
03/12/2020
Page 2

Broadband Ready Community – Greene County
Point of Contact for Broadband Infrastructure Projects

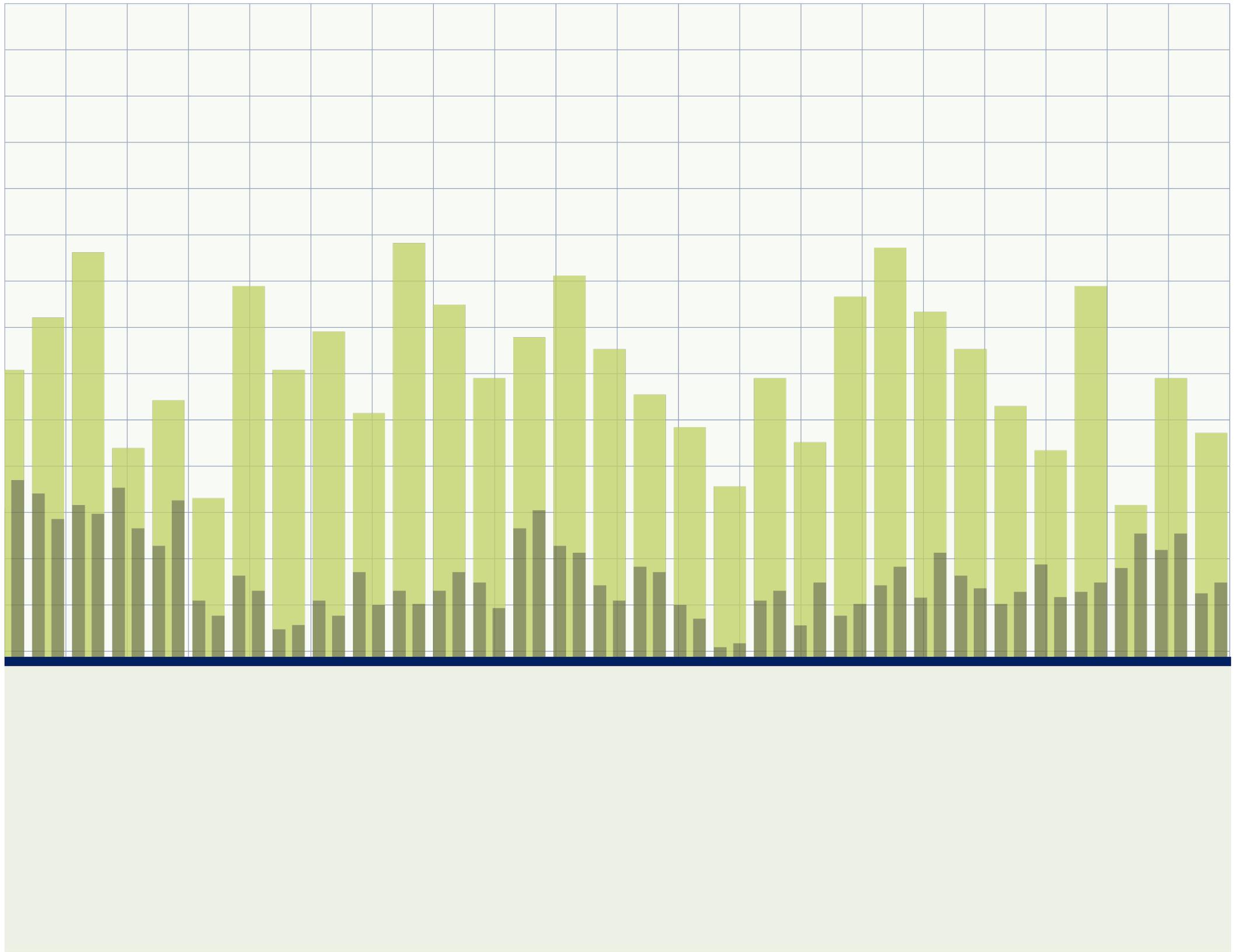
Name: Brianne Jerrels

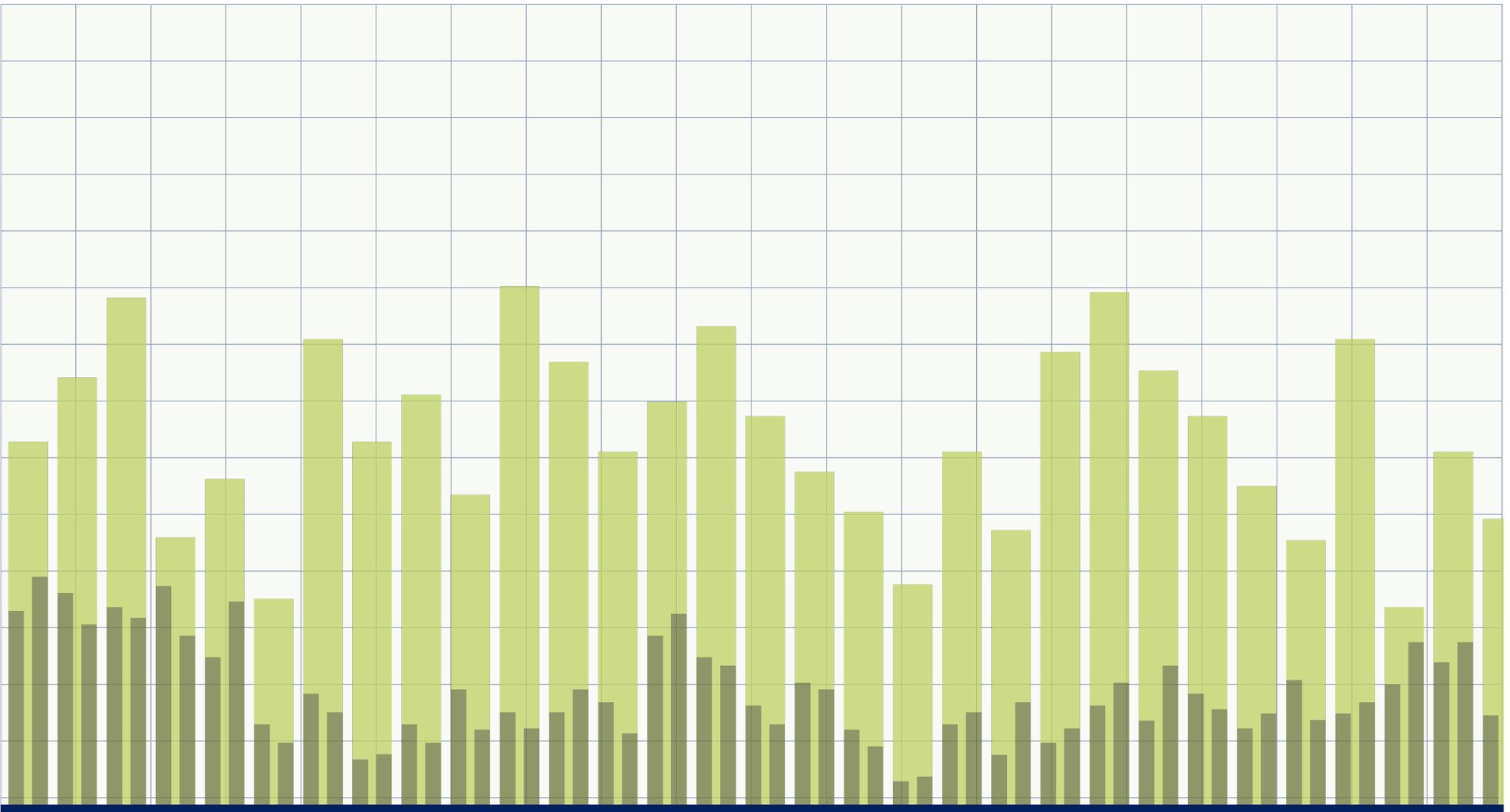
Title: Executive Director, Greene County Economic Development Corporation

Address: 4513 West State Road 54, Suite 105 Bloomfield, IN 47424

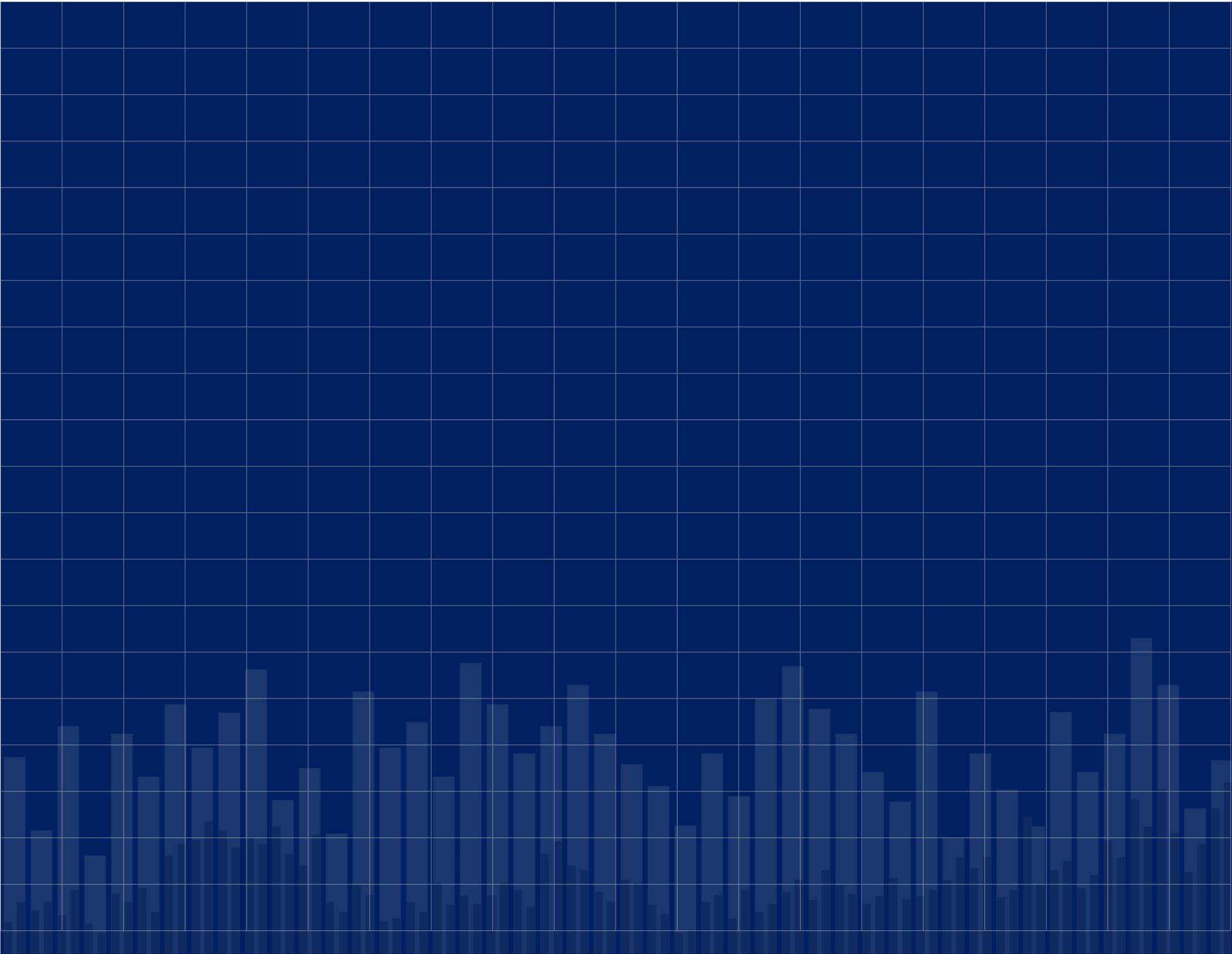
Phone: (812)659-2109

Email: brianne@insidegreencounty.com





Appendix **B**





DIG ONCE POLICY

To aide the development of a Dig Once Policy, the following language was adapted from a dig once policy in The City of Gonzales, California. The policy is used primarily for public works projects, including construction and maintenance of transportation and utility infrastructure. Excavators in the public right-of-way are required to install communications conduit. An exception is allowed if the City of Gonzales determines there is insufficient cost benefit.

This policy was identified as a best practice because of its focus on City led projects and its simplicity. The policy is outlined within 1 page and clearly articulates the intention of the policy, the process by which to meet the policy and the end ownership of the newly placed conduit.

Dig Once Policies can be increasingly complicated and include a variety of unique and specific sections based on the needs of the community.

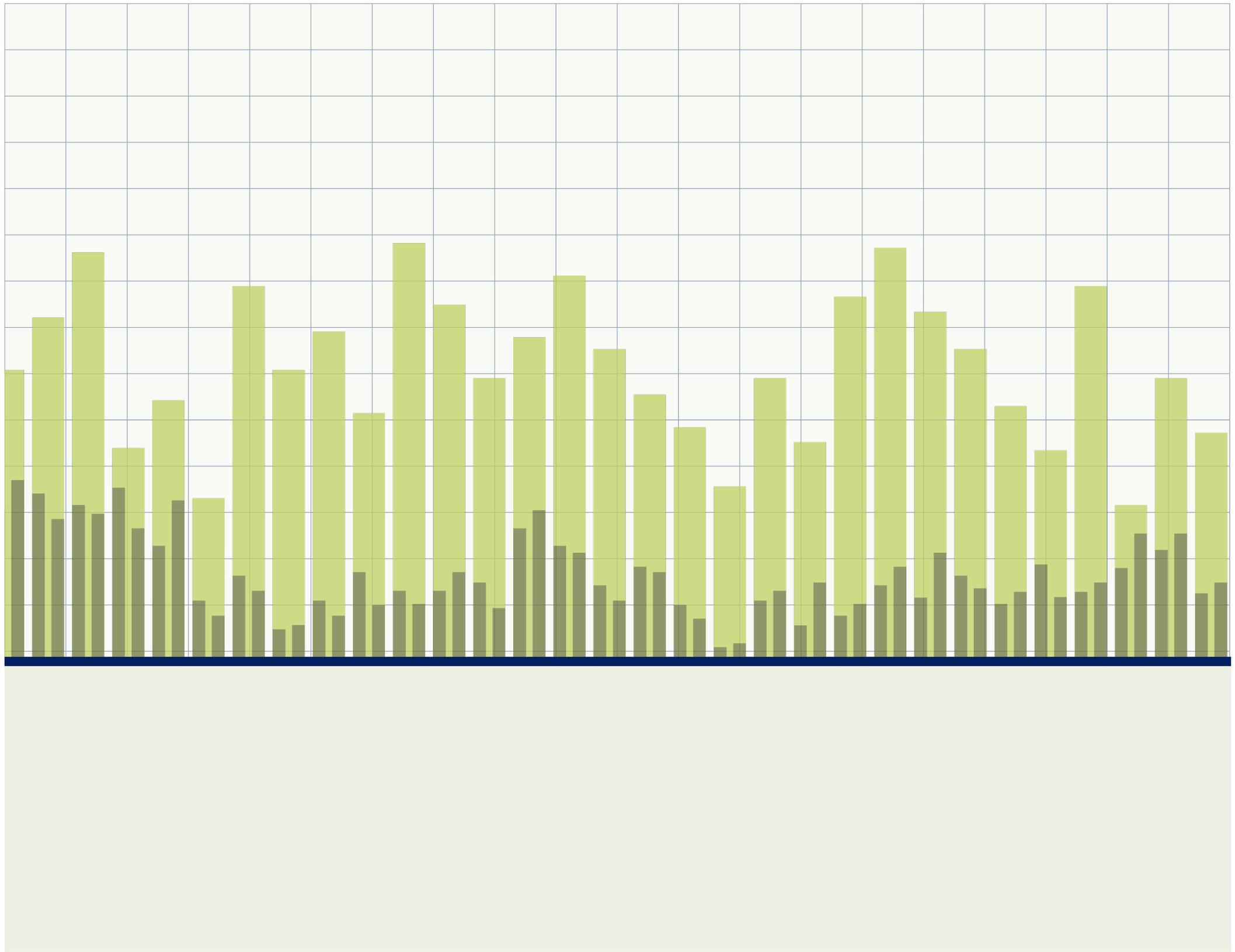
The following language is offered only as a guide. As Greene County moves forward with drafting their own Dig Once Policy, the Broadband Task Force, Greene County Commissioners and the County Attorney will need to discuss the specific needs of the community in order to finalize the language.

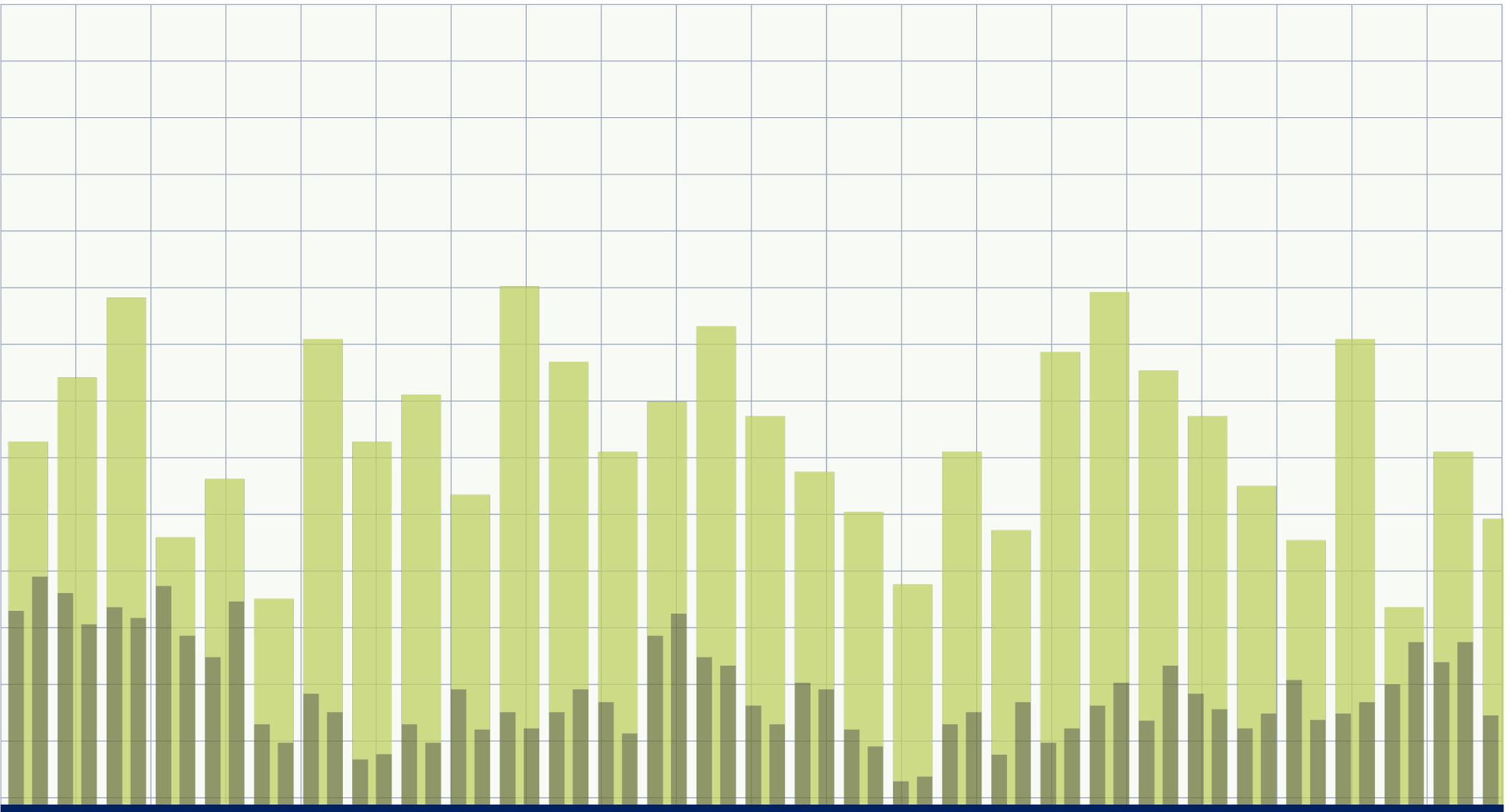
Model "Dig Once" Policy for Public Works Projects in Greene County

1. Unless waived by the Public Works Director on the basis of undue burden, or an unfavorable cost-benefit analysis, or the consideration of other relevant factors, Greene County will install or have installed communications conduit whenever the County undertakes or authorizes the following types of projects:
 - a) New street, road, sidewalk, bike path, or other transportation infrastructure construction.
 - b) Maintenance, repaving or other significant work on the above infrastructure.
 - c) Excavations for the purpose of installing utilities, including but not limited to communications, electrical, gas, water, waste water, storm drainage.
 - d) Other excavations, or work on public property on in the public right of way that provide a similar opportunity to install conduit for future use at a low additional cost.
2. The Public Works Director will work with other local agencies to establish common standards for the type, size, and number of conduits and associated fixtures to be installed. Until these standards are established, a single conduit will be installed with the following specifications, unless the Public Works Director or Project Manager determines otherwise:
 - a) A minimum inside diameter of 2-inches.
 - b) Made of PVC Schedule 40 material (color orange).
 - c) Laid to a depth of not less than 18 inches below grade in concrete sidewalk areas, and not less than 30 inches below finished grade in all other areas when feasible, or the maximum feasible depth otherwise.
 - d) When feasible, installed so fiber optic cable maintains a minimum bend ratio of 20-times the cable diameter.
 - e) When practicable, furnish with pull tape and an external locate wire no more than 3-inches above the conduit.
3. When determining if a particular specification is feasible or practicable, the Public Works Director or Project Manager will take into account the added cost, the length of the conduit installed (and therefore its potential future value), the impact on the overall project, and other relevant factors.
4. Because communications facilities are needed to monitor, manage, and provide security for Public Works specifically, and to support Public Safety and Economic Development in general, the cost of purchasing, installing, and documenting the conduit may be included in the cost of the overall project. However, other sources of funds may also be used if available.

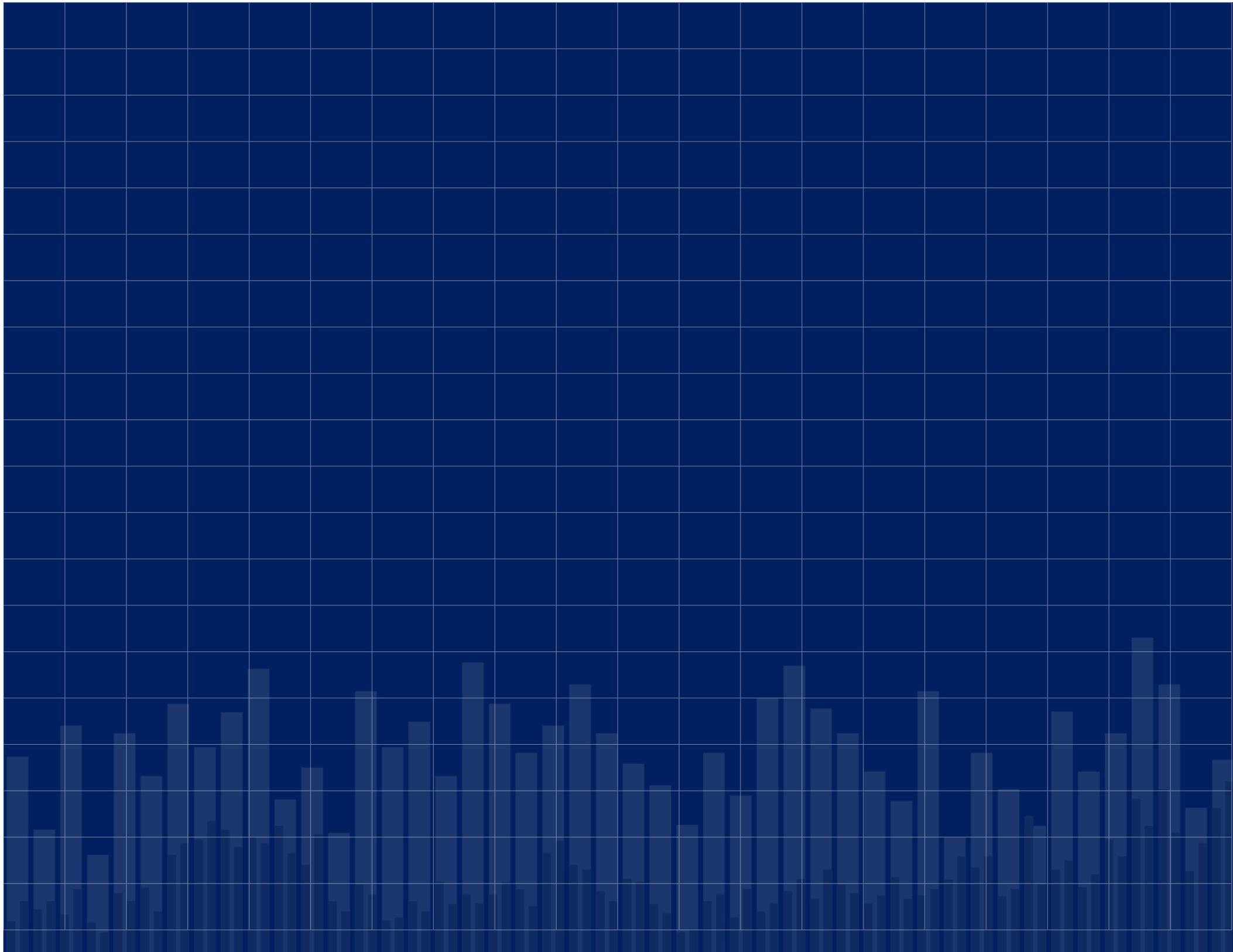
5. Conduit installed by or on behalf of the County, will be owned by the County.
6. A record of all County-owned conduits will be maintained, and transferred into a geographic information system (GIS) whenever feasible.

FOR REFERENCE ONLY





Appendix **C**





EXAMPLE REQUEST FOR PROPOSAL (RFP) DOCUMENT

To aid the development of a Request for Proposal, the following example was developed, which operationalizes the deployment recommendations outlined within Chapter 5 and 6.

RFP documents can be increasingly specific and include a variety of unique and specific sections based on the needs of the community and the private service providers. **The following language is offered only as a guide.** While two priority areas were identified within Chapter 5, a final geographical location will need to be identified prior to the issuance of this RFP. Placeholder text has been included throughout the RFP and is notated in [RED]. Additionally, as a final set of available resources (both financial and in-kind) is developed, the information will need to be accounted for within this RFP format. Language has been included to account for these items and should be reviewed, edited or omitted based on the needs of the final location and the availability of resources.

As Greene County moves forward with drafting their own RFP, the Broadband Task Force, Greene County Commissioners and the County Attorney should work to refine the content, format and response criteria. To ensure that the RFP is applicable and easy to understand, Greene County is encouraged to coordinate this effort with local service providers to ensure that their needs are being met in the process as well.

BROADBAND IMPROVEMENT IMPLEMENTATION

Greene County, Indiana

[DATE OF ISSUANCE]

BACKGROUND

The Greene County Commissioners invite proposals to deliver reliable, fast and affordable broadband internet access to all homes, businesses and community institutions within the municipal borders of [INSERT COMMUNITY NAME HERE]. Proposals are also encouraged to extend services to those residences, businesses and future development areas immediately adjacent to the municipal boundaries of [INSERT COMMUNITY NAME HERE] as a part of the proposed project. The proposed system must include all currently unserved locations, defined as those that do not have access to at least 25 Mbps download/3 Mbps upload speeds.

Greene County is one of Indiana's largest counties and includes 550 square miles of land area. The county's population is dispersed through seven incorporated cities and towns including Bloomfield, Jasonville, Linton, Lyons, Newberry, Switz City and Worthington. Outreach by the County's Broadband Task Force, a group of key stakeholders formed in 2020, has found a keen and widespread desire among citizens for reliable, affordable broadband service.

[INSERT COMMUNITY SPECIFIC SUMMARY AND INCLUDE THE FOLLOWING ITEMS: GENERAL LOCATION, GENERAL POPULATION DEMOGRAPHICS AND SOCIOECONOMIC CONDITIONS. INFORMATION ON KEY BUSINESSES AND ECONOMIC INFLUENCES AS WELL AS KEY DEVELOPMENT AREAS FOR THE FUTURE SHOULD ALSO BE CONSIDERED.]

The community currently has very limited and uneven broadband access availability and speeds. The only such service in [INSERT COMMUNITY NAME HERE] is provided by [INSERT APPLICABLE PROVIDERS HERE], which offers [SERVICE TYPE OPTIONS HERE]. Currently, it is reported that that about [INSERT PERCENTAGE HERE] of [INSERT COMMUNITY NAME HERE] do not have access to broadband speeds of 25/3 or more. There is no competing fiber service in [INSERT COMMUNITY NAME HERE], offering the prospect of high uptake for fast, reliable broadband service. Satellite and cellular data providers do not meet residents' needs, since these models have significant download caps; once these limits are reached, data rates are throttled and drop far below the broadband standard.

In 2019, Greene County was selected as a participant in the Office of Community and Rural Affairs Broadband Readiness Pilot Program, which allowed the county to complete a Broadband Readiness Study focused on the communities of Bloomfield, Jasonville, Smith Township, Switz City and Worthington. Greene County Broadband Readiness Study provides a focused look at the demographic, socioeconomic and existing physical conditions of Bloomfield, Jasonville, Smith Township, Switz City and Worthington, Indiana and aims to identify a realistic, infrastructure deployment model to establish and improve access to and use of high-speed internet systems throughout the community. The plan not only outlines an infrastructure plan, but also

identifies key strategies and measurable action items that both County and community leaders can use to reduce barriers to implementation, incentivize provider investment and develop public and private community programs to better link residents to the technology that is available. Submitters are encouraged to utilize the plan as a resource while preparing their RFP response. The plan can be downloaded here: [\[INSERT DOWNLOAD LINK HERE\]](#).

BUSINESS MODEL AND GENERAL CONSIDERATIONS

The Greene County Commissioners seek proposals that would be the basis for one or more providers to deliver such services. We prefer a proposal that embodies a total solution, encompassing construction, financing, operations and maintenance. The County sees itself as a facilitator; it does not intend to install, operate, or own the system.

- Both wired and wireless technologies will be considered. As a part of the 2020 Broadband Readiness Study, we have identified fiber optic as a preferred solution and will consider either fiber infrastructure entirely to subscribers' premises or to a nearby node with final connection by either wire, fiber or wireless means.
- The County will work with providers in siting equipment, placement of poles and conduit, and location of distribution equipment within either the [\[INSERT NAME OF COMMUNITY HERE\]](#) or county rights-of-way.
- Proposals should include costs to provide service at the "street level" along state, municipal and county public and private roadways, and should also provide service options and pricing estimates for connection to final locations, including "off grid" locations.
- Proposals should include a comprehensive schedule of proposed monthly subscriber rates.

Include if appropriate:

As a part of the proposal, Greene County is able and willing to offer the following resources to aid in either the implementation and marketing of new broadband service.

[\[INSERT LISTING OF RESOURCES HERE\]](#)

Submitters are not required to use these resources as a part of their submittal response.

Greene County may consider the use of municipal bonding authority to aid, facilitate or incentivize such a proposal, provided that the respondent assumes 100 percent responsibility for principal, interest and other costs of the bonds. The County would need to retain ownership of the financed assets at least until bonds are retired.

TIMETABLE

All proposals must be submitted by [INSERT DATE HERE].

Once proposals are received, the County's Broadband Advisory Committee will review them and recommend a provider or providers to the County Commissioners, which will make a final decision. The county may seek additional information and negotiate contract terms as the county, in its sole discretion, deems appropriate. This process will be accomplished expeditiously, consistent with the requirements of due diligence and the time needed to negotiate contractual terms. The county will expect prompt responses from the chosen respondent(s) to questions, requests for additional detail, and its negotiating positions.

Final approval and acceptance of any bonding-dependent proposal(s) will require a vote at the County Commissioners meeting, which will occur at one of their regularly scheduled board meetings.

We are seeking to have a broadband system in operation as soon as possible, within no more than 12 to 24 months from finalizing terms with the chosen provider(s).

PROPOSAL GUIDELINES

All proposals should include:

A letter of transmittal with the name, signature and title of the person authorized to commit the respondent to the proposal terms, along with five (5) hard copies of the proposal.

One electronic version of the proposal as an attachment in .pdf format.

- Description of the technology to be used and how it meets the County's requirements.
- Detailed project design.
- Explanation of the proposed business model, including installation, ownership, interconnection and maintenance of network hardware; ownership and operation of the ISP (Internet Service Provider) function; and provision of additional value-added services.
- **Include if appropriate-** If municipal bond financing is contemplated, the total cost to install to the street level for all of [INSERT COMMUNITY NAME HERE].
- Approximate timeline for installation. This should include estimates for tasks that may or may not be fully under a provider's control, such as "make-ready" requirements or easements. Anticipated easements or approvals required from third parties should be itemized.

- If not included in the “street level” cost above, any additional cost of installation from “street” to residence and how such costs will be met.
- Guarantees of service call response times.
- Comprehensive schedule of proposed monthly subscriber rates.
- A program to mitigate subscription costs for residents who would otherwise be unable to afford access.
- **Include if appropriate- Buyout provisions of county investment after bond retirement, if applicable.**
- The respondent’s credentials, including examples of other systems it has built and managed, and contacts within those systems.
- Proposed insurance coverages.

CONTACT INFORMATION

Please send your proposal to:

[INSERT ADDRESS HERE]

Attn: [INSERT NAME HERE], Chair, Greene County Broadband Task Force

Send your electronic version to [INSERT NAME AND EMAIL ADDRESS HERE] or call with any questions at [INSERT PHONE NUMBER HERE].

PROPOSAL EVALUATION

The county reserves the right to cancel this RFP at any time, reject any and all proposals, to waive any defect or informality in the proposals received and to accept the proposal deemed to be most favorable to the best interests of the town, including, but not limited to, respondent qualifications, project cost, project size, schedule and business model.

The county is not obligated to select the lowest proposal, the lowest responsible proposal or follow any other predetermined criteria in selecting the successful respondent. The county shall select the proposal which, after evaluation of the qualifications of the respondent and proposed design, business model, and schedule, is most advantageous to the county.

All contractual terms and conditions will be subject to review by the county’s legal counsel including scope, budget, schedule, and other necessary items pertaining to the project. The county has the right to accept or refuse any or all proposals.

We will evaluate all proposals based on the criteria below. To ensure consideration, your proposal should include all of the following criteria:

- Overall suitability: Proposals must meet the scope and needs we have described herein and be presented in a clear and well-organized manner.
- Organizational Experience: Proposals will be evaluated on their experience in building systems comparable in scope to this project.
- Track record: Organizations will be evaluated on examples of their work as well as input from previous clients.
- Value and cost: Organizations will be evaluated on the cost of their solutions, based on the work to be performed.
- Technical expertise and experience: Organizations should provide descriptions and documentation of staff technical expertise and experience.

Responding to this RFP does not obligate the county or any other person associated with the project to pay any costs incurred by proposals in preparing and submitting a proposal.

This solicitation does not obligate the county or any other person associated with the project to accept or contract for any expressed or implied services.

Submission of a proposal shall be evidence that the respondent is familiar with all the conditions of this procurement. On finding any omissions or discrepancy in the proposal documents, the respondent shall notify the county immediately, so that any necessary addenda may be issued. Failure of the respondent to completely investigate the premises and/or to be thoroughly familiar with the contract documents shall in no way relieve the respondent from any obligation with respect to the proposal. Respondent is responsible for verifying all statements in this RFP with the proper authorities.

Proposals that are incomplete, contain any omissions, erasures, alterations, additions or irregularities may be rejected.

A respondent may withdraw or modify its proposal by written request at any time prior to the response deadline. Telephonic proposals, amendments or withdrawals will not be accepted. Unless otherwise specified, no proposal may be withdrawn for a period of ninety days from the response date. The town may, at its discretion, waive this provision to allow for minor changes or corrections.

