UTAH BROADBAND CENTER
CONNECTING UTAH

MORGAN COUNTY
LOCAL BROADBAND PLAN

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EXECUTIVE SUMMARY

VISION	Promote social and economic growth throughout Morgan County by investing in broadband infrastructure that is accessible, modern, and scalable and provides communities with opportunities to participate in the current digital economy.

KEY BARRIERS	**Physical**	**Climate Resilience**	**Permitting**
	Physical barriers that block the implementation of internet infrastructure include terrain, Union Pacific Railroad, Weber River, and I-15	Extreme weather events, such as snow conditions often damage or destroy the physical infrastructure necessary for internet connectivity	The process can be lengthy, complex, and costly

COVERED POPULATIONS	Individuals who primarily reside in a rural area	Veterans	Individuals who are members of racial or ethnic minority groups	Individuals who live in low-income households	Individuals with disabilities	Aging Individuals	Incarcerated Individuals

GOALS	Work collaboratively to ensure that adequate infrastructure is available to deliver affordable, high-speed broadband internet to all residents, businesses and anchor institutions.	Encourage innovation and economic growth by increasing access to high-speed broadband	Invest in broadband infrastructure that is scalable and future-proof	

KEY STRATEGIES	Collaborate in planning and implementation	Update ordinances and policies	Establish strategic partnerships	Maximize existing infrastructure
	Explore and maximize funding opportunities	Streamline processes	Raise awareness internally and externally	

1 OVERVIEW OF THE LOCAL BROADBAND PLAN

1.1 VISION

Through the Governor's Office of Economic Opportunity, the Utah Broadband Center (UBC) with the Connecting Utah initiative is working to assist communities throughout Utah to have high-speed, affordable, and reliable internet access through broadband connectivity. Identification of infrastructure needs, implementation of actionable strategies, and support of statewide broadband planning efforts will improve the current digital and broadband infrastructure divide within the impacted communities of Morgan County.

Morgan County's vision for expansion of high-speed fiber optic broadband includes infrastructure that is accessible, modern, and scalable throughout Morgan County, providing the communities with opportunities to participate in the current digital economy to promote social and economic growth. This vision aims to provide access to high-speed internet to all residents and businesses in the County regardless of location.

1.2 GOALS AND OBJECTIVES

As part of the Morgan County Local Broadband Plan, some of the stipulated goals are:

- Work collaboratively to ensure that adequate infrastructure is available to deliver affordable, high-speed broadband internet to all residents, businesses and anchor institutions.
- Utilize broadband connectivity to encourage innovation, attract business investment and spur economic growth.
- Invest in broadband infrastructure that is scalable and future-proof.

To better identify the current broadband infrastructure and service needs and strategize the implementation of such goals, the Local Broadband Plan will also has the following objectives:

- Expand the reach of local ISPs within Morgan County and attract new providers to the area
- Pursue and apply for grant funding to expand broadband infrastructure
- Implement policy and codify ordinances that support broadband expansion
- Drive broadband adoption through the expansion of affordability, device access and digital skills programming.
- Inform residents and businesses of the available internet service options in Morgan County
- Leverage County-owned assets to incentivize ISP investment
- Prioritize fiber installation

- Work with UDOT and ISPs to close middle mile gaps through program funds or sharing of existing or new infrastructure.
- Ensure all County owned facilities and anchor institutions are connected to 1G service

2 BACKGROUND

On November 15, 2021, the Infrastructure Investment and Jobs Act (IIJA) was signed into law. This Act included a $65 billion investment in high-speed broadband internet infrastructure and efforts to close the digital divide to ensure that all Americans have access to reliable and affordable high-speed internet.

Included in the IIJA was the Broadband Equity, Access, and Deployment (BEAD) Program. The BEAD Program provides $42.45 billion to expand high-speed internet access by funding planning, infrastructure deployment, and adoption programs throughout the United States.

Through this funding, the UBC launched a grant program that will consist of two phases, with funding in each phase. The first phase is planning and the second is implementation. The State of Utah was awarded $5 million to support both the creation of a statewide Digital Connectivity Plan and provide funding for local communities to create local broadband plans.

The UBC awarded Morgan County $30,000 to create a plan for broadband infrastructure deployment in the region. Morgan County's broadband plan will be used to inform the statewide Digital Connectivity Plan that will determine Utah's broadband priorities over the coming years.

The local planning grant from the UBC was awarded on April 3, 2023, and the project kick-off meeting with the consultant team, Horrocks, began on April 7, 2023. The initial draft of this plan will be submitted on June 1, 2023, to the UBC and the final plan will be incorporated in the statewide planning efforts and will be submitted on August 1, 2023.

2.1 SCOPE OF BROADBAND PLAN

Morgan County lies in the northern region of Utah. Its strategic location provides convenient access to major transportation arteries like Interstate 15 (I-15) and the Union Pacific Railroad. These vital connections foster economic growth and enable travel to and from the region.

Morgan County faces a significant challenge: the digital divide. Access to affordable and reliable broadband services has become an essential requirement for economic growth, improved education, and an enhanced quality of life. Recognizing this pressing need, the county is taking proactive measures to bridge this divide.

The local government of Morgan County is actively working on a comprehensive broadband infrastructure plan. This strategy aims to address the digital divide and serve as a roadmap for enhancing and expanding broadband connectivity throughout the region. Key principles guiding this plan include accessibility and dependability, ensuring that all citizens and enterprises can benefit from the transformative power of broadband technology.

To develop this Local Broadband Plan, Morgan County is collaborating with various stakeholders. Citizens, businesses, and community organizations are participating in the process, providing valuable insights and perspectives. This inclusive approach guarantees that the plan will be tailored to the specific needs and aspirations of the community.

Through the implementation of the Local Broadband Plan, Morgan County envisions equal access to reliable and affordable broadband services.

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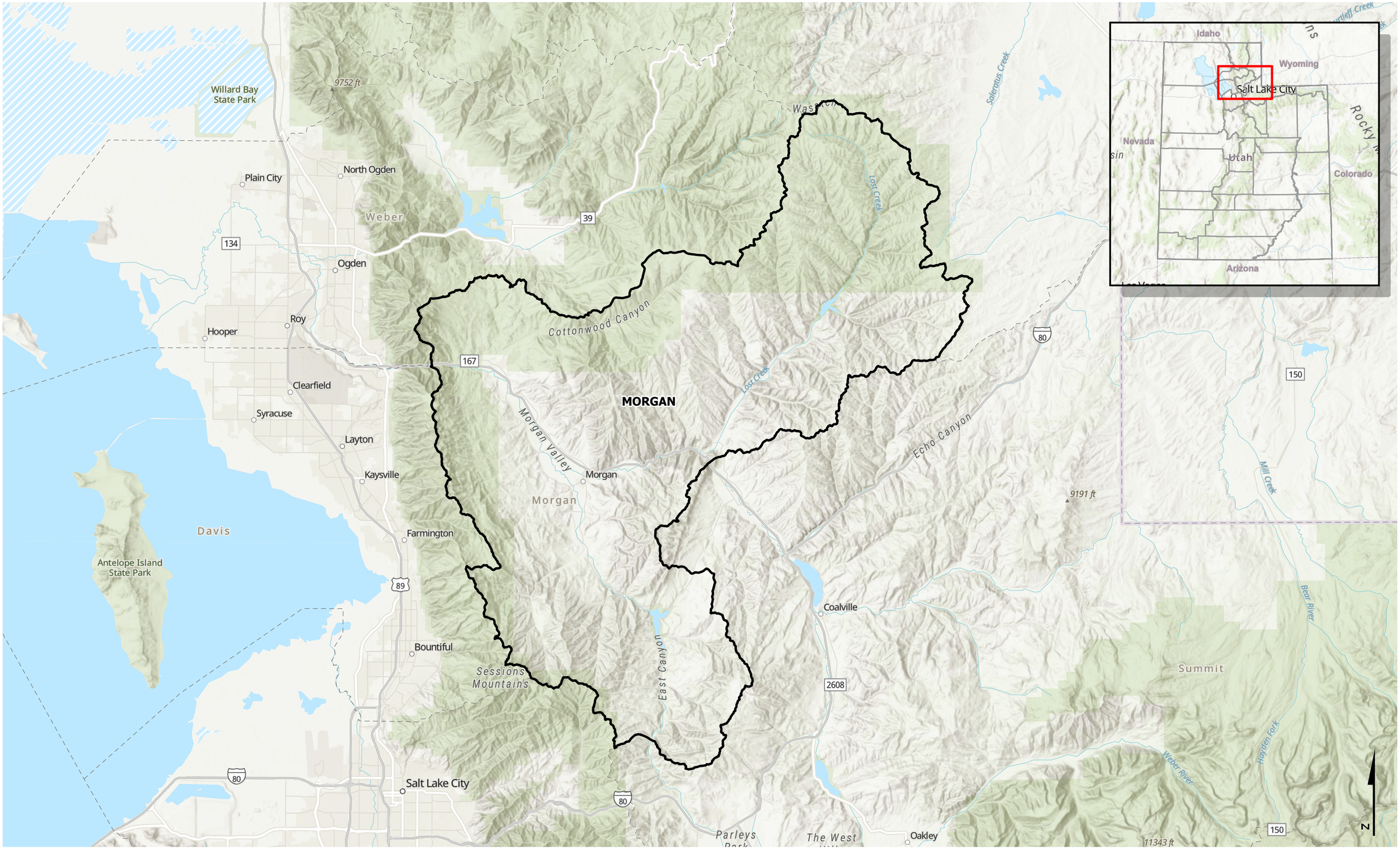

Horrocks.

Figure 1: Boundaries of Morgan County

0 6.5 13 Miles

A summary of the demographics of the area is outlined in Table 1 below. These statistics reflect the most updated data from the United States Census 2020 for the State of Utah.[1]

Table 1. Demographic Information

MORGAN COUNTY	
Total Population	12,832
Median Household Income	$112,721
Bachelor's Degree or Higher	39.7%
Employment Rate	63.1%
Poverty	4.5%
Median Age	31.5 years
Land Area in Square Miles	609.17
RACE & ETHNICITY	
White	12,139
Hispanic/Latino	385
American Indian and Alaska Native	51
All Others	256

2.2 WHAT IS BROADBAND?

Broadband is a dedicated connection to high-speed internet. The threshold for what speed is defined as high-speed internet changes according to the standards presented by the Federal Communication Commission (FCC). Currently, broadband is defined as any speeds above 25 megabits per second (Mbps) download speed and 3 Mbps upload speed (25/3 Mbps).[2]

The BEAD Program defines households with less than 25/3 Mbps as unserved locations and those with less than 100/20 Mbps as underserved locations.[3] Community anchor institutions

[1] U.S. Census Bureau. (2021). Morgan County, Utah. https://data.census.gov/profile/Morgan_County,_Utah?g=050XX00US49029

[2] FCC. (2015). Broadband Progress Report. https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2015-broadband-progress-report

[3] NTIA. Notice of Funding Opportunity - Broadband Equity, Access, and Deployment (BEAD) Program. Section I. Program Definitions, C. Definitions. Pages 16-17. https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf

with less than 1/1 gigabits per second (Gbps) speeds are also considered underserved, as defined by Section 60102 of the IIJA, which also sets forth the BEAD program[4].

2.2.1 Broadband Network Distribution

The infrastructure that data travels along is called a network. Similar to other public utilities such as roads or water pipes, the network infrastructure is carefully planned and then built according to how many people need to be served in both the present and the future. Within the network, data is carried across fiber, wires, or radio signals in the air (wireless). These various means of carrying data have different capacities and speeds. The part of the network used to transport data between cities or across cities is known as middle mile infrastructure. The middle mile network connects to hubs built throughout a city. The part of the network that connects from a hub to the end-user is called final mile or last mile infrastructure. End-users can be businesses, residential homes, or individuals connecting to cell service. In Figure 2, the blue lines connecting the city to the hubs represent middle mile infrastructure, and the orange lines connecting the hubs to the residential houses represent final mile (or last mile) infrastructure.

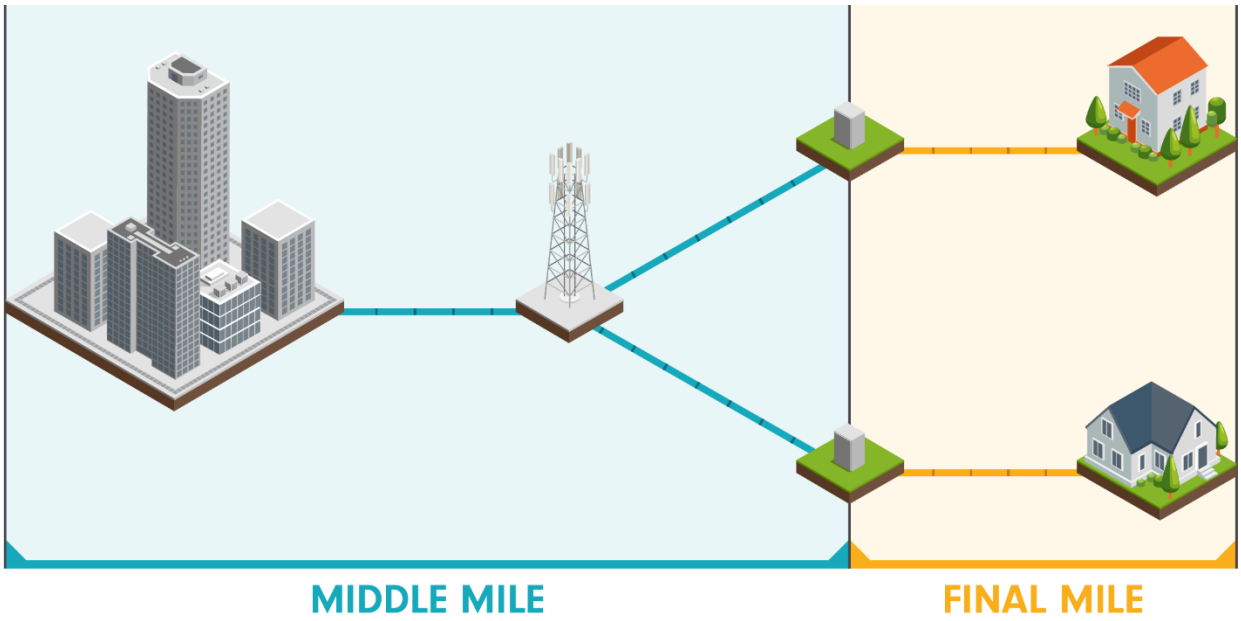

Figure 2. Middle Mile and Final Mile Infrastructure

[4] United States Congress. (2021). H.R. 3684- Infrastructure Investment and Jobs Act. 60401(e)(3)(C). https://www.congress.gov/bill/117th-congress/house-bill/3684/text

2.2.2 Types of Broadband

There are various technologies that high-speed broadband internet can be served through, such as fiber optic, digital subscriber line (DSL), cable modem (Coax), and wireless technologies. Each form of technology has pros and cons.

2.2.2.1 Fiber Optic

Fiber optic technology sends data-carrying digital signals as light through cables made of glass fibers. It provides the fastest, most reliable networks. Because fiber is a newer technology, many areas do not have fiber networks developed, and this type of network can require building new infrastructure. Fiber optic cables can be placed on existing power poles or they can be placed inside conduit buried in the ground. If the network is designed and installed correctly, symmetrical speeds can be up to 400 Gbps; however, 400 Gbps speeds are typically only designed for and installed in the backbone/distribution cables of the network. **Fiber optic is the gold standard for high-speed broadband internet as it provides the fastest speeds and can support emerging digital technologies into the future.**

2.2.2.2 DSL

DSL uses existing copper telephone cables to transmit data. Speeds vary widely based on local providers, the condition of cables, the distance between homes, and the equipment at the primary connection point. Because of this, DSL speeds can be less than 1 Mbps or up to 100 Mbps. With maximum DSL speeds at 100 Mbps, DSL does not meet the ever-growing needs of future technologies, so it is not a preferred option when building modern broadband infrastructure.

2.2.2.3 Cable Modem (Coax)

Cable modem delivers increased speeds over DSL and transmits broadband data over the same coaxial cables that are used for cable televisions. Like DSL, it is not a preferred option when building new broadband infrastructure, but it can be used where existing infrastructure is in place. Cable modems use a protocol called Data Over Cable Service Interface Specification (DOCSIS). There are six versions of DOCSIS (1.0, 1.1, 2.0, 3.0, 3.1, and 4.0). The speeds range between 40 Mbps download and 10 Mbps for upload for version 1.0 to 10 Gbps download and 6 Gbps upload for version 4.0.

2.2.2.4 Wireless

Wireless broadband includes several technologies, including satellite broadband, Wireless Local Area Networks (WLANs), Wi-Fi, and cellular 4G, 5G, and LTE. These technologies use radio spectrum to transmit broadband data. Please note that BEAD funding can only be used to build wireless broadband technology when it is connected to a terrestrial Middle Mile network, and cannot be used on satellite broadband technologies.

Satellite Broadband – Satellite internet involves satellites that orbit the earth while transmitting long-range signals to individual subscriber locations anywhere on earth with a clear view of the sky. It is primarily a middle mile wireless solution, but many people use satellite internet directly to their homes as well. Satellite connection speeds vary based on location, and weather and

tree foliage can affect the signal. Typical connection speeds are 12-100 Mbps. However, satellite internet has a higher latency (a delay of transmission also known as lag), making video calls extremely "glitchy" on this type of internet. An acceptable range of latency is between 50-100 ms. Satellite connection latency typically falls within 594-624 ms.[5] For the BEAD program, the NTIA currently does not recognize satellite broadband technologies as a reliable wireless technology.

WLANs – WLANs are the Last Mile networks used at homes or businesses to distribute internet to phones, computers, and other devices through radio signals. Wi-Fi and hotspots are both examples of a WLAN. Connection speeds are dependent on the service provided at the access point.

Cellular 4G, 5G, and LTE – Cellular 4G, 5G, and LTE involve antennas mounted on cell towers transmitting radio signals, which are then received through the modems in cell phones, mobile routers, cellular antennas, or various signal boosters. Mobile carriers now offer residential fixed wireless broadband plans supported by their mobile towers. A middle mile fiber network connected to a tower will increase the network capabilities and provide a better final connection to the cellular user. The download speeds can often reach 600 Mbps if specialized equipment is used to boost the signal. This is usually the fastest high-speed broadband internet available for users who do not have access to fiber optic technology. This technology supports broadband speeds for mobile devices as well as fixed wireless broadband service to residences.

2.2.3 Benefits of Broadband

High-speed broadband internet has become an integral part of society. It is critical for work, education, telehealth, and the completion of everyday tasks.

High-speed broadband internet has transformed the way the world does business. There are few businesses that can operate today without the internet, and while some can get by with a low-speed connection, high-speed internet is becoming more and more necessary. A Pew Research Center survey[6] conducted in April 2021 found that 90% of adults surveyed considered internet "essential or important for them personally during the [COVID-19] pandemic."[7] High-speed broadband internet has allowed for remote work possibilities, which opens the possibility of highly skilled workers relocating to smaller communities and benefiting the economies of those communities. Readily available access to the internet has allowed businesses to widen their customer base to a global market. In today's world, broadband can grow Morgan County's economic outlook.

While high-speed broadband internet is benefitting many regions across the globe, it is important to ensure that Morgan County does not get left behind. There is a growing digital

[5] Cooke, K. (2023). Is Satellite Internet a Good Option? Pros and Cons of Satellite Internet Service. SatelliteInternet.com. https://www.satelliteinternet.com/resources/satellite-internet-pros-and-cons

[6] https://www.pewresearch.org/internet/2021/09/01/the-internet-and-the-pandemic/

[7] https://www.pewresearch.org/internet/2021/09/01/the-internet-and-the-pandemic/

divide where those that do not have access to internet do not learn the digital skills necessary for high paying jobs, pushing them further into poverty. Conversely, increasing high-speed broadband internet access increases economic opportunities for low-income families.

Developing digital skills at a young age has become increasingly important, as high-speed broadband internet is an integral tool in modern education and preparation for the future workforce. Access to online classes, homework submissions, and research opportunities can be lost if a reliable high-speed broadband internet connection is not secured. Many districts are also utilizing online learning on snow days and other times when it isn't possible for students to gather at the school. Online classes can be made available for specialized subjects like foreign language or technological courses that do not have a local teacher available. Children without access to a broadband internet connection may be left out in these scenarios.

Other online resources are also becoming more important for communities. For example, telehealth is a tool that allows users to connect to doctors and medical providers online. Some of the benefits of telehealth include decreased healthcare costs, access to specialists not available locally, travel time reductions, and reducing the risk of exposing others to viral infections. High-speed broadband internet is necessary when completing a video call with a health professional.

High-speed broadband internet has become increasingly essential for daily tasks. High-speed internet is used when paying bills, accessing banks and retirement accounts, and applying and interviewing for jobs. High-speed broadband internet is also vital when enjoying modern-day entertainment, such as video streaming, watching live sports, or playing live video games. It is used when communicating with family and friends, especially when making a video call. Even using a smartphone with 4G or 5G service involves broadband technology.

3 CURRENT STATE OF BROADBAND AND DIGITAL ACCESS

3.1 METHODS TO DETERMINE THE CURRENT STATE OF BROADBAND

The planning team took several steps to determine the current state of high-speed broadband internet in Morgan County. This planning team included the following individuals and/or organizations:

- Morgan County
  - Blaine Fackrell – County Commissioner
  - James Ebert – Director of Economic Development
  - Jeremy Archibald – Director of Information Technology
- Horrocks
  - Eleise Lowe – Project Manager
  - Jason Libert – Technical Analysis
  - Georgia Tsoutsounis – Technical Analysis
  - Katie Williams – Public Involvement
  - Caleb Worthen – Public Involvement
  - Makenna Riding – Public Involvement

The activities performed included:

- **Public Outreach:** Morgan County conducted targeted public outreach to gather feedback from residents starting in April 2023 through June 2023. The purpose of this outreach was to learn and understand regional broadband needs and to identify gaps in broadband availability, accessibility, and affordability for residents. Public outreach was conducted for both the Utah Internet Speed Test and the Morgan County broadband survey in the following ways:
  - Website landing page: connectingutah.com/morgancounty
  - Survey and Speed Test overview flyer
  - Organic social media posts on Facebook
  - Door-to-door canvassing
  - Direct mail
  - Paid Facebook and Google ads

  A location-specific landing page was created and linked on all collateral created to capture public feedback and encourage involvement in the development of the Morgan

County Local Broadband Plan. The landing page received 1,313 page visits during the course of the planning effort.

The Survey and Speed test overview flyer was created and distributed to stakeholders and the public within Morgan County. The flyer was utilized to reach the public to spread awareness and compel involvement in the planning process. The flyer was circulated by Morgan County officials and staff as well as during door-to-door canvassing efforts.

A written and visual content package was developed as a resource to Morgan County and stakeholders such as other governmental entities and civic organizations who have an online presence. The content package included copy and graphics for stakeholders to post organically on to their social media accounts.

Door-to-door canvassing was conducted throughout Morgan County to collect survey responses and encourage speed test participation. Over multiple canvassing sessions, over 200 households were contacted with 42 surveys completed.

Direct mail was utilized to compel participation in the Utah Internet Speed Test. Over 500 postcards were sent to a targeted audience of underserved and unserved Morgan County residents.

A paid Google Display and Search ad campaign was placed on April 27 and ran through May 19, specifically geo-targeted to reach residents in Morgan County. The ad reached 44,158 impressions within the designated Morgan County audience and achieved an average 3.3% click through rate.

An additional paid Facebook ad campaign was placed on May 1 and ran through May 12, specifically geo-targeted to reach residents in Morgan County. The ad reached 3,257 impressions within the designated Morgan County audience and achieved a 6% click through rate.

- **Public Surveys:** The outreach team created the Morgan County survey to gather more quantitative data from the general public about their experience with internet connectivity. Questions in this survey covered topics such as residents' current internet connections, device accessibility, affordability options, connectivity for businesses, community internet needs, and voluntary disclosure of demographics. A toll-free hotline number was provided for residents taking the survey who did not have access to the internet.

  There were 177 surveys completed for Morgan County's broadband planning efforts. There were five surveys completed specifically in Morgan County in conjunction with the statewide efforts from the UBC, 130 surveys from the Morgan County effort and 42 surveys obtained during canvassing. Specific survey findings and analysis can be found throughout Sections 3.4 and 3.5.

- **Internet Speed Tests:** Stakeholders' participation in the Utah Internet Speed Test, sponsored by the UBC, helped the team gather real-time internet upload and download speeds in Morgan County. The outreach team advertised the Utah Internet Speed Test through direct mail, digital advertising, door-to-door canvassing, and social media to notify the public of Morgan County's planning effort.

  As of July 5, 2023, there were 273 speed tests completed in Morgan County. See Section 3.5.1 Broadband Availability for more detailed speed test results and information.

- **Stakeholder Meetings and Workshops:** The UBC, as part of the statewide planning effort, conducted stakeholder workshops in each of the 29 counties in Utah. Participants of these workshops included community advocates, educators, public and elected officials, and industry leaders. During these meetings, participants engaged in in-depth discussion relating to broadband. Topics included education, economic impact, affordability, availability, barriers, and opportunities to expand access to high-speed internet.

  The Morgan County workshop was held on January 25, 2023, in Morgan County**.** Workshop attendees included representatives from Morgan County School District, Morgan County Library, and local businesses and industries. During the workshop, participants provided insight surrounding the following topics:

  - The County has limited provider options and service is spotty and unreliable in many areas. Many households rely on wireless internet for service.
  - Attendees reinforced the priority of providing a stable and reliable network for households in the County.
  - More awareness building about the provider and plan options available in the County is needed.

- **Community Partner Survey:** The planning team facilitated a community partner survey. The purpose of this survey was to bring Morgan County and the organizations that support community broadband expansion together in an effort to help document existing broadband assets and plan for a future where every resident in the Morgan County area has the tools necessary to successfully access affordable high-speed internet.

  The Community Partner Survey was provided to participants and identified partners. The purpose of the survey was to take stock of partnering entities' current broadband planning, access, deployment, and digital access activities. The survey also captured data on challenges to local broadband expansion. The Morgan County Community Partner Survey was completed by the Morgan County School District and Weber/Morgan Human Services. Specific findings from the Community Partner Survey are detailed in Section 3.4 Asset Inventory.

- **Meeting With Internet Service Providers (ISPs):** Meetings were scheduled and conducted with identified internet service providers (ISPs) and Morgan County officials to create a partnership and discuss ISP expansion plans in Morgan County and assess their readiness to apply for federal BEAD deployment grant funding. Focus areas included service requirements and ISPs' capacity to deliver reliable broadband connectivity. The approach involved comprehensive measures such as analyzing data from the FCC and the Utah Broadband Maps as well as conducting surveys and meetings with local officials. ISPs' active involvement in the Affordable Connectivity Program (ACP) was ensured, verifying their commitment to expanding broadband access in unserved and underserved regions. The unique geography and characteristics of Morgan County were considered when evaluating infrastructure needs and associated costs to establish realistic project timelines and budgets. In addition to providing valuable insights into ISP capabilities and commitment to expanding broadband access, meeting with the respective ISPs provided crucial information for formulating effective plans to deliver internet connectivity to unserved and underserved communities.

- **Existing Assets Assessment:** Using data collected from state GIS mapping efforts, the FCC, the Utah Residential Broadband Map[8], surveys, meetings with stakeholders, and internet speed tests, the technical team created an asset inventory of all existing broadband assets within Morgan. The integration of GIS data into the assessment provided valuable insights into the existing broadband landscape, aiding in the development of targeted strategies for enhancing connectivity.

- **Disparity Analysis:** Analysis was conducted to identify and map areas within Morgan that are unserved and underserved. To further understand potential disparities in broadband access, socioeconomic and demographic variables were considered that could contribute to inequalities in broadband access between members of one group versus another. Examples of groups considered include Age 60+, Disabled Individuals, Veterans, Incarcerated Individuals, Non-White, and Rural Areas. This data was gathered from both public outreach efforts and the U.S. Census and analyzed. GIS mapping technology allows visualization of those areas that may require targeted intervention for digital inclusion efforts.

- **Research:** The team collected research from various sources and agencies regarding broadband infrastructure and deployment best practices, federal funding opportunity qualifications, all resources produced by the NTIA, and broadband outreach best practices.

  Additional research was conducted by utilizing the latest U.S. Census data to provide insights into an area's population and household data, geographic distribution,

[8] UGRC. Utah Residential Broadband Map. https://broadband.ugrc.utah.gov/

demographic information, socioeconomic information, internet adoption and usage, and commuting patterns. These factors contribute to the formation of a comprehensive plan that is based upon data.

- **Geographic Information System (GIS) Mapping:** To visualize and analyze broadband coverage, gaps, and infrastructure locations in Morgan County, GIS mapping technology was utilized. This mapping approach provided valuable insights into the current state of broadband connectivity, identifying areas of need, and assisting in the planning of future expansion.

3.2 EXISTING RESOURCES

Existing programs include all the programs and activities that Morgan County currently performs or has performed in the past. Morgan County collaborated with the project team to produce this Local Broadband Plan which will inform Utah's statewide digital connectivity plan. The statewide connectivity plan will be submitted to the NTIA and they will determine the amount of total funding Utah will receive from the federal government for broadband and digital access expansion. Once federal funds are awarded, the state will allocate those funds based on areas with the most need.

Funding for the Morgan County broadband plan was provided by the UBC, powered by the Governor's Office of Economic Opportunity, through the Local Broadband Planning Grant. A total of $942,738 grant funds were awarded to 28 organizations[9] across the state to build comprehensive plans relating to local broadband and digital access needs. Morgan County was awarded $30,000 for broadband infrastructure planning. Table 2, Table 3, Table 4, and Table 5 include details about broadband-related resources, contractor support, and funding.

Table 2. Current Broadband-Related Activities

ACTIVITY NAME	DESCRIPTION	INTENDED OUTCOME(S)
Morgan County Local Broadband Plan	This plan includes best practices, references, and suggestions that will inform the state's Five-Year Connectivity plan and Morgan County's broadband expansion efforts.	Promote social and economic growth throughout Morgan County by investing in broadband infrastructure that is accessible, modern, and scalable and provides the community with equitable opportunities to participate in the current digital economy.

[9] https://business.utah.gov/broadband/utah-broadband-center-announces-2023-planning-grant-recipients

Table 3. Current and Planned Full-Time and Part-Time Employees

CURRENT / PLANNED	FULL-TIME / PART-TIME	POSITION	DESCRIPTION OF ROLE
Blaine Fackrell	Full-Time	County Commissioner	Elected official; Chair, Broadband Subcommittee
Current	Full-Time	Director of Information Systems	Staff position; Provides IT and technical support to County agencies

Table 4. Current and Planned Contractor Support

CURRENT / PLANNED	CONTRACTOR	POSITION	DESCRIPTION OF ROLE
Current	Horrocks	Technical Analysis Team	Write Morgan County Local Broadband Plan.
Current	Horrocks	Public Involvement Team	Coordinate public outreach and write Morgan County Local Broadband Plan.

Table 5. Broadband Funding

SOURCE	PURPOSE	TOTAL
Utah Broadband Center (UBC)	Broadband infrastructure planning for Morgan County	$30,000
Broadband Access Grant (UBC)	All West won funding to connect 56 locations in Croyden with 1 Gbps speeds.	Unknown

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Funding Areas

- Broadband Grant Access
- Community Connect (CC)
- Rural Digital Opportunity Fund (RDOF) Area
- ReConnect Program

MORGAN

Figure 3: Funding Areas in Morgan County

Horrocks.

0 5 10 Miles

3.3 PARTNERSHIPS

This section identifies existing and potential partners and community anchor institutions that Morgan County may engage for the development and implementation of the Local Broadband Plan. Such partners include organizations that are already engaged in issues related to broadband deployment and digital inclusion, such as local governments, college and university systems, school systems, faith-based organizations, foundations, chambers of commerce, and local internet service providers. Table 6 and Table 7 include information about local and statewide partners.

Table 6. Local Community Partners and Community Anchor Institutions

COMMUNITY PARTNER/ ANCHOR INSTITUTION	DESCRIPTION OF CURRENT OR PLANNED ROLE IN BROADBAND DEPLOYMENT AND ADOPTION
Internet Service Providers	The following providers offer wired, fixed wireless, and/or mobile wireless services in Morgan County: AllWest, Verizon, T-Mobile, Utopia, Beehive Broadband, CenturyLink, Liberty Broadband, Wi-Fi Cow, Rise Broadband.
Morgan County School District	Morgan County School District currently has Wi-Fi that students and guests can access from the school and the school parking lot.
Morgan County Library	The Morgan County Library provides internet that visitors can access. They also have five hot spots that residents can check out for two-week periods at a time.
Morgan Area Chamber of Commerce	The Morgan Area Chamber of Commerce supports local businesses and drives economic growth in the area.

Table 7. Statewide Partners

NAME	CONTACT INFORMATION	ROLE IN BROADBAND DEPLOYMENT AND ADOPTION
Rebecca Dilg	rdilg@utah.gov (801) 538-8681	Utah Broadband Center Director *Governor's Office of Economic Opportunity*
Claire Warnick	cwarnick@utah.gov (801) 450-6682	Utah Broadband Center Program Manager *Governor's Office of Economic Opportunity*
Teri Mumm	tmumm@utah.gov	Utah Broadband Center Digital Access Program Manager *Governor's Office of Economic Opportunity*
Lynne Yocom	yocom@utah.gov (801) 514-4565	Fiber Optics Manager *Utah Department of Transportation*
Vikram Ravi	vravi@ntia.gov	Federal Program Officer for Utah *National Telecommunications and Information Administration*

3.4 ASSET INVENTORY

Broadband assets include hard assets (e.g., towers, buildings, and utility poles) and soft assets (e.g., programs, activities, strategies, skills, people) that can be leveraged to close the digital divide. Hard assets in Morgan County are described in section 3.4.1. Morgan County's soft assets are described in sections 3.4.2 and 3.4.3, below.

3.4.1 Broadband Availability

Broadband availability relates to whether the physical broadband infrastructure is available in a region to support specific speeds. To deliver broadband speeds of at least 100/20 Mbps broadband speeds to the end-user, a robust network must be in place.

General Service Areas

Figure 4 and Figure 5 below depict the wireline and fixed wireless broadband currently available in Morgan County, Utah. ISPs are required to submit their corresponding service areas twice a year through FCC Form 477. ISPs are now required to submit service areas through the FCC webpage[10]. The accuracy of the service locations can be influenced by the optimism and interests of ISPs. These maps, part of the Utah Residential Broadband Map[11], provide specific upload and download speed information as well as fixed and mobile wireless data. Figure 4 shows service areas considered "served" which have at least 100/20 Mbps speeds. Figure 5 shows service areas considered "underserved" which have at least 100/20 Mbps speeds. "Underserved" (areas with speeds below 100/20 Mbps) and "unserved" (areas with speeds below 25/3 Mbps) will be further discussed in the needs and gaps analysis in Section 3.5.

[10] Federal Communications Commission. December 2022. Information for Filers. https://www.fcc.gov/BroadbandData/filers

[11] UGRC. Utah Residential Broadband Map. https://broadband.ugrc.utah.gov/

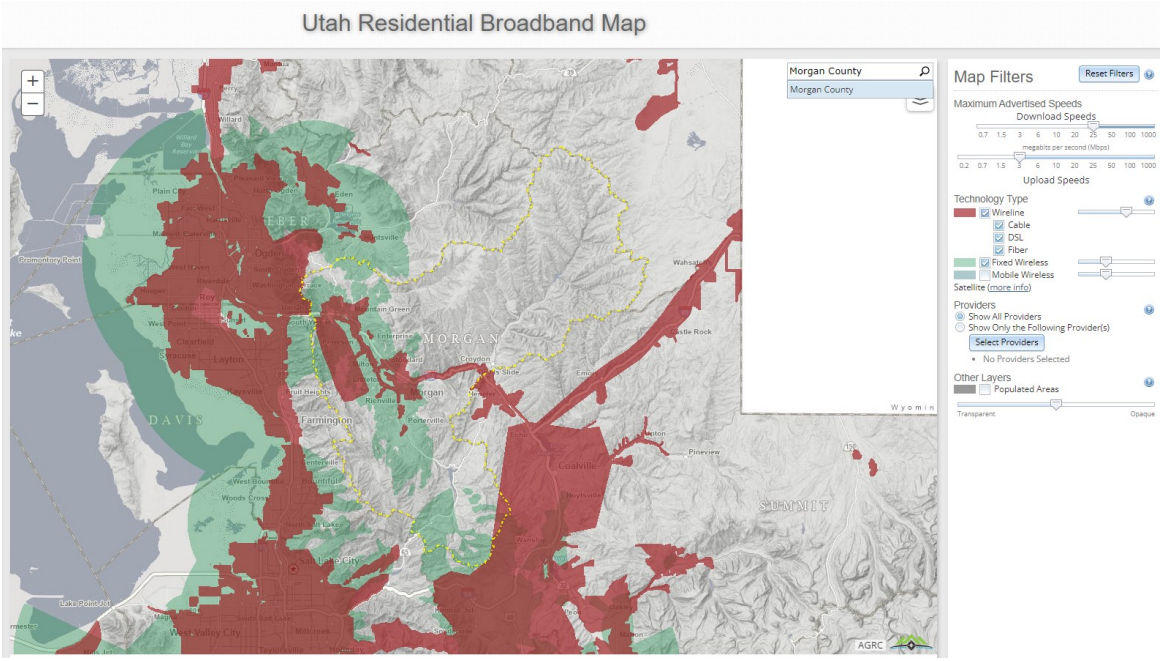

Figure 4. Broadband Coverage Area in Morgan County with 100/20 Mbps Minimum Speeds (Red Areas are Wired Service, Green Areas are Fixed Wireless Service)

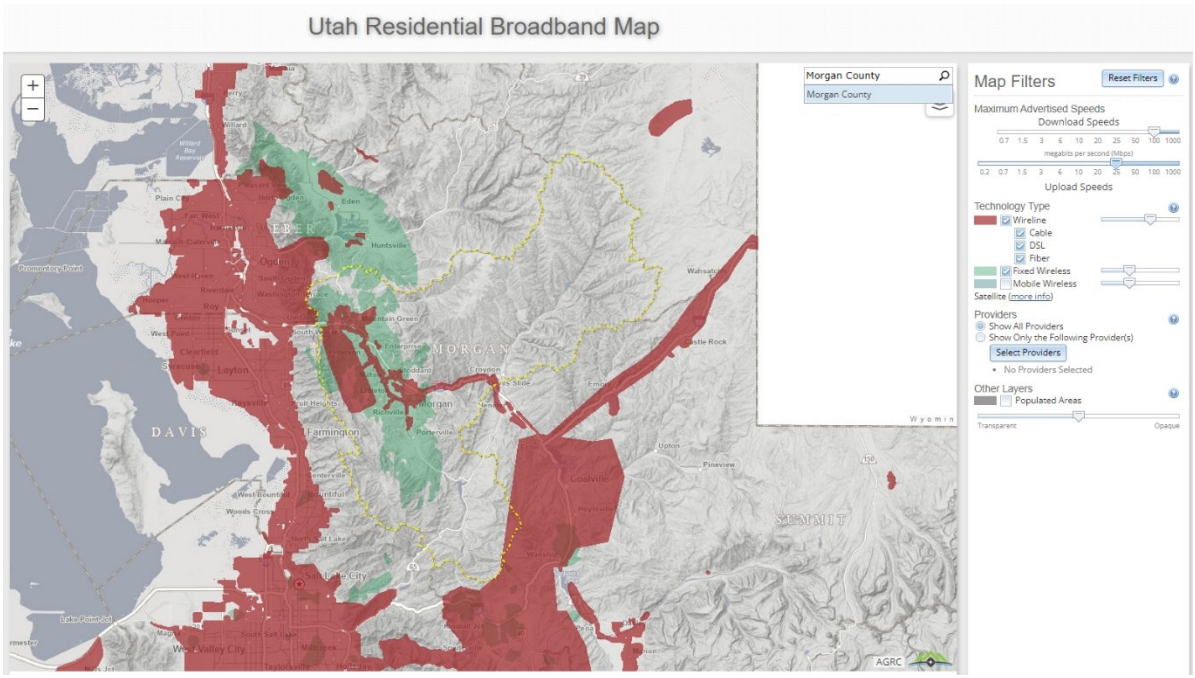

Figure 5. Broadband Coverage Area in Morgan County with 25/3 Mbps Minimum Speeds (Red Areas are Wired Service, Green Areas are Fixed Wireless Service)

Table 8 summarizes the availability of different internet technologies for the population of Morgan County, including fiber, cable/DSL, licensed wireless, and unlicensed wireless for all available speeds. These numbers were obtained from GIS data as reported from FCC Form 477[12].

Table 8. Technology Available to Region's Population

LOCATION	PERCENT OF HOUSEHOLDS			
	WIRELINE SERVICE (FIBER OPTIC)	WIRELINE SERVICE (CABLE/DSL)	UNLICENSED WIRELESS	LICENSED WIRELESS
Morgan County	87.1%	84.3%	99.0%	0%

Internet Service Providers (ISPs)

Private ISP companies provide internet service to residents and businesses and typically own the networks that distribute the broadband to their customers. Twice a year, ISPs self-report their service areas through FCC Form 477. In Utah, these coverage areas are mapped onto Utah Residential Broadband Map[13], a state GIS map from the Governor's Office of Economic Opportunity. In Morgan County, a range of ISPs cater to the diverse needs of residents and businesses.

Wired ISPs currently serving areas within Morgan County are:

- All West Communications
- Beehive Broadband
- CenturyLink
- Utopia
- XMission

Fixed Wireless ISPs currently serving areas within Morgan County are:

- Rise Broadband
- Liberty Broadband
- My Surfs Up
- T-Mobile
- Hughes Net
- WifiCow
- Verizon

[12] Federal Communications Commission. Fixed Broadband Deployment Data from FCC Form 477. https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477

[13] UGRC. Utah Residential Broadband Map. https://broadband.ugrc.utah.gov/

Satellite ISPs currently serving areas within Morgan County are:

- Starlink
- Viasat

Figure 6, Figure 7, Figure 8, Figure 9, Figure 10, and Figure 11 show the current coverage areas of each of the available ISPs in Morgan County that report their coverage areas to the FCC. Areas in red are wired service while areas in green are fixed wireless service. These coverage areas show any coverage available by the ISP, regardless of whether it is a high or low speed. Because these coverage areas are self-reported by the ISPs, they do not always represent the actual coverage that are available to residents.

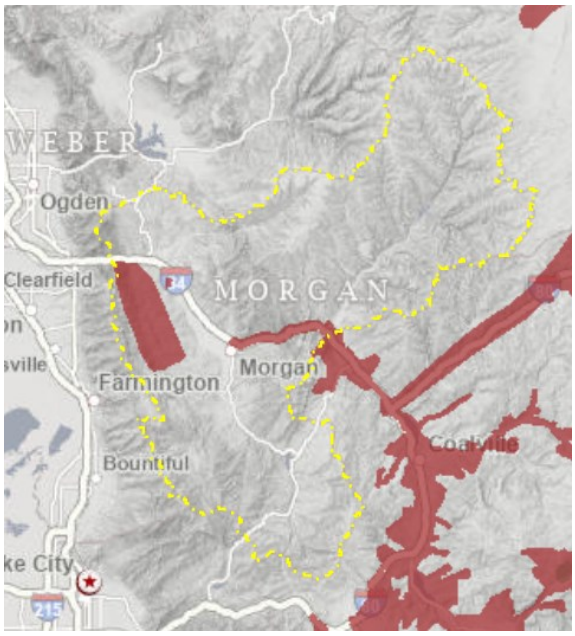

Figure 6. All West Communications Coverage Areas in Morgan County with Any Speed (Red Areas are Wired Service, Green Areas are Fixed Wireless Service)

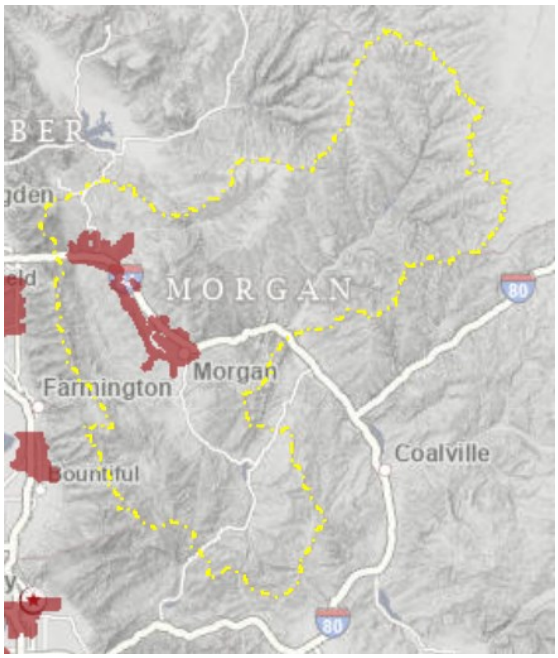

Figure 7. Beehive Broadband Coverage Areas in Morgan County with Any Speed (Red Areas are Wired Service, Green Areas are Fixed Wireless Service)

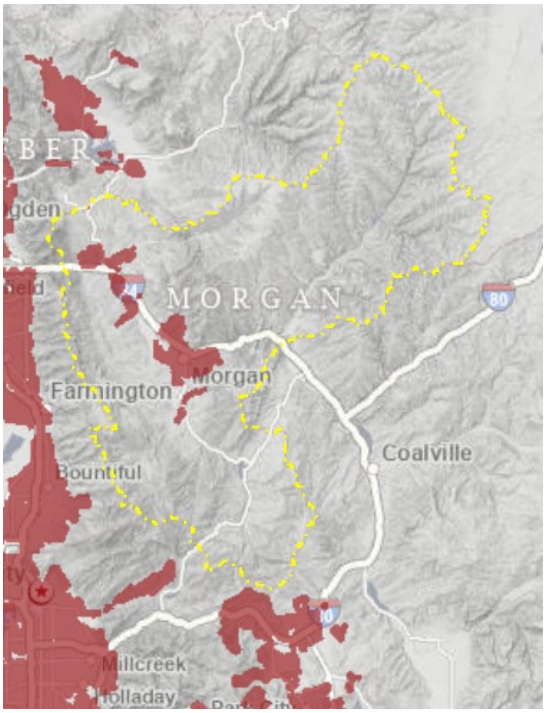

Figure 8. Century Link Coverage Areas in Morgan County with Any Speed (Red Areas are Wired Service, Green Areas are Fixed Wireless Service)

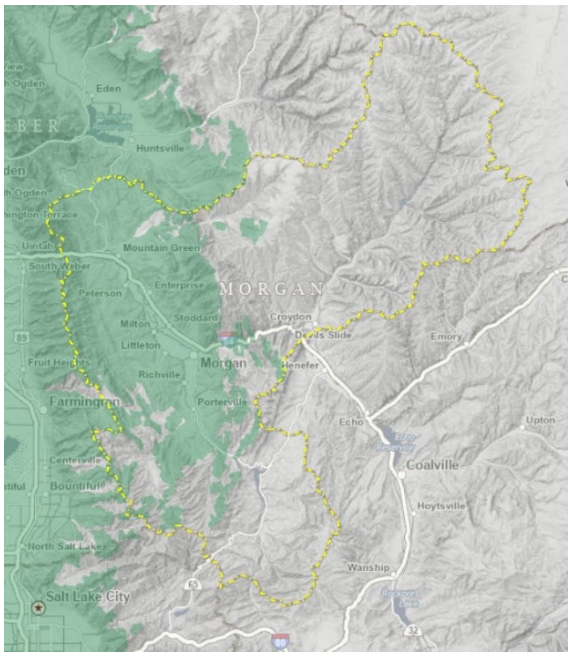

Figure 9. Rise in Morgan County with Any Minimum Speed (Red Areas are Wired Service, Green Areas are Fixed Wireless Service)

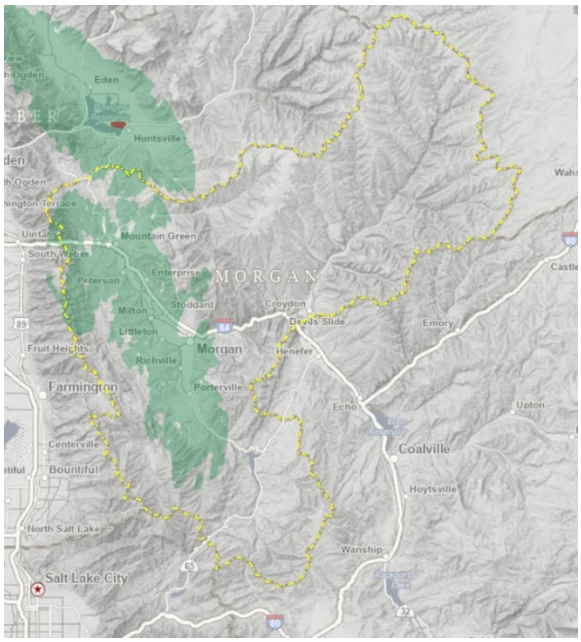

Figure 10. Liberty Broadband Coverage Areas in Morgan County with Any Minimum Speed (Red Areas are Wired Service, Green Areas are Fixed Wireless Service)

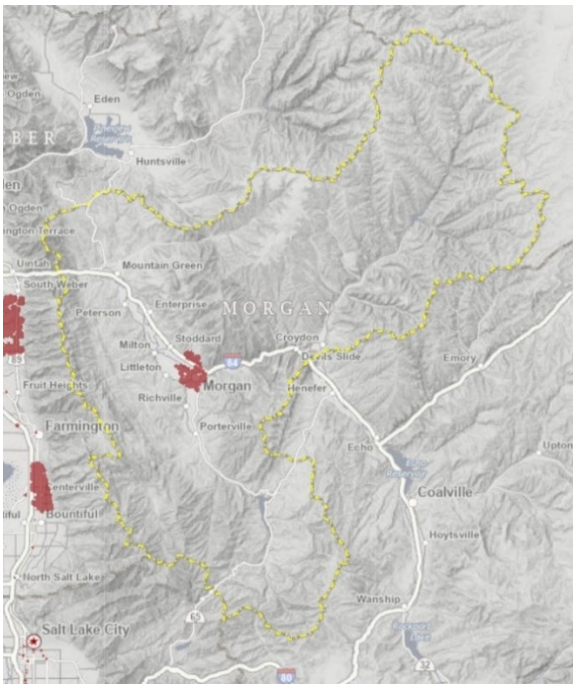

Figure 11. Utopia Coverage Areas in Morgan County with Any Speed (Red Areas are Wired Service, Green Areas are Fixed Wireless Service)

Wireless Towers

Point-to-point wireless towers, also known as microwave towers or wireless backhaul towers, are structures used in telecommunications to establish wireless communication links between two specific points. These towers facilitate the transmission of data, voice, or other forms of communication over long distances without the need for physical cables or fiber optic lines.

The primary purpose of point-to-point wireless towers is to establish a direct and dedicated connection between two locations. These towers are typically equipped with directional antennas, which transmit and receive signals in a focused beam, allowing for high-speed and reliable data transmission.

Figure 12 shows wireless tower locations within Morgan County.

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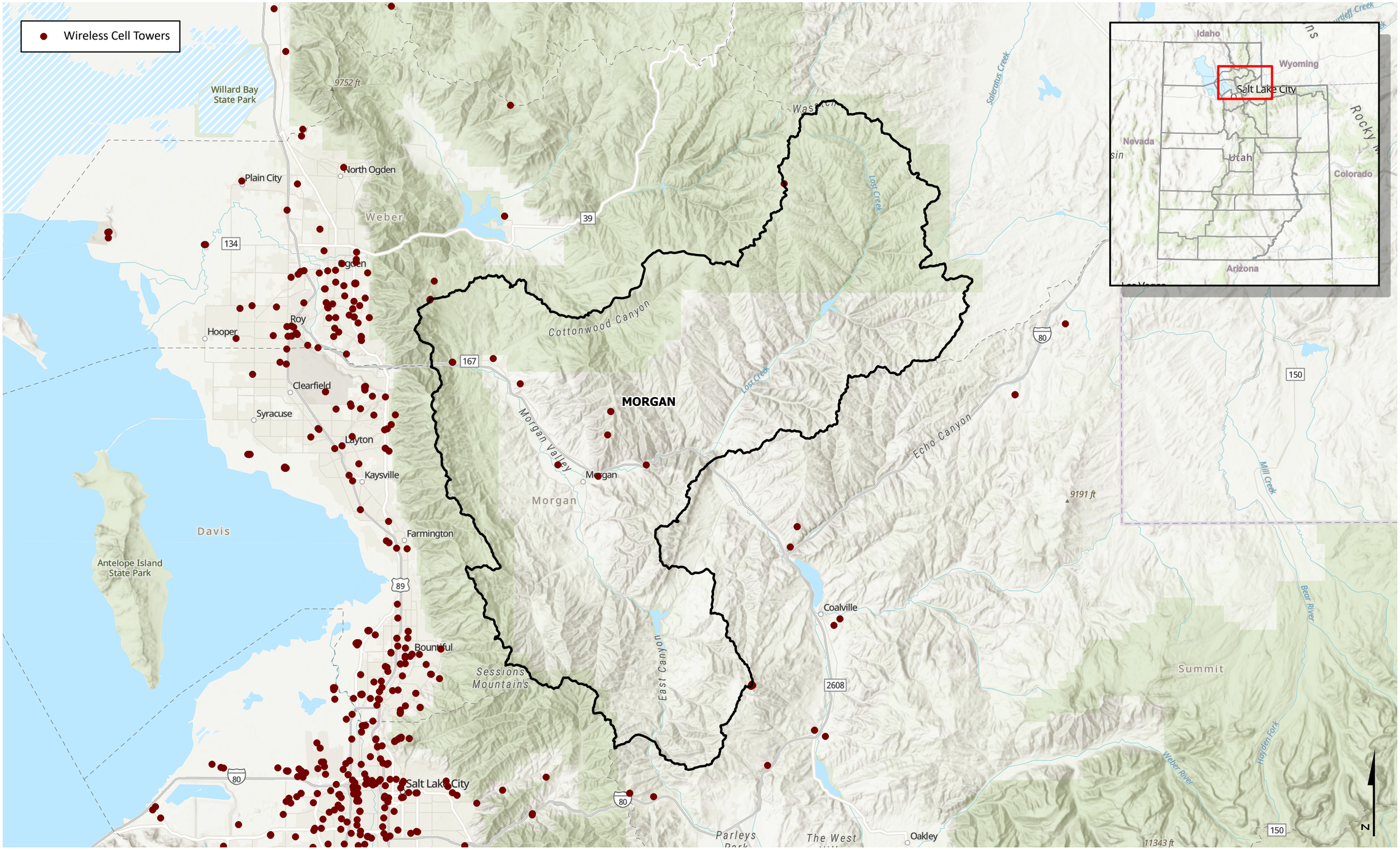

Figure 12: Wireless Cell Towers in Morgan County

Utah Department of Transportation (UDOT)

UDOT has been actively deploying fiber optic infrastructure along the state highway system for many years. This infrastructure includes conduit, fiber optic cabling, access points, distribution hubs, and communications equipment. This infrastructure is a publicly owned asset that UDOT uses to monitor traffic and other transportation-related activities and facilitate broadband deployment across state highways. Whenever UDOT builds or expands a roadway, their practice is to install fiber optic conduits as an incremental cost to the project. UDOT exchanges sections of their empty conduit to private ISPs to allow them to install their own cabling. In exchange, private ISPs provide their own empty conduit for UDOT to use in different locations. Often, an ISP that provides shared communications infrastructure, such as Crown Castle or Syringa, will own and manage the fiber in the conduit leased from UDOT. This network creates the primary middle mile fiber network throughout the region. The ISPs that provide final mile internet service to the end-user can often start their build-out from the nearest state road.

One of the advantages of using the UDOT fiber network for broadband is that it can reduce the cost and complexity of deploying new infrastructure. Rather than building new fiber optic cables, ISPs can lease or use existing UDOT fiber to provide broadband services to customers. This can make it more feasible for ISPs to offer high-speed internet service in rural areas where the population density may be lower and the cost of deploying new infrastructure is higher. Figure 13 shows UDOT fiber network infrastructure in the region of Morgan County, along with FCC unserved and underserved locations. The significance of these unserved locations will be discussed in section 3.4.1 Broadband Availability.

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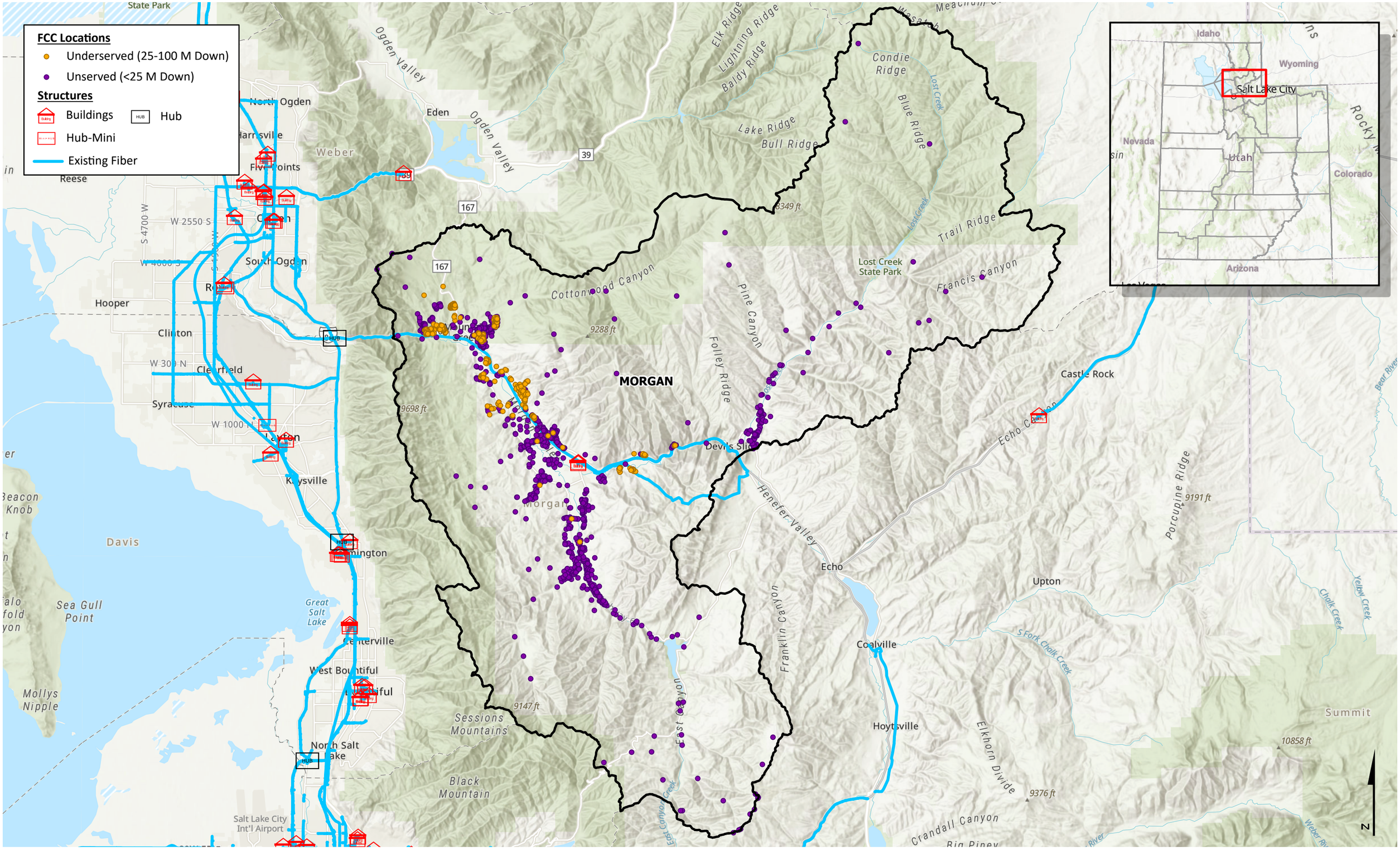

Horrocks.

Figure 13: UDOT Fiber Network in Morgan County

0 5 10 Miles

Municipal Open-Access Broadband Network

Many municipalities offer a municipally owned open-access fiber broadband networks. UTOPIA is a local ISP that has been providing this service for over 20 years to various municipalities. In this model, the municipality bonds for the capital expenses of the project deployment, and the residents and businesses of the municipality pay for the cost of the bond through subscription enrollments, utility bills, or municipality taxes. UTOPIA owns, operates, and maintains the network and offers the subscribers a choice of various ISPs for the internet service.

Municipal Fiber Network

Morgan County is linked through a fiber network operated by Utopia, facilitating the connection of County Buildings and fostering the advancement of smart city initiatives.

Served community resources in Morgan County include various places of worship and schools, a state library, and a health care facility. These are displayed in Figure 14.

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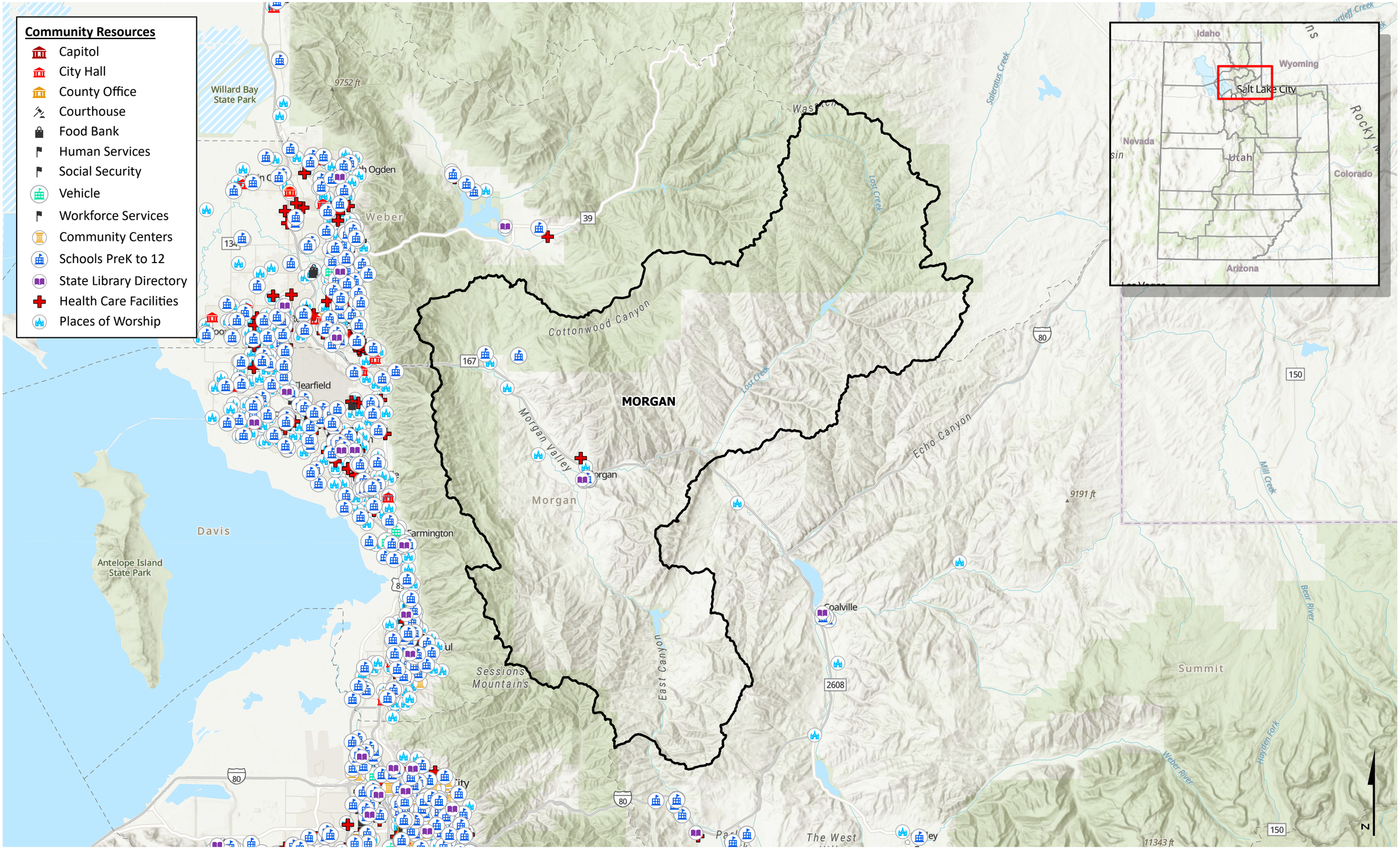

Figure 14: Community Resources in Morgan County

0 6.5 13 Miles

3.4.2 Digital Access

Digital access refers to the ability of individuals to use and benefit from digital technologies, including high-speed internet. In addition to the availability of broadband infrastructure, digital access also depends on factors such as knowledge, skills, and personal hardware. As digital technologies continue to play an increasingly important role in our daily lives, the need for equitable access to high-speed internet becomes more pressing. Digital access is an important aspect of this issue, as it relates to distribution of digital resources and opportunities, particularly for covered populations (unserved, underserved, and underrepresented communities). In Morgan County, ensuring digital access for all residents is a critical part of building a thriving and inclusive community.

Community Programs

Refer to Section 3.3, Table 6, above for information on local community partners and community anchor institutions and programs. Further information will be discovered at the upcoming partnership meeting.

Public Wi-Fi Networks

Utah Communities Connect (UCC) developed an interactive map[14] detailing public Wi-Fi locations in Utah as a response to the access needs brought on by the COVID-19 pandemic. As these Wi-Fi networks are typically fed through fiber optics, the speeds are very high (at least 100/20 Mbps) and the networks provide significant bandwidth and can serve multiple users. This map does not show any public Wi-Fi locations in Morgan County, however, it should show the Morgan County Library.

Wi-Fi Hotspot Loan Programs

The State Library Division has a program that provides free wireless hotspot devices to the public. Residents can check out a hotspot device to be able to connect online remotely at zero cost. These devices are available at most state- or municipality-owned libraries across the state.

Library Wi-Fi

The Morgan County Library has public Wi-Fi that is available during the hours of operation. The library is connected with fiber optics, meaning the Wi-Fi supports robust connection speeds.

Mobile Wireless Access

Mobile wireless carriers provide strong coverage areas across Morgan County. According to the data provided by the major mobile wireless carriers, there are only a few pockets where mobile wireless service is not available.[15] The areas that are not covered include locations that are extremely remote, or where the terrain is such that the wireless signal is impeded. For those locations that are covered by mobile wireless, most of the service that is offered supports the "served" threshold of 100/20 Mbps broadband speeds. See Figure 15 for a mobile wireless

[14] Utah Communities Connect. Public Wi-Fi Access Points. https://utah.maps.arcgis.com/apps/webappviewer/index.html?id=e463ba10af034b6e90a8d01b5c13ec55 (accessed May 9, 2023)

[15] UGRC. Utah Residential Broadband Map. https://broadband.ugrc.utah.gov/

coverage map of at least 100/20 Mbps speeds (data provided to the Utah Geospatial Resource Center).

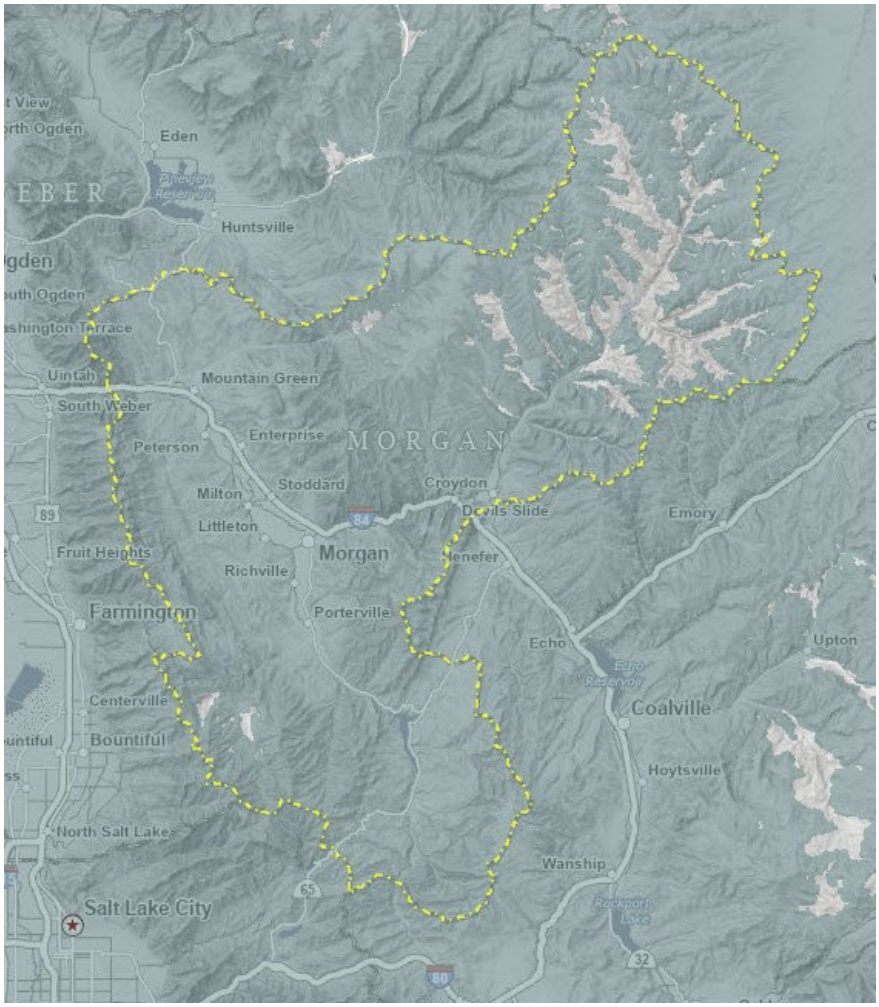

Figure 15. Mobile Wireless Coverage Area in Morgan County 100/20 Mbps Minimum Speeds

3.4.3 Broadband Affordability

Broadband affordability is critical, as the cost of high-speed internet can be a significant barrier for many households. In Morgan County, the economic affordability of broadband varies depending on a variety of factors, including the availability of affordable broadband service plans and discounted or subsidized broadband programs. While some ISPs offer competitive pricing and bundles that can make high-speed internet more accessible, others may charge higher prices for their services. Understanding the overall affordability of broadband in Morgan County is essential for ensuring that all residents have access to the digital resources and opportunities they need to thrive.

Table 9 outlines the providers available in the area, as well as their respective costs, available speeds, and participation in the ACP. Participation in the ACP program is a requirement for ISPs to be awarded federal BEAD implementation funding.

There are varying price points and speeds available among the five service providers in Morgan County. The providers offering the lowest service speed, RISE, do not offer the lowest price. Conversely, the service provider offering the highest speed, Beehive Broadband, does not require the highest cost to the end-user. There are various price point and speed options available to the residents of Morgan County (see Table 9).

Table 9. Providers and Prices

PROVIDER	PRICE	DESCRIPTION OF SERVICE TIER, ADVERTISED SPEEDS, AND AFFORDABILITY	PARTICIPATES IN THE AFFORDABLE CONNECTIVITY PROGRAM?
All West Communications	$59.95/mo $89.95/mo	300Mbps/300Mbps 1000Mbps/1000Mbps	Yes
Beehive Broadband	$34.95/mo $132.95/mo	6Mbps/1Mbps 1Gbps/1Gbps	Yes
Connext (Not currently available in Morgan County)	$35/mo	100Mbps 250Mbps 1Gbps	Yes
RISE Broadband	$50/mo	10Mbps 25Mbps 100Mbps	Yes
Liberty Broadband	$35/mo $60/mo $90/mo $140/mo	30Mbps 50Mbps 100Mbps 250Mbps	Yes

Lifeline

Lifeline is an FCC program that helps make communications services more affordable for low-income consumers. Lifeline provides a discount on qualifying monthly telephone service, broadband internet service, or bundled voice-broadband packages. The Lifeline program offers $9.25 per month to certain qualifying households and plans, and the State of Utah provides an additional $3.25 per month. As of January 2022, there were 11 lifeline subscribers in Morgan County according to The Universal Service Administrative Co.[16]

[16] Universal Service Administrative Co. Jan. 2023. Lifeline Program Data. https://www.usac.org/lifeline/resources/program-data/#

E-Rate

The Schools and Libraries Universal Service Support Program, commonly known as the E-rate program, helps schools and libraries to obtain affordable broadband. The E-rate program is administered by the Universal Service Administrative Company (USAC) under the direction of the FCC. USAC is responsible for processing applications for support, confirming eligibility, and reimbursing service providers and eligible schools and libraries for the discounted services. USAC also ensures that the applicants and service providers comply with the E-rate rules and procedures established by the FCC. Four service categories are eligible for E-rate funding: telecommunications, internet access, internal connections, and basic maintenance of internal connections.[17]

The Utah Education Network (UEN) is the E-rate consortium lead in applying for and implementing E-rate funds received in Utah. UEN helps schools and libraries apply for discounts on broadband services through the E-rate program. This program utilizes Utah Universal Service Funds (UUSF), which are collected through fees on consumers' phone bills.

Utah Universal Service Fund

The Utah Universal Service Fund (UUSF) enables rural customers to have access to the same quality of service as urban customers at a reasonably comparable price. Enacted in 1997 and governed by Utah Administrative Rule R746-8,[18] funding from UUSF is used to support programs that advance and maintain telecommunication networks and services in rural areas. This program provides rural telecommunication providers a rate-of-return to advance the operation and maintenance of rural networks.

3.5 NEEDS AND GAPS ASSESSMENT

To ensure that all residents of Morgan County have access to high-quality broadband internet, a needs and gaps assessment is essential. This assessment will identify gaps between the current state of broadband deployment and the needs of residents, businesses, and institutions. Through needs identification, data collection, and analysis, policymakers and community leaders can develop and implement strategies that address these gaps, ensuring that all residents have access to the digital resources necessary for success in today's economy.

To gather more qualitative data from the public about their experience with internet connectivity, a survey was created and distributed to the public. Questions in this survey covered topics such as residents' current internet connections, device accessibility, affordability options, connectivity for businesses, community internet needs, and voluntary disclosure of demographics. A toll-free hotline number was provided for residents taking the survey who did not have access to the internet. There were 177 surveys compiled and analyzed for this plan. Of those, 130 were completed for Morgan County's broadband planning efforts. There were 42 Morgan County

[17] Universal Service Administrative Co. Eligible Services List. https://www.usac.org/e-rate/applicant-process/before-you-begin/eligible-services-list

[18] Utah Office of Administrative Rules. (January 2022). Rule 8: Utah Universal Public Telecommunications Service Support Fund. https://adminrules.utah.gov/public/rule/R746-8/Current%20Rules?

canvassing surveys completed and five statewide surveys completed specifically in Morgan County in conjunction with the statewide planning effort. Survey results and charts are included in the following sections.

3.5.1 Broadband Availability

The ability to interact with friends and family, access educational and health care resources, and fully engage in the digital economy are all made possible by having access to high-speed broadband. However, not every part of Morgan County has access to dependable and reasonably priced broadband connectivity.

The primary metric by which broadband availability is evaluated is what speeds are available to residents and businesses throughout Morgan County. The BEAD program aims to provide service of 100/20 Mbps speeds to every American. Serviceable locations with speeds under 25/3 Mbps are considered unserved locations that are given the top priority for broadband funding. Locations with speeds less than 100/20 Mbps are considered underserved locations and are the second priority for BEAD funding.

Figure 16 shows the areas where there is no wired or fixed wireless service above 25/3 Mbps.

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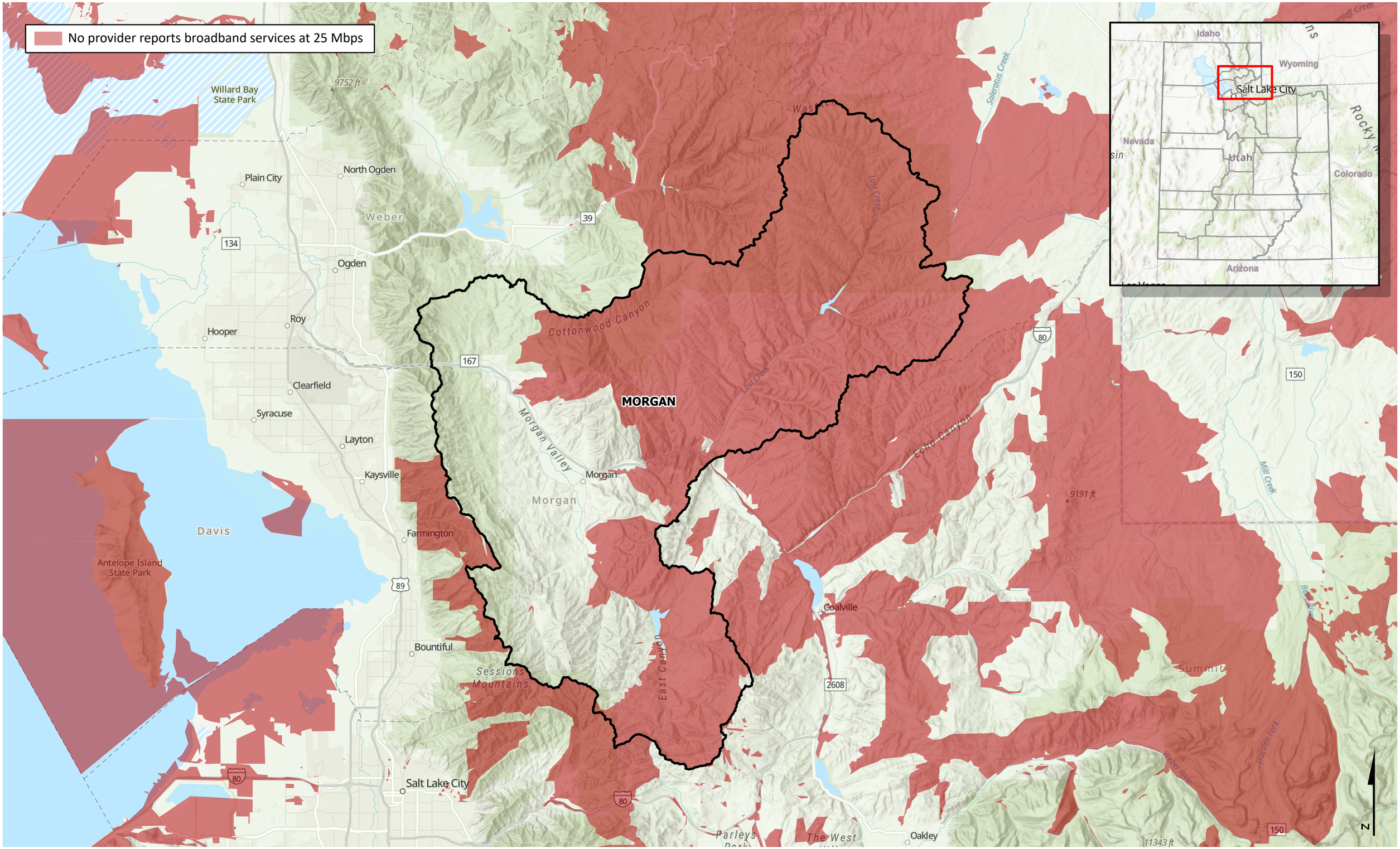

Horrocks.

Figure 16: Areas with No Services at 25 Mbps in Morgan County

0 6.5 13 Miles

FCC Service Locations

The FCC has created a map[19] that shows the service availability at each broadband serviceable location. Residences and businesses that are classified as unserved or underserved will qualify for BEAD funding. The data within the other sections of 3.5.1 generally support the FCC service designations.

Figure 17 displays the residences in Morgan County with classifications of served, underserved, and unserved. The map depicts the sparsity of the unserved locations throughout the county as well as the cluster of served locations in the northwest region of the county. It also shows the minimal number of underserved residences.

Figure 18 simply illustrates the underserved and unserved locations throughout Morgan County.

[19] FCC. National Broadband Map. https://broadbandmap.fcc.gov/home

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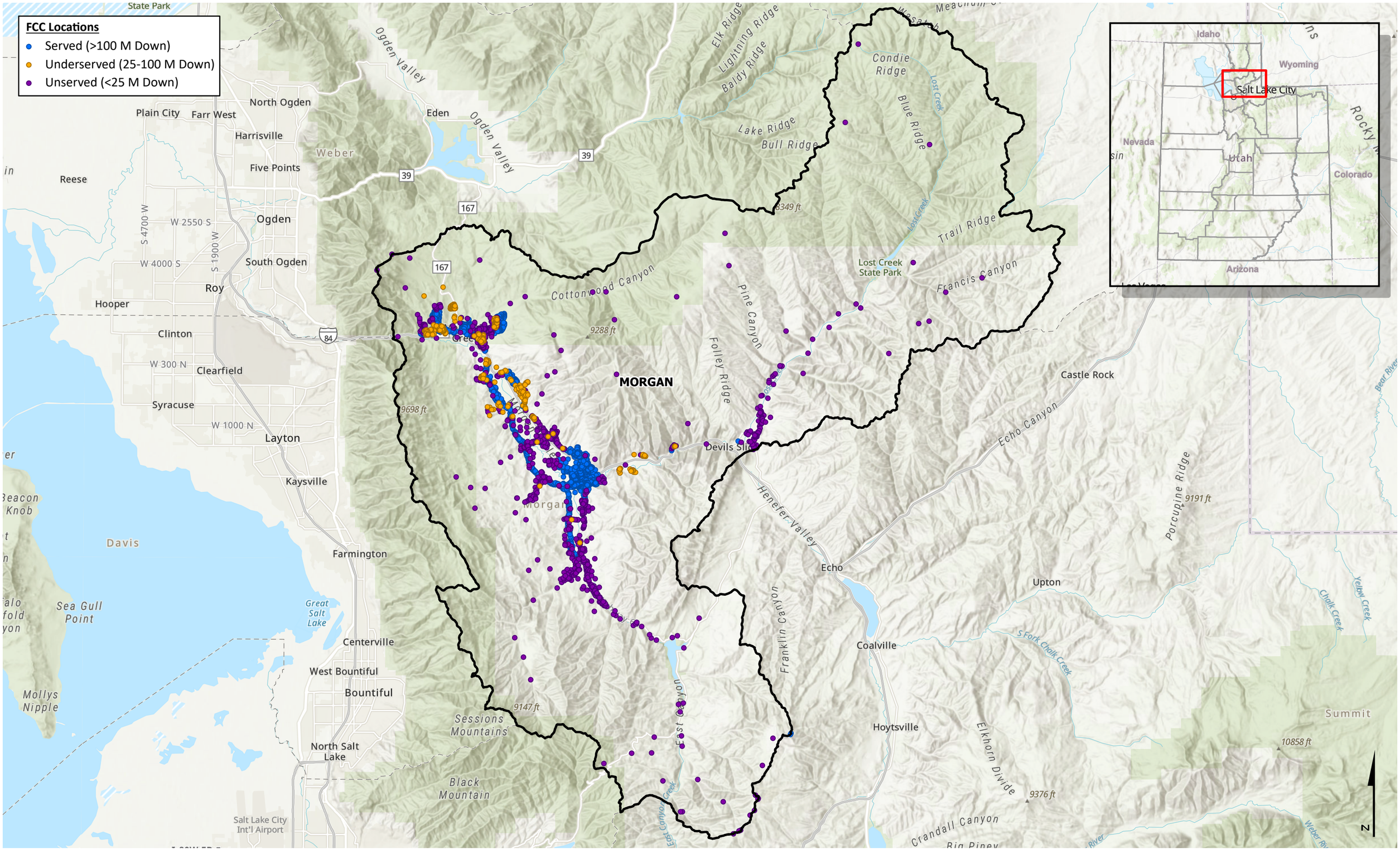

Figure 17: FCC Service Locations in Morgan County

0 5 10 Miles

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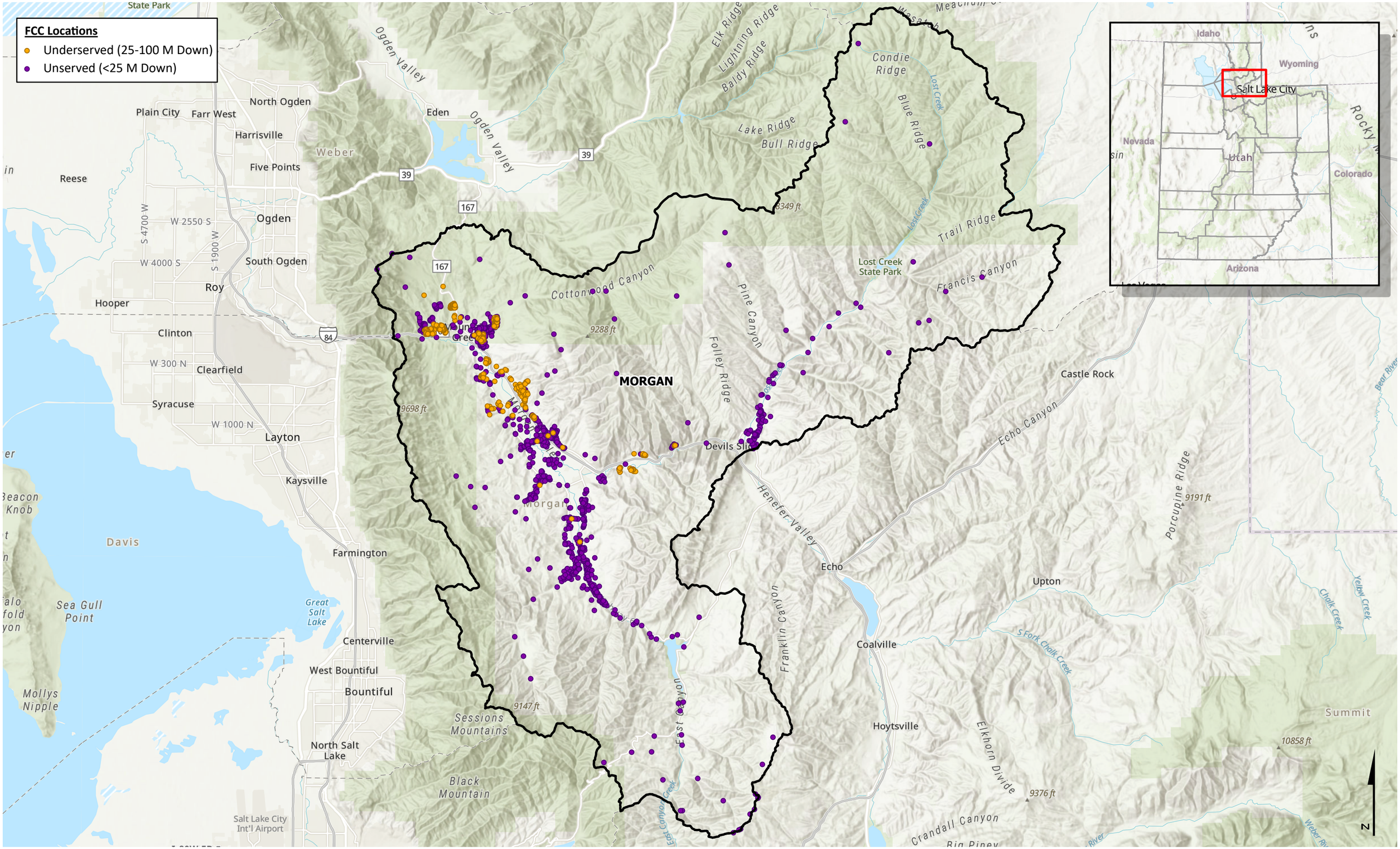

Figure 18: FCC Underserved/Unserved Service Locations in Morgan County

0 5 10 Miles

Below, Table 10 shows the speed tiers available to residents throughout Morgan County. Margin of error estimates may be a factor of the percents not totaling 100.

Table 10. Broadband Speeds Available

LOCATION	UNSERVED (BELOW 25/3 MBPS)		UNDERSERVED (BELOW 100/20 MBPS)		SERVED (ABOVE 100/20 MBPS)		TOTAL FCC LOCATIONS
	NUMBER OF LOCATIONS	%	NUMBER OF LOCATIONS	%	NUMBER OF LOCATIONS	%	
Morgan County	1201	29.8%	393	9.7%	2438	60.5%	4032

Internet Speed Test

In order to correctly gauge accuracy of FCC broadband data and ISP coverage areas, Morgan County and the state of Utah held a speed test campaign throughout the region. Residents could test the current speeds that their device was experiencing at the time of the test. Speed tests provide insight of additional unserved and underserved locations, showing gaps and discrepancies beyond the information provided by ISP data and FCC broadband data. These real-time internet download and upload speeds, while beneficial, did not come without limitations. For example, residents may be experiencing lower speeds because they are paying for a slower speed tier, which indicates an affordability issue. In addition, slower speeds may be due to personal hardware that's been incorrectly installed, which would be a digital access issue. The speed test cannot show if these other factors are happening, so it is best used to assess general trends.

Table 11 shows the results of the speed test. Out of the total 273 tests taken, nearly 48% (131) of the locations classify as Unserved (download speeds below 25 Mbps).

Table 11. Speed Test Results

DOWNLOAD SPEED	NUMBER OF TESTS
No Service	0
Below 25 Mbps	68
25-11 Mbps	63
Above 100 Mbps	140
Total Tests	273

Figure 19 indicates the locations of the speed test results.

Figure 20 displays the FCC broadband serviceable locations (both underserved and unserved) in addition to the speed test results.

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Speed Test Results
- No Service
- <10 M down
- <25 M down
- <500 M Down
- >500 M down

MORGAN

Horrocks.

Figure 19: Speed Test Results for Morgan County

0 5 10 Miles

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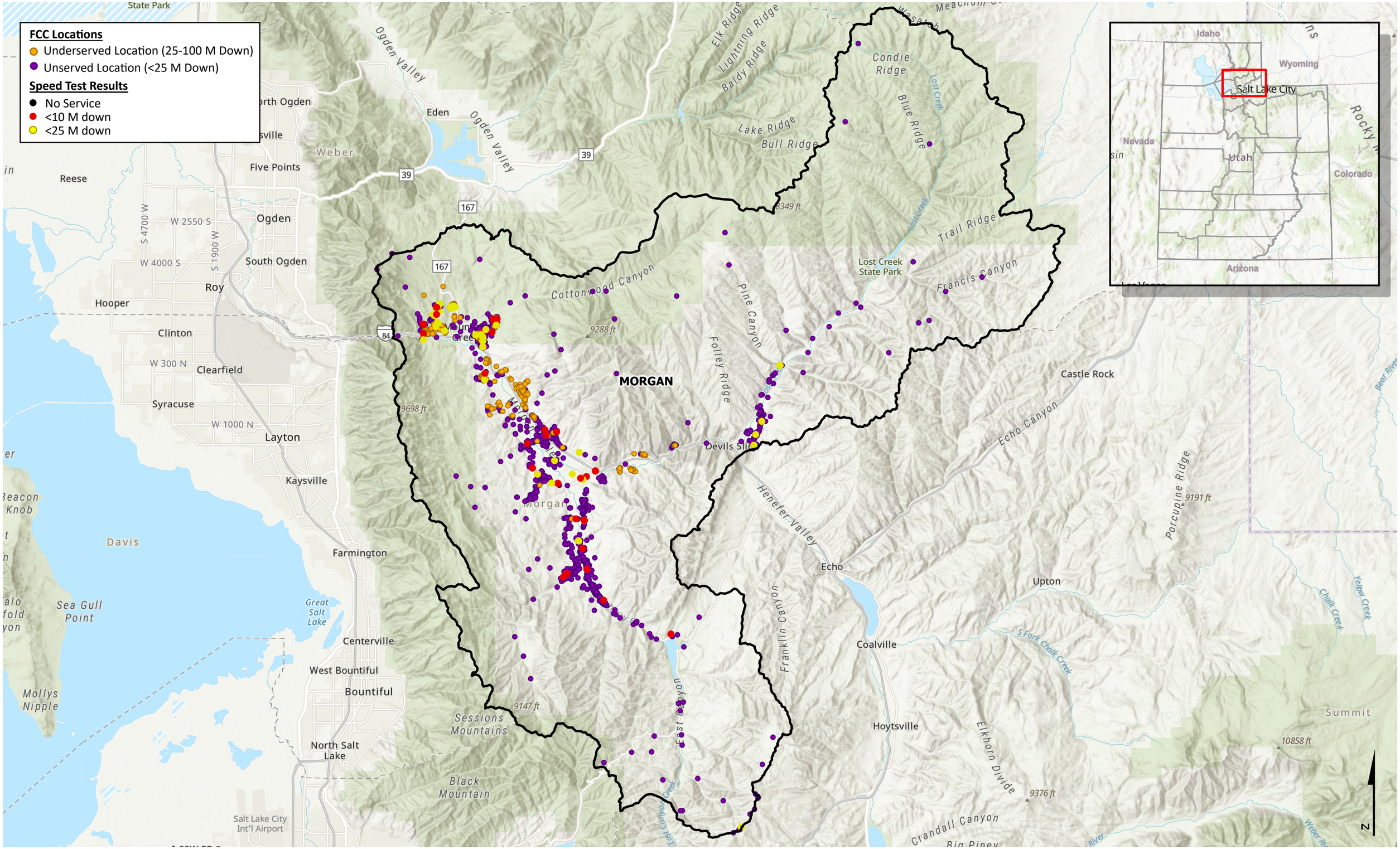

Figure 20: Unserved Speed Test Results and Underserved/Unserved FCC Locations in Morgan County

0 5 10 Miles

Middle Mile

The UDOT fiber network is the primary statewide fiber network. State highways that do not yet have UDOT fiber in them often do not have any fiber in them due to their remote locations.

On the UDOT fiber map, sections of highway are marked if they are a priority area UDOT wishes to run fiber through or if they are segments of road that have projects or funding for deploying fiber in the near future. Figure 22 shows the current UDOT fiber network along with future needs projects and FCC unserved and underserved locations.

UDOT has a tentative upcoming project to install fiber and conduit infrastructure, connecting South Weber to Morgan City via I-84, pending Capital Funds. The project will extend further over SR - 167 (Trappers Loop) and reach the SR- 39 Junction (Pineview Reservoir). The upcoming middle mile fiber expansion is shown in Figure 21.

Construction is scheduled to begin in 2025 and will be completed by 2026. There are no current plans in place for UDOT to construct HWY 66. This initiative aims to establish a pathway for ISPs to utilize the UDOT Conduit Trade program. By leveraging this program, ISPs can expand their services to the residents of Mountain Green, enabling better connectivity and improved internet access.

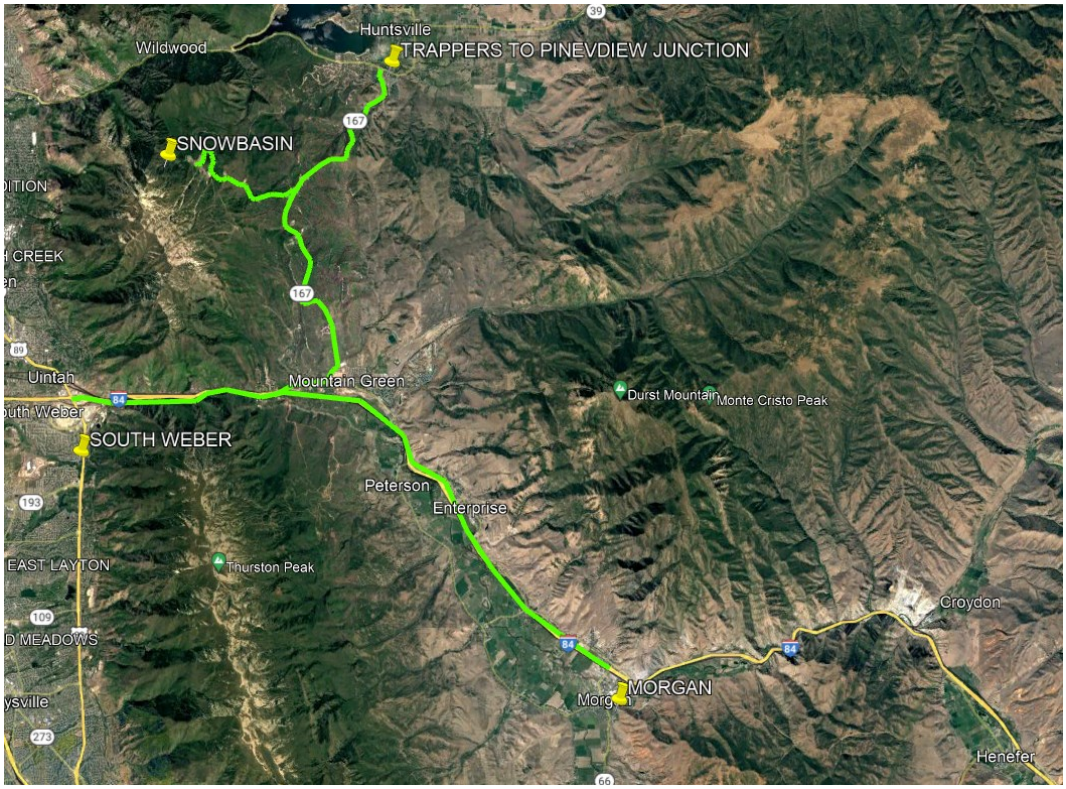

Figure 21. Middle Mile Fiber Expansion

Figure 22 outlines the UDOT fiber network and needs for Morgan County.

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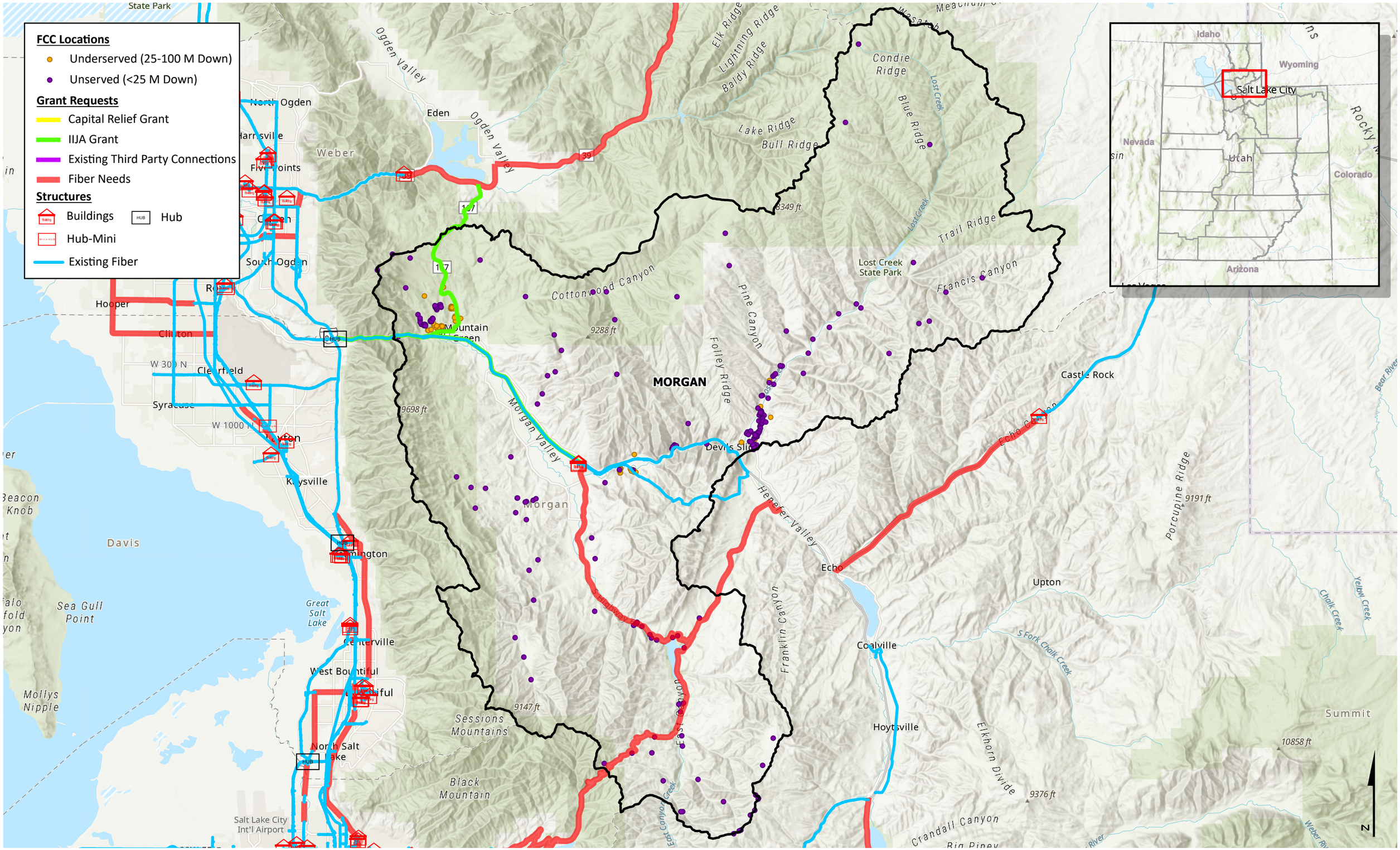

Figure 22: UDOT Fiber Network with Fiber Needs and Grant Requests in Morgan County

Projected Growth in Morgan County

Over the next 10 years, the population of Morgan County is projected to increase slightly. The projected growth is expected to occur in the northern region of Morgan County and along the major interstate, where much of the current population is located now. Much of the population is expected to increase by up to 111 people, and in other areas up to 810. Figure 23 shows the 10-year growth estimates from the U.S. Census, known as Traffic Analysis Zones (TAZ)[20].

[20] Traffic Analysis Zones. July 2023. https://www.arcgis.com/home/item.html?id=81adbf0ae9eb47a89a9e0cf569010e16

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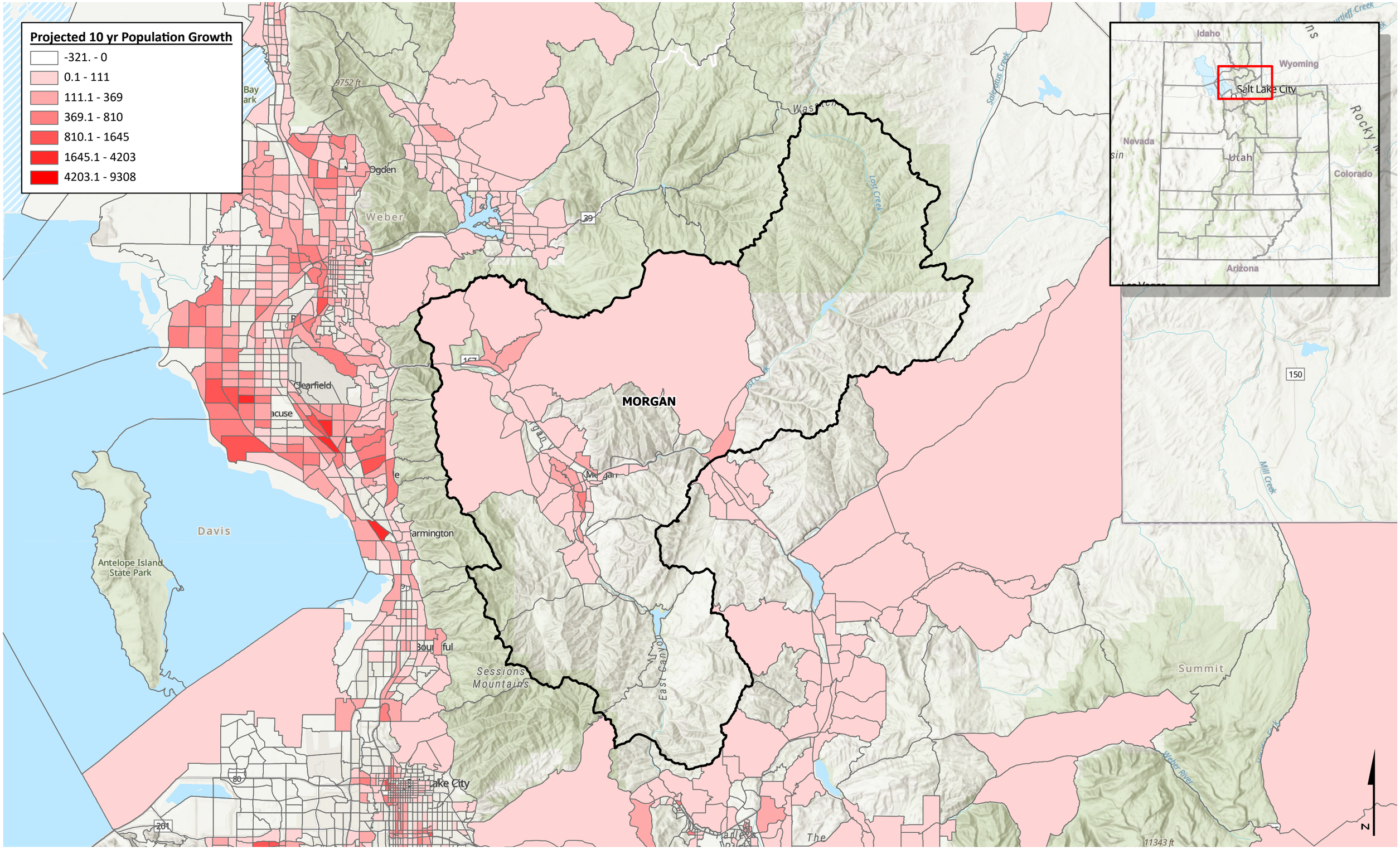

Figure 23: Projected 10 Year Population Growth of Morgan County

0 6.5 13 Miles

Survey Data

The Morgan County broadband survey asked respondents to indicate if they had a household internet connection. Of 176 respondents, 163 responded, “Yes, I have an internet connection at my residence” and 13 selected “No, I don’t have an internet connection at my residence.” This data is detailed in Figure 24 below.

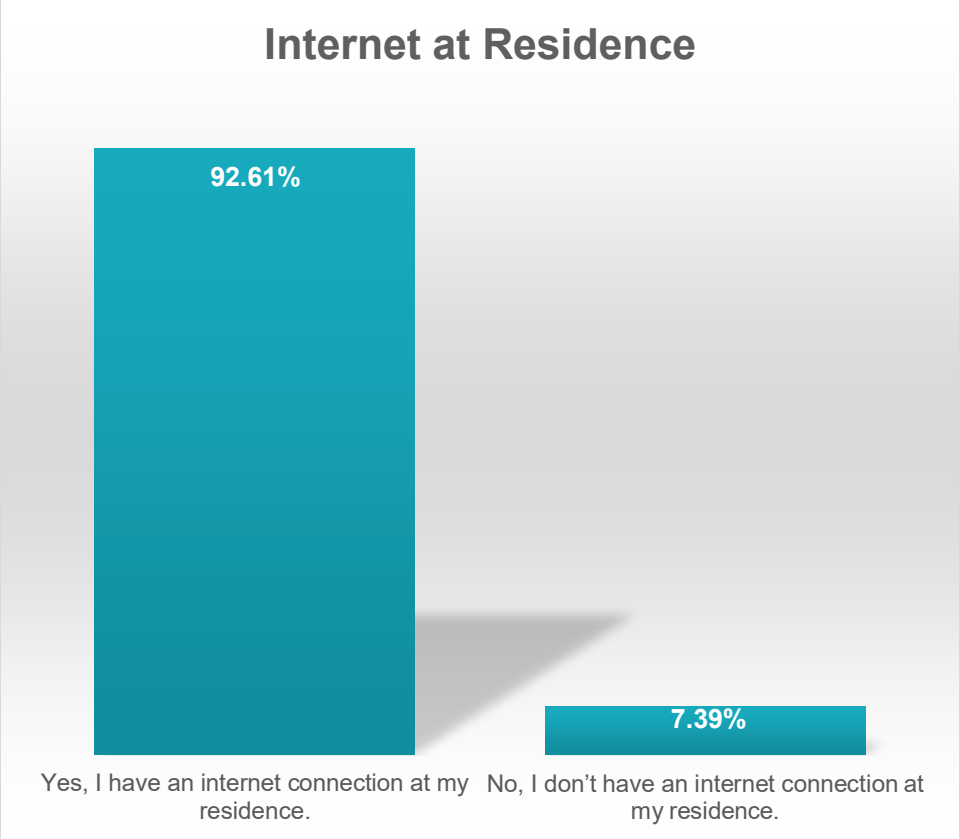

Figure 24. Percentage of Survey Respondents with a Household Internet Connection

When asked if they have an internet connection at their business, 29 out of 34 respondents replied “Yes,” and five respondents answered “No.” See Figure 25 below.

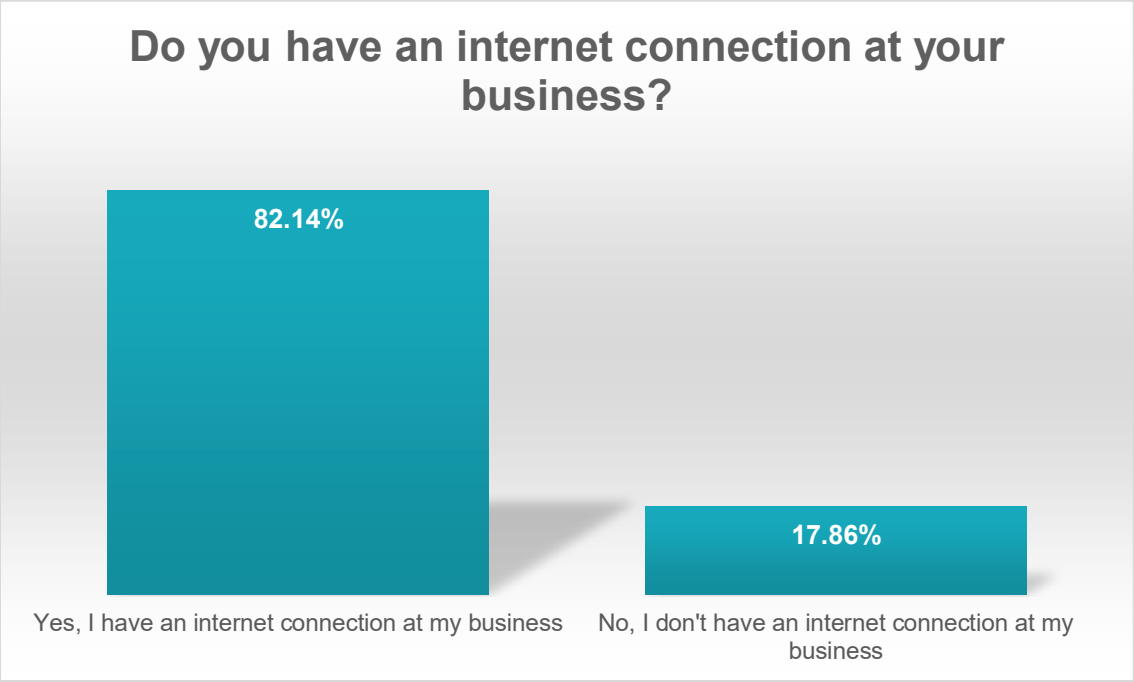

Figure 25. Percentage of Survey Respondents with a Business Internet Connection

The Morgan County broadband survey asked respondents what company they use for internet service. There were 150 responses to this question, with 34% or 51 respondents indicating that CenturyLink was their ISP. Rise Broadband was the second most common ISP representing 15% or 22 respondents. This data is detailed in Figure 26 below.

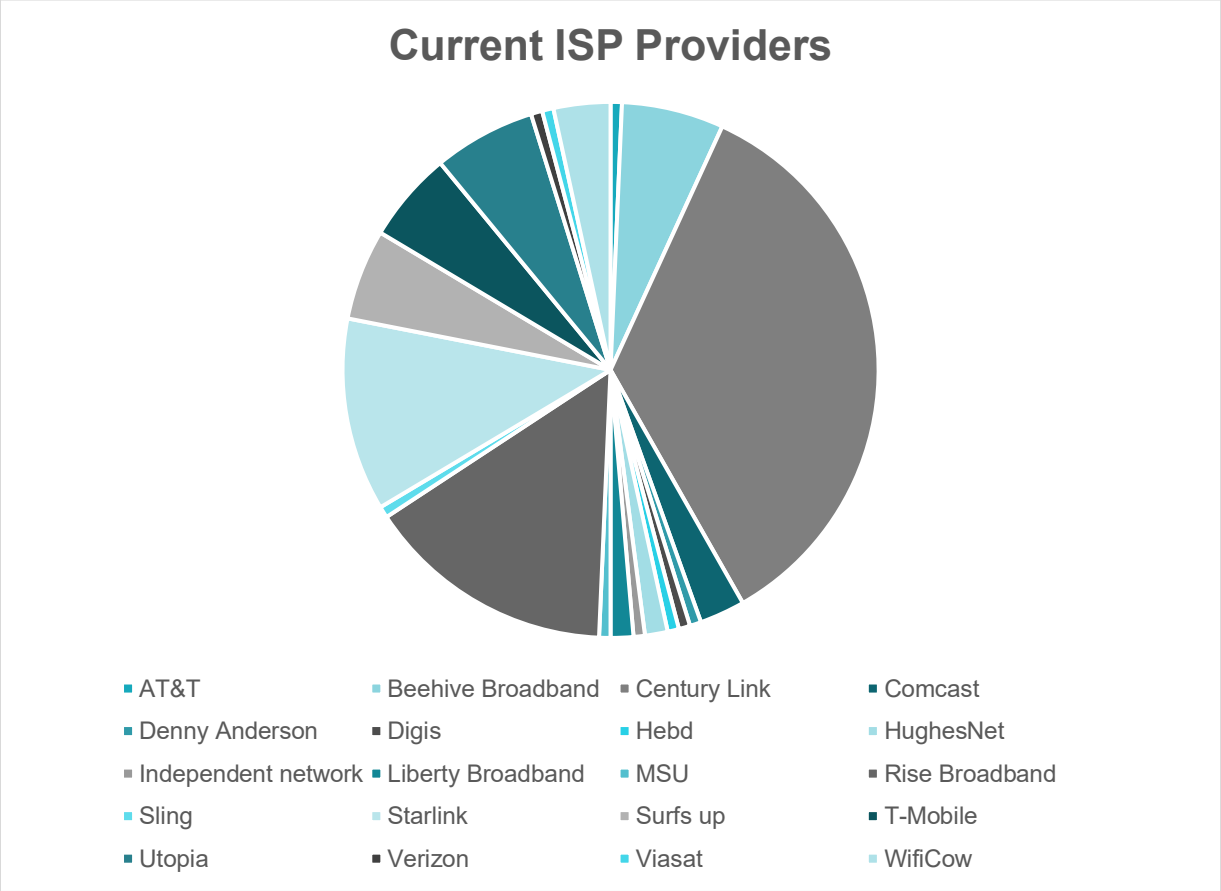

Figure 26. ISP in the Morgan County Area

Survey respondents who answered “No, I do not have internet connection at my residence” were directed to a follow-up question about why internet is not available for them. Of 10 respondents, 50% (five respondents) shared that they did not have connectivity because initial connection fees are too expensive. “An internet connection isn’t available in my area,” was also selected by 50% (five respondents) as a barrier to internet access. Four respondents (33.33%) shared that initial connection fees are too expensive. More information is detailed in Figure 27 below.

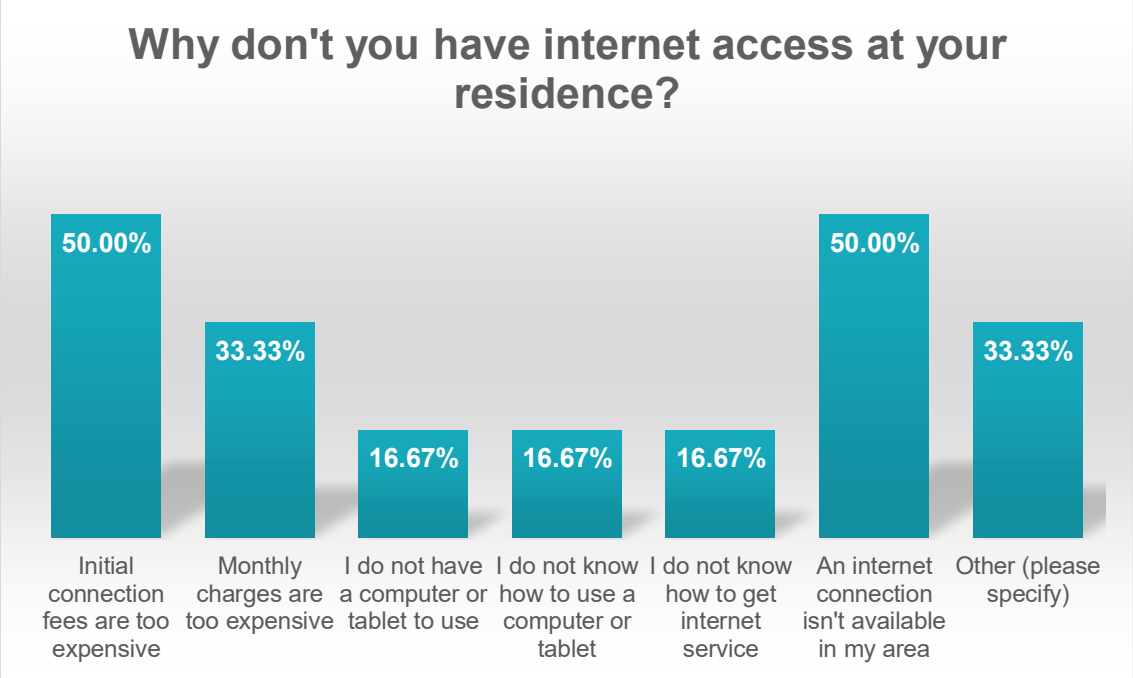

Figure 27. Common Reasons Residences Don't Have Internet

3.5.2 Digital Access

There are many barriers to digital access in Morgan County which have made it difficult for residents to access high-speed broadband internet. These barriers are primarily affordability and digital literacy. To address these needs, it is important to prioritize initiatives that improve digital literacy and provide affordable access to high-speed internet, particularly in underserved areas of Morgan County.

Covered Populations

A covered population refers to a group of individuals who are eligible for a particular program or intervention based upon economic or socioeconomic factors. The goal of defining a covered population is to target resources and focus them on those who are most in need.

Covered populations in Morgan County include:[21]

- Individuals who primarily reside in a rural area
  - 64.9%
- Veterans
  - 4.2%
- Individuals who are members of racial or ethnic minority groups
  - 2.8% (includes all individuals who are non-white)
- Individuals who live in low-income households
  - 4.5% (persons in poverty)
- Individuals with disabilities
  - 4.3% (under the age of 65)
- Aging individuals
  - 12.3% (65 and above)
  - See Figure 28
- Incarcerated individuals, other than individuals who are incarcerated in a Federal correctional facility
  - <0.09%

According to the U.S. Census Bureau (2021), the total population of Morgan County is 12,832 people. In addition to margin of error estimates, categories are not mutually exclusive; as such, percentages do not total 100.

The maps in Figure 28 below show covered populations with more than a 10% variance within Morgan County. Covered populations not depicted in the figure do not show a significant variance throughout Morgan County.

[21] U.S. Census Bureau. (2021). U.S. Census Bureau QuickFacts: Morgan County, Utah. https://www.census.gov/quickfacts/fact/table/morgancountyutah/PST045222

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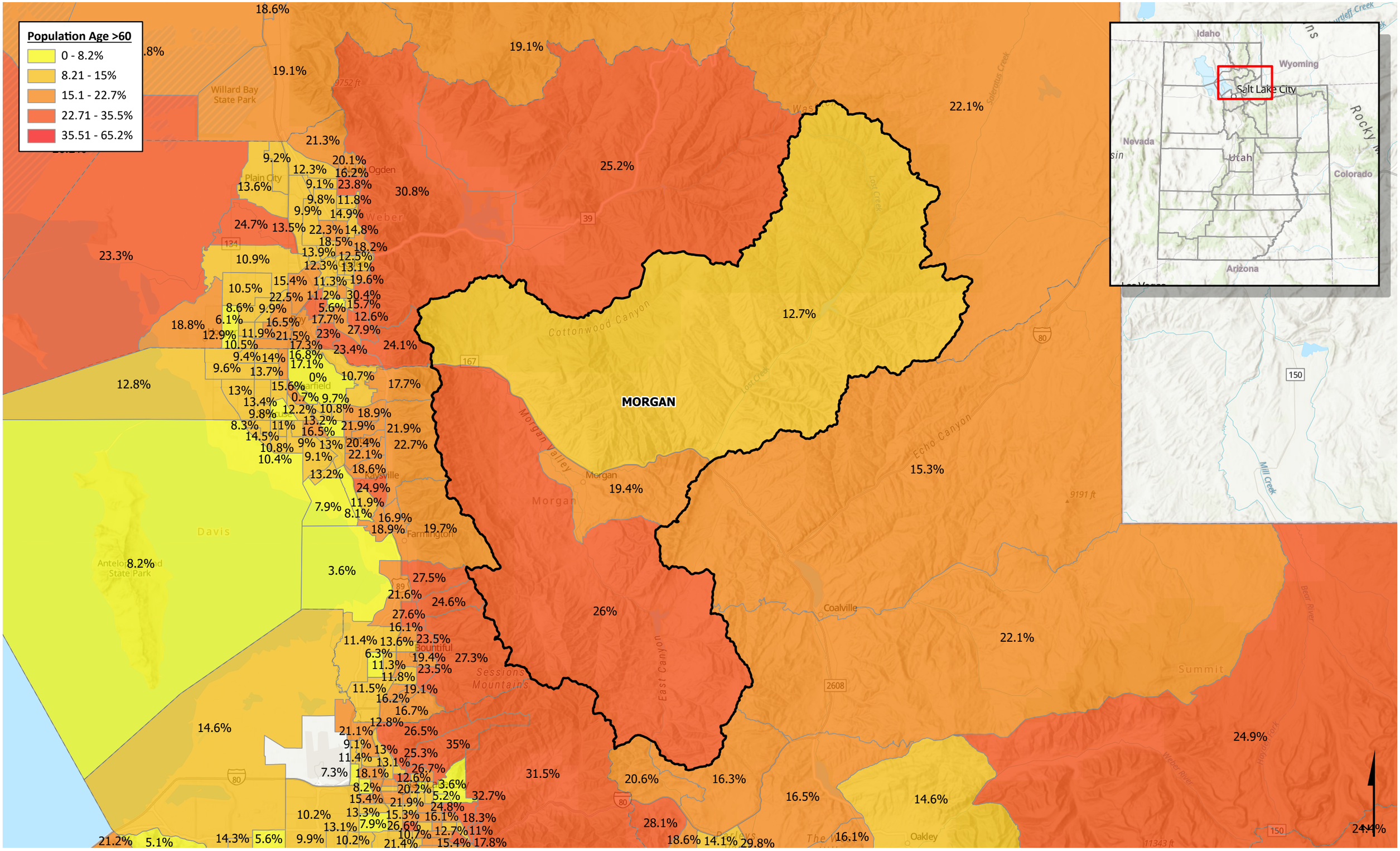

Figure 28: Population Age 60+ in Morgan County

0 6.5 13 Miles

Internet Subscription Rates

Morgan County recognizes the vital role that broadband internet plays in the community. Census data provides valuable insights into the adoption and accessibility of broadband services among the population. This data assists in identifying areas of opportunity and addressing existing gaps in broadband access.

As of 2021, 94.3% of Morgan County households have a broadband internet subscription.

Table 12 lists the internet subscription rates within Morgan County.[22]

Table 12. Internet Subscription Rates

LOCATION	TOTAL HOUSEHOLDS	HOUSEHOLDS WITHOUT AN INTERNET SUBSCRIPTION	% WITHOUT AN INTERNET SUBSCRIPTION
Morgan County	3,504	201	5.7%

[22] U.S. Census Bureau. (2021). American Community Survey 5-Year Estimates. S2801 - Types of Computers and Internet Subscriptions. https://data.census.gov/table?q=internet+morgan+county,+utah

Survey Data

The Morgan County broadband survey asked respondents what they use internet for at their household. There were 112 responses to this question, and most respondents indicated they were using the internet for remote working, remote learning, entertainment, shopping, and video conferencing. This data is detailed in Figure 29 below.

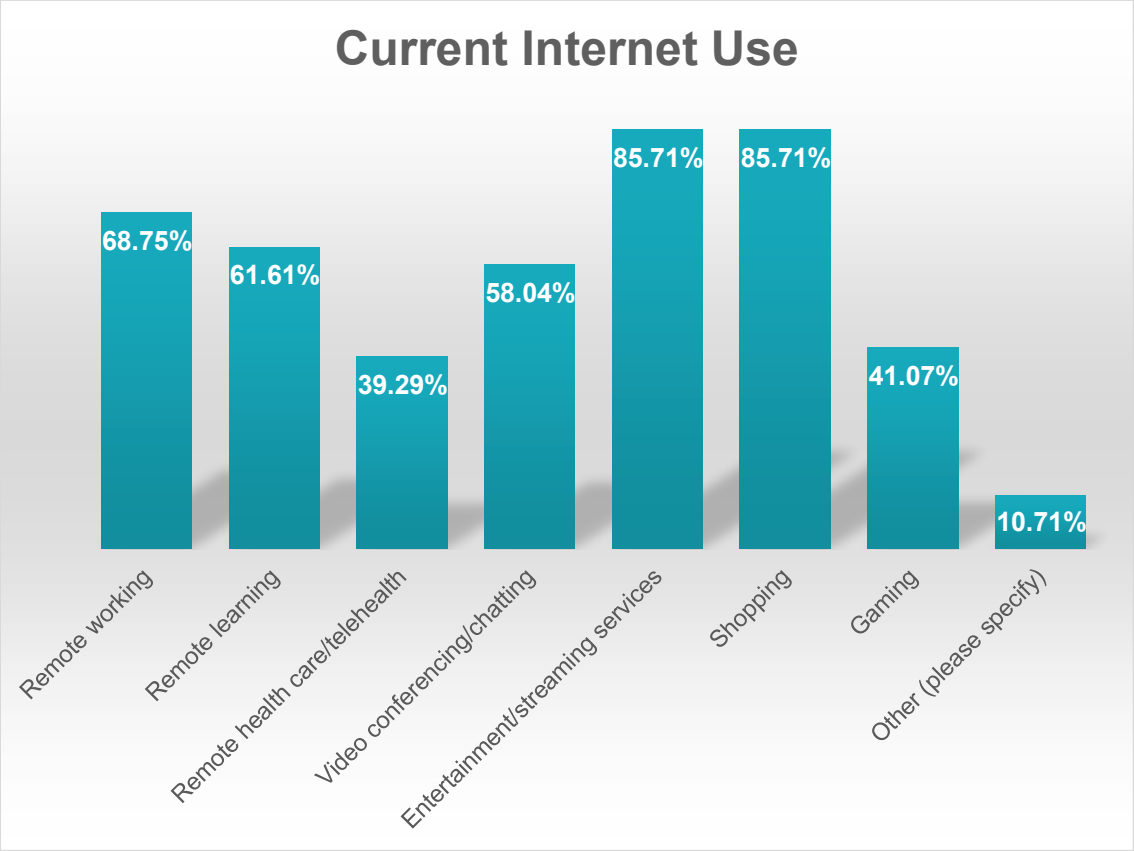

Figure 29. Household Internet Uses

The survey asked respondents what they use internet for at their business. There were 20 responses to this question, and most respondents indicated they were using the internet for banking, communication, office productivity and cloud storage. This data is detailed in Figure 30 below.

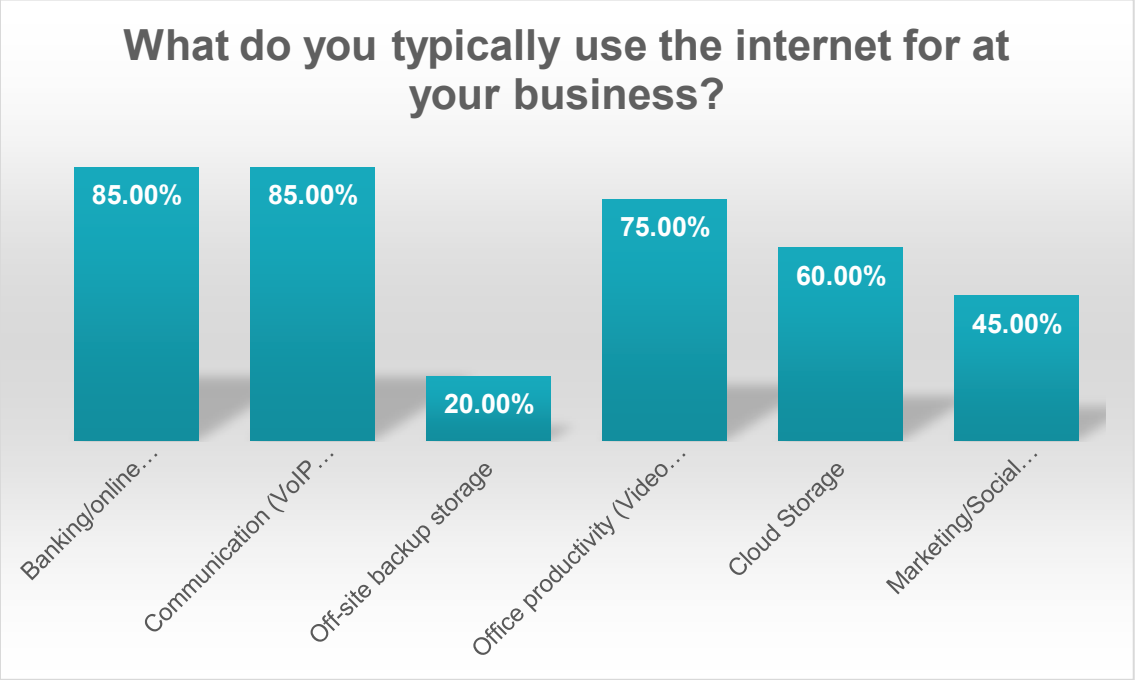

Figure 30. Business Internet Uses

The survey included a question for respondents about in-home, connected device access in their communities. Out of 85 responses to this question, 36 individuals shared that most people in their community have a desktop or laptop at home, as detailed in Figure 31.

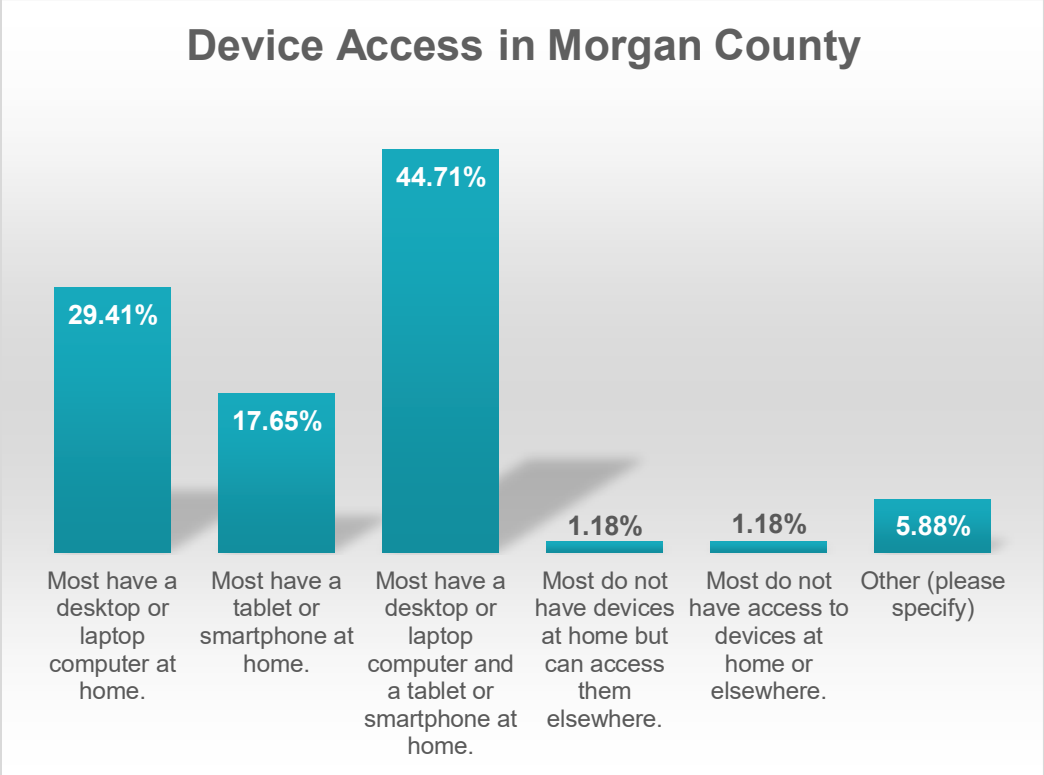

Figure 31. Device Access in Morgan County

The survey included a question about how people in their community could access internet-connected devices if they were not available in their homes. There were 79 responses to this question, with school, work, or library being where most people can have access to community devices. The data is included in Figure 32.

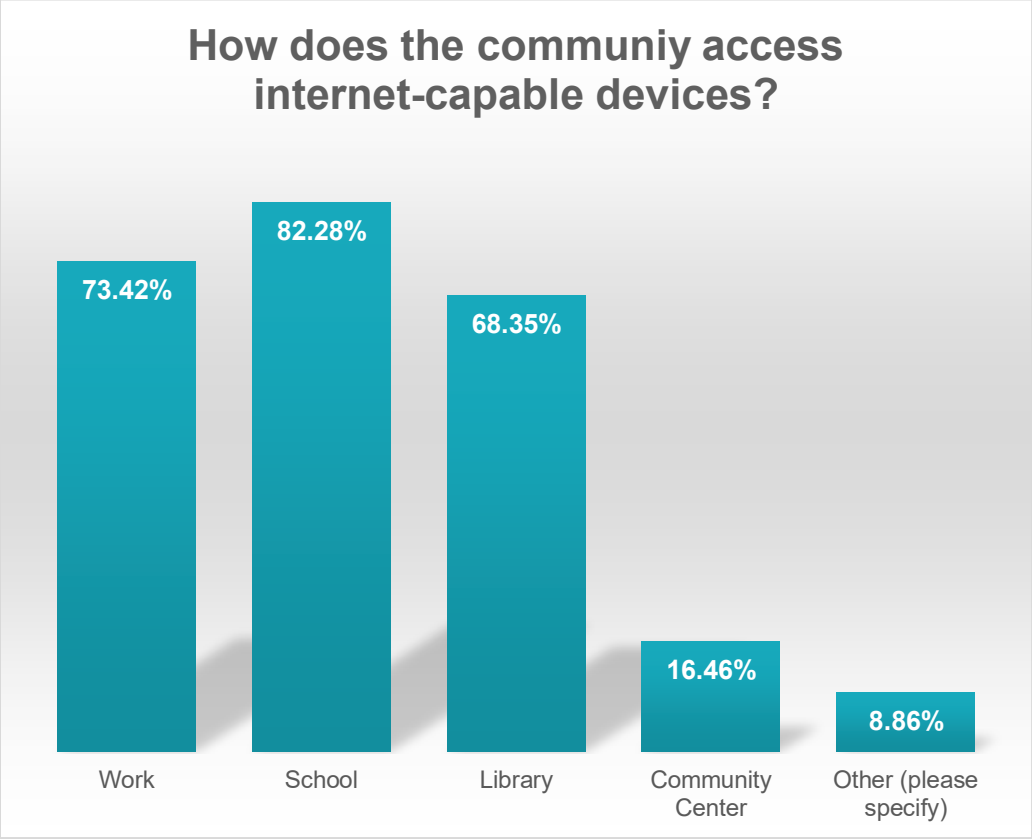

Figure 32. Community Access to Devices

3.5.3 Broadband Affordability

Affordability is a significant barrier to broadband access in Morgan County. While access to high-speed internet has become increasingly important for education, health care, and business opportunities, many residents are unable to afford the cost of broadband services. To address these needs and gaps in broadband affordability, it is important to develop initiatives that provide affordable broadband options for low-income households, increase competition among broadband providers, and address the root causes of broadband affordability challenges.

Survey Data

The Morgan County broadband survey included a question about what the monthly charge is for respondents' household internet service. There were 131 responses to this question, with 23% of respondents indicated they pay between $40.01 and $50 for monthly internet service and 17% indicating they pay more than $100 per month on home internet service. This data is detailed in Figure 33 below.

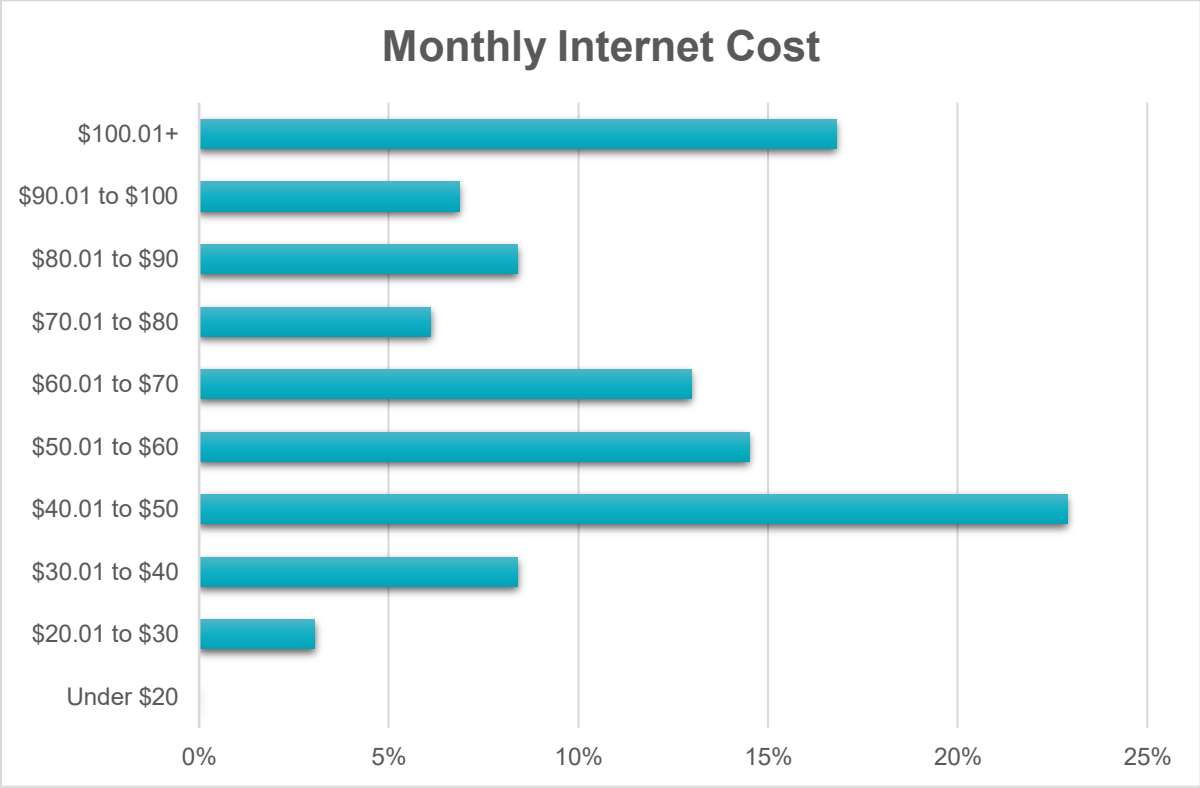

Figure 33. Monthly Household Internet Cost

Survey respondents were also asked about their awareness of the Affordable Connectivity Program (ACP). Of 120 responses to this question, 82 people shared they were not aware of the ACP. Information is detailed in Figure 34.

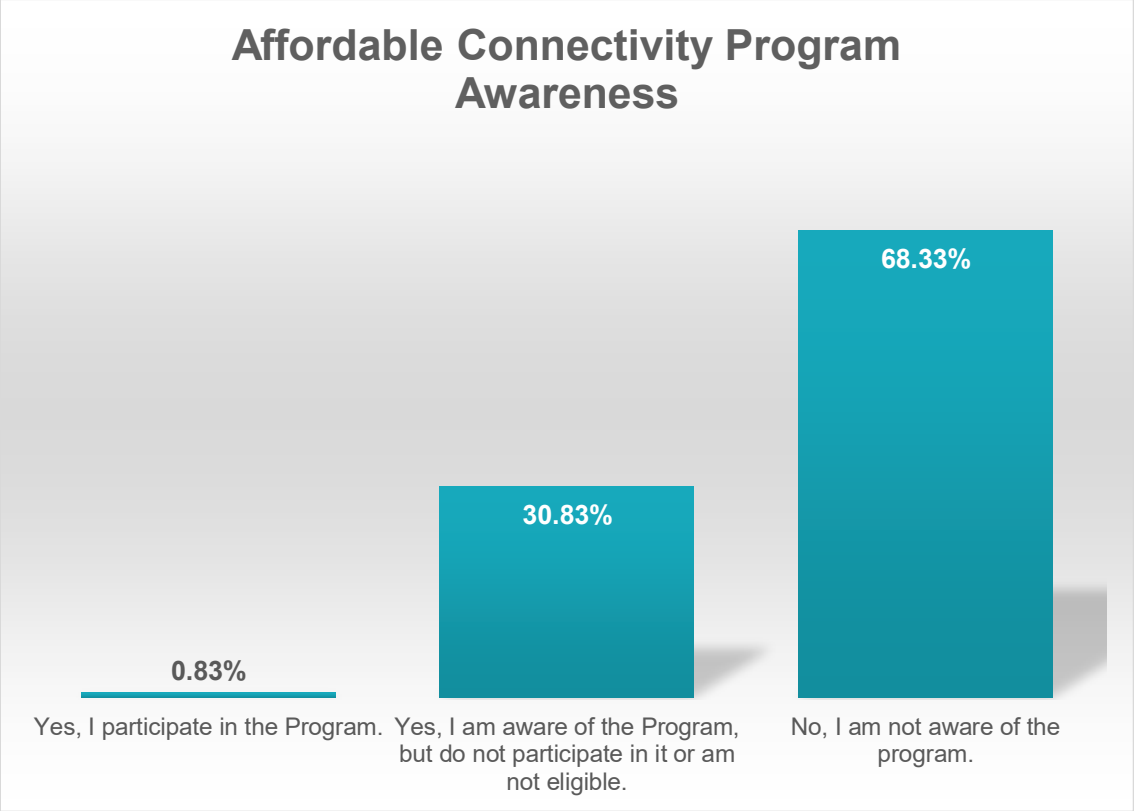

Figure 34. Affordable Connectivity Program Awareness

The survey included a prompt about internet access and how it relates to people within their community. Of 91 responses to this question, 58 respondents thought that some people want internet provider options other than those currently available to them. More information is included in Figure 35.

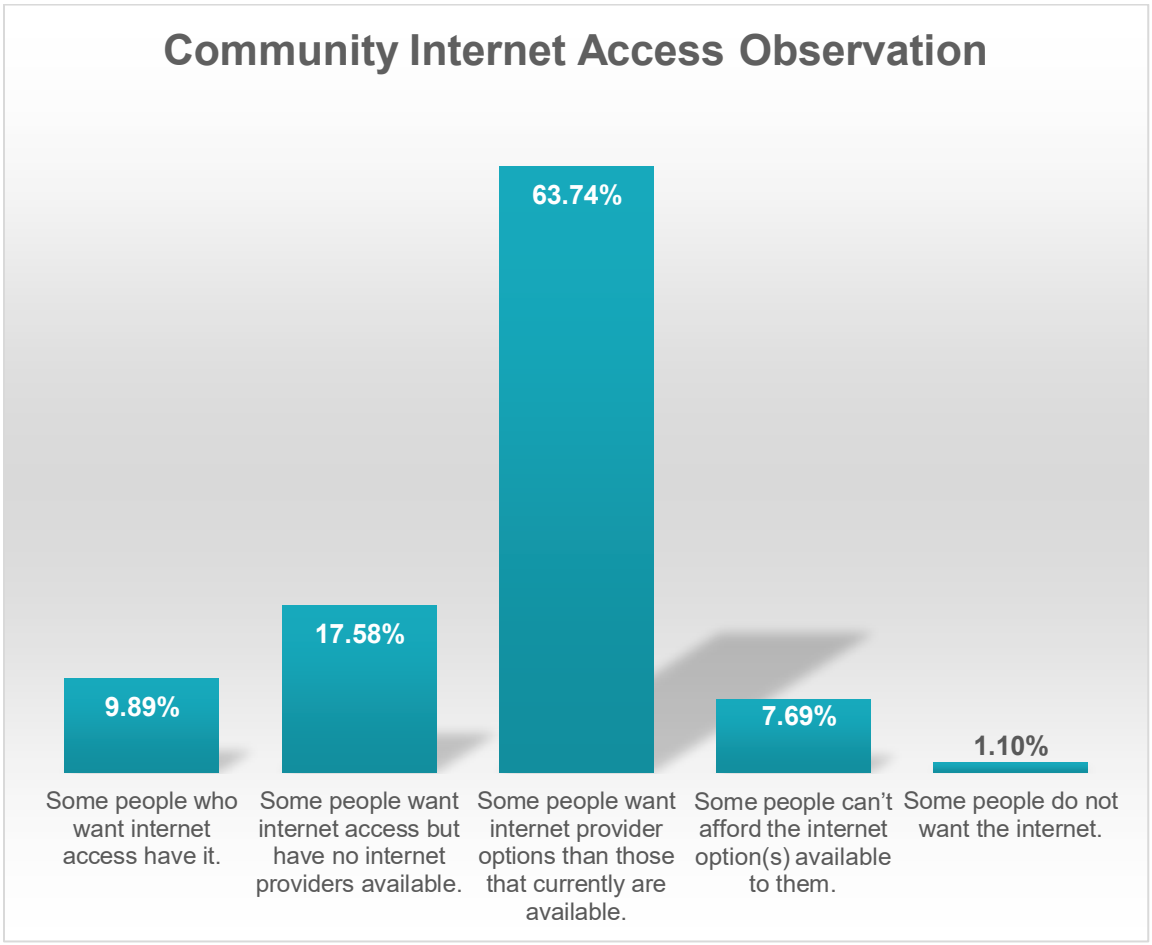

Figure 35. Community Internet Access Observation

4 OBSTACLES OR BARRIERS

The project team has identified various obstacles related to broadband deployment and adoption within Morgan County. Specific obstacles related to high-speed broadband internet, such as availability, digital access, and affordability, are identified below.

- **Physical Barriers**: The geographic properties of Morgan County contain physical barriers that block the implementation of internet infrastructure. The terrain of Morgan County is primarily hilly. These hills present obstacles for constructing fixed wireless. Furthermore, Union Pacific Railroad, Weber River, and I-15 all run throughout Morgan County, creating additional limitations for building infrastructure. The sparsity and low density of Lost Creek Road presents additional geographic and cost-related challenges as it relates to cost of individual homes passed. These physical obstacles to high-speed broadband internet availability and digital access must be addressed to ensure access and participation in the digital age.
- **Climate Resilience for Infrastructure**: Climate resilience is an important consideration for the infrastructure needed to provide high-speed broadband internet access. Extreme weather events, such as snow conditions often present during Morgan County's winter months, damage or destroy the physical infrastructure necessary for internet connectivity, leaving communities without access to essential digital resources. Building climate resilience into broadband infrastructure ensures that digital access remains available during and after extreme weather events.
- **Permitting**: Permitting, as seen in Table 13, presents a significant challenge for broadband infrastructure development, as the process can be lengthy, complex, and costly. By addressing permitting challenges, Morgan County can help ensure that high-speed broadband internet is deployed quickly, efficiently, and affordably.

Table 13. Permitting Agencies shows many of the permitting entities within Morgan County with longer lead times.

Figure 36 shows land ownership throughout the region, which informs permitting.

Initiating the permitting application process promptly is essential to meet any of the funding opportunity's implementation deadlines. It is important to note that this list is not an exhaustive list and may evolve between the publication of this plan and the construction phase.

Table 13. Permitting Agencies

LEVEL	APPROXIMATE TIMEFRAME FOR PERMITTING	ENTITY
Local	30 Days	City Engineering
Local	30 Days	Morgan County Engineering
State	30 Days	State Parks and Recreation
State	30 Days	State Wildlife Reserve
State	30 Days	State Parks and Recreation
State	30 Days	UDOT
Federal	180 Days	U.S. Forest Service
Utility	45 Days	Electrical Company
Utility	45 Days	Gas Company
Utility	45 Days	Other Telecom
Railroad	90 Days	Union Pacific Railroad

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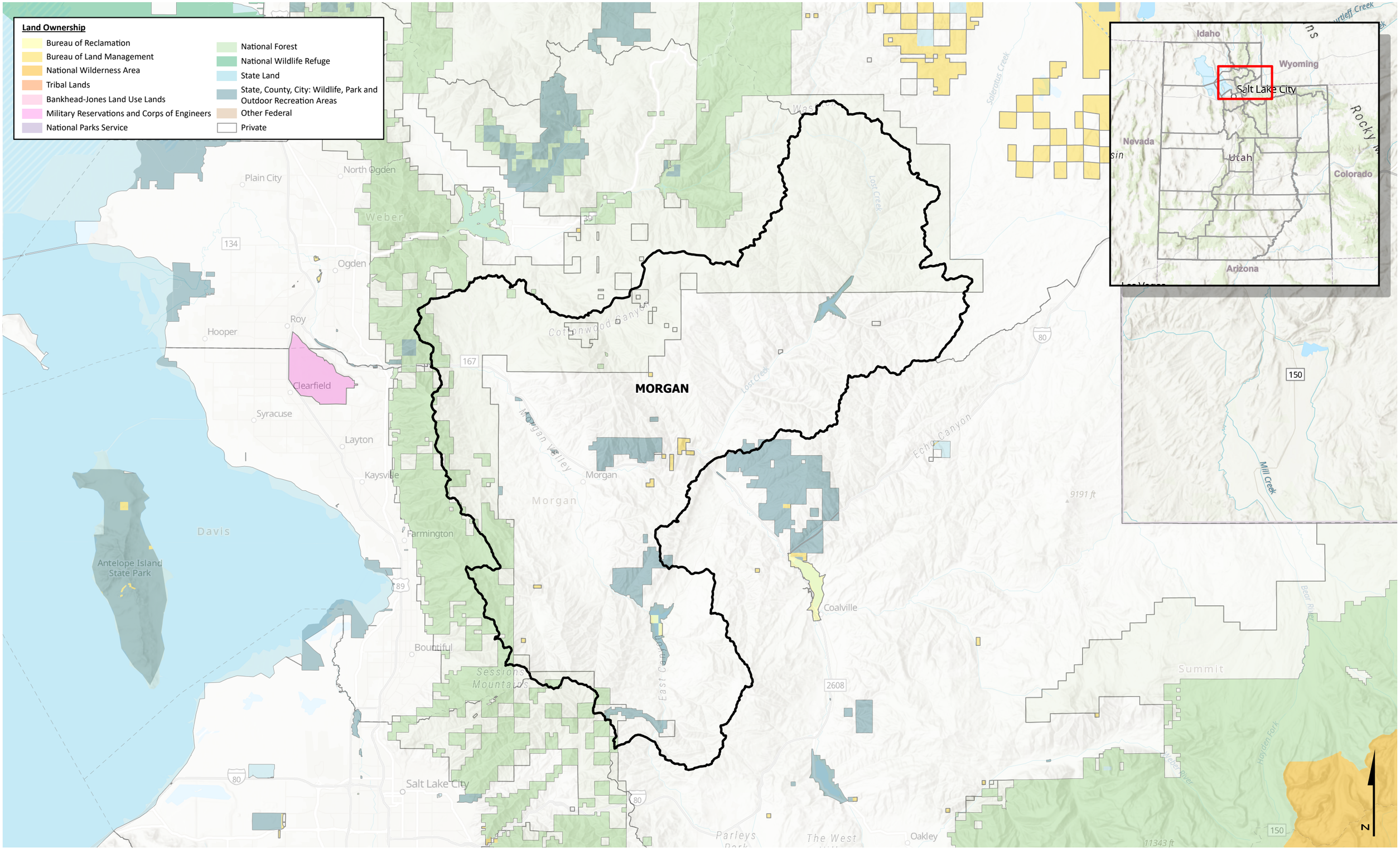

Horrocks.

Figure 36: Land Ownership in Morgan County

0 6.5 13 Miles

Survey Data

When asked about barriers to internet access, nearly 61% of 84 survey respondents shared that the availability of high-speed internet was the biggest obstacle for individuals in their area, the next highest barrier being affordability. Data is shown in Figure 37.

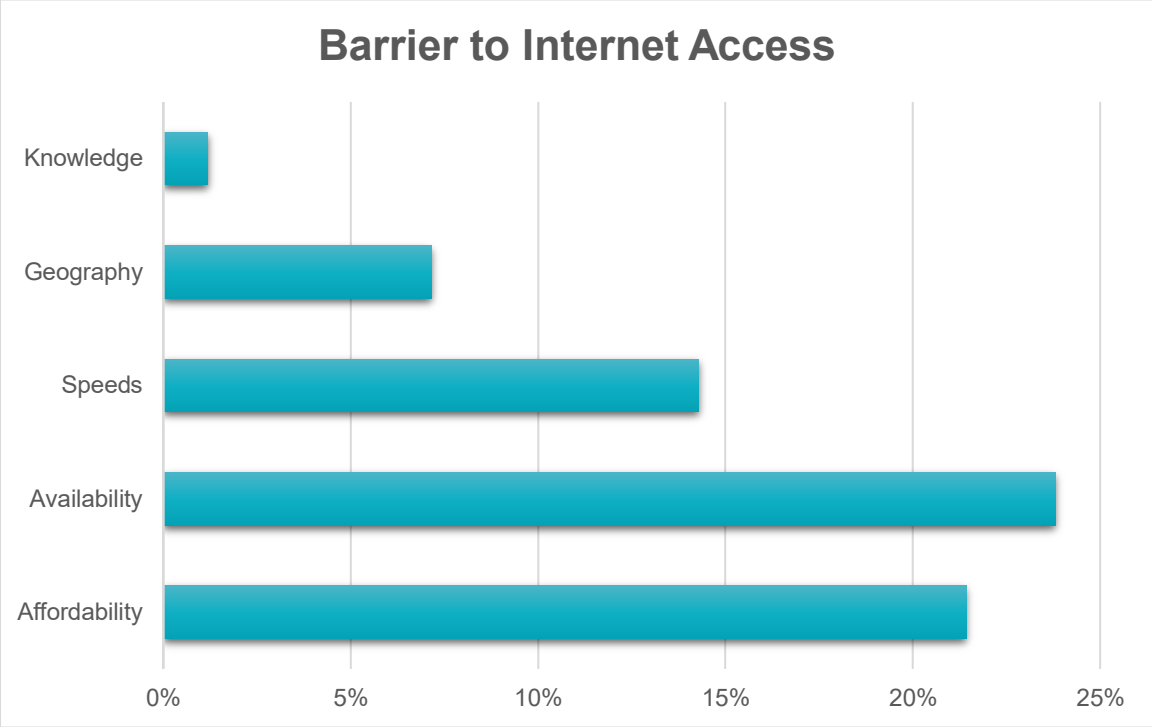

Figure 37. Barriers to Broadband Access

Business owners were asked if speed or reliability of their internet service, whether at home or in their place of work, has affected their business. Of 24 business owners who answered this question, more than 70% shared that it had impacted their ability to have uninterrupted calls and video chats and complete other functions of their jobs. Some survey respondents shared that they do not have internet access at their residence, which prevents the flexibility to complete work functions from home. See Figure 38.

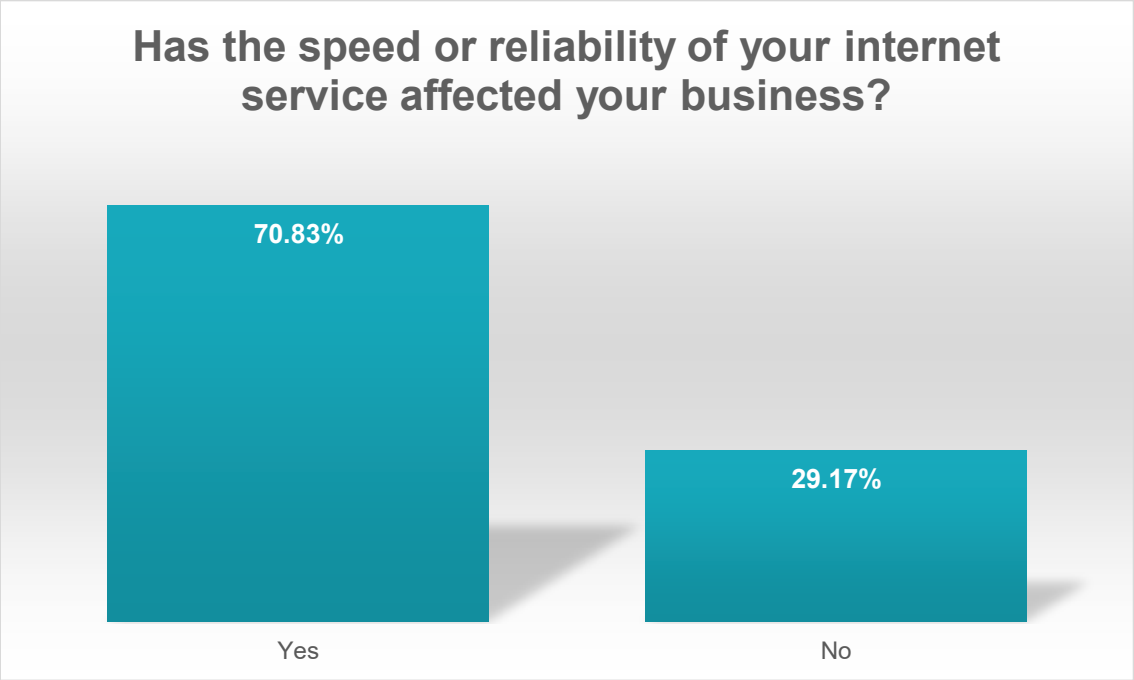

Figure 38. Internet Service Reliability for Businesses

When asked what would make it easier to access the internet, 63% of 84 survey respondents said infrastructure improvements would help. Limited availability of internet was also mentioned by approximately 29% of respondents. Information is detailed in Figure 39.

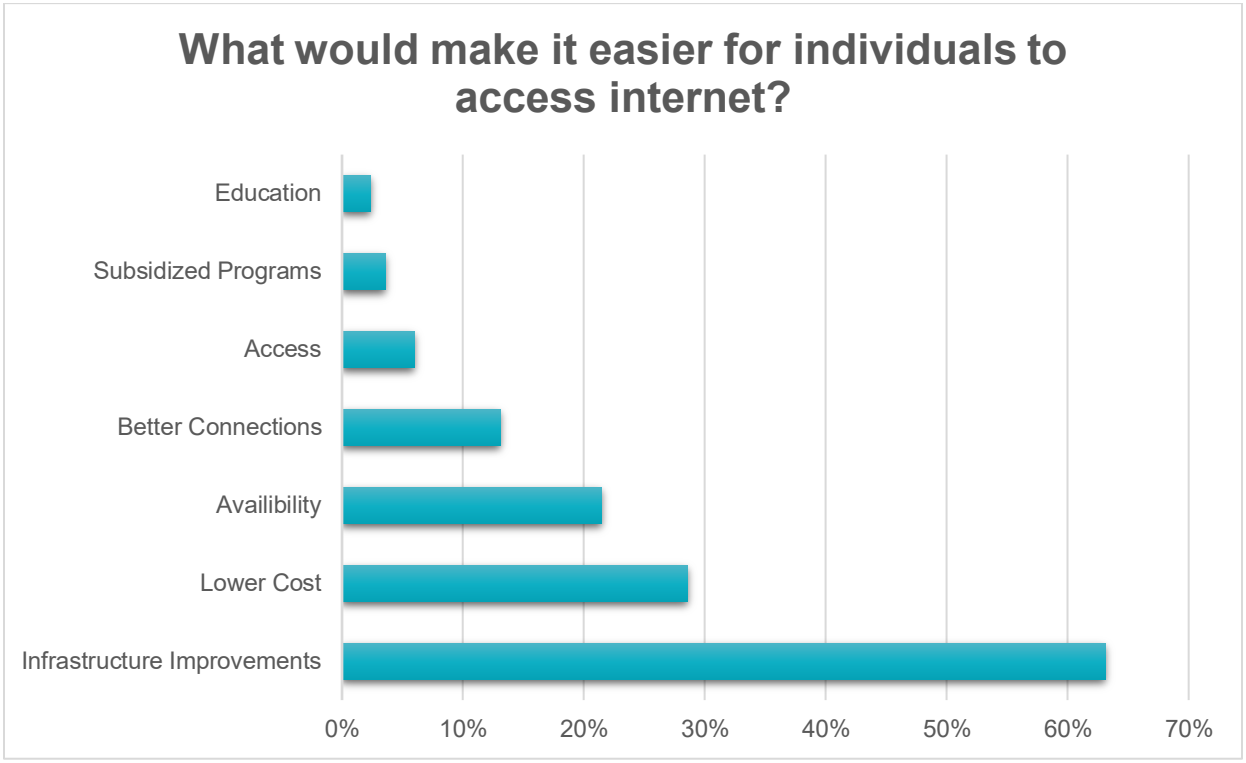

Figure 39. Potential Solutions for Easier Internet Access

The survey included a question about what the biggest barriers are for access to internet-capable devices. Of 46 survey responses to this question, 61% of people shared that affordability of devices is the biggest obstacle, as detailed in Figure 40.

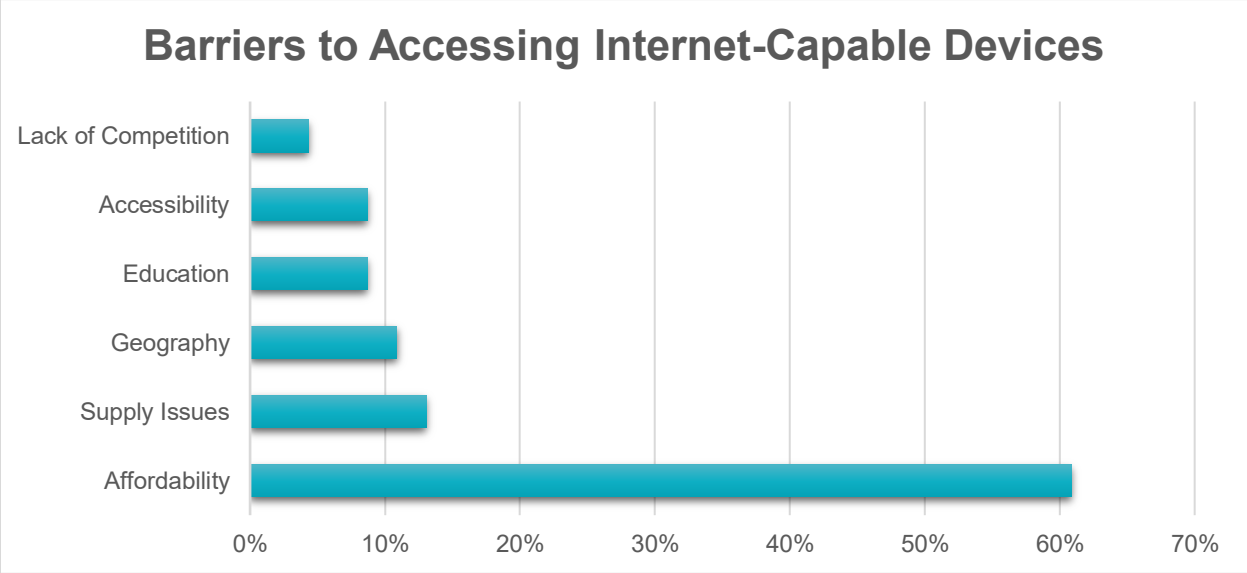

Figure 40. Barriers to Accessing Internet-Capable Devices

The survey included a question about what would make it easier for individuals in their area to access internet-capable devices. Of 44 responders, 59% shared that if device costs were lower, it would help address the barrier to internet-capable device access. Information is included in Figure 41.

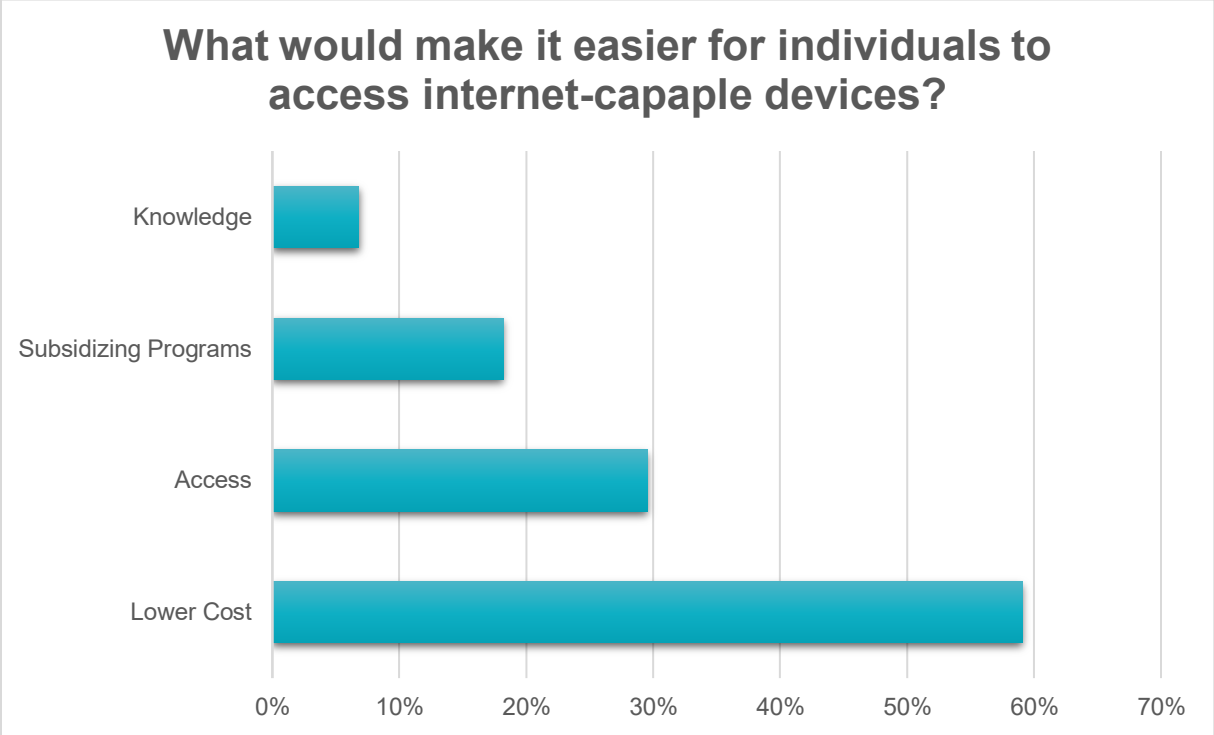

Figure 41. Potential Solutions for Easier Device Access

5 IMPLEMENTATION PLAN

The deployment of broadband infrastructure and expanded digital access throughout Morgan County follows the priorities, actions, strategies, and stakeholder involvement set forth in the implementation plan. With an emphasis on addressing the identified needs and gaps in broadband availability, affordability, and adoption, the plan lays out a roadmap for achieving universal access. The plan includes a projected timetable and cost as well as planned activities, key strategies, and stakeholder engagement. This implementation plan ensures that access to the possibilities and resources that come with dependable broadband infrastructure and connection are available to residents of Morgan County. The implementation plan seeks to build a more equitable and connected community with a strong commitment to stakeholder involvement and collaboration.

5.1 PRIORITIES

The priorities defined in Table 14 act as the foundation for executing Morgan County's broadband plan to ensure that the plan is in line with the community's vision for broadband infrastructure and digital access. Together with the stakeholders, the Morgan County community can concentrate efforts on attaining the most crucial broadband goals and objectives.

Table 14. Priorities for Broadband Deployment and Digital Access

PRIORITY	RANKING	DESCRIPTION
Establish high-speed internet in all unserved areas.	High	Establish connection to areas that need a greater level of service. This includes the areas of Porterville, segments of Morgan Valley Drive, north of Mountain Green, Round Valley and Highway Six near East Canyon.
Establish high-speed internet for all underserved areas.	High	Establish connection to areas that need a greater level of service. This includes areas of Croydon, north of Round Valley and Taggarts.
Partner with ISPs to serve the entire County and bring fiber to the homes.	Medium	There are currently three ISPs that have franchise agreements with the County which allow them to build new infrastructure.
Ensure that critical infrastructure is connected to fiber.	Medium	This infrastructure includes city buildings, schools, hospitals, first responders' buildings, etc.

5.2 KEY EXECUTION STRATEGIES

Drawing on the vision and goals in Section 1.2, this section explains the specific strategies that Morgan County will undertake to realize those goals.

GOAL 1: Morgan County will work collaboratively to ensure that adequate infrastructure is available to deliver affordable, high-speed broadband internet to all residents, businesses and anchor institutions.

OBJECTIVE	STRATEGY	IMPLEMENTATION DETAILS
Expand the reach of local ISPs within Morgan County and attract new providers to the area	Maintain relationships and lines of communications with local ISPs to understand plans to upgrade and expand coverage areas. Identify and address potential barriers to infrastructure deployment and devise mechanisms to streamline construction and service. Provide letters of support to ISPs applying for federal and state grants. Ensure that ISPs participate in the ACP. Enter into MoUs or agreements with ISPs to formalize plans serve Morgan County	**Key Players**: Liberty Broadband, Connext, Allwest, County Officials **Funding Sources**: ISP operating capital, state and federal grants **Timeline**: Ongoing
Pursue and apply for grant funding to expand broadband infrastructure	Monitor and apply for federal broadband funding made available through the BEAD program, USDA Telecommunications Infrastructure Program, USDA ReConnect Program, and Capital Projects Fund. Monitor and apply for State broadband funding through the Broadband Access Grant.	**Key Players:** ISP partners, County Officials **Funding Sources:** FCC, NTIA, USDA, Utah Broadband Center **Timeline:** Ongoing

Implement policy and codify ordinances that support broadband expansion	Add and revise county ordinances to include broadband considerations. Require new development to design for and install conduit and/or fiber as part of the permit approval process Coordinate broadband infrastructure installation with utility work. Establish a Dig-Once policy Evaluate permitting processes to identify opportunities to include strategies for broadband expansion Add broadband supportive language to any County planning effort	**Key Players:** County officials and departments, **Funding Sources:** N/A **Timeline:** Ongoing

GOAL 2: Utilize broadband connectivity to encourage innovation, attract business investment and spur economic growth.

OBJECTIVE	STRATEGY	IMPLEMENTATION DETAILS
Drive broadband adoption through the expansion of affordability, device access and digital skills programming.	Format County franchise agreements to require ISPs to offer subscriptions and plans that are affordable or no cost after the ACP benefit is applied. Look for opportunities to apply for digital equity grant programs to implement broadband access programming.	**Key Players:** County officials, residents, businesses, Morgan County School District, Weber Human Services- Aging **Funding Sources:** Utah Broadband Center **Timeline:** Winter 2024
Inform residents and businesses of the available internet service options in Morgan County	Develop public awareness campaigns to promote the benefits of broadband access and communicate available connectivity options. Establish partnerships with local organizations, nonprofits, and community leaders to foster engagement.	**Key Players:** County officials, residents, businesses, ISPs, Morgan City **Funding Sources:** ACP Outreach Grant (FCC) **Timeline:** Ongoing

Leverage County-owned assets to incentivize ISP investment	Streamline permitting processes to reduce time and costs for deployment. Explore utilizing public assets such as County-owned ROW or upcoming capital projects to incentivize ISP investment and to reduce the cost of deployment.	**Key Players:** County officials, department staff **Funding Sources:** N/A **Timeline:** Fall 2023

GOAL 3: Prioritize broadband infrastructure that is scalable and future-proof

OBJECTIVE	STRATEGY	IMPLEMENTATION DETAILS
Give preference to fiber installation	Adopt standards that address access points, high-count fiber optic cable, installation standards which allow for new technologies when appropriate. Prioritize network buildout to unserved and then underserved areas in the County	**Key Players:** County officials, department staff, ISPs **Funding Sources:** ISP funding, grants **Timeline:** Fall 2023
Work with UDOT and ISPs to close middle mile gaps through program funds or sharing of existing or new infrastructure.	Work to ensure that middle-mile infrastructure is open-access and offers new entrants' equal access. Capitalize on middle-mile expansion to connect County facilities and community anchor institutions.	**Key Players:** County officials, UDOT, ISPs **Funding Sources:** UDOT, ISPs **Timeline:** Spring 2024
Ensure all County owned facilities and anchor institutions are connected to 1G service	Identify and inventory all county owned facilities and anchor institutions and document the internet speeds available at each location. Require accommodations for broadband infrastructure to all County facilities. Incorporate opportunities to increase connectivity into all capital projects and plans.	**Key Players:** County officials, UETN, ISPs **Funding Sources:** Grant, self-funded **Timeline:** 2025

5.3 ONGOING STAKEHOLDER ENGAGEMENT

Continued stakeholder engagement is vital to the success of Morgan County's broadband deployment strategies. Morgan County will continue to build strong relationships with community partners and key stakeholders as this plan is implemented. The success of getting all residents connected to reliable high-speed internet will be dependent on the ability to continually coordinate efforts with local community partners.

Key initiatives to support continued engagement include:

- **Create a Broadband Working Group:** This working group should be diverse and represent a variety of roles. Important representation in this group includes municipal officials, educators, community influencers, business leaders, technical experts, and organizations that represent the covered populations. A broadband working group will ensure that there is county-wide support for resulting broadband projects.
- **Meet with Internet Service Providers:** Building a relationship with an internet service provider (ISP) can be beneficial for both Morgan County and the ISP. By working together, Morgan County can help to ensure that their residents have access to high-quality, affordable broadband internet.

  The following strategies promote the establishment of a collaborative partnership with local ISPs:

  - IMPORTANT: Only meet with one ISP company at a time. Ask them to share their future build-out plans for Morgan County. They are more willing to share information when their competition is not in the room.
  - Streamline permitting and processes: Review and streamline the permitting and approval processes for ISPs to facilitate efficient infrastructure deployment.
  - Create incentives: Offer incentives such as tax breaks or expedited permit processing for ISPs that invest in broadband infrastructure.
  - Foster public-private partnerships: Explore opportunities for public-private partnerships with ISPs to leverage resources, expertise, and funding.
  - Collaborate on funding opportunities: Work together with ISPs to identify and pursue available funding sources, grants, or subsidies for broadband projects.
  - Share infrastructure resources: Explore possibilities for sharing existing infrastructure, such as utility poles or conduit, to reduce costs and deployment timelines.
  - Regular communication and updates: Establish regular communication channels to keep ISPs informed about city initiatives, policies, and upcoming projects related to broadband infrastructure.

- **Continue Stakeholder Communication:** Stakeholder communication that is frequent and transparent helps build and maintain community support. Morgan County should aim to educate, garner support, and celebrate accomplishments through stakeholder communication. Tactics for communicating with stakeholders should be varied and represent traditional and virtual engagement. Specific tactics to continue stakeholder communication include:
    - Meet and coordinate regularly with local ISPs to understand and encourage expansion priorities and track progress of ongoing projects.
    - Engage the public, community partners, and businesses in Morgan County to perform their own Internet Speed Tests and FCC Map Challenges.
    - Highlight the concerted and ongoing effort by the Morgan County Commission Broadband Subcommittee to expand affordable and reliable high-speed broadband.
- **Identify and Update Community Priorities**: Each community within Morgan County has different needs, resources, technologies, financing, and partnership options. Reevaluation of priorities will be required to keep community members engaged, achieve a local vision of connectivity, and increase broadband utilization. Updates to the Local Broadband Plan may become necessary through the process of planning, implementing and evaluating success.
    - Continue gathering input and perspectives through a year-round, publicly available local broadband survey. As projects and initiatives are implemented, the survey may be adapted to measure the success of that programming.
- **Understand Regional Context:** By establishing and strengthening working relationships with a variety of stakeholders, Morgan County may identify additional opportunities, barriers or initiatives. Continued coordination with key stakeholders will allow Morgan County to clearly communicate the benefits of connectivity, empower local entities to advocate for broadband initiatives and build enthusiasm and support for projects. This may be accomplished through:
    - Continued engagement with local businesses, non-profits, civic organizations, and the general public in Morgan County to understand priorities, opportunities, and offer a coordinated approach to project implementation.
    - Coordination with the school district and library within Morgan County to educate residents and students about benefits of connectivity, and better understand their needs.
- **Advertise and Continue to Increase Enrollment in the Affordable Connectivity Program (ACP).** The ACP is an FCC benefit program that helps ensure that all

households can afford broadband. The benefit provides a discount of up to $30 per month toward internet service for eligible households.

- Expand awareness of ACP benefits to rural communities members and households with school aged children.
- Identify ACP champions and explore options within organizations to include ACP information and enrollment assistance to those in need.

5.4 ESTIMATED TIMELINE FOR UNIVERSAL SERVICE

Universal service is the goal of providing broadband service to every resident of Morgan County. Achieving this goal depends upon receiving sufficient funding for broadband infrastructure projects, the timeline by which ISPs build at, and the timeline by which the BEAD program is administered by. Due to this timeline being determinant on external elements, Morgan County intends to communicate closely with all ISPs building in the area and follow the state timeline as listed in the statewide Digital Connectivity Plan. The state aims to provide universal broadband service for all Utahns by December 31, 2028. The timeline more specific to items relevant to Morgan County officials are listed in Section 5.3 of this plan.

Individual Broadband Project Minimum Timeline

It will be up to the ISPs to carry out the design and construction of broadband infrastructure projects within Morgan County, however, a sample broadband project timeline is listed here for reference. An estimated timeline concerning activities necessary to implement broadband services include the following:

Table 15. Broadband Infrastructure Project Design and Build Phase Estimated Timeline for ISPs

STEP	DESCRIPTION	TIMELINE
High-Level Design (HLD)	Create a preliminary FTTP (Fiber to the Premise) design before fielding and jurisdictional research	30-60 Days
Low-Level Design (LLD)	Create a FTTP design that is constructable using fielding data and jurisdictional research	60-90 Days
Permitting	Get approval from the appropriate jurisdictions for construction	Up to 180 Days
Construction	Build a functioning FTTP network	90-180 Days
Project Audit	Review construction documents, conduct AARs, create audit documentation	Up to 90 Days

Note that some of these phases may overlap, while others must be completed sequentially. Unforeseen circumstances or delays might impact the overall timeline.

Minimum duration: 30 days (HLD) + 60 days (fielding and LLD) + 180 days (permitting) + 90 days (construction) = 360 days (about 1 year) for full turn-key implementation.

If some phases can be completed concurrently, the duration could be shortened. For example, construction can be started on certain segments of the broadband build that have approved permits much sooner than the predicted 180 days, shortening the original estimate for the overall project duration.

It is crucial to account for potential delays and other factors that may affect the project schedule. Regular communication with relevant stakeholders and close monitoring of progress can help mitigate risks and keep the project on track.

5.5 ESTIMATED COST FOR UNIVERSAL SERVICE

An estimated cost for the project is calculated using GIS analysis and incorporating data from various sources such as the State of Utah's roads layer and address points as well as FCC data on served, underserved, and unserved locations. The length attribute from the roads layer is used to determine the distance, taking into account several key parameters including aerial percentage, aerial cost, and underground cost (can vary based on the location geology).

The estimated cost for materials, design, and installation can vary. Costs for aerial fiber hung on power poles can range up to $10/FT. Underground fiber costs range from $30/FT when installing in easy-to-bore areas, up to $35-$60/FT when boring in rocky or hilly areas.

The formula for calculating the total cost of construction is as follows:

Total Cost of Construction = ((Road Length * Aerial Cost * Aerial Percentage) + (Road Length * Underground Cost * (1 – Aerial Percentage)))

For this estimate, the following numbers were used:

Aerial Cost: $10/FT

Underground Cost: $30/FT

Aerial Percentage: See Table 16 below

To obtain the cost per passing, the total cost of construction is divided by the count of address points (in some instances FCC points) within a defined geographic area, as determined by a polygon selection. This methodology ensures that the estimated cost is derived from reliable data sources and consider the specific characteristics of the project area, providing an accurate and comprehensive financial projection for the implementation of universal services.

Table 16 explains in detail the areas comprising Morgan County and their respective costs.

Table 16. Estimated Cost for Broadband Deployment in Morgan County

AREA	TOTAL LENGTH (MILES)	% AERIAL	TOTAL COST (DOLLARS)	COST PER PASSING (DOLLARS)	# OF LOCATIONS	UNDER-SERVED	UN-SERVED	COST FOR JUST UN-SERVED & UNDER -SERVED
Croydon	16.08	80%	1,188,811.19	14,323.03	83	23	60	$1,188,811.49
Enterprise	16	50%	861,722.76	2,951.07	292	0	0	$0
Morgan Valley Drive	35.52	70%	3,000,504.65	6,866.14	437	0	4	$27,464.56
North of Mountain Green	8.81	50%	930,128.42	2,048.74	454	21	37	$118,826.92
North of Round Valley	3.93	30%	211,561.34	16,273.95	13	8	2	$162,739.50
Round Valley	4.8	60%	258,684.41	15,216.73	17	0	17	$258,684.41
Taggarts	0.7	90%	44,445.97	5,555.75	8	5	2	$38,890.25

Each of Morgan County's identified underserved and unserved polygon areas are highlighted in Figure 42.

Figure 42. Identified Polygon Areas

5.6 ALIGNMENT

The Morgan County Local Broadband Plan is closely aligned with the community's local broadband priorities, which include establishing high-speed internet in all unserved areas and underserved areas and further addressing the need for more reliable infrastructure and connectivity. By partnering with ISPs, Morgan County aims to ensure comprehensive coverage throughout the entire county and bring fiber-to-the-home connectivity.

Morgan County has a General Plan[23] that was completed in 2010. The General Plan does not have a plan specific to broadband infrastructure but is heavily focused on economic development. This Local Broadband Plan emphasizes the economic importance of connecting critical infrastructure to fiber, enhancing the reliability and resilience of essential services. By prioritizing the deployment of fiber optic networks, Morgan County seeks to strengthen the broadband infrastructure and support future growth and technological advancements.

Morgan County aims to build upon existing initiatives and leverage partnerships to maximize available funding and resources. It seeks to collaborate with ISPs to close the digital divide and

[23] Morgan County General Plan. December 2010. https://irp.cdn-website.com/016dd32e/files/uploaded/General%20Plan%20with%20key%20notes.pdf

ensure equitable access to high-speed internet for all residents, businesses, and institutions in the community.

In alignment with these priorities, the Local Broadband Plan emphasizes the need for comprehensive coverage and connectivity, targeting unserved and underserved areas. It also recognizes the importance of reliable infrastructure and connectivity, addressing the specific needs of this area. By coordinating efforts and avoiding duplication, the plan ensures a strategic allocation of resources to meet these priorities effectively.

Through the alignment of priorities and the strategic execution of the Local Broadband Plan, Morgan County is committed to establishing high-speed internet in all unserved areas, bringing connectivity to underserved areas, providing reliable infrastructure, and partnering with ISPs to serve the entire county and ensuring critical infrastructure is connected to fiber. This comprehensive approach will drive equitable access, economic growth, and enhanced quality of life for all residents of Morgan County.

5.7 TECHNICAL ASSISTANCE

The successful implementation of the local broadband plan in Morgan County requires support and technical assistance from the UBC in addition to Telecommunication Consultant/Contractor services.

This support encompasses various areas, such as broadband infrastructure development, policy guidance, and access to funding opportunities.

Added technical assistance from the UBC alleviates the complexities of navigating broadband deployment, leveraging available resources, and aligning specific priorities with statewide broadband initiatives.

By partnering with the UBC and accessing necessary data, Morgan County will have the support and information required to implement the local broadband plan successfully. This collaboration will address the digital divide, enhance broadband accessibility, and drive economic development through digital infrastructure.

6 CONCLUSION

In conclusion, the Local Broadband Plan outlined above serves as a comprehensive roadmap for maximizing the potential of broadband technology to drive economic growth, enhance connectivity, and foster innovation. By expanding infrastructure, affordability, reliability, and accessibility, the Plan aims to connect households and create a more prosperous Morgan County. Through collaboration among government entities, private sector partners, agencies, and community stakeholders, this Plan establishes a solid foundation for harnessing the transformative power of high-speed internet to empower individuals, businesses, and communities alike.

Priorities

The top priorities of this plan include establishing high-speed internet connection in all unserved areas throughout the community. Once every unserved area is covered, then the next priority will be to get connection to underserved areas. The goal is to make sure all Morgan County residents have equal access and opportunity to connect to the digital world. Other priorities in this plan include partnering with ISPs to ensure service to the entire county and ensure all homes and critical infrastructure are connected to fiber. These priorities were informed by stakeholder input and technical analysis. As the Plan is implemented, other strategic focus areas may arise and this plan may be updated to meet that need.

Expected Outcomes

Successful implementation of this Plan will depend on the ability of Morgan County, ISPs, local community organizations, and residents to come together to promote and establish broadband expansion throughout the entire county.

Broadband accessibility is becoming more of a necessary utility rather than a non-essential luxury. Having the infrastructure, tools, and education to access high-speed internet is the modern-day societal equalizer. Not only do broadband services allow residents access to essential services like online banking, telehealth, and employment, but they have the ability to connect communities, provide entertainment, and provide endless resources and information. Many Morgan County businesses, nonprofits and social resources viability depend on reliable and high-speed connectivity.

In the Morgan County Broadband Survey residents were asked to share how access to high-speed internet would improve their quality of life. Many residents responded that the ability to work from home is critical to providing for their families. Numerous respondents stated that they have the opportunity to work from home, but the current lack of reliable connectivity prevents that opportunity. Respondents overwhelmingly stated the top priorities for this plan should be affordable, reliable, high-speed internet for every household and business in Morgan County.

This Plan establishes a path forward to accomplish the Morgan County vision: broadband infrastructure that is accessible, modern, and scalable throughout the county, providing the rural community with equitable opportunities to participate in the current digital economy to promote social and economic growth.

Appendix A: Survey Data

The following pages include the individual responses from surveys gathered as part of the Morgan County local broadband planning outreach. Survey responses gathered as part of the Connecting Utah statewide survey in the Morgan County area are also included as part of this appendix.

Q1 What is your address?

Answered: 124 Skipped: 5

ANSWER CHOICES	RESPONSES	
Name	0.00%	0
Company	0.00%	0
Street Address	99.19%	123
Address 2	0.81%	1
City/Town	99.19%	123
State/Province	0.00%	0
ZIP/Postal Code	99.19%	123
Country	0.00%	0
Email Address	0.00%	0
Phone Number	0.00%	0

#	NAME	DATE
	There are no responses.	

#	COMPANY	DATE
	There are no responses.	

#	STREET ADDRESS	DATE
1		6/30/2023 1:56 PM
2		6/25/2023 2:40 PM
3		6/19/2023 6:08 PM
4		6/16/2023 2:04 PM
5		6/16/2023 9:05 AM
6		6/12/2023 8:51 AM
7		6/9/2023 9:45 PM
8		6/9/2023 3:23 PM
9		6/9/2023 8:37 AM
10		6/6/2023 6:46 PM
11		6/4/2023 12:57 AM
12		5/30/2023 2:34 PM
13		5/25/2023 2:12 PM
14		5/24/2023 1:31 PM
15		5/24/2023 7:13 AM
16		5/24/2023 3:49 AM

17		5/24/2023 1:19 AM
18		5/24/2023 12:00 AM
19		5/20/2023 1:49 PM
20		5/20/2023 11:55 AM
21		5/19/2023 7:20 AM
22		5/19/2023 3:37 AM
23		5/17/2023 5:06 PM
24		5/16/2023 10:50 PM
25		5/16/2023 6:10 PM
26		5/16/2023 1:20 PM
27		5/14/2023 9:43 AM
28		5/14/2023 6:39 AM
29		5/13/2023 3:20 AM
30		5/12/2023 9:12 PM
31		5/12/2023 7:38 PM
32		5/12/2023 3:08 PM
33		5/12/2023 12:43 PM
34		5/11/2023 9:45 PM
35		5/11/2023 5:24 PM
36		5/11/2023 1:51 PM
37		5/11/2023 11:09 AM
38		5/10/2023 9:50 PM
39		5/10/2023 8:44 PM
40		5/10/2023 6:03 PM
41		5/10/2023 2:53 PM
42		5/9/2023 10:20 PM
43		5/9/2023 9:51 PM
44		5/9/2023 5:34 PM
45		5/9/2023 2:57 PM
46		5/9/2023 11:16 AM
47		5/9/2023 8:36 AM
48		5/9/2023 8:30 AM
49		5/9/2023 7:29 AM
50		5/8/2023 9:49 PM
51		5/8/2023 8:58 PM
52		5/8/2023 8:42 PM
53		5/8/2023 8:09 PM
54		5/8/2023 7:18 PM

55		5/8/2023 5:58 PM
56		5/8/2023 1:17 PM
57		5/8/2023 9:39 AM
58		5/8/2023 12:42 AM
59		5/8/2023 12:06 AM
60		5/7/2023 9:24 PM
61		5/7/2023 8:03 PM
62		5/7/2023 2:04 PM
63		5/7/2023 1:43 PM
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65		5/7/2023 6:26 AM
66		5/6/2023 7:50 PM
67		5/6/2023 7:22 PM
68		5/6/2023 7:21 PM
69		5/6/2023 1:33 PM
70		5/6/2023 9:27 AM
71		5/6/2023 6:34 AM
72		5/5/2023 10:06 PM
73		5/5/2023 6:24 PM
74		5/5/2023 1:53 PM
75		5/5/2023 1:50 PM
76		5/5/2023 12:04 PM
77		5/5/2023 10:51 AM
78		5/5/2023 9:00 AM
79		5/5/2023 8:50 AM
80		5/5/2023 7:49 AM
81		5/5/2023 7:23 AM
82		5/4/2023 9:34 PM
83		5/4/2023 7:51 PM
84		5/4/2023 9:00 AM
85		5/4/2023 7:27 AM
86		5/4/2023 1:17 AM
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88		5/3/2023 9:44 PM
89		5/3/2023 9:08 PM
90		5/3/2023 6:59 PM
91		5/3/2023 6:20 PM
92		5/3/2023 3:32 PM

93		5/3/2023 1:07 PM
94		5/3/2023 11:30 AM
95		5/3/2023 10:43 AM
96		5/3/2023 8:44 AM
97		5/3/2023 7:57 AM
98		5/3/2023 7:52 AM
99		5/3/2023 7:21 AM
100		5/3/2023 6:39 AM
101		5/3/2023 4:42 AM
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106		5/2/2023 8:39 PM
107		5/2/2023 7:22 PM
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114		5/2/2023 12:50 PM
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116		5/2/2023 10:20 AM
117		5/1/2023 6:39 PM
118		5/1/2023 5:51 PM
119		4/27/2023 9:17 PM
120		4/27/2023 2:54 PM
121		4/26/2023 7:55 PM
122		4/26/2023 3:00 PM
123		4/25/2023 3:01 PM
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1		5/19/2023 3:37 AM
#	**CITY/TOWN**	**DATE**
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3	Morgan	6/19/2023 6:08 PM
4	Morgan	6/16/2023 2:04 PM

5	Morgan	6/16/2023 9:05 AM
6	Peterson	6/12/2023 8:51 AM
7	Morgan	6/9/2023 9:45 PM
8	Milton	6/9/2023 3:23 PM
9	Morgan	6/9/2023 8:37 AM
10	Mtn. Green	6/6/2023 6:46 PM
11	mountain green	6/4/2023 12:57 AM
12	Morgan	5/30/2023 2:34 PM
13	Morgan	5/25/2023 2:12 PM
14	Peterson	5/24/2023 1:31 PM
15	Morgan	5/24/2023 7:13 AM
16	Clearfield	5/24/2023 3:49 AM
17	Grantsville	5/24/2023 1:19 AM
18	Missoula	5/24/2023 12:00 AM
19	Morgan	5/20/2023 1:49 PM
20	Morgan	5/20/2023 11:55 AM
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22	Murraý..	5/19/2023 3:37 AM
23	LAYTON	5/17/2023 5:06 PM
24	Morgan	5/16/2023 10:50 PM
25	Morgan	5/16/2023 6:10 PM
26	Mountain Green	5/16/2023 1:20 PM
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39	Morgan	5/10/2023 8:44 PM
40	Mountain Green	5/10/2023 6:03 PM
41	Morgan	5/10/2023 2:53 PM
42	Morgan	5/9/2023 10:20 PM

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44	Mountain Green	5/9/2023 5:34 PM
45	Mountain Green	5/9/2023 2:57 PM
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53	Morgan	5/8/2023 8:09 PM
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72	Morgan	5/5/2023 10:06 PM
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74	Mountain Green - Morgan	5/5/2023 1:53 PM
75	Mountain Green	5/5/2023 1:50 PM
76	MORGAN	5/5/2023 12:04 PM
77	Morgan	5/5/2023 10:51 AM
78	Mtn Green	5/5/2023 9:00 AM
79	Morgan	5/5/2023 8:50 AM
80	Mountain Green	5/5/2023 7:49 AM

81	Morgan	5/5/2023 7:23 AM
82	Morgan	5/4/2023 9:34 PM
83	Morgan	5/4/2023 7:51 PM
84	Morgan	5/4/2023 9:00 AM
85	Morgan	5/4/2023 7:27 AM
86	Croydon	5/4/2023 1:17 AM
87	Mtn Green	5/3/2023 10:16 PM
88	Morgan	5/3/2023 9:44 PM
89	Mountain Green	5/3/2023 9:08 PM
90	Croydon	5/3/2023 6:59 PM
91	Morgan	5/3/2023 6:20 PM
92	MOUNTAIN GREEN	5/3/2023 3:32 PM
93	Morgan	5/3/2023 1:07 PM
94	Morgan	5/3/2023 11:30 AM
95	Morgan	5/3/2023 10:43 AM
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108	Mountain Green	5/2/2023 6:30 PM
109	Morgan	5/2/2023 6:14 PM
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111	Morgan	5/2/2023 2:45 PM
112	Croydon	5/2/2023 1:54 PM
113	Morgan	5/2/2023 1:48 PM
114	Morgan	5/2/2023 12:50 PM
115	Morgan	5/2/2023 11:10 AM
116	Mountain Green	5/2/2023 10:20 AM
117	Morgan	5/1/2023 6:39 PM
118	Mountain Green	5/1/2023 5:51 PM

119	Mountian Green	4/27/2023 9:17 PM
120	Mountian Green	4/27/2023 2:54 PM
121	Croydon	4/26/2023 7:55 PM
122	Mountain Green	4/26/2023 3:00 PM
123	Morgan	4/25/2023 3:01 PM

#	STATE/PROVINCE	DATE
	There are no responses.	

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5	84050	6/16/2023 9:05 AM
6	84050	6/12/2023 8:51 AM
7	84050	6/9/2023 9:45 PM
8	84050	6/9/2023 3:23 PM
9	Utah	6/9/2023 8:37 AM
10	84050	6/6/2023 6:46 PM
11	84050	6/4/2023 12:57 AM
12	84050	5/30/2023 2:34 PM
13	84050	5/25/2023 2:12 PM
14	84050	5/24/2023 1:31 PM
15	84050	5/24/2023 7:13 AM
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17	84029	5/24/2023 1:19 AM
18	59804	5/24/2023 12:00 AM
19	84050	5/20/2023 1:49 PM
20	84050-9846	5/20/2023 11:55 AM
21	84105	5/19/2023 7:20 AM
22	84107	5/19/2023 3:37 AM
23	84041	5/17/2023 5:06 PM
24	84050	5/16/2023 10:50 PM
25	84050	5/16/2023 6:10 PM
26	84050-6721	5/16/2023 1:20 PM
27	84050	5/14/2023 9:43 AM
28	809090	5/14/2023 6:39 AM
29	UT	5/13/2023 3:20 AM
30	84050	5/12/2023 7:38 PM

31	Hhrh	5/12/2023 5:05 PM
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33	84050	5/12/2023 12:43 PM
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43	84050	5/9/2023 9:51 PM
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66	84050	5/6/2023 7:50 PM
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69	UT 84050	5/6/2023 1:33 PM
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74	84050	5/5/2023 1:53 PM
75	84050	5/5/2023 1:50 PM
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77	84050	5/5/2023 10:51 AM
78	84050	5/5/2023 9:00 AM
79	84050	5/5/2023 8:50 AM
80	84050	5/5/2023 7:49 AM
81	84050	5/5/2023 7:23 AM
82	84050	5/4/2023 9:34 PM
83	84050	5/4/2023 7:51 PM
84	84050	5/4/2023 9:00 AM
85	84050	5/4/2023 7:27 AM
86	84018	5/4/2023 1:17 AM
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90	84018	5/3/2023 6:59 PM
91	84050	5/3/2023 6:20 PM
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99	84050	5/3/2023 7:21 AM
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123	84050	4/25/2023 3:01 PM

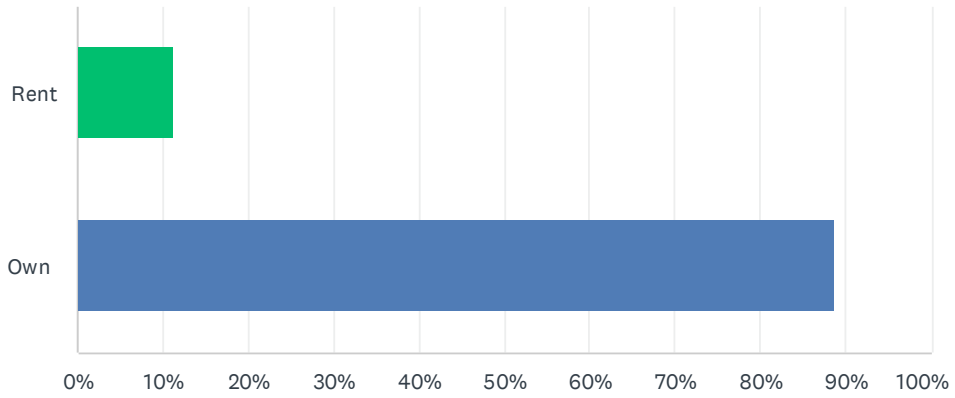
#	COUNTRY	DATE
	There are no responses.	

#	EMAIL ADDRESS	DATE
	There are no responses.	

#	PHONE NUMBER	DATE
	There are no responses.	

Q2 Do you rent or own this property?

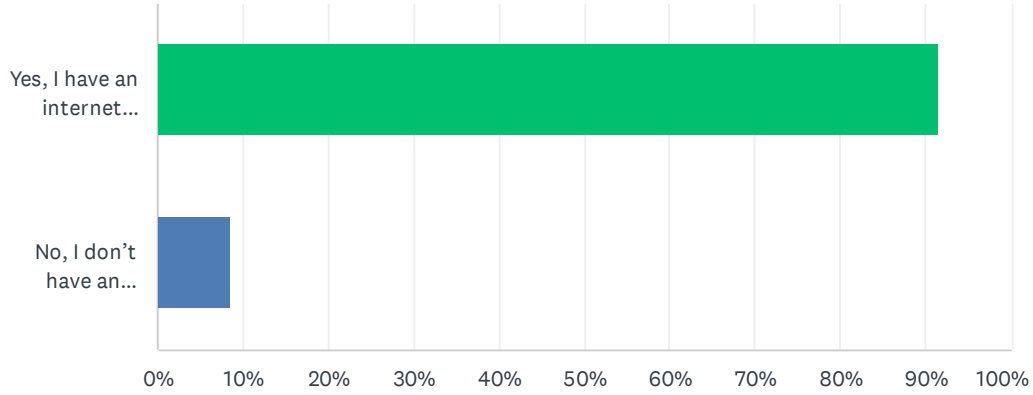
Answered: 124 Skipped: 5



ANSWER CHOICES	RESPONSES	
Rent	11.29%	14
Own	88.71%	110
TOTAL		124

Q3 Do you have an internet connection at your residence?

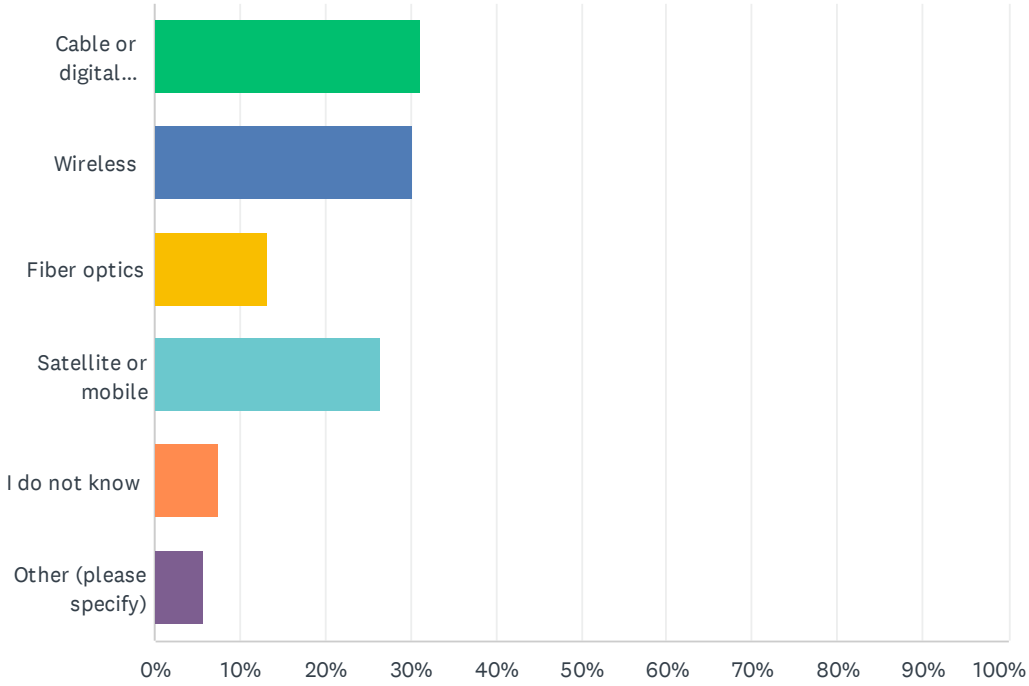
Answered: 128 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes, I have an internet connection at my residence.	91.41%	117
No, I don't have an internet connection at my residence.	8.59%	11
TOTAL		128

Q4 What kind of internet connection do you have? (Select all that apply)

Answered: 106 Skipped: 23

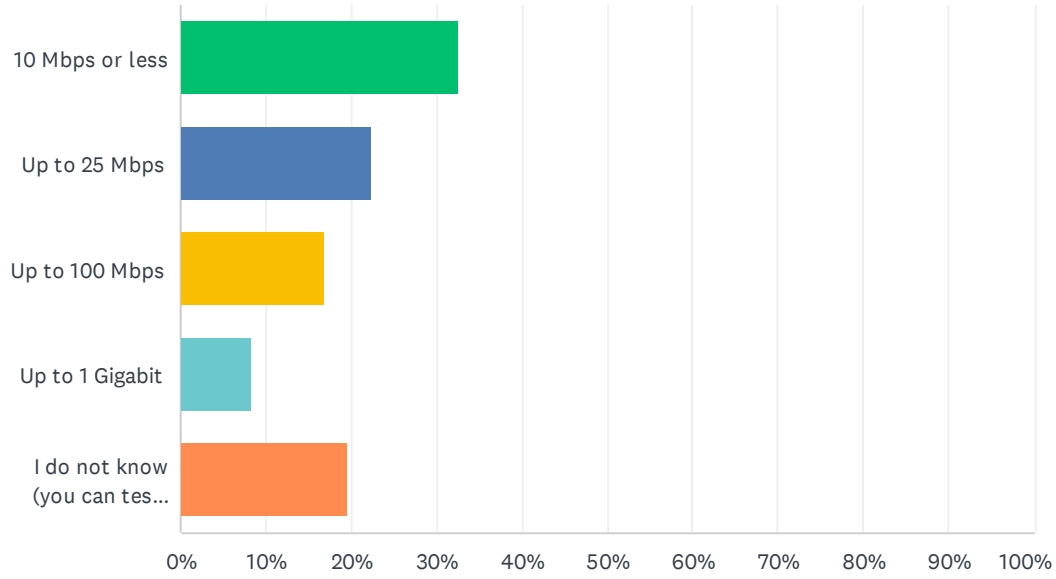


ANSWER CHOICES	RESPONSES	
Cable or digital subscriber line (DSL- telephone line)	31.13%	33
Wireless	30.19%	32
Fiber optics	13.21%	14
Satellite or mobile	26.42%	28
I do not know	7.55%	8
Other (please specify)	5.66%	6
Total Respondents: 106		

#	OTHER (PLEASE SPECIFY)	DATE
1	SĹINĢ	5/19/2023 3:42 AM
2	Slow	5/8/2023 9:53 PM
3	T-Mobile cell hot spot	5/6/2023 7:24 PM
4	We just signed up with Liberty yesterday.	5/4/2023 8:17 AM
5	It’s terrible	5/2/2023 4:32 PM
6	Cooper wire	4/26/2023 3:03 PM

Q5 What speed is your internet service (download speed)? (Megabits per second = Mbps)

Answered: 107 Skipped: 22



ANSWER CHOICES	RESPONSES	
10 Mbps or less	32.71%	35
Up to 25 Mbps	22.43%	24
Up to 100 Mbps	16.82%	18
Up to 1 Gigabit	8.41%	9
I do not know (you can test your internet speed at speedtest.utah.gov)	19.63%	21
TOTAL		107

Q6 Which company do you use for internet? (E.g., Utopia, CenturyLink, Xfinity, Rise Broadband, Liberty Broadband, Beehive Broadband, etc.)

Answered: 107 Skipped: 22

#	RESPONSES	DATE
1	T mobile	6/30/2023 1:58 PM
2	Hughes Net	6/19/2023 6:11 PM
3	Century Link	6/16/2023 9:06 AM
4	CenturyLink	6/12/2023 8:52 AM
5	My Surfs Up	6/9/2023 9:48 PM
6	Starlink	6/9/2023 3:23 PM
7	Century Link	6/6/2023 6:47 PM
8	Century Link	6/4/2023 12:57 AM
9	Starlink	5/25/2023 2:17 PM
10	Tmobile, Rise Broadband, or Starlink by SpaceX	5/24/2023 1:32 PM
11	Utopia	5/24/2023 7:15 AM
12	CenturyLink	5/20/2023 1:51 PM
13	Rise	5/20/2023 11:56 AM
14	Xfinity	5/19/2023 7:22 AM
15	SÍiñġ	5/19/2023 3:42 AM
16	Xfinity	5/17/2023 5:07 PM
17	Beehive (on old cable network)	5/16/2023 10:51 PM
18	Utopia	5/16/2023 6:12 PM
19	Viasat	5/14/2023 9:52 AM
20	Rise	5/13/2023 3:22 AM
21	Surf	5/12/2023 9:14 PM
22	CenturyLink	5/12/2023 7:44 PM
23	Hebd	5/12/2023 5:05 PM
24	StarLink	5/12/2023 3:09 PM
25	Century Link	5/12/2023 12:44 PM
26	rise broadband	5/11/2023 9:47 PM
27	Rise Broadband	5/11/2023 5:25 PM
28	Starlink	5/11/2023 1:52 PM
29	Xfinity	5/10/2023 9:52 PM
30	Starlink	5/10/2023 8:46 PM
31	Verizon	5/10/2023 2:55 PM

32	CenturyLink	5/9/2023 10:21 PM
33	Century Link	5/9/2023 9:54 PM
34	Century Link	5/9/2023 5:35 PM
35	CenturyLink	5/9/2023 2:59 PM
36	Tmobile	5/9/2023 11:17 AM
37	Rise Broadband	5/9/2023 8:43 AM
38	Denny Anderson	5/9/2023 8:33 AM
39	Rise Broadband	5/9/2023 7:39 AM
40	Rise broadband	5/8/2023 9:53 PM
41	Century Link	5/8/2023 9:00 PM
42	Xmission	5/8/2023 8:44 PM
43	Century link	5/8/2023 8:11 PM
44	Rise Broadband	5/8/2023 5:59 PM
45	Centurylink	5/8/2023 1:18 PM
46	Broadband	5/8/2023 9:40 AM
47	Centurylink	5/8/2023 12:44 AM
48	Beehive	5/8/2023 12:08 AM
49	t-mobile.	5/7/2023 9:26 PM
50	CenturyLink	5/7/2023 8:05 PM
51	Centurylink	5/7/2023 1:44 PM
52	Rise Broadband	5/7/2023 11:58 AM
53	T-Mobile	5/7/2023 6:30 AM
54	My Surf's Up	5/6/2023 7:52 PM
55	Century Link and T Mobile, need both	5/6/2023 7:24 PM
56	CenturyLink and TMobile	5/6/2023 7:23 PM
57	Rise Broadband	5/6/2023 1:34 PM
58	Century Link	5/6/2023 9:32 AM
59	Beehive Broadband	5/6/2023 6:37 AM
60	Utopia/Beehive Broadband	5/5/2023 10:08 PM
61	Elan Musk Starlink	5/5/2023 6:25 PM
62	Rise	5/5/2023 1:54 PM
63	Liberty Broadband	5/5/2023 1:51 PM
64	Centurylink	5/5/2023 12:05 PM
65	CenturyLink	5/5/2023 10:51 AM
66	Starlink	5/5/2023 9:01 AM
67	rise broadband	5/5/2023 8:52 AM
68	Century link	5/5/2023 7:24 AM
69	Rise Broadband	5/4/2023 9:36 PM

70	Starlink	5/4/2023 7:52 PM
71	Rise broadband	5/4/2023 9:03 AM
72	Liberty, as of yesterday	5/4/2023 8:17 AM
73	WifiCow	5/4/2023 1:19 AM
74	Rise Broadband	5/3/2023 10:17 PM
75	Rise Broadband	5/3/2023 9:12 PM
76	WifiCow	5/3/2023 7:00 PM
77	MSU	5/3/2023 6:22 PM
78	Beehive Broadband	5/3/2023 3:34 PM
79	Centurylink	5/3/2023 1:12 PM
80	Rise broadband	5/3/2023 11:34 AM
81	Centurylink	5/3/2023 10:45 AM
82	Utopia	5/3/2023 8:46 AM
83	Century Link	5/3/2023 7:59 AM
84	Starlink	5/3/2023 7:58 AM
85	Utopia	5/3/2023 7:24 AM
86	CenturyLink	5/3/2023 6:40 AM
87	Beehive Broadband	5/3/2023 4:44 AM
88	Beehive broadband	5/2/2023 11:58 PM
89	Utopia	5/2/2023 9:18 PM
90	Rise	5/2/2023 8:51 PM
91	Starlink	5/2/2023 8:41 PM
92	CenturyLink	5/2/2023 7:23 PM
93	T- mobile	5/2/2023 6:15 PM
94	CenturyLink - terrible service	5/2/2023 4:32 PM
95	Utopia	5/2/2023 2:46 PM
96	Wifi Cow	5/2/2023 1:56 PM
97	Century Link	5/2/2023 1:51 PM
98	CenturyLink	5/2/2023 12:51 PM
99	Utopia	5/2/2023 11:12 AM
100	Rise Broadband	5/2/2023 10:21 AM
101	Beehive	5/1/2023 6:40 PM
102	CenturyLink	5/1/2023 5:52 PM
103	T-Mobile	4/27/2023 9:18 PM
104	Tmobile, century link	4/27/2023 2:55 PM
105	Wifi Cow	4/26/2023 7:56 PM
106	Centurylink	4/26/2023 3:03 PM
107	Utopia	4/25/2023 3:02 PM

Q7 What is the monthly charge for your internet service? Write "Unknown" if unknown.

Answered: 107 Skipped: 22

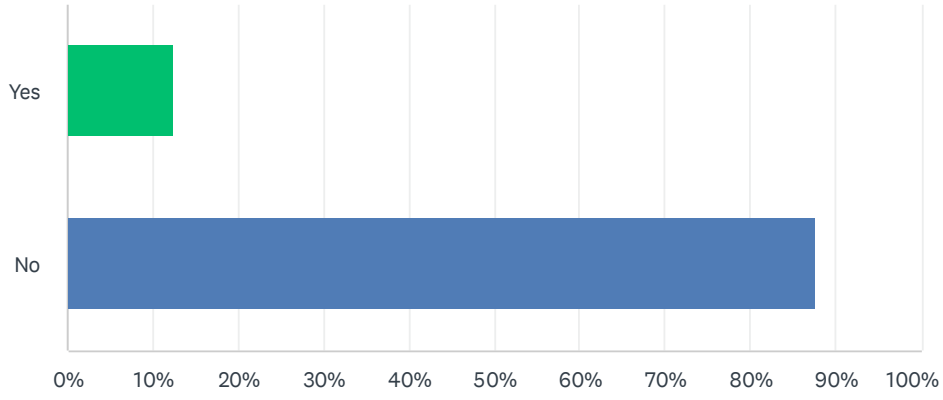
#	RESPONSES	DATE
1	75.00	6/30/2023 1:58 PM
2	approx $100.00	6/19/2023 6:11 PM
3	50	6/16/2023 9:06 AM
4	69	6/12/2023 8:52 AM
5	$45	6/9/2023 9:48 PM
6	$120	6/9/2023 3:23 PM
7	Unknown	6/6/2023 6:47 PM
8	70ish	6/4/2023 12:57 AM
9	$130.00	5/25/2023 2:17 PM
10	$50 for Tmobile or Rise up to $110 for Starlink	5/24/2023 1:32 PM
11	50	5/24/2023 7:15 AM
12	$49	5/20/2023 1:51 PM
13	unknown	5/20/2023 11:56 AM
14	Unknown	5/19/2023 7:22 AM
15	Unknowñ	5/19/2023 3:42 AM
16	65	5/17/2023 5:07 PM
17	45	5/16/2023 10:51 PM
18	Unkown	5/16/2023 6:12 PM
19	220.00	5/14/2023 9:52 AM
20	67.99	5/13/2023 3:22 AM
21	70	5/12/2023 9:14 PM
22	40	5/12/2023 7:44 PM
23	Hrhdhd	5/12/2023 5:05 PM
24	100	5/12/2023 3:09 PM
25	45	5/12/2023 12:44 PM
26	80	5/11/2023 9:47 PM
27	90	5/11/2023 5:25 PM
28	$115	5/11/2023 1:52 PM
29	Unknown	5/10/2023 9:52 PM
30	Unknown	5/10/2023 8:46 PM
31	Unknown	5/10/2023 2:55 PM

32	$50	5/9/2023 10:21 PM
33	138.00	5/9/2023 9:54 PM
34	$70	5/9/2023 5:35 PM
35	$55	5/9/2023 2:59 PM
36	75	5/9/2023 11:17 AM
37	$75	5/9/2023 8:43 AM
38	$45.00	5/9/2023 8:33 AM
39	55.33	5/9/2023 7:39 AM
40	85.00	5/8/2023 9:53 PM
41	55	5/8/2023 9:00 PM
42	Unknown	5/8/2023 8:44 PM
43	49.00	5/8/2023 8:11 PM
44	85	5/8/2023 5:59 PM
45	53	5/8/2023 1:18 PM
46	Ilunknown	5/8/2023 9:40 AM
47	49.00	5/8/2023 12:44 AM
48	$50	5/8/2023 12:08 AM
49	50	5/7/2023 9:26 PM
50	36.00	5/7/2023 8:05 PM
51	$60	5/7/2023 1:44 PM
52	65	5/7/2023 11:58 AM
53	$50	5/7/2023 6:30 AM
54	Prefer not to answer	5/6/2023 7:52 PM
55	Century Link $50, T Mobile $50	5/6/2023 7:24 PM
56	$120.00	5/6/2023 7:23 PM
57	$100	5/6/2023 1:34 PM
58	60.00	5/6/2023 9:32 AM
59	100	5/6/2023 6:37 AM
60	$35	5/5/2023 10:08 PM
61	Unknown	5/5/2023 6:25 PM
62	50	5/5/2023 1:54 PM
63	100.00	5/5/2023 1:51 PM
64	80	5/5/2023 12:05 PM
65	$40	5/5/2023 10:51 AM
66	$110.00	5/5/2023 9:01 AM
67	84.00	5/5/2023 8:52 AM
68	$115	5/5/2023 7:24 AM
69	82.00	5/4/2023 9:36 PM

70	110	5/4/2023 7:52 PM
71	$86	5/4/2023 9:03 AM
72	Unknown	5/4/2023 8:17 AM
73	$45	5/4/2023 1:19 AM
74	70	5/3/2023 10:17 PM
75	60	5/3/2023 9:12 PM
76	45	5/3/2023 7:00 PM
77	$45	5/3/2023 6:22 PM
78	85.00	5/3/2023 3:34 PM
79	$55.	5/3/2023 1:12 PM
80	$70	5/3/2023 11:34 AM
81	Unknown	5/3/2023 10:45 AM
82	30.00	5/3/2023 8:46 AM
83	45.00	5/3/2023 7:59 AM
84	$110	5/3/2023 7:58 AM
85	30.00	5/3/2023 7:24 AM
86	$45	5/3/2023 6:40 AM
87	60	5/3/2023 4:44 AM
88	35	5/2/2023 11:58 PM
89	30 for Utopia, 35 for Bingham.net	5/2/2023 9:18 PM
90	$65	5/2/2023 8:51 PM
91	$ 110.	5/2/2023 8:41 PM
92	40	5/2/2023 7:23 PM
93	30.00	5/2/2023 6:15 PM
94	$150	5/2/2023 4:32 PM
95	55	5/2/2023 2:46 PM
96	$45	5/2/2023 1:56 PM
97	$62.50	5/2/2023 1:51 PM
98	50	5/2/2023 12:51 PM
99	60	5/2/2023 11:12 AM
100	$234	5/2/2023 10:21 AM
101	65	5/1/2023 6:40 PM
102	$35	5/1/2023 5:52 PM
103	$56	4/27/2023 9:18 PM
104	$80	4/27/2023 2:55 PM
105	45	4/26/2023 7:56 PM
106	70.00 (+ or -)	4/26/2023 3:03 PM
107	Unknown	4/25/2023 3:02 PM

Q8 Does your internet bill include other services such as phone, TV, or premium content?

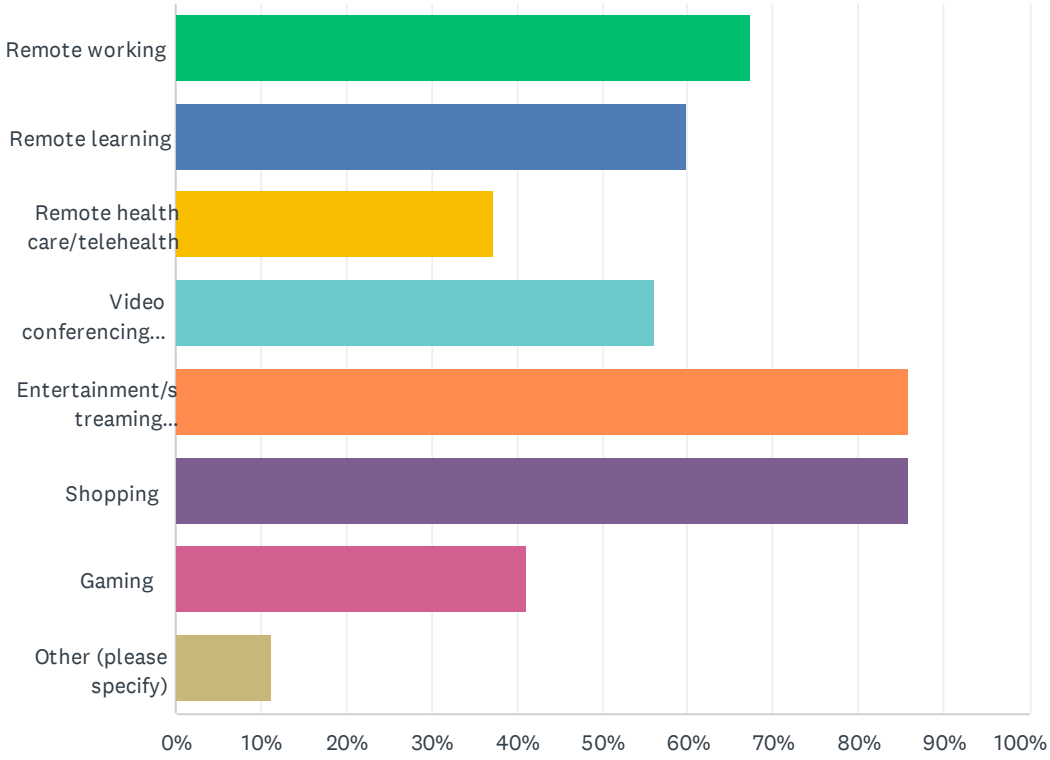
Answered: 106 Skipped: 23



ANSWER CHOICES	RESPONSES	
Yes	12.26%	13
No	87.74%	93
TOTAL		106

Q9 What do you use the internet for? Select all that apply.

Answered: 107 Skipped: 22



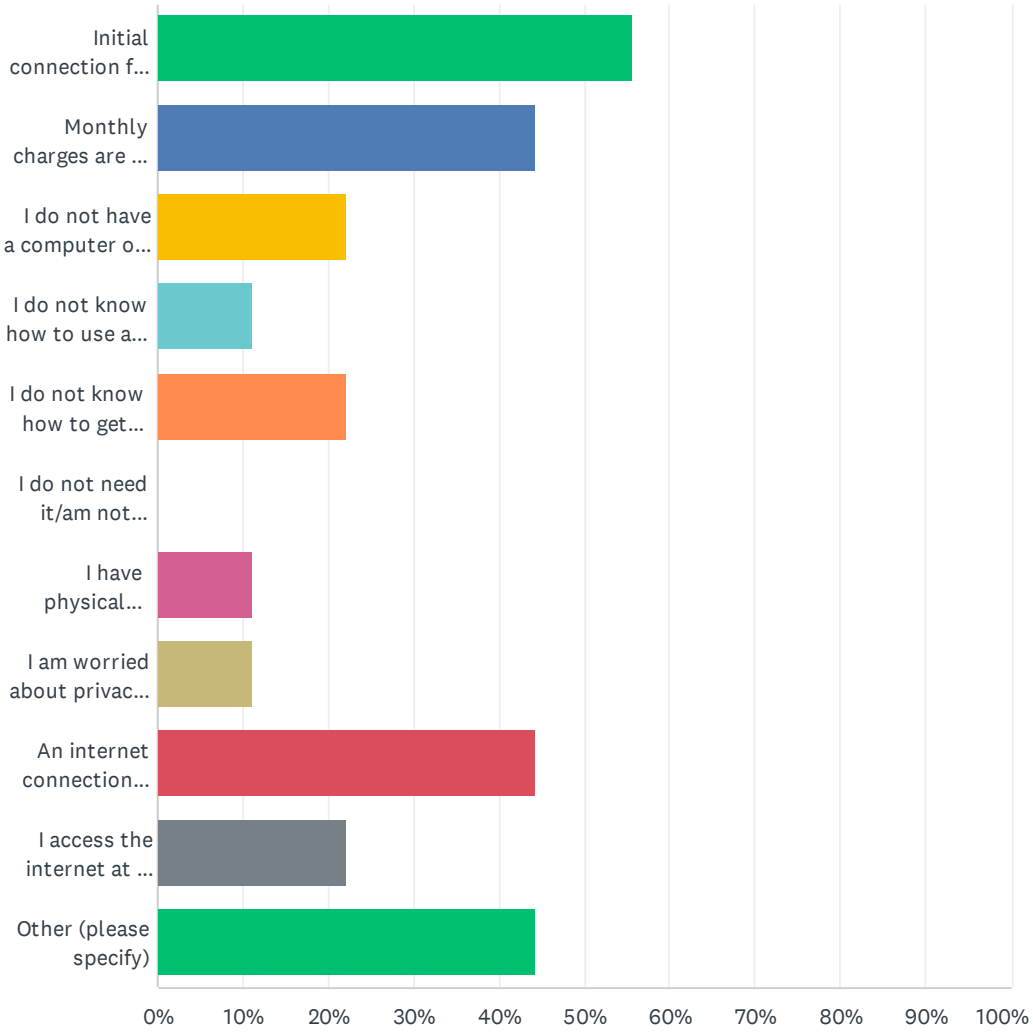
ANSWER CHOICES	RESPONSES	
Remote working	67.29%	72
Remote learning	59.81%	64
Remote health care/telehealth	37.38%	40
Video conferencing/chatting	56.07%	60
Entertainment/streaming services	85.98%	92
Shopping	85.98%	92
Gaming	41.12%	44
Other (please specify)	11.21%	12
Total Respondents: 107		

#	OTHER (PLEASE SPECIFY)	DATE
1	financial matters	6/19/2023 6:11 PM
2	All of the above, i work from home	5/24/2023 1:32 PM
3	I don't pay for my internet	5/19/2023 7:22 AM
4	Ĺove Pets	5/19/2023 3:42 AM

5	Email	5/10/2023 2:55 PM
6	Information searches	5/9/2023 2:59 PM
7	Accessing government and financial services	5/6/2023 7:52 PM
8	Research	5/4/2023 8:17 AM
9	Family research	5/3/2023 10:45 AM
10	Watching tv	5/3/2023 7:24 AM
11	Work !!	5/2/2023 4:32 PM
12	many different things, church service,	5/2/2023 1:51 PM

Q10 Can you provide more details about what is preventing you from accessing the internet at your household? Select all that apply.

Answered: 9 Skipped: 120

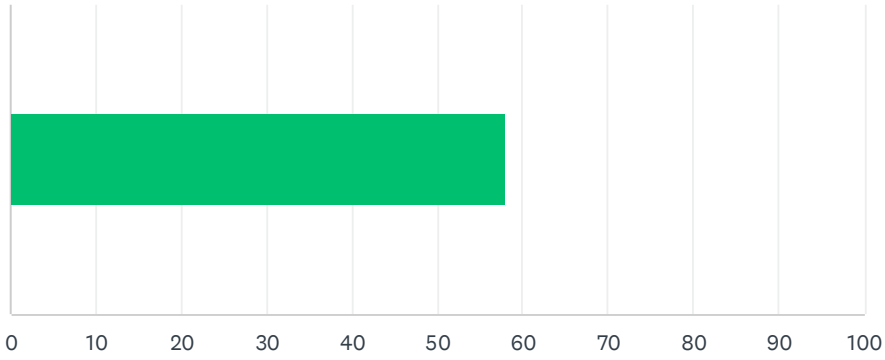


ANSWER CHOICES	RESPONSES	
Initial connection fees are too expensive	55.56%	5
Monthly charges are too expensive	44.44%	4
I do not have a computer or tablet to use	22.22%	2
I do not know how to use a computer or tablet	11.11%	1
I do not know how to get internet service	22.22%	2
I do not need it/am not interested in it	0.00%	0
I have physical limitations	11.11%	1
I am worried about privacy and others getting my information	11.11%	1
An internet connection isn't available in my area	44.44%	4
I access the internet at a public internet source, such as a library or a community center	22.22%	2
Other (please specify)	44.44%	4
Total Respondents: 9		

#	OTHER (PLEASE SPECIFY)	DATE
1	The only available connectivity that is no over the air is CenturyLink DSL which is extremely slow and intermitent at best. Rise broad band is not available at my house because the LoS to the transmission attena does not exist (it's blocked by other houses in the neighborhood - (Whisper Ridge) Currently using T-Mobile, which is the best available option, but barely usable wrt the bandwidth available for the seven users in our house.	6/16/2023 2:09 PM
2	Sister in Tooele wants me there alot of the timesol go there	5/24/2023 1:28 AM
3	I want internet for house, I have it on my phone.	5/11/2023 11:14 AM
4	I use a cell phone booster which was expensive and rely on phones	5/2/2023 6:32 PM

Q11 How much would you pay for internet per month if it was accessible to you at your residence?

Answered: 7 Skipped: 122



ANSWER CHOICES	AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
	58	406	7
Total Respondents: 7			

#		DATE
1	40	6/16/2023 2:09 PM
2	24	5/24/2023 3:52 AM
3	117	5/14/2023 6:40 AM
4	40	5/11/2023 11:14 AM
5	60	5/3/2023 9:45 PM
6	55	5/2/2023 8:50 PM
7	70	5/2/2023 6:32 PM

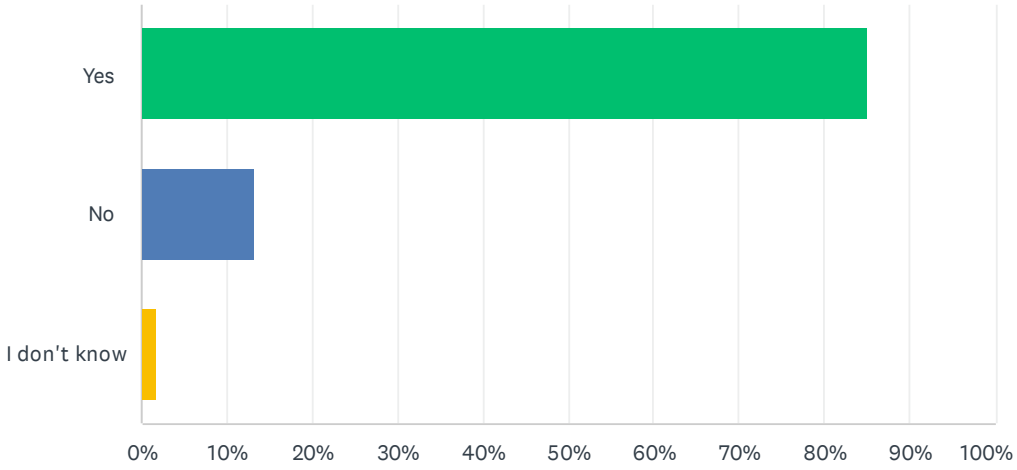
Q12 If you are willing, please share how a high-speed internet connection would improve your quality of life.

Answered: 6 Skipped: 123

#	RESPONSES	DATE
1	It would enable participation in 21st century America culture, society, and job market. It is laughably pathetic, and highly predictable, the the insular nepotism driving all decisions regarding infrastructure and services in this county have created this situation, despite decades of availability.	6/16/2023 2:09 PM
2	I can get a lot more stuff done I could watch TV all sorts of things I can do if I had internet	5/24/2023 3:52 AM
3	I am opening my own biz here soon so I will need it sooners not later ,ya know.	5/24/2023 1:28 AM
4	I would have Access to all kinds of information, I'm all about learning things I don't know. Plus my mom had a stroke and this would enable her to watch whatever she wanted. And could connect with more relatives.	5/11/2023 11:14 AM
5	I have a brand new computer I can't use since I have no internet access . I haveva really nice color printer I can't use since it won't run off of my cell phone hot spot.	5/2/2023 8:50 PM
6	Banking and appointment booking for children and doctors. Everyone is paperless now so when you don't have internet you can see your email on your phone but can't print anything. Small screens are hard to read and I am older (51) and cannot read some of the smaller type anymore	5/2/2023 6:32 PM

Q13 Do you have a tablet device you can use to access the internet at home?

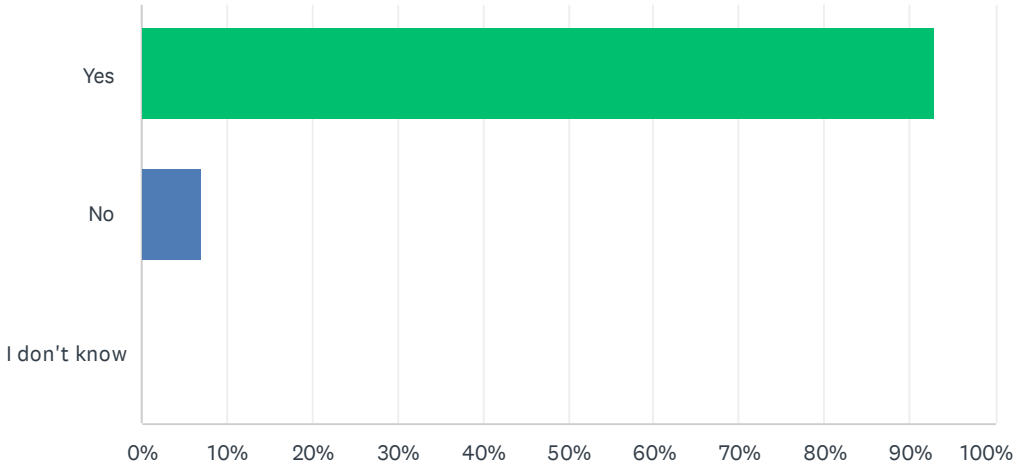
Answered: 114 Skipped: 15



ANSWER CHOICES	RESPONSES	
Yes	85.09%	97
No	13.16%	15
I don't know	1.75%	2
TOTAL		114

Q14 Do you have a desktop or laptop computer you can use to access the internet at home?

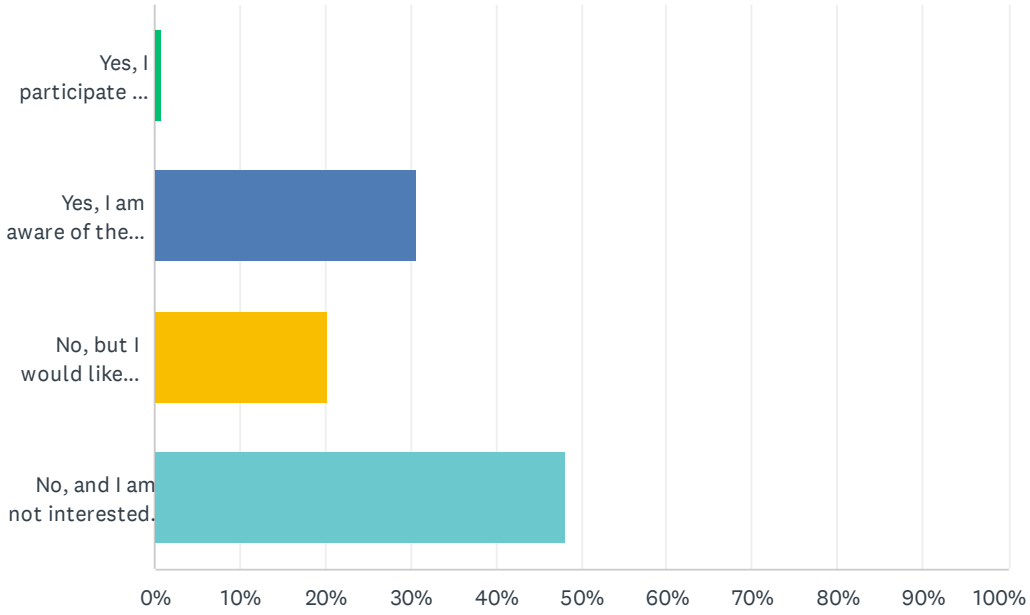
Answered: 113 Skipped: 16



ANSWER CHOICES	RESPONSES	
Yes	92.92%	105
No	7.08%	8
I don't know	0.00%	0
TOTAL		113

Q15 Are you aware of the Affordable Connectivity Program, which provides a $30 monthly discount for internet to low-income households?

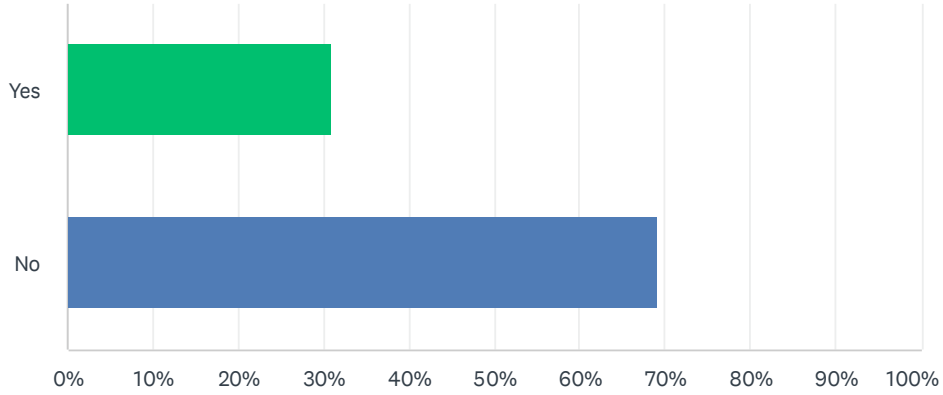
Answered: 114 Skipped: 15



ANSWER CHOICES	RESPONSES	
Yes, I participate in the Program.	0.88%	1
Yes, I am aware of the Program, but do not participate in it or am not eligible.	30.70%	35
No, but I would like information to learn if my household qualifies. (Please visit business.utah.gov)	20.18%	23
No, and I am not interested.	48.25%	55
TOTAL		114

Q16 Are you a business owner?

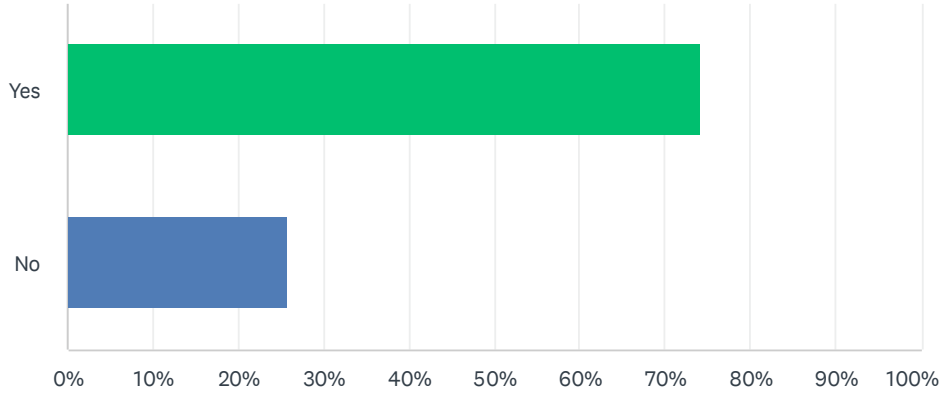
Answered: 113 Skipped: 16



ANSWER CHOICES	RESPONSES	
Yes	30.97%	35
No	69.03%	78
TOTAL		113

Q17 Is your business located at your primary residence?

Answered: 35 Skipped: 94



ANSWER CHOICES	RESPONSES	
Yes	74.29%	26
No	25.71%	9
TOTAL		35

Q18 What is your business address?

Answered: 6 Skipped: 123

ANSWER CHOICES	RESPONSES	
Name	0.00%	0
Company	83.33%	5
Address	100.00%	6
Address 2	0.00%	0
City/Town	100.00%	6
State/Province	0.00%	0
ZIP/Postal Code	100.00%	6
Country	0.00%	0
Email Address	0.00%	0
Phone Number	0.00%	0

#	NAME	DATE
	There are no responses.	

#	COMPANY	DATE
1		6/30/2023 1:59 PM
2		6/19/2023 6:13 PM
3		6/12/2023 8:53 AM
4		5/16/2023 10:53 PM
5		5/2/2023 9:26 PM

#	ADDRESS	DATE
1		6/30/2023 1:59 PM
2		6/19/2023 6:13 PM
3		6/12/2023 8:53 AM
4		5/16/2023 10:53 PM
5		5/8/2023 9:54 PM
6		5/2/2023 9:26 PM

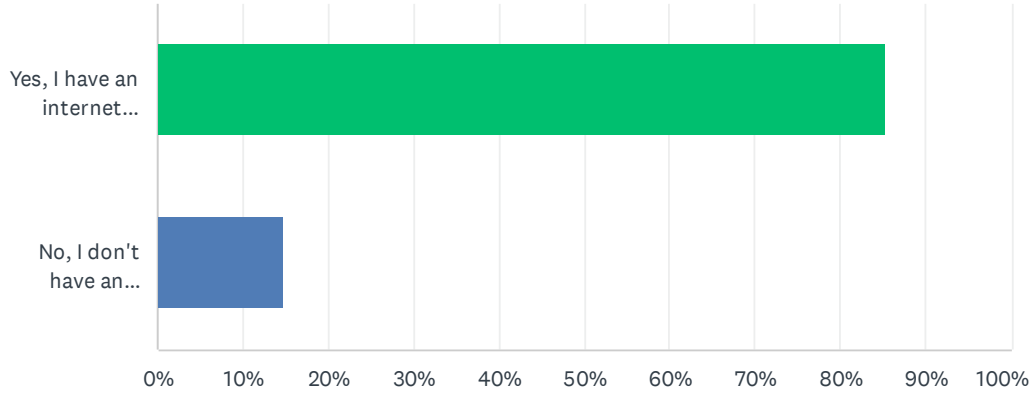
#	ADDRESS 2	DATE
	There are no responses.	

#	CITY/TOWN	DATE
1	South Jordan	6/30/2023 1:59 PM
2	Morgan	6/19/2023 6:13 PM
3	Ogden	6/12/2023 8:53 AM

4	MORGAN	5/16/2023 10:53 PM
5	Logan	5/8/2023 9:54 PM
6	Morgan	5/2/2023 9:26 PM
#	**STATE/PROVINCE**	**DATE**
	There are no responses.	
#	**ZIP/POSTAL CODE**	**DATE**
1	84095	6/30/2023 1:59 PM
2	84050	6/19/2023 6:13 PM
3	84401	6/12/2023 8:53 AM
4	84050	5/16/2023 10:53 PM
5	84332	5/8/2023 9:54 PM
6	84050	5/2/2023 9:26 PM
#	**COUNTRY**	**DATE**
	There are no responses.	
#	**EMAIL ADDRESS**	**DATE**
	There are no responses.	
#	**PHONE NUMBER**	**DATE**
	There are no responses.	

Q19 Do you have an internet connection at your business?

Answered: 34 Skipped: 95



ANSWER CHOICES	RESPONSES	
Yes, I have an internet connection at my business	85.29%	29
No, I don't have an internet connection at my business	14.71%	5
TOTAL		34

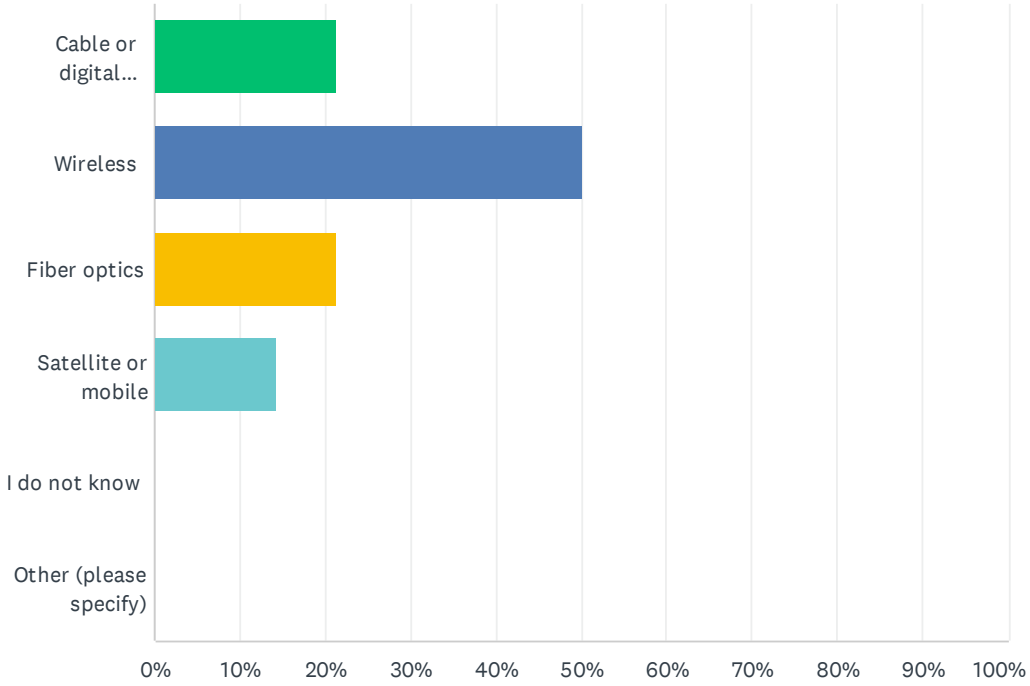
Q20 Which company do you use for business internet? (E.g., Utopia, CenturyLink, Xfinity, Rise Broadband, Liberty Broadband, Beehive Broadband, etc.)

Answered: 15 Skipped: 114

#	RESPONSES	DATE
1	Comcast	6/30/2023 2:02 PM
2	Allwest	6/19/2023 8:05 PM
3	Xfinity	6/12/2023 8:55 AM
4	UTOPIA	5/16/2023 10:56 PM
5	Viasat	5/14/2023 9:54 AM
6	Comcast	5/12/2023 9:17 PM
7	Century link	5/12/2023 12:45 PM
8	Comcast	5/4/2023 9:07 AM
9	MSU	5/3/2023 6:28 PM
10	Beehive Broadband	5/3/2023 3:37 PM
11	Starlink	5/3/2023 8:00 AM
12	CEnturyLink	5/2/2023 7:24 PM
13	CenturyLink	5/2/2023 4:34 PM
14	Rise	5/2/2023 10:23 AM
15	Wifi Cow	4/26/2023 7:58 PM

Q21 What type of internet connection does your business have?

Answered: 14 Skipped: 115

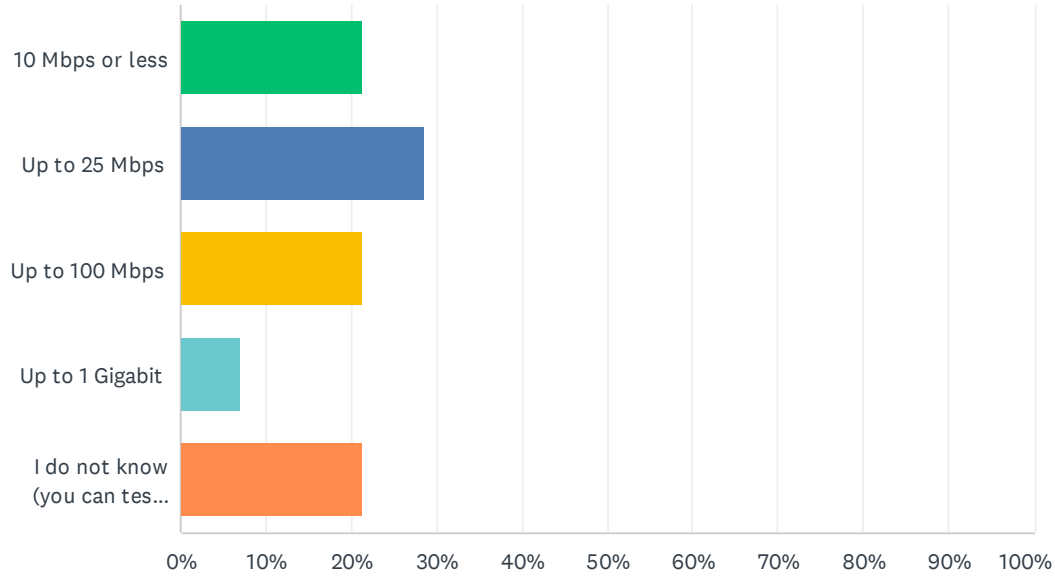


ANSWER CHOICES	RESPONSES	
Cable or digital subscriber line (DSL- telephone line)	21.43%	3
Wireless	50.00%	7
Fiber optics	21.43%	3
Satellite or mobile	14.29%	2
I do not know	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 14		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q22 What speed is your business internet service (download speed)? (Megabits per second = Mbps)

Answered: 14 Skipped: 115



ANSWER CHOICES	RESPONSES	
10 Mbps or less	21.43%	3
Up to 25 Mbps	28.57%	4
Up to 100 Mbps	21.43%	3
Up to 1 Gigabit	7.14%	1
I do not know (you can test your internet speed at speedtest.utah.gov)	21.43%	3
TOTAL		14

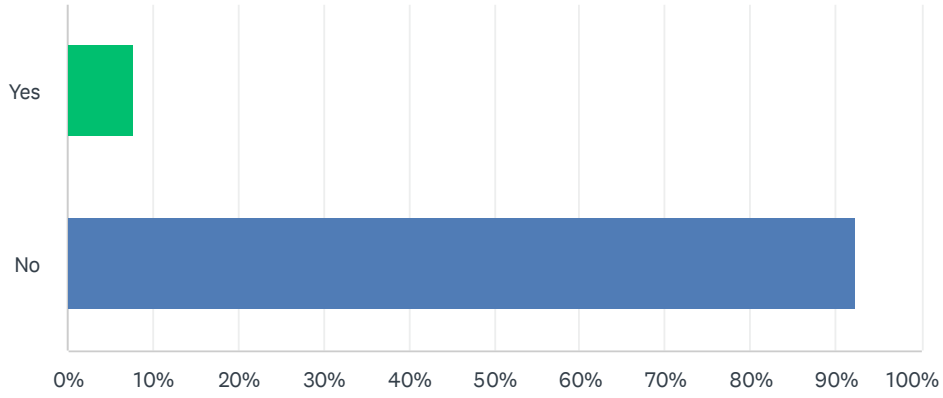
Q23 What is the monthly charge for your business internet service? Write "Unknown" if unknown.

Answered: 13 Skipped: 116

#	RESPONSES	DATE
1	60.00	6/30/2023 2:02 PM
2	Don't know	6/19/2023 8:05 PM
3	Unknown	6/12/2023 8:55 AM
4	199.00	5/16/2023 10:56 PM
5	77	5/12/2023 9:17 PM
6	45	5/12/2023 12:45 PM
7	$200	5/4/2023 9:07 AM
8	$45	5/3/2023 6:28 PM
9	$110	5/3/2023 8:00 AM
10	40	5/2/2023 7:24 PM
11	150	5/2/2023 4:34 PM
12	$234	5/2/2023 10:23 AM
13	45	4/26/2023 7:58 PM

Q24 Does your business internet bill include other services such as phone, TV, or premium content?

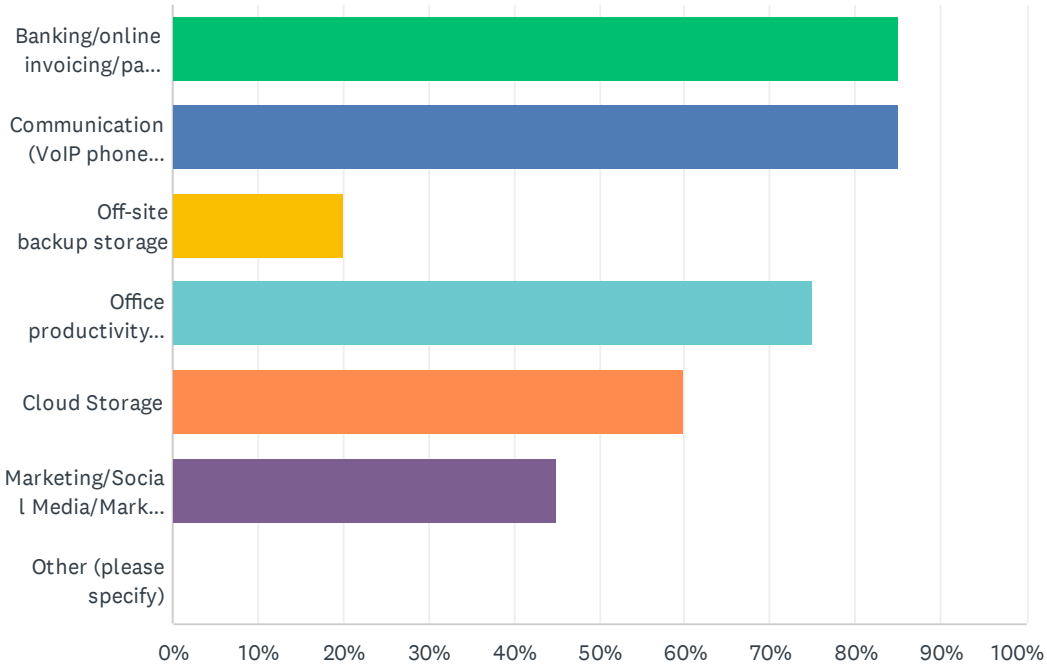
Answered: 13 Skipped: 116



ANSWER CHOICES	RESPONSES	
Yes	7.69%	1
No	92.31%	12
TOTAL		13

Q25 What do you typically use the internet for at your business? Select all that apply.

Answered: 20 Skipped: 109

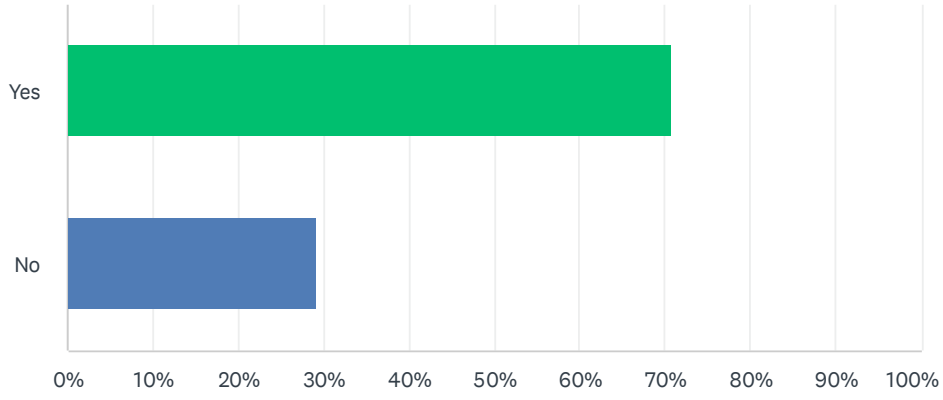


ANSWER CHOICES	RESPONSES	
Banking/online invoicing/payment processing/payroll	85.00%	17
Communication (VoIP phone system, email)	85.00%	17
Off-site backup storage	20.00%	4
Office productivity (Video conferencing, Slack, Microsoft Teams)	75.00%	15
Cloud Storage	60.00%	12
Marketing/Social Media/Market Research	45.00%	9
Other (please specify)	0.00%	0
Total Respondents: 20		

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q26 Has the speed or reliability of your internet service affected your business?

Answered: 24 Skipped: 105



ANSWER CHOICES	RESPONSES	
Yes	70.83%	17
No	29.17%	7
TOTAL		24

Q27 Please describe how internet reliability - or lack of internet connection - has affected your business.

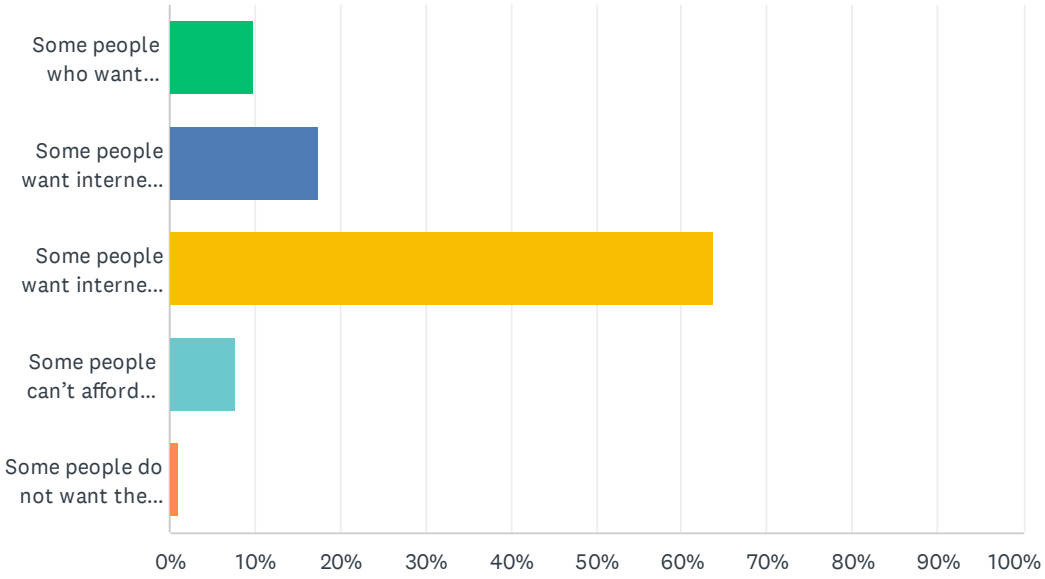
Answered: 21 Skipped: 108

#	RESPONSES	DATE
1	When I remotely answer phones from home it’s VIOP and sometimes I can not get calls. It’s shows missed call but the phone doesn’t ring	6/30/2023 2:02 PM
2	I don't want to discuss the business. My worry and complaint is our home services. They are terrible.	6/19/2023 8:05 PM
3	It is so slow and is out alot	6/12/2023 8:55 AM
4	too slow, hangs up, delays	5/20/2023 11:57 AM
5	UTOPIA SPEEDS ARE A POSITIVE. THE COST TO BUSINESSES WITH UTOPIA, AND LONG CONTRACTS, ARE INSULTING AND FRUSTRATING. HOMES HAVE BETTER SPEEDS AT A FRACTION OF THE COST. BUT OUR GOVT SEEMS TO THINK IT CAN ALL BE SHOULDERED BY BUSINESS. IT'S RIDICULOUS.	5/16/2023 10:56 PM
6	Slow connectivity.	5/14/2023 9:54 AM
7	We are unable to work from home as we’d like because the Internet is too slow. It is also for our college kids to do any online work.	5/12/2023 9:17 PM
8	It is really slow	5/12/2023 12:45 PM
9	I Can occasionally work from home. It won’t connect in some places in the home. Very slow. Can’t stream	5/8/2023 9:55 PM
10	The speed and reliability lead to interruptions in virtual meetings.	5/8/2023 6:01 PM
11	The connection is not consistant. Sometimes it's good and other times we lose connection.	5/7/2023 9:28 PM
12	Loss of connection, slow speed and interruptions have been a pain here in Morgan.	5/7/2023 6:32 AM
13	Slow downloads, ability to send and receive emails, billing, etc	5/4/2023 9:39 PM
14	Intermittent and slow connection has hurt client calls multiple times	5/3/2023 10:19 PM
15	It is not reliable. I often go elsewhere for on line meetings	5/3/2023 6:28 PM
16	Long waits	5/3/2023 11:36 AM
17	Too slow	5/3/2023 8:00 AM
18	If internet was cheaper I could install card readers on my washers and dryers	5/2/2023 9:27 PM
19	It is insane. I have tried to start a petition here in our neighborhood and contacted Behive Broadband which received a lot of county dollars in 2020 during covid to "expand" their network, they instead rewired their cable network and did not expand. I am .5 miles from a fiber line and those funds were supposed to get people connect to last mile. Beehive has horrible public relations. I contacted liberty broadband and arranged for them to speak with Behive to get a wireless tower installed for highspeed for our neighborhood after 3 years of trying nothing is done. behive wanted to charge Liberty some insane amount of money to place a tower with their fiber backbone. I truly believe that something improper went on with the fund and money spent by behive. They did not expand but instead improved existing infrastructure. I wish someone would now take a look and make the County and Beehive Broadband accountable. This was the "good old boy" network at play. someone knows the Beehive guys in county government and they did what they wanted not whay they should have done. If I had high speed network my wife could work from home. we could have Voip phone which we cannot have for our office lines. We could employ people and expand	5/2/2023 6:38 PM
20	Terrible connection	5/2/2023 4:34 PM

21	A lot of down time and slow speeds have caused dropped Zoom calls, slow network response.	4/26/2023 7:58 PM

Q28 Tell us about internet access and how it relates to people within Morgan County.

Answered: 91 Skipped: 38



ANSWER CHOICES	RESPONSES	
Some people who want internet access have it.	9.89%	9
Some people want internet access but have no internet providers available.	17.58%	16
Some people want internet provider options than those that currently are available.	63.74%	58
Some people can't afford the internet option(s) available to them.	7.69%	7
Some people do not want the internet.	1.10%	1
TOTAL		91

Q29 What barriers make it difficult for individuals in Morgan County to access the internet? (e.g., affordability, knowledge, infrastructure).

Answered: 85 Skipped: 44

#	RESPONSES	DATE
1	Infrastructure	6/30/2023 2:05 PM
2	ours is distance and availibility	6/19/2023 8:09 PM
3	Infrastructure; the county's failure to deliver fiber infrastructure along the Old Highway Road corridor, and within the new development of Whisper Ridge, is blatant incompetence.	6/16/2023 2:12 PM
4	Infastructure	6/12/2023 9:02 AM
5	Not enough infrastructure. Limited options.	6/9/2023 9:51 PM
6	Infrastructure	6/6/2023 6:49 PM
7	Very limited access to good internet	5/25/2023 2:26 PM
8	Infrastructure	5/24/2023 7:18 AM
9	Don't know	5/24/2023 12:06 AM
10	No fiber optic in our area. Poor choice of providers. All options are slow.	5/20/2023 1:56 PM
11	only a few providers causing too many on a tower and slow connectivity	5/20/2023 11:59 AM
12	INFRASTRUCTURE AND OPTIONS HAVE NEVER COME TOGETHER, DESPITE ALL OF THE MONEY AND ATTEMPTS TO PROVIDE OPTIONS TO COUNTY RESIDENTS.	5/16/2023 11:00 PM
13	Affordability	5/16/2023 6:15 PM
14	Infrastructure - same issues affecting many small towns and rural communities - lack of fiber optics or high speed internet to areas outside of city limits.	5/14/2023 9:57 AM
15	Infrastructure. No alternatives other than satellite internet exist where I live	5/13/2023 3:24 AM
16	Options. Speed	5/12/2023 9:19 PM
17	Infrastructure	5/12/2023 7:48 PM
18	land locked neighborhoods	5/11/2023 9:50 PM
19	infrastructure	5/11/2023 5:30 PM
20	Having a hard time getting access to the internet because of the mountains and trees	5/10/2023 10:38 PM
21	Infrastructure. We need more options other than Utopia/CenturyLink. It's limited through CenturyLink and also unaffordable through Utopia.	5/9/2023 10:25 PM
22	Infrastructure	5/9/2023 10:00 PM
23	infrastructure	5/9/2023 5:48 PM
24	Infrastructure	5/9/2023 3:03 PM
25	Infrastructure	5/9/2023 11:20 AM
26	We live in a rural area	5/9/2023 8:38 AM
27	Infrastructure	5/9/2023 7:43 AM
28	No high speed access.	5/8/2023 9:59 PM
29	No fiber access	5/8/2023 9:04 PM

30	Infrastructure, affordability	5/8/2023 8:47 PM
31	The rural parts of Morgan can't get good internet. My speed with CL is 2mb/3mb	5/8/2023 8:17 PM
32	Morgan City added a fiber network through utopia but it does not extend to the rest of the county. This leaves no high speed options available for most residents.	5/8/2023 6:04 PM
33	Infrastructure	5/8/2023 1:22 PM
34	infrastructure	5/8/2023 12:46 AM
35	Internet speeds are slow sometimes.The connection is not consistant. Sometimes it's good and other times we lose connection.	5/7/2023 9:29 PM
36	Infrastructure	5/7/2023 8:09 PM
37	Centurylink will not upgrade their internet service. Fiber optic was brought into this area (Highlands), but for some reason was not offered to all residents despite their willingness to pay for it. There was no communication with residents in the area. NOT OK. This survey monkey is too little too late.	5/7/2023 1:49 PM
38	Infastructure. I have no access to fiber or broadband at my residence.	5/7/2023 12:01 PM
39	We do not have high speed internet available compared to speeds below the canyon. It’s frustrating!	5/7/2023 6:38 AM
40	Infrastructure----availability is poor in some areas.	5/6/2023 7:54 PM
41	No high speed internet available in my area of Mountain Green.	5/6/2023 7:29 PM
42	Affordability and connectivity infrastructure	5/6/2023 7:28 PM
43	Affordability and availability	5/6/2023 1:35 PM
44	Our location is not available for most internet services except Century Link or over the air services.	5/6/2023 9:38 AM
45	Infrastructure and affordability	5/6/2023 6:44 AM
46	Options available	5/5/2023 6:28 PM
47	Little availability	5/5/2023 1:56 PM
48	infrastructure	5/5/2023 1:54 PM
49	At our home satelite and centurylink are the only options. Centurylink has old cables and is very intermittent.	5/5/2023 12:08 PM
50	infrastructure	5/5/2023 10:57 AM
51	Probably affordability first. Yet Morgan county allows developers, and internet providers to pick and choose who they provide their services to.	5/5/2023 9:08 AM
52	not available	5/5/2023 8:56 AM
53	Monopoly for service and poor performance	5/5/2023 7:28 AM
54	Trees, no direct vision to towers, affordability	5/4/2023 9:44 PM
55	Infrastructure	5/4/2023 7:55 PM
56	Infrastructure	5/4/2023 9:09 AM
57	I think infrastructure has been the biggest challenge. In our particular setting, we have been unable to have many options.	5/4/2023 8:23 AM
58	Croydon has limited options. While I am grateful for what I have, it would be nice to have faster, more reliable internet.	5/4/2023 1:28 AM
59	Infrastructure and affordability. Unwillingness to run high speed cable a 1/4 mile to get our neighbors and us	5/3/2023 10:23 PM
60	Infrastructure	5/3/2023 9:15 PM

61	Infrastructure	5/3/2023 7:03 PM
62	Hughes is not reliable and expensive. I dropped it. MSU is not reliable either but cost is ok.	5/3/2023 6:35 PM
63	Infrastructure	5/3/2023 10:51 AM
64	Infrastructure - many homes don't have Utopia fiber optic available.	5/3/2023 8:49 AM
65	Infrastructure	5/3/2023 8:02 AM
66	knowledge,infrastructure	5/3/2023 8:02 AM
67	Affordability, location (won’t provide access to fiber on commercial street, or too many trees “block the signal”)	5/3/2023 6:43 AM
68	Infrastructure	5/3/2023 4:47 AM
69	I'm not sure	5/3/2023 12:02 AM
70	Unavailability of high speed internet in the County areas	5/2/2023 9:30 PM
71	Affordability. Infrastructure.	5/2/2023 8:53 PM
72	Infrastructure	5/2/2023 8:45 PM
73	Infrastructure and misappropropriation of funds for expansion by Beehive and the County, someone should really look in to this. Cost for slow "high speed" internet that sucks is 100-200 dollars and up.	5/2/2023 6:43 PM
74	Affordability, infrastructure, location	5/2/2023 6:19 PM
75	More people work from home and need the faster and better service.	5/2/2023 4:37 PM
76	infrastructure	5/2/2023 2:49 PM
77	There is only one option that’s semi affordable. The internet isn’t great either.	5/2/2023 2:00 PM
78	One available	5/2/2023 12:54 PM
79	unknown	5/2/2023 11:14 AM
80	infrastructure	5/1/2023 6:43 PM
81	High price for even basic service and overpriced for high speed	5/1/2023 6:02 PM
82	Infrastructure, poor planning, rich rich people leapfrog over most of the county to get their dedicated lines	4/27/2023 9:25 PM
83	Infrastructure and affordability, many providers limit data usage	4/26/2023 8:00 PM
84	Infrastructure, affordability. Centurylink will not upgrade the area I live in which is 1960s copper wire.	4/26/2023 3:15 PM
85	infrastructure	4/25/2023 3:05 PM

Q30 What would make it easier for individuals in Morgan County to access the internet? (e.g., lower costs, subsidizing programs for internet service, educational programming for digital skills, infrastructure improvements).

Answered: 84 Skipped: 45

#	RESPONSES	DATE
1	Infrastructure improvements. More companies to offer service	6/30/2023 2:05 PM
2	infrastructure improvements.	6/19/2023 8:09 PM
3	Infrastructure and competent leadership at the county council	6/16/2023 2:12 PM
4	Getting better to service to the Peterson area that works and stays working and does not cost a mortgage payment to have it.	6/12/2023 9:02 AM
5	Infrastructure improvements	6/9/2023 9:51 PM
6	Infrastructure improvements	6/6/2023 6:49 PM
7	Morgan needs better access to affordable internet	5/25/2023 2:26 PM
8	Infrastructure improvements especially outside the city	5/24/2023 7:18 AM
9	To have the internet towers there so they can they can be provided for them so they're able to do all of those things	5/24/2023 3:57 AM
10	Infrastructure improvements. Run fiber optic and/or cable. Encourage more providers. Lower costs.	5/20/2023 1:56 PM
11	lower costs, faster speeds,	5/20/2023 11:59 AM
12	JUST GETTING OPTIONS TO COUNTY RESIDENTS. MANY HAVE BEEN PROPOSED, MONEY HAS BEEN SPENT. A COMBINATION OF SOURCES IS ACCEPTABLE AND ADEQUATE.	5/16/2023 11:00 PM
13	Lower cost	5/16/2023 6:15 PM
14	Infrastructure improvements - either providing 4G/5G access or running more fiber optic line to provide cable internet.	5/14/2023 9:57 AM
15	Infrastructure improvements so more companies can offer service	5/13/2023 3:24 AM
16	It’s easy enough to get service but the speed is not adequate	5/12/2023 9:19 PM
17	infrastructure improvements	5/12/2023 7:48 PM
18	lower costs and more options	5/11/2023 5:30 PM
19	Subsidizing the internet and or make a programed like xfinity	5/10/2023 10:38 PM
20	There is a monopoly through Utopia and the OTA options need to be allowed in the valley	5/9/2023 10:25 PM
21	Lower cost & infrastructure	5/9/2023 10:00 PM
22	more options for high speed internet, lower costs	5/9/2023 5:48 PM
23	Lower costs and infrastructure improvements	5/9/2023 3:03 PM
24	Infrastructure improvements	5/9/2023 11:20 AM
25	Have a good reliable source	5/9/2023 8:38 AM
26	Infrastructure improvement	5/9/2023 7:43 AM
27	Bring it in. We need it to	5/8/2023 9:59 PM

28	Getting fiber or cable prviders	5/8/2023 9:04 PM
29	Infrastructure and lower costs	5/8/2023 8:47 PM
30	Infrastructure	5/8/2023 8:17 PM
31	Infrastructure to bring Fiber to the rest of the county.	5/8/2023 6:04 PM
32	Better providers	5/8/2023 1:22 PM
33	infrastructure improvements	5/8/2023 12:46 AM
34	infrastructure improvements	5/7/2023 9:29 PM
35	Infrastructure improvements	5/7/2023 8:09 PM
36	Continue bringing fiber optic to all residents in the service area.	5/7/2023 1:49 PM
37	Infastructure Improvements.	5/7/2023 12:01 PM
38	Have good options available! It’s time!	5/7/2023 6:38 AM
39	Infrastructure improvements	5/6/2023 7:54 PM
40	Getting high speed internet connected to my neighborhood.	5/6/2023 7:29 PM
41	Infrastructure for faster internet	5/6/2023 7:28 PM
42	Lower costs and more options	5/6/2023 1:35 PM
43	Lower costs and availability of fiber.	5/6/2023 9:38 AM
44	More service providers	5/6/2023 6:44 AM
45	Lower costs	5/5/2023 6:28 PM
46	More availability	5/5/2023 1:56 PM
47	fiber installation	5/5/2023 1:54 PM
48	Reliable providers	5/5/2023 12:08 PM
49	costs and infrastructure	5/5/2023 10:57 AM
50	Improve access and options.	5/5/2023 9:08 AM
51	lower cost	5/5/2023 8:56 AM
52	Infrastructure and prices	5/5/2023 7:28 AM
53	Fiber optics, affordable, not using direct line of site towers	5/4/2023 9:44 PM
54	Infrastructure improvements	5/4/2023 7:55 PM
55	Infrastructure improvements	5/4/2023 9:09 AM
56	Infrastructure improvements, lower costs	5/4/2023 8:23 AM
57	There isn't really any good infrastructure to our portion of the county	5/4/2023 1:28 AM
58	Infrastructure improvements. Mandatory high speed into all (previous and current) neighborhoods for future development	5/3/2023 10:23 PM
59	Infrastructure improvement	5/3/2023 9:15 PM
60	Infrastructure	5/3/2023 7:03 PM
61	Infrastructure improvements and greater reliability	5/3/2023 6:35 PM
62	Infrastructure improvements	5/3/2023 10:51 AM
63	Infrastructure improvements to have fiber optic available for all residents would help.	5/3/2023 8:49 AM
64	Infrastructure improvements	5/3/2023 8:02 AM
65	infrastructure improvements	5/3/2023 8:02 AM

66	Lower cost	5/3/2023 6:43 AM
67	I'm not sure. We have beehive fiber when we first moved in and it was great. Then the county have utopia the contract and they relaid lines. Now we pay more than before and the service isn't as good.	5/3/2023 12:02 AM
68	?	5/2/2023 9:30 PM
69	Infrastructure improvements. Lower costs	5/2/2023 8:53 PM
70	Infrastructure improvements	5/2/2023 8:45 PM
71	Lower cost true high speed infrastructure	5/2/2023 6:43 PM
72	All of the above	5/2/2023 6:19 PM
73	Better internet services	5/2/2023 4:37 PM
74	Infrastructure	5/2/2023 2:49 PM
75	Offer a variety of companies. Improvements to the current company.	5/2/2023 2:00 PM
76	Having more availability	5/2/2023 12:54 PM
77	infrastructure improvements	5/2/2023 11:14 AM
78	Lower costs, faster speeds	5/2/2023 10:24 AM
79	infrastructure improvements	5/1/2023 6:43 PM
80	Lower cost	5/1/2023 6:02 PM
81	If internet providers had the ability to roll out high speed fiber to residents. Beehive Broadband literally had their fiber cables running to my property but it is not accessible at my address. Beyond that, Darrel it internet is garbage, anything less than 200mbps is not really quality internet and DSL, connections are far out dated and need a rehaul, not to mention the terrible access to Century Link customer care, their support is great but the chat is near impossible to use.	4/27/2023 9:25 PM
82	Infrastructure	4/26/2023 8:00 PM
83	Infrastructure improvements	4/26/2023 3:15 PM
84	All of the above.	4/25/2023 3:05 PM

Q31 Do you have anything else to share about internet access in your area?

Answered: 66 Skipped: 63

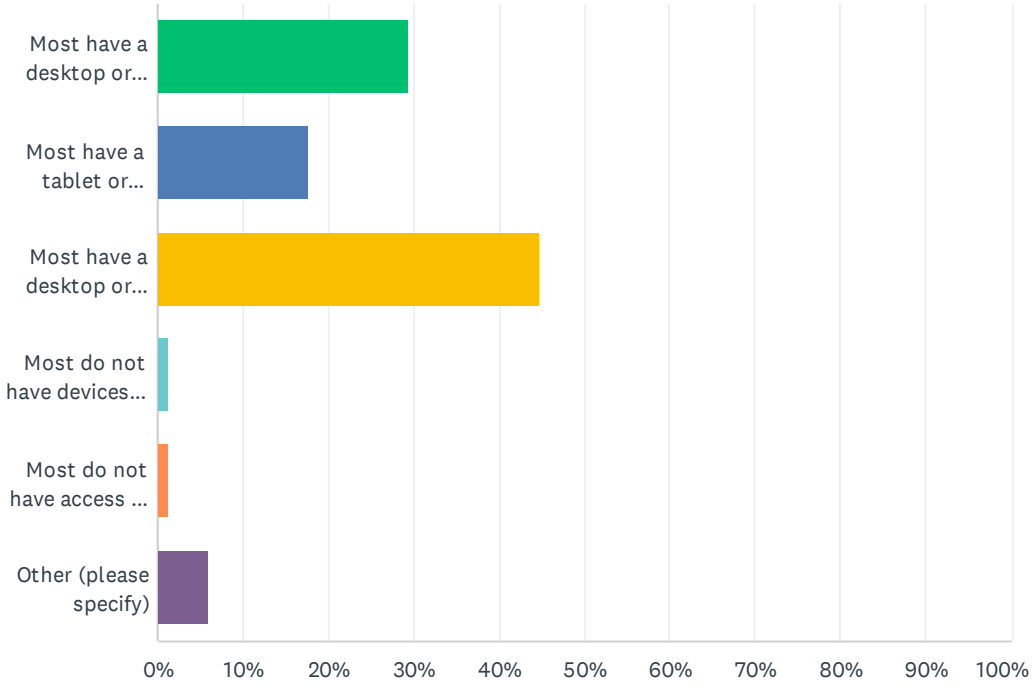
#	RESPONSES	DATE
1	Improvements needed!	6/30/2023 2:05 PM
2	How can I find a better service??	6/19/2023 8:09 PM
3	It would be nice to have actively working internet full time and options to choose from immediately instead of this area gets it and that area doesn't. New subdivisions get the new and we are stuck with the old stuff that never works.	6/12/2023 9:02 AM
4	The geographical area is often a barrier to accessing reliable internet.	6/9/2023 9:51 PM
5	No	6/6/2023 6:49 PM
6	Rise Broadband is who we used to have and they were awful. They charged really high fees and very limited internet.	5/25/2023 2:26 PM
7	No	5/24/2023 7:18 AM
8	Send internet places they've really take advantage of you and they end up pretty much robbing you as far as cost	5/24/2023 3:57 AM
9	I live in Montana	5/24/2023 12:06 AM
10	I'VE SAID ENOUGH.	5/16/2023 11:00 PM
11	No	5/16/2023 6:15 PM
12	No	5/13/2023 3:24 AM
13	A lot of people in our neighborhood have resorted to paying for really expensive internet to get the speeds and reliability they need.	5/12/2023 7:48 PM
14	Would like to have a fiber option	5/11/2023 5:30 PM
15	They have a program called internet essentials and it's only $9.95 a month it helps out folks who cannot afford regular internet	5/10/2023 10:38 PM
16	It drops daily and streaming is slow	5/9/2023 10:00 PM
17	At my home cell phone coverage is weak or none at all so I run my cell phone through the internet/wifi. This is often inadequate too. If I have an important call, I typically drive about 1 mile down the road so I can access better cell phone coverage - because my wifi often disconnects the call.	5/9/2023 5:48 PM
18	Very slow. Doing this on my phone rather than laptop.	5/9/2023 3:03 PM
19	No	5/9/2023 11:20 AM
20	We just need a really good service	5/9/2023 8:38 AM
21	Internet access is critical for my home business and for our family, but there are limited choices outside of specific areas that have been provided access to fiber optic	5/9/2023 7:43 AM
22	Please do something to help us	5/8/2023 9:59 PM
23	dsl service gets overwhelmed easily	5/8/2023 9:04 PM
24	Nope	5/8/2023 8:47 PM
25	My house can only get century link and it is extremely slow. Others can see the dish at the Y and are able to get other service providers.	5/8/2023 8:17 PM

26	No	5/8/2023 1:22 PM
27	no	5/8/2023 12:46 AM
28	I would love to have faster more reliable insurance	5/7/2023 8:09 PM
29	The lack of communication regarding this issue is unacceptable.	5/7/2023 1:49 PM
30	Fiber would be great.	5/7/2023 12:01 PM
31	It sucks! Too slow and behind the times. I heard Morgan Co denied fiber optics years ago.	5/7/2023 6:38 AM
32	HughsNet satellite internet was terrible. Century Link is kind of dependable but slow. T Mobile is just a cell service hot spot.	5/6/2023 7:29 PM
33	Please bring faster internet to my neighborhood	5/6/2023 7:28 PM
34	No	5/6/2023 1:35 PM
35	no	5/6/2023 9:38 AM
36	It works in my area just fine and I think the cost is reasonable. I don’t want to pay more taxes for infrastructure or to subsidize but understand the need for others.	5/6/2023 6:44 AM
37	Needed to work remotely	5/5/2023 6:28 PM
38	Access is very inconsistent. One street over has fiber. We do not	5/5/2023 1:56 PM
39	Liberty is pretty good by the speed and reliability of a fiber connection would be great	5/5/2023 1:54 PM
40	Centurylink is crap in our area in Mountain Green. The infrastructure needs to be updated badly.	5/5/2023 10:57 AM
41	Again, if an internet provider like beehive is allowed to provide internet and use the infrastructure make them provide to everyone. It is interesting that the gated community in my area and the clustered homes have beehive, but small cul-d-sacs are intentionally not provided access.	5/5/2023 9:08 AM
42	No	5/5/2023 7:28 AM
43	Fiber internet please	5/4/2023 7:55 PM
44	I appreciate the additional choice that has recently been made available to us in our area.	5/4/2023 8:23 AM
45	I think WifiCow provides a good service at reasonable rates. However, my daughter in Manti, Utah has significantly faster internet for a similar cost.	5/4/2023 1:28 AM
46	It’s frustrating to have high speed internet run to the neighborhood right next door but beehive is unwilling to connect our phase of the development because we’re slightly lower density housing	5/3/2023 10:23 PM
47	The mobile data is much faster than the home connection, but hotspot data from it is limited, so it's used sparingly.	5/3/2023 7:03 PM
48	We need broadband	5/3/2023 6:35 PM
49	No	5/3/2023 10:51 AM
50	Make high speed more accessible throughout the county	5/3/2023 8:02 AM
51	no	5/3/2023 8:02 AM
52	No	5/3/2023 6:43 AM
53	See above answer	5/3/2023 12:02 AM
54	No	5/2/2023 9:30 PM
55	We need more options for internet service	5/2/2023 8:45 PM
56	New developers should be required to install conduit when they do curb and gutter for high speed internet lines. The top of our neighborhood has no internet available unless you play tons of money for LTE (some houses can't get that) or starlink (which works some of the time and can be slow) also expensive	5/2/2023 6:43 PM

57	No	5/2/2023 6:19 PM
58	Needs to be better - most work from home due to covid	5/2/2023 4:37 PM
59	no	5/2/2023 2:49 PM
60	No	5/2/2023 12:54 PM
61	No	5/2/2023 11:14 AM
62	no	5/1/2023 6:43 PM
63	No	4/27/2023 9:25 PM
64	No	4/26/2023 8:00 PM
65	Fiber has been lates all around, but as stated before current provider will not upgrade. Centurylink received $505 mil of federal money in 2020 nothing has been done to date in my area. As stated I am on copper wire, that is buried when it is wet I get no internet, up load is generally 1mbps to 0.	4/26/2023 3:15 PM
66	no	4/25/2023 3:05 PM

Q32 Tell us about the access to devices for people in Morgan County.

Answered: 85 Skipped: 44

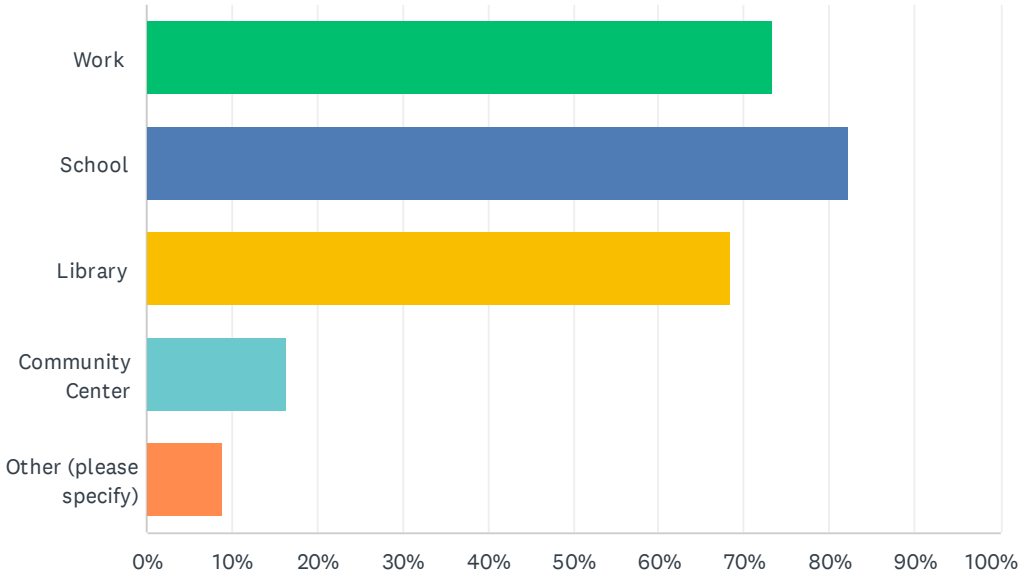


ANSWER CHOICES	RESPONSES	
Most have a desktop or laptop computer at home.	29.41%	25
Most have a tablet or smartphone at home.	17.65%	15
Most have a desktop or laptop computer and a tablet or smartphone at home.	44.71%	38
Most do not have devices at home but can access them elsewhere.	1.18%	1
Most do not have access to devices at home or elsewhere.	1.18%	1
Other (please specify)	5.88%	5
TOTAL		85

#	OTHER (PLEASE SPECIFY)	DATE
1	I don't know.	6/19/2023 8:09 PM
2	I don't live there	5/24/2023 12:06 AM
3	Only Centruy Link available	5/2/2023 1:54 PM
4	unknown	5/2/2023 11:14 AM
5	Unknown	4/26/2023 3:15 PM

Q33 Select the other ways your community accesses devices if they do not own them. Select all that apply.

Answered: 79 Skipped: 50



ANSWER CHOICES	RESPONSES	
Work	73.42%	58
School	82.28%	65
Library	68.35%	54
Community Center	16.46%	13
Other (please specify)	8.86%	7
Total Respondents: 79		

#	OTHER (PLEASE SPECIFY)	DATE
1	Don't know	6/19/2023 8:09 PM
2	cell phone	5/25/2023 2:26 PM
3	Friend	5/24/2023 3:57 AM
4	I think most people have their own devices	5/12/2023 7:48 PM
5	Cost of living	5/10/2023 10:38 PM
6	Neighbor	5/6/2023 7:28 PM
7	Don't know	5/6/2023 9:38 AM

Q34 What barriers make it difficult for individuals in Morgan County to access device(s)? (e.g., affordability, skill level, supply issues).

Answered: 55 Skipped: 74

#	RESPONSES	DATE
1	Supply	6/30/2023 2:05 PM
2	don't know	6/19/2023 8:09 PM
3	Pick and choose within the county where updates and lines are put	6/12/2023 9:02 AM
4	NA	6/9/2023 9:51 PM
5	I don’t know.	6/6/2023 6:49 PM
6	There are a lot of places you can't get internet and if you can it is very expensive.	5/25/2023 2:26 PM
7	?	5/24/2023 7:18 AM
8	It's so far away	5/24/2023 3:57 AM
9	Don't know	5/24/2023 12:06 AM
10	Cost	5/20/2023 1:56 PM
11	affordability, lack of options for providers	5/20/2023 11:59 AM
12	AFFORDABILITY AND COVERAGE, WITH HIGH COST, IN MORE REMOTE/RURAL PARTS OF THE COUNTY.	5/16/2023 11:00 PM
13	Affordability	5/16/2023 6:15 PM
14	Affordability	5/12/2023 7:48 PM
15	affordability	5/11/2023 5:30 PM
16	The housing costs is a lot and I'm sure it costs a lot more to buy a house	5/10/2023 10:38 PM
17	Affordable & supply	5/9/2023 10:00 PM
18	For me it is high speed internet options.	5/9/2023 5:48 PM
19	Affordability	5/9/2023 3:03 PM
20	Cost and access	5/9/2023 8:38 AM
21	Affordability	5/8/2023 9:59 PM
22	Affordability	5/8/2023 8:47 PM
23	Cost?	5/8/2023 8:17 PM
24	Not sure	5/8/2023 1:22 PM
25	Affordability	5/7/2023 8:09 PM
26	No options other than Beehive, T-mobile or Rise Broadband! ALL ARE SLOW! And expensive!	5/7/2023 6:38 AM
27	Affordability	5/6/2023 7:29 PM
28	Affordability	5/6/2023 7:28 PM
29	Affordability	5/6/2023 1:35 PM
30	Don't know	5/6/2023 9:38 AM
31	None	5/6/2023 6:44 AM

32	Supply	5/5/2023 1:56 PM
33	LOCATION	5/5/2023 1:54 PM
34	Don' know	5/5/2023 10:57 AM
35	Costs	5/5/2023 7:28 AM
36	unknown	5/4/2023 8:23 AM
37	I think overall, Morgan has decent access to the equipment needed.	5/4/2023 1:28 AM
38	Affordability, lack of speed, and lack of reliability	5/3/2023 6:35 PM
39	Affordability - families with 3+ children in school can't afford devices for every family member.	5/3/2023 8:49 AM
40	Accessibility, age barriers	5/3/2023 6:43 AM
41	Don't know	5/3/2023 12:02 AM
42	?	5/2/2023 9:30 PM
43	Accessibility	5/2/2023 8:53 PM
44	Skill level	5/2/2023 8:45 PM
45	Affordability, Availability	5/2/2023 6:43 PM
46	All	5/2/2023 6:19 PM
47	Available internet companies	5/2/2023 4:37 PM
48	affordability	5/2/2023 2:49 PM
49	Supply and affordability.	5/2/2023 2:00 PM
50	unknown	5/2/2023 11:14 AM
51	Limited supply at public places like a library	5/1/2023 6:02 PM
52	Skill issue.	4/27/2023 9:25 PM
53	Affordability	4/26/2023 8:00 PM
54	Affordability	4/26/2023 3:15 PM
55	Skill level among the elderly.	4/25/2023 3:05 PM

Q35 What would make it easier for individuals in Morgan County to have access to device(s)? (e.g., lower costs, subsidizing programs for device purchases).

Answered: 50 Skipped: 79

#	RESPONSES	DATE
1	Not sure	6/30/2023 2:05 PM
2	NA	6/9/2023 9:51 PM
3	I don’t know.	6/6/2023 6:49 PM
4	Both. It is hard to get internet it lots of areas in Morgan so they need more providers, more points of connections.	5/25/2023 2:26 PM
5	Lower costs	5/24/2023 7:18 AM
6	For some of them to establish a home in Morgan so those people can have it	5/24/2023 3:57 AM
7	?	5/24/2023 12:06 AM
8	Lower cost	5/20/2023 1:56 PM
9	NO...THE COVERAGE/INTERNET IS THE PRIORITY.	5/16/2023 11:00 PM
10	Lower cost	5/16/2023 6:15 PM
11	Access to devices in Morgan County is not the issue, the per-capita income levels here are high. The problem is access to higher speed internet options outside of city limits.	5/14/2023 9:57 AM
12	Lower costs	5/12/2023 7:48 PM
13	lower costs	5/11/2023 5:30 PM
14	To have the in the company going to Morgan County and have them help them set things up for the customers	5/10/2023 10:38 PM
15	Lower cost	5/9/2023 10:00 PM
16	I'm guessing that lower costs would help	5/9/2023 5:48 PM
17	Lower costs	5/9/2023 3:03 PM
18	County wide service for all	5/9/2023 8:38 AM
19	Give us high speed	5/8/2023 9:59 PM
20	Lower costs	5/8/2023 8:47 PM
21	I'm not sure we need more devices. Low income help specifically for that?	5/8/2023 8:17 PM
22	Not sure	5/8/2023 1:22 PM
23	Lower cost	5/7/2023 8:09 PM
24	High speed access	5/7/2023 6:38 AM
25	Maybe reign in the horrid and vast array of money grubbing private utilities!!!!	5/6/2023 7:29 PM
26	Subsidized programs	5/6/2023 7:28 PM
27	Lower costs	5/6/2023 1:35 PM
28	Cost is always a concern for people on fixed incomes.	5/6/2023 9:38 AM
29	Lower cost	5/6/2023 6:44 AM

30	Internet availability	5/5/2023 1:56 PM
31	lower cost	5/5/2023 1:54 PM
32	Subsidized purchase	5/5/2023 7:28 AM
33	I don't know	5/4/2023 1:28 AM
34	I do not know	5/3/2023 6:35 PM
35	Lower costs for devices.	5/3/2023 8:49 AM
36	Lower cost	5/3/2023 6:43 AM
37	The library has them if someone needs access	5/3/2023 12:02 AM
38	?	5/2/2023 9:30 PM
39	Unknown	5/2/2023 8:45 PM
40	Lower costs Subsidized programs hard line high speed internet access	5/2/2023 6:43 PM
41	All	5/2/2023 6:19 PM
42	Access and affordable	5/2/2023 4:37 PM
43	lower cost	5/2/2023 2:49 PM
44	Lower costs and availability	5/2/2023 1:54 PM
45	unknown	5/2/2023 11:14 AM
46	Lower costs	5/1/2023 6:02 PM
47	If it was actually available.	4/27/2023 9:25 PM
48	Lower costs	4/26/2023 8:00 PM
49	Unknown	4/26/2023 3:15 PM
50	Education in how to purchase and set up devices.	4/25/2023 3:05 PM

Q36 Is there anything else you'd like to share about device access?

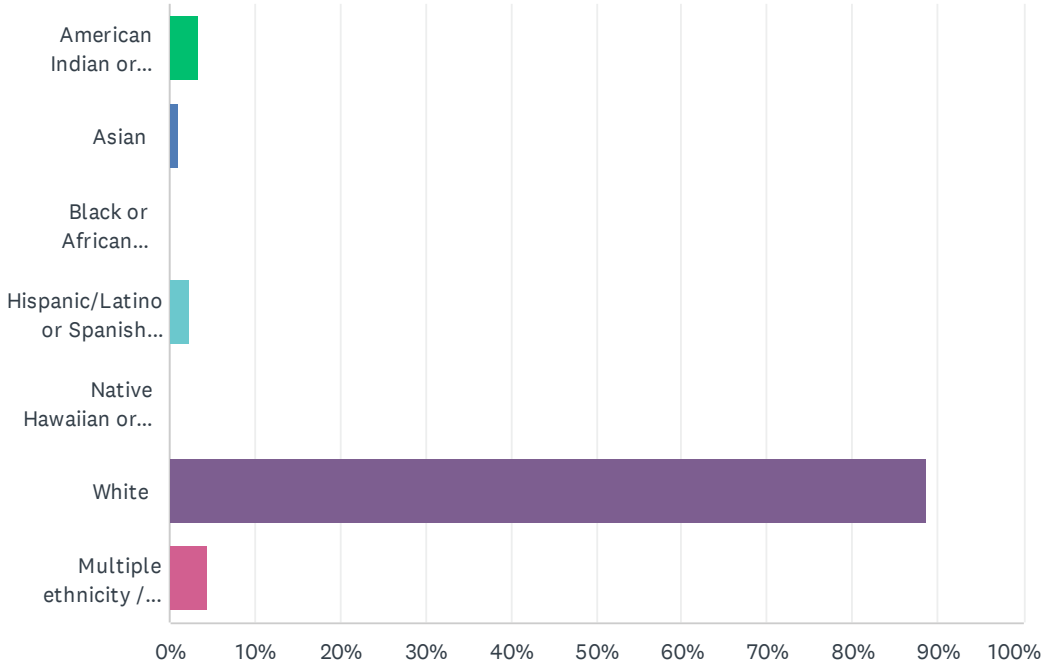
Answered: 39 Skipped: 90

#	RESPONSES	DATE
1	No	6/30/2023 2:05 PM
2	Devices aren't the problem; who "designed" this survey?	6/16/2023 2:12 PM
3	No	6/12/2023 9:02 AM
4	No	6/9/2023 9:51 PM
5	No	6/6/2023 6:49 PM
6	There needs to be fiber optics ran through the county.	5/25/2023 2:26 PM
7	No	5/24/2023 7:18 AM
8	No	5/24/2023 12:06 AM
9	NO	5/16/2023 11:00 PM
10	No	5/16/2023 6:15 PM
11	no	5/12/2023 7:48 PM
12	n/a	5/11/2023 5:30 PM
13	Just to thank you for letting me do the survey	5/10/2023 10:38 PM
14	Older neighborhood not much choice in providers	5/9/2023 10:00 PM
15	As I stated above, I need to use wifi/internet for cell phone service ... and it's spotty and inadequate.	5/9/2023 5:48 PM
16	No	5/9/2023 3:03 PM
17	no	5/9/2023 8:38 AM
18	No	5/8/2023 9:59 PM
19	Nope	5/8/2023 8:47 PM
20	No	5/8/2023 8:17 PM
21	No	5/6/2023 7:29 PM
22	Schools and libraries help with access	5/6/2023 7:28 PM
23	Mo	5/6/2023 1:35 PM
24	no	5/6/2023 9:38 AM
25	Nope	5/6/2023 6:44 AM
26	N/a	5/5/2023 1:56 PM
27	nope	5/4/2023 1:28 AM
28	Good fast access, affordability, and reliability is needed	5/3/2023 6:35 PM
29	No	5/3/2023 10:51 AM
30	No	5/3/2023 12:02 AM
31	No	5/2/2023 9:30 PM
32	No	5/2/2023 8:45 PM

33	Century link's best product is so slow it is unusable here, literally not useable.	5/2/2023 6:43 PM
34	No	5/2/2023 6:19 PM
35	no	5/2/2023 11:14 AM
36	No	4/27/2023 9:25 PM
37	No	4/26/2023 8:00 PM
38	No	4/26/2023 3:15 PM
39	no	4/25/2023 3:05 PM

Q37 What is your race/ethnicity? Select all that apply.

Answered: 88 Skipped: 41

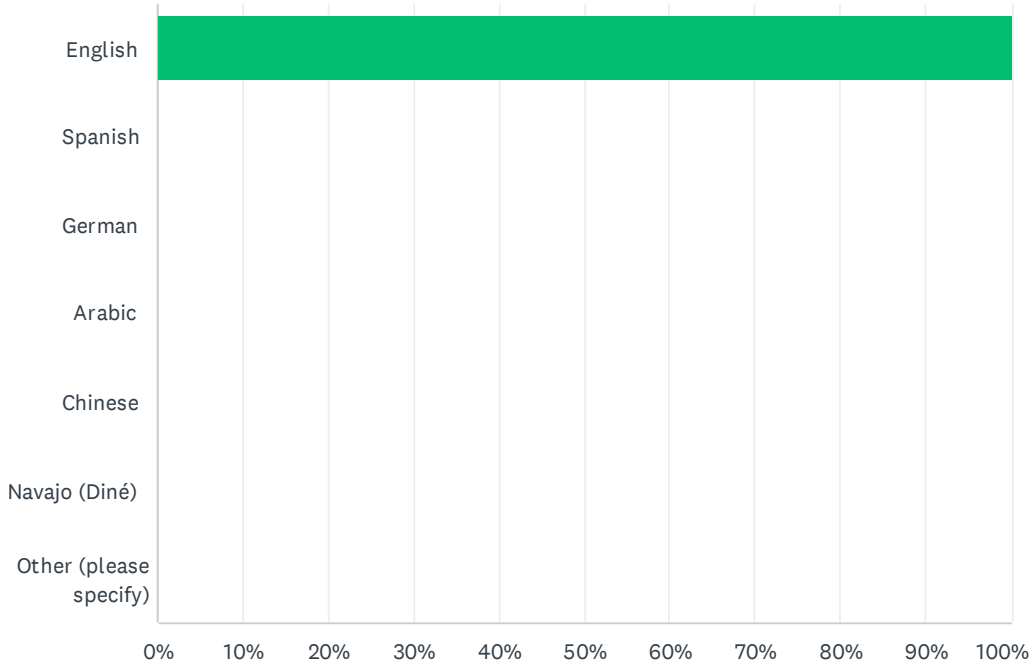


ANSWER CHOICES	RESPONSES	
American Indian or Alaska Native	3.41%	3
Asian	1.14%	1
Black or African American	0.00%	0
Hispanic/Latino or Spanish Origin	2.27%	2
Native Hawaiian or Other Pacific Islander	0.00%	0
White	88.64%	78
Multiple ethnicity / Other (please specify)	4.55%	4
TOTAL		88

#	MULTIPLE ETHNICITY / OTHER (PLEASE SPECIFY)	DATE
1	European	5/13/2023 3:25 AM
2	Did not respond	5/9/2023 11:22 AM
3	Scandinavian and Asian mixed	5/6/2023 7:30 PM
4	Multiple ethnicity	5/6/2023 7:29 PM

Q38 What language is spoken most often in your household?

Answered: 91 Skipped: 38

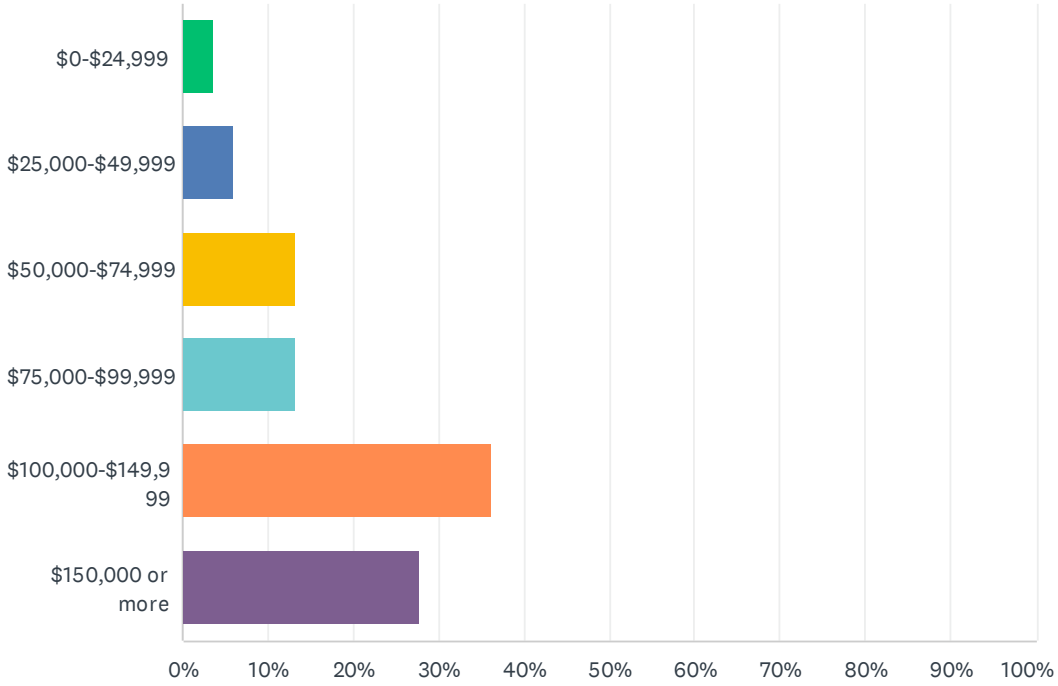


ANSWER CHOICES	RESPONSES	
English	100.00%	91
Spanish	0.00%	0
German	0.00%	0
Arabic	0.00%	0
Chinese	0.00%	0
Navajo (Diné)	0.00%	0
Other (please specify)	0.00%	0
TOTAL		91

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q39 What is your household's gross annual income?

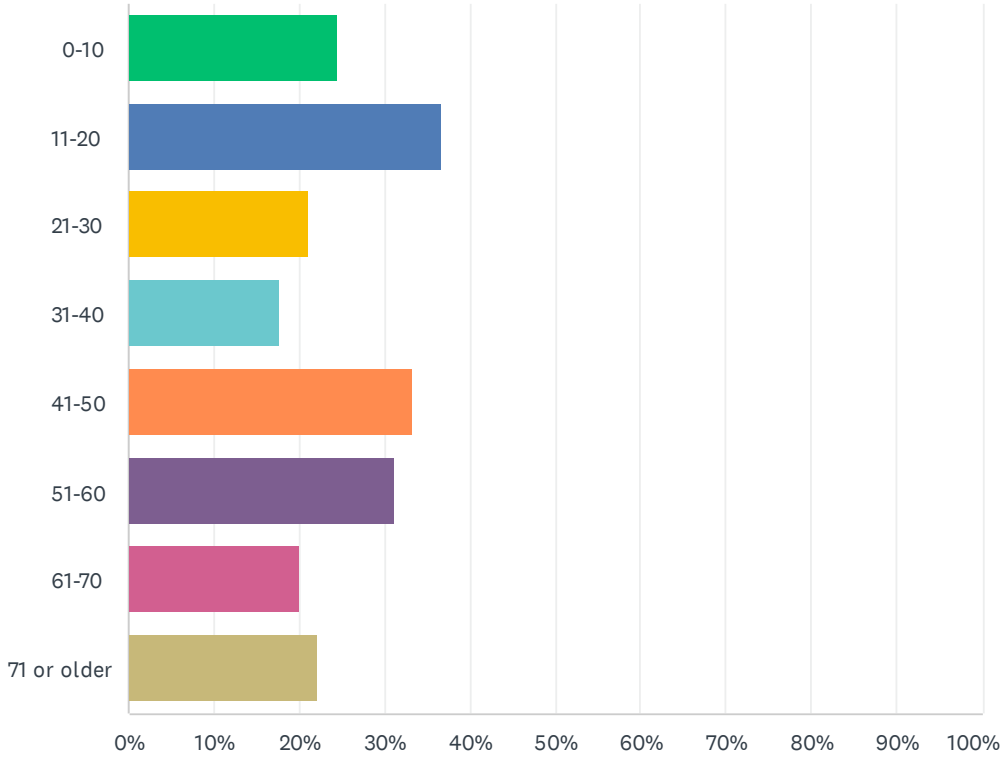
Answered: 83 Skipped: 46



ANSWER CHOICES	RESPONSES	
$0-$24,999	3.61%	3
$25,000-$49,999	6.02%	5
$50,000-$74,999	13.25%	11
$75,000-$99,999	13.25%	11
$100,000-$149,999	36.14%	30
$150,000 or more	27.71%	23
TOTAL		83

Q40 Which age groups live in your home? Select all that apply.

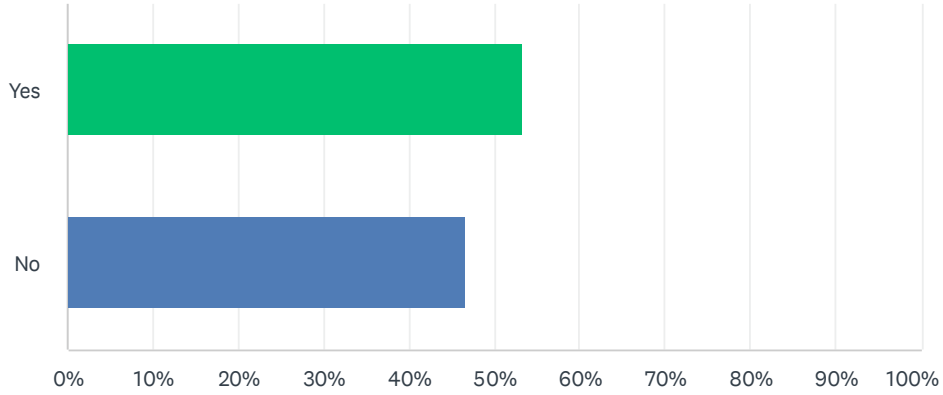
Answered: 90 Skipped: 39



ANSWER CHOICES	RESPONSES	
0-10	24.44%	22
11-20	36.67%	33
21-30	21.11%	19
31-40	17.78%	16
41-50	33.33%	30
51-60	31.11%	28
61-70	20.00%	18
71 or older	22.22%	20
Total Respondents: 90		

Q41 Do students live at your household?

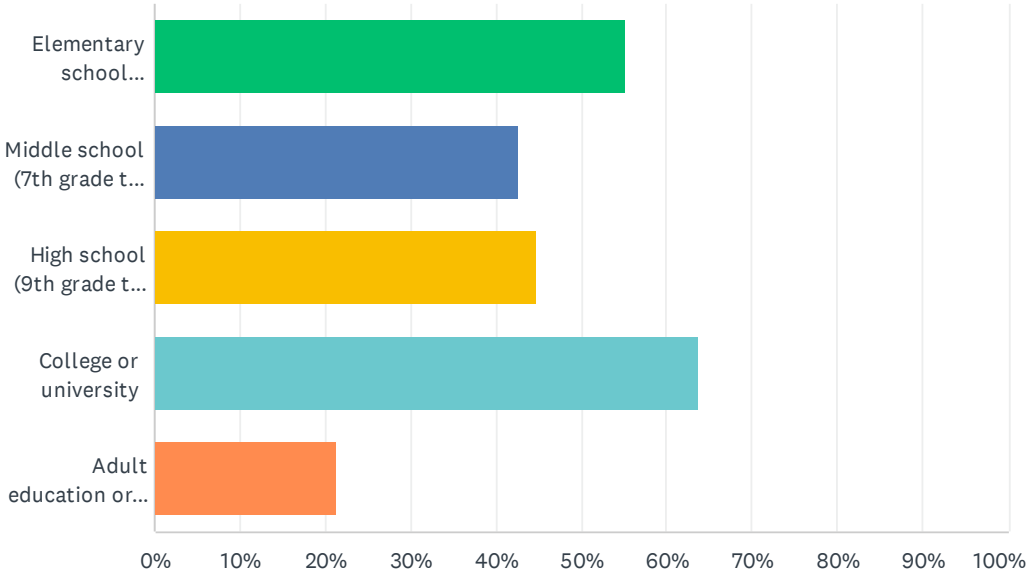
Answered: 92 Skipped: 37



ANSWER CHOICES	RESPONSES	
Yes	53.26%	49
No	46.74%	43
TOTAL		92

Q42 Which education level? Select all that apply.

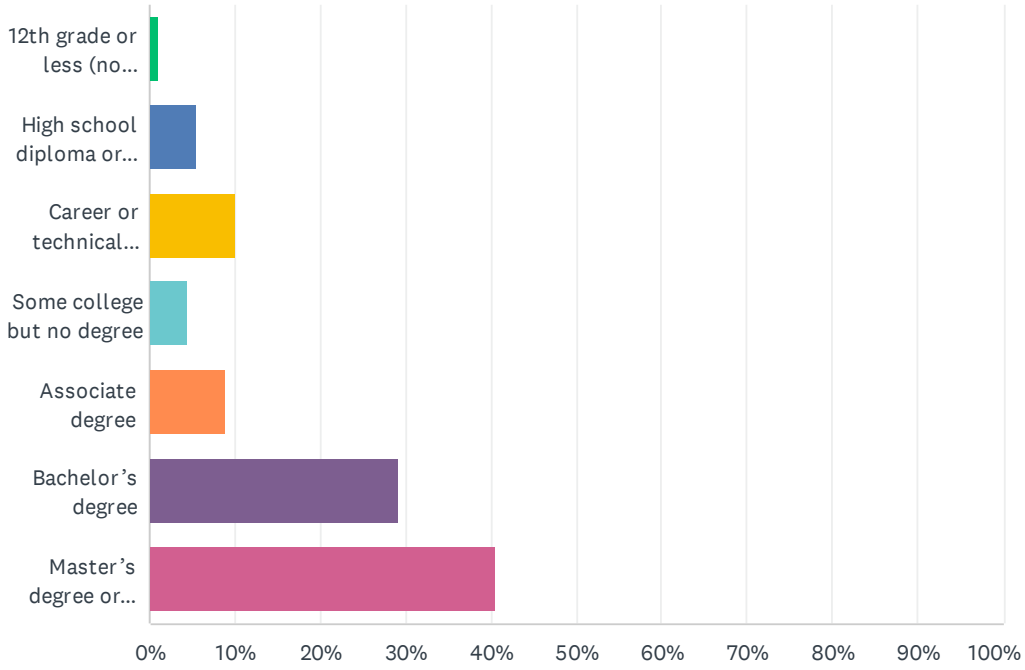
Answered: 47 Skipped: 82



ANSWER CHOICES	RESPONSES	
Elementary school (kindergarten to 6th grade)	55.32%	26
Middle school (7th grade to 9th grade)	42.55%	20
High school (9th grade to 12th grade)	44.68%	21
College or university	63.83%	30
Adult education or technical training	21.28%	10
Total Respondents: 47		

Q43 What is the highest level of education completed by someone in your household?

Answered: 89 Skipped: 40



ANSWER CHOICES	RESPONSES	
12th grade or less (no diploma)	1.12%	1
High school diploma or equivalent (GED)	5.62%	5
Career or technical education certificate	10.11%	9
Some college but no degree	4.49%	4
Associate degree	8.99%	8
Bachelor's degree	29.21%	26
Master's degree or doctorate	40.45%	36
TOTAL		89

Q1 What is your address?

Answered: 36 Skipped: 6

ANSWER CHOICES	RESPONSES	
Address Line 1	94.44%	34
Address Line 2	2.78%	1
City	88.89%	32
State	88.89%	32
Zip Code	83.33%	30

#	ADDRESS LINE 1	DATE
1		5/8/2023 5:39 PM
2		5/8/2023 5:28 PM
3		5/8/2023 5:06 PM
4		5/8/2023 5:02 PM
5		5/8/2023 4:55 PM
6		5/8/2023 4:53 PM
7		5/8/2023 4:40 PM
8		5/8/2023 4:38 PM
9		5/8/2023 4:04 PM
10		5/4/2023 7:03 PM
11		5/4/2023 5:16 PM
12		5/4/2023 4:42 PM
13		5/2/2023 7:15 PM
14		5/2/2023 7:11 PM
15		5/2/2023 7:05 PM
16		5/2/2023 6:42 PM
17		5/2/2023 6:28 PM
18		5/2/2023 6:23 PM
19		5/2/2023 6:04 PM
20		5/2/2023 5:58 PM
21		5/2/2023 5:51 PM
22		5/2/2023 5:46 PM
23		5/2/2023 5:42 PM
24		5/2/2023 5:32 PM
25		5/2/2023 5:20 PM
26		5/2/2023 5:13 PM

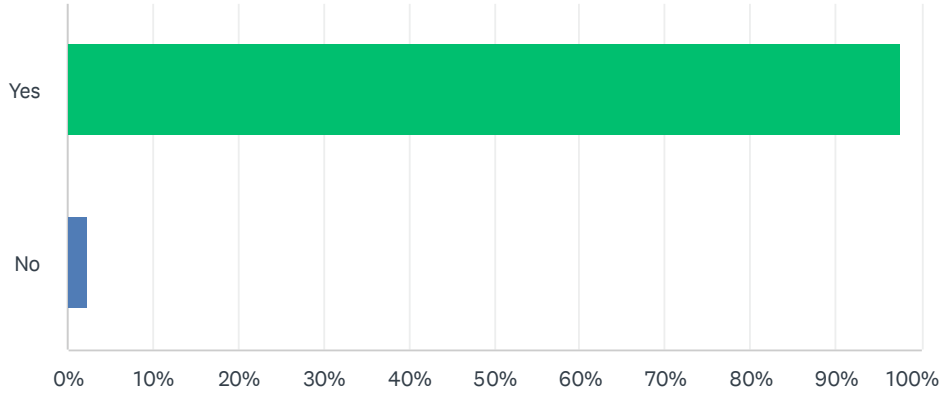
27		5/2/2023 5:09 PM
28		5/2/2023 5:00 PM
29		5/2/2023 4:47 PM
30		5/2/2023 4:45 PM
31		5/2/2023 4:38 PM
32		5/2/2023 4:29 PM
33		5/2/2023 4:29 PM
34		5/2/2023 2:03 PM
#	**ADDRESS LINE 2**	**DATE**
1		5/2/2023 2:03 PM
#	**CITY**	**DATE**
1	Morgan	5/8/2023 5:39 PM
2	Morgan	5/8/2023 5:28 PM
3	Morgan	5/8/2023 5:06 PM
4	Morgan	5/8/2023 4:55 PM
5	Morgan	5/8/2023 4:53 PM
6	Morgan	5/8/2023 4:40 PM
7	Morgan	5/8/2023 4:38 PM
8	Morgan	5/4/2023 7:03 PM
9	Morgan	5/4/2023 5:16 PM
10	Morgan	5/4/2023 4:42 PM
11	Morgan	5/2/2023 7:15 PM
12	Morgan	5/2/2023 7:11 PM
13	Morgan	5/2/2023 7:05 PM
14	Morgan	5/2/2023 6:58 PM
15	Morgan	5/2/2023 6:50 PM
16	Morgan	5/2/2023 6:42 PM
17	Morgan	5/2/2023 6:28 PM
18	Morgan	5/2/2023 6:23 PM
19	Morgan	5/2/2023 6:04 PM
20	Morgan	5/2/2023 5:58 PM
21	Morgan	5/2/2023 5:51 PM
22	Morgan	5/2/2023 5:42 PM
23	Morgan	5/2/2023 5:32 PM
24	Morgan	5/2/2023 5:13 PM
25	Morgsn	5/2/2023 5:09 PM
26	Morgan	5/2/2023 5:00 PM
27	Morgan	5/2/2023 4:47 PM

28	Morgan	5/2/2023 4:45 PM
29	Morgan	5/2/2023 4:38 PM
30	Morgan	5/2/2023 4:29 PM
31	Morgan	5/2/2023 4:29 PM
32	Syracuse	5/2/2023 2:03 PM
#	**STATE**	**DATE**
1	UT	5/8/2023 5:39 PM
2	UT	5/8/2023 5:28 PM
3	UT	5/8/2023 5:06 PM
4	Ut	5/8/2023 4:55 PM
5	UT	5/8/2023 4:53 PM
6	UT	5/8/2023 4:40 PM
7	Ut	5/8/2023 4:38 PM
8	UT	5/4/2023 7:03 PM
9	UT	5/4/2023 5:16 PM
10	Ut	5/4/2023 4:42 PM
11	UT	5/2/2023 7:15 PM
12	UT	5/2/2023 7:11 PM
13	UT	5/2/2023 7:05 PM
14	Ut	5/2/2023 6:58 PM
15	UT	5/2/2023 6:50 PM
16	UT	5/2/2023 6:42 PM
17	UT	5/2/2023 6:28 PM
18	Utah	5/2/2023 6:23 PM
19	UT	5/2/2023 6:04 PM
20	Ut	5/2/2023 5:58 PM
21	ut	5/2/2023 5:51 PM
22	UT	5/2/2023 5:42 PM
23	UT	5/2/2023 5:32 PM
24	UT	5/2/2023 5:13 PM
25	Ut	5/2/2023 5:09 PM
26	UT	5/2/2023 5:00 PM
27	Ut	5/2/2023 4:47 PM
28	UT	5/2/2023 4:45 PM
29	UT	5/2/2023 4:38 PM
30	Ut	5/2/2023 4:29 PM
31	Ut	5/2/2023 4:29 PM
32	Utah	5/2/2023 2:03 PM

#	ZIP CODE	DATE
1	84050	5/8/2023 5:39 PM
2	84050	5/8/2023 5:28 PM
3	84050	5/8/2023 5:06 PM
4	84050	5/8/2023 4:53 PM
5	84050	5/8/2023 4:40 PM
6	84050	5/4/2023 7:03 PM
7	84050	5/4/2023 5:16 PM
8	84050	5/4/2023 4:42 PM
9	84050	5/2/2023 7:15 PM
10	84050	5/2/2023 7:11 PM
11	84050	5/2/2023 7:05 PM
12	84050	5/2/2023 6:58 PM
13	84050	5/2/2023 6:50 PM
14	85050	5/2/2023 6:42 PM
15	84050	5/2/2023 6:28 PM
16	84050	5/2/2023 6:23 PM
17	84050	5/2/2023 6:04 PM
18	84050	5/2/2023 5:58 PM
19	84050	5/2/2023 5:51 PM
20	85050	5/2/2023 5:42 PM
21	84050	5/2/2023 5:32 PM
22	84050	5/2/2023 5:13 PM
23	84050	5/2/2023 5:09 PM
24	84050	5/2/2023 5:00 PM
25	84050	5/2/2023 4:47 PM
26	84050	5/2/2023 4:45 PM
27	84050	5/2/2023 4:38 PM
28	84050	5/2/2023 4:29 PM
29	84050	5/2/2023 4:29 PM
30	84075	5/2/2023 2:03 PM

Q2 Do you have internet connection at your household?

Answered: 42 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	97.62%	41
No	2.38%	1
TOTAL		42

Q3 What is the monthly charge for just your internet service (excluding the costs of other services or bundle options)?

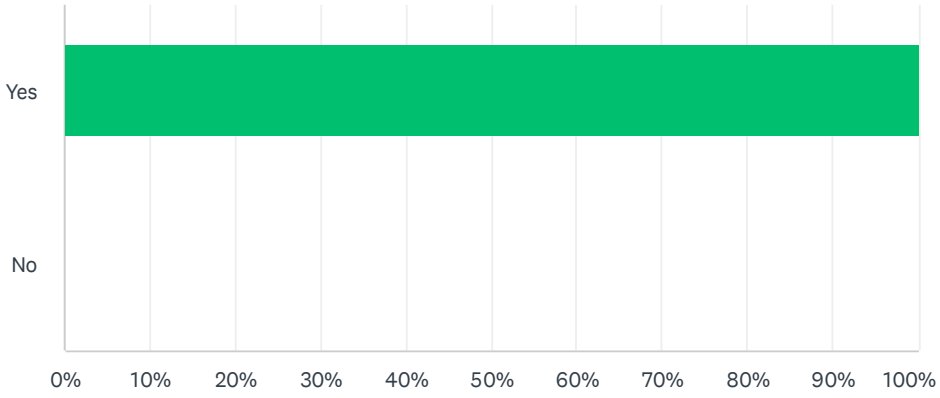
Answered: 37 Skipped: 5

#	RESPONSES	DATE
1	65	5/8/2023 5:39 PM
2	100	5/8/2023 5:28 PM
3	110	5/8/2023 5:07 PM
4	35	5/8/2023 5:03 PM
5	115	5/8/2023 4:56 PM
6	35	5/8/2023 4:53 PM
7	35	5/8/2023 4:40 PM
8	60	5/8/2023 4:39 PM
9	40	5/4/2023 7:03 PM
10	60	5/4/2023 5:16 PM
11	$60	5/4/2023 5:12 PM
12	120	5/4/2023 4:42 PM
13	110	5/2/2023 8:22 PM
14	94	5/2/2023 7:05 PM
15	$75	5/2/2023 6:59 PM
16	NA	5/2/2023 6:50 PM
17	120	5/2/2023 6:42 PM
18	$80	5/2/2023 6:28 PM
19	$62.50	5/2/2023 6:24 PM
20	55	5/2/2023 6:04 PM
21	$45	5/2/2023 5:58 PM
22	45	5/2/2023 5:42 PM
23	$120	5/2/2023 5:38 PM
24	$85	5/2/2023 5:35 PM
25	85	5/2/2023 5:32 PM
26	$65	5/2/2023 5:21 PM
27	125	5/2/2023 5:13 PM
28	$60	5/2/2023 5:09 PM
29	90	5/2/2023 5:00 PM
30	$55	5/2/2023 4:49 PM
31	65	5/2/2023 4:47 PM

32	$55	5/2/2023 4:47 PM
33	100	5/2/2023 4:45 PM
34	50	5/2/2023 4:39 PM
35	85	5/2/2023 4:29 PM
36	$120	5/2/2023 4:29 PM
37	$45	5/2/2023 4:20 PM

Q4 Do you have a desktop or laptop computer you use to access the internet at home?

Answered: 39 Skipped: 3



ANSWER CHOICES	RESPONSES	
Yes	100.00%	39
No	0.00%	0
Total Respondents: 39		

Q5 Who is your internet service provider? (e.g., Utopia, CenturyLink, Xfinity, Rise Broadband, Liberty Broadband, Beehive Broadband, etc.)

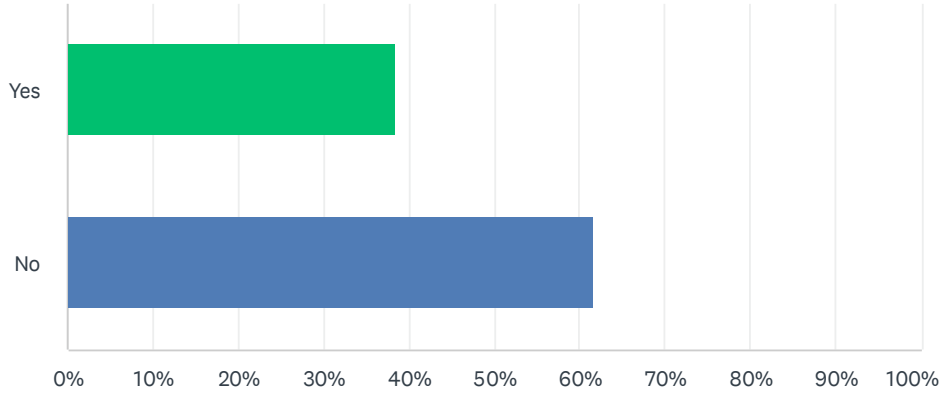
Answered: 38 Skipped: 4

#	RESPONSES	DATE
1	Surfs up	5/8/2023 5:39 PM
2	Hugh’s net	5/8/2023 5:28 PM
3	Starlink	5/8/2023 5:07 PM
4	Surfs up	5/8/2023 5:03 PM
5	Starlink	5/8/2023 4:56 PM
6	Surfs up	5/8/2023 4:53 PM
7	Surfs up	5/8/2023 4:40 PM
8	Independent network	5/8/2023 4:39 PM
9	WiFi cow	5/4/2023 7:03 PM
10	Century link	5/4/2023 5:16 PM
11	Rise broadband	5/4/2023 5:12 PM
12	Star link	5/4/2023 4:42 PM
13	Starlink	5/2/2023 8:22 PM
14	CenturyLink	5/2/2023 7:05 PM
15	Century link	5/2/2023 6:59 PM
16	Starlink	5/2/2023 6:50 PM
17	Comcast	5/2/2023 6:42 PM
18	Century link	5/2/2023 6:28 PM
19	Century link	5/2/2023 6:24 PM
20	Centry link	5/2/2023 6:04 PM
21	Century link	5/2/2023 5:58 PM
22	Comcast	5/2/2023 5:47 PM
23	Century link	5/2/2023 5:42 PM
24	Star link	5/2/2023 5:38 PM
25	Century link	5/2/2023 5:35 PM
26	Centenary link	5/2/2023 5:32 PM
27	Century link	5/2/2023 5:21 PM
28	Starlink	5/2/2023 5:13 PM
29	Century link	5/2/2023 5:09 PM
30	Rise broadband	5/2/2023 5:00 PM
31	Century link	5/2/2023 4:49 PM

32	Century’s link	5/2/2023 4:47 PM
33	Comcast	5/2/2023 4:47 PM
34	Century link	5/2/2023 4:45 PM
35	Comcast	5/2/2023 4:39 PM
36	Digis	5/2/2023 4:29 PM
37	Century link	5/2/2023 4:29 PM
38	ATT	5/2/2023 4:20 PM

Q6 Are you satisfied with your current internet speeds?

Answered: 39 Skipped: 3



ANSWER CHOICES	RESPONSES	
Yes	38.46%	15
No	61.54%	24
TOTAL		39

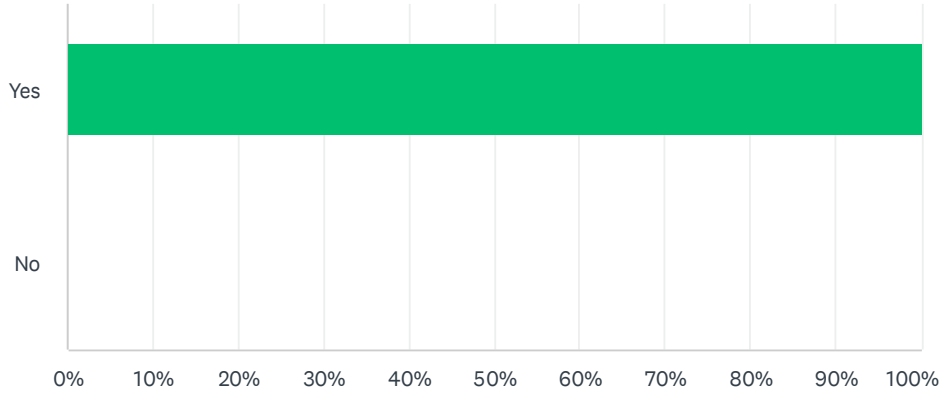
Q7 Why aren't you satisfied with your current internet speeds? (e.g., bad video call connection, slow speeds after school, not able to stream, etc.)

Answered: 24 Skipped: 18

#	RESPONSES	DATE
1	Slow, inconsistent, can’t stream	5/8/2023 5:39 PM
2	Not bandwidth. Barley any connection	5/8/2023 5:28 PM
3	Slow speeds	5/8/2023 5:03 PM
4	Could be faster	5/8/2023 4:53 PM
5	Slow, inconsistent	5/4/2023 7:04 PM
6	Low speed. Lags is using multiple devices	5/4/2023 5:16 PM
7	Slow and the only option	5/4/2023 5:12 PM
8	Unreliable. Slow.	5/2/2023 7:05 PM
9	Bandwidth. Not consistent.	5/2/2023 7:00 PM
10	Connectivity	5/2/2023 6:51 PM
11	Slow. Sporadic connectivity	5/2/2023 6:42 PM
12	Really bad and slow	5/2/2023 6:28 PM
13	Slow	5/2/2023 6:24 PM
14	It be better. Would do a fiber option	5/2/2023 5:58 PM
15	Could be better	5/2/2023 5:47 PM
16	More Options	5/2/2023 5:42 PM
17	All of it just really bad	5/2/2023 5:35 PM
18	Slow speeds	5/2/2023 5:32 PM
19	Speed. Sporadic connectivity. Bad for gaming	5/2/2023 5:13 PM
20	Speed and consistency of connectivity. Works at home	5/2/2023 5:00 PM
21	Quite slow	5/2/2023 4:50 PM
22	Slow speeds	5/2/2023 4:47 PM
23	Too slow	5/2/2023 4:47 PM
24	Upload speed is inconsistent.	5/2/2023 4:29 PM

Q8 Do you feel confident in your ability to use the internet?

Answered: 39 Skipped: 3



ANSWER CHOICES	RESPONSES	
Yes	100.00%	39
No	0.00%	0
TOTAL		39

Q9 What areas of internet use would you like to improve? (e.g., using email, online banking, video calls, etc.)

Answered: 0 Skipped: 42

#	RESPONSES	DATE
	There are no responses.	

Q10 Would you be willing to share why you don’t have internet at home? (e.g., It’s too expensive, no devices at home, not interested in internet, digital literacy concerns, etc.)

Answered: 1 Skipped: 41

#	RESPONSES	DATE
1	Gone 6 months	5/2/2023 5:51 PM

Q11 How much would you be willing to pay to get connected to the internet at home?

Answered: 0 Skipped: 42

#	RESPONSES	DATE
	There are no responses.	

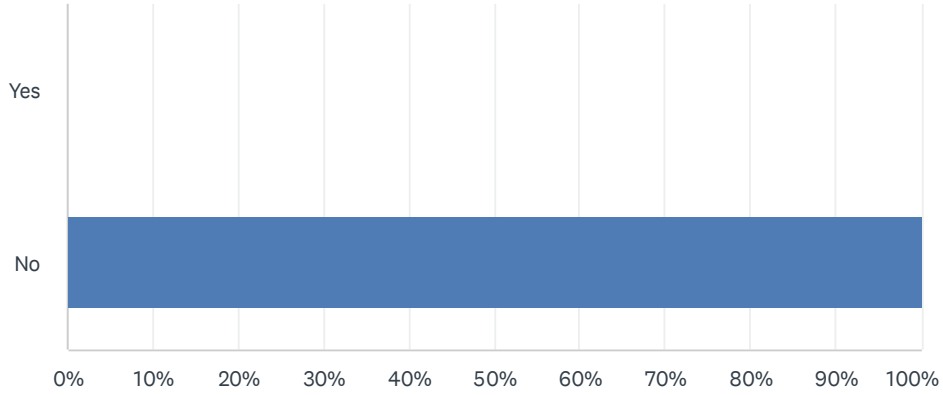
Q12 Do you have a device you could use the internet on at home? If so what type of device (laptop, tablet, phone etc.)

Answered: 1 Skipped: 41

#	RESPONSES	DATE
1	Yes	5/2/2023 5:51 PM

Q13 Do you go somewhere else to access the internet?

Answered: 1 Skipped: 41



ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	100.00%	1
TOTAL		1

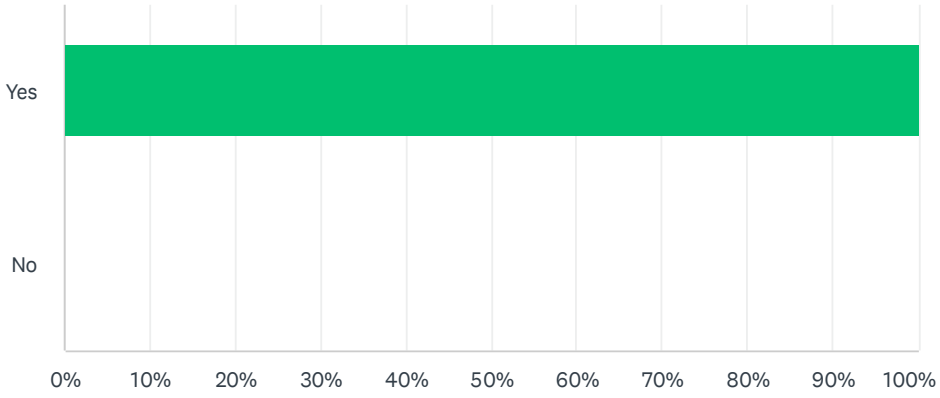
Q14 Where do you go to access the internet? (e.g., library, school, community center, etc.)

Answered: 0 Skipped: 42

#	RESPONSES	DATE
	There are no responses.	

Q15 Are you aware of the Affordable Connectivity Program (ACP), which provides a $30 monthly discount for internet to low-income households?

Answered: 1 Skipped: 41



ANSWER CHOICES	RESPONSES	
Yes	100.00%	1
No	0.00%	0
TOTAL		1

Q16 Do you have anything else you'd like to let Morgan County know regarding your internet connectivity or experience?

Answered: 38 Skipped: 4

#	RESPONSES	DATE
1	Bring fiber!	5/8/2023 5:40 PM
2	Would be Nice to have fiber. Move the cable the fiber cable I can’t connect to out of my back yard	5/8/2023 5:28 PM
3	NA	5/8/2023 5:07 PM
4	Sit down in bowl so it affects speed. Slower speeds when everyone tries to get connected. Uses phone and cell plan because speeds are similar	5/8/2023 5:05 PM
5	Neighborhood is really in need. Many people would take fiber if it was offered. Fixed wireless isn’t great. $500 for equipment set up for starlink.	5/8/2023 4:58 PM
6	More consistent connection	5/8/2023 4:53 PM
7	Heavy user. Terabytes per month. Needs fast upload speeds. Need as much upload as possible. Network runs through T-Mobile.	5/8/2023 4:40 PM
8	Would love higher speed internet so she can work from home	5/8/2023 4:40 PM
9	No	5/4/2023 7:04 PM
10	No	5/4/2023 5:16 PM
11	No	5/4/2023 5:12 PM
12	No	5/4/2023 4:43 PM
13	Fiber badly needed	5/2/2023 8:22 PM
14	More cell service and they want fiber	5/2/2023 7:14 PM
15	More options. Internet at all. Fiber	5/2/2023 7:05 PM
16	Get better internet	5/2/2023 7:00 PM
17	Would be nice to have fiber	5/2/2023 6:52 PM
18	They need cell service up here	5/2/2023 6:29 PM
19	More options	5/2/2023 6:24 PM
20	More options for providers.	5/2/2023 6:04 PM
21	Worried about expanding homes and it getting slower over time	5/2/2023 5:58 PM
22	No	5/2/2023 5:51 PM
23	No	5/2/2023 5:47 PM
24	Higher speeds	5/2/2023 5:42 PM
25	More options would be good	5/2/2023 5:39 PM
26	Love something better	5/2/2023 5:35 PM
27	No	5/2/2023 5:32 PM
28	No	5/2/2023 5:21 PM
29	They have forgotten trappers point	5/2/2023 5:14 PM

30	It could be faster.	5/2/2023 5:09 PM
31	Huge supporter of bringing faster internet to Morgan	5/2/2023 5:00 PM
32	To get something more affordable and faster	5/2/2023 4:50 PM
33	No	5/2/2023 4:47 PM
34	We need better internet service	5/2/2023 4:47 PM
35	Would like fiber connection	5/2/2023 4:45 PM
36	More providers	5/2/2023 4:39 PM
37	Not appropriate to take money from everyone to get internet.	5/2/2023 4:30 PM
38	No	5/2/2023 4:20 PM

Appendix A. Statewide Survey: Morgan County Responses

Resident Response #	Date	Location			Do you rent or own this property?	Do you have an internet connection at your residence?	What kind of internet connection do you have? (Select all that apply)	What speed is your internet service (download speed)? (Megabits per second = Mbps)	Which company do you use for internet? (E.g. Xfinity, Google Fiber, Connext, Emery Telecom, CenturyLink, etc.)	What is the monthly charge for your internet service? Write "Unknown" if unknown.	Does your internet bill include other services such as phone, TV, or premium content?	What do you use the internet for? Select all that apply.						
		AOG	County	City/Town	Response	Response	Response	Response	Open-Ended Response	Open-Ended Response	Response	Remote working	Remote learning	Remote health care/telehealth	Video conferencing/chatting	Entertainment/streaming services	Shopping	Gaming
5	2023-02-04 11:14:10	WFRC	Morgan County	Morgan	Rent	Yes, I have an internet connection at my residence.	Wireless	10 Mbps or less	T Mobile	50	No	Remote working	Remote learning		Video conferencing/chatting			
4	2023-02-02 18:45:46	WFRC	Morgan County	MORGAN	Own	Yes, I have an internet connection at my residence.	Wireless	Up to 25 Mbps	mysurfsup		No	Remote working	Remote learning	Remote health care/telehealth	Video conferencing/chatting	Entertainment/streaming services	Shopping	
3	2023-02-02 06:04:54	WFRC	Morgan County	Morgan	Own	Yes, I have an internet connection at my residence.	Fiber optics	Up to 1 Gigabit	Beehive Broadband	$99	No	Remote working	Remote learning	Remote health care/telehealth	Video conferencing/chatting	Entertainment/streaming services	Shopping	
2	2023-02-02 14:22:30	WFRC	Morgan County	Mountain Green	Own	Yes, I have an internet connection at my residence.	Cable or digital subscriber line (DSL-telephone line)	Up to 25 Mbps	CenturyLink	$45	No	Remote working	Remote learning	Remote health care/telehealth	Video conferencing/chatting	Entertainment/streaming services	Shopping	Gaming
1	2023-02-02 03:55:18	WFRC	Morgan County	Mountain Green	Own	Yes, I have an internet connection at my residence.	Wireless	10 Mbps or less	T Mobile	$50	No	Remote working	Remote learning	Remote health care/telehealth	Video conferencing/chatting	Entertainment/streaming services	Shopping	Gaming

Appendix A. Statewide Survey: Morgan County Responses

Resident Response #		Why don't you have internet access at your residence? Select all that apply.											How much would you pay for internet per month if it was accessible to you at your residence?	If you are willing, please share how a high-speed internet connection would improve your quality of life.	Are you aware of the Affordable Connectivity Program, which provides a $30 monthly discount for internet to low-income households?	What is your race/ethnicity? Select all that apply.		What language is spoken most often in your household?
	Other (please specify)	Initial connection fees are too expensive	Monthly charges are too expensive	I do not have a computer or tablet to use	I do not know how to use a computer or tablet	I do not know how to get internet service	I do not need it/am not interested in it	I have physical limitations	I am worried about privacy and others getting my information	An internet connection isn't available in my area	I access the internet at a public internet source, such as a library or a community center	Other (please specify)	Open-Ended Response	Open-Ended Response	Response	Response	Multiple ethnicity / Other (please specify)	Response
5															No, but I would like information to learn if my household qualifies. If this option is selected, please complete the contact form at the end of this survey.	White		English
4															No, and I am not interested.			
3															No, and I am not interested.	No	White	
2															Yes, I am aware of the Program, but do not participate in it or am not eligible.	Yes	White	
1	Really everything, almost every aspect of modern life requires an IP														No, and I am not interested.	Yes	White	

Appendix A. Statewide Survey: Morgan County Responses

Resident Response #		What is your household's gross annual income?	Which age groups live in your home? Select all that apply.								Do students live at your household?	Which education level? Select all that apply.					What is the highest level of education completed by someone in your household?
	Other (please specify)	Response	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71 or older	Response	Elementary school (kindergarten to 6th grade)	Middle school (7th grade to 9th grade)	High school (9th grade to 12th grade)	College or university	Adult education or technical training	Response
5		$25,000-$49,999								71 or older	No						Bachelor's degree
4															College or university		
3	English		$150,000 or more		11-20	21-30		41-50				Yes		Middle school (7th grade to 9th grade)	High school (9th grade to 12th grade)	College or university	
2	English		$75,000-$99,999			21-30			51-60			Yes				College or university	
1	English		$50,000-$74,999	0-10	11-20	21-30		41-50				Yes	Elementary school (kindergarten to 6th grade)			College or university	

Appendix A. Statewide Survey: Morgan County Responses

Elected Official Response #	Date	Are you a local or state representative?	Location		Which municipality, county or area do you represent?	Do you feel knowledgeable about the current state of broadband internet coverage for the area you represent?	What tools and/or resources could Connecting Utah provide to help you learn about internet coverage in your area?		Has the area you represent benefited from past efforts to expand internet access?	What were those efforts?	Tell us about internet access for the people you serve. Select all that apply.
		Response	AOG	County	Open-Ended Response	Response	Response	Other (please specify)	Response	Open-Ended Response	Some people who want internet access have it.
1	11/16/2022 14:08	Local representative	WFRC	Morgan County	Morgan County	Yes			Yes	County provided CARES act funding to two different broadband companies to subsidize internet infrastructure	Some people who want internet access have it.

Appendix A. Statewide Survey: Morgan County Responses

Elected Official Response #						What barriers make it difficult for individuals in your area to access the internet? (e.g., affordability, infrastructure).	What would make it easier for individuals in your area to access the internet? (e.g., lower costs, subsidizing programs, infrastructure improvements).	Do you feel like the area(s) you represent has enough funding to expand broadband coverage to all homes?	Do you know the provider(s) in your area?	Have you met or talked to the provider(s) in your areas?	Is there anything else you'd like to share about internet access in your area?
	Some people want internet access but have no internet providers available.	Some people want internet provider options than those that are currently available.	Some people can't afford the internet option(s) available to them.	Some people do not want the internet.	Other (please specify)	Open-Ended Response	Open-Ended Response	Response	Open-Ended Response	Open-Ended Response	Open-Ended Response
1	Some people want internet access but have no internet providers available.	Some people want internet provider options than those that are currently available.				Infrastructure, we have many rural areas that do not have internet Infrastructure.	Infrastructure	No	Yes, Liberty Broadband, Beehive Broadband,	Yes	We have areas of the county that are not well served due to limited or no infrastructure

Appendix A. Statewide Survey: Morgan County Responses

Elected Official Response #	Tell us how the people you serve access the internet if devices are not available at their residences. Select all that apply.					What barriers make it difficult for individuals in your area to access device(s)? (e.g., affordability, supply issues).	What would make it easier for individuals in your area to access device(s)? (e.g., lower costs, subsidizing programs).	Do you feel like your area(s) has enough funding to provide internet-capable devices to homes that cannot afford them?	Do you have anything else to share about devices in your area?
	Work	School	Library	Community Center	Other (please specify)	Open-Ended Response	Open-Ended Response	Response	Open-Ended Response
1	Work	School	Library			Distance to the County library, schools, etc	Subsidizing programs that will encourage internet providers to build infrastructure	No	No

Appendix B: Community Partner Survey

This appendix contains the responses from the surveys distributed to Morgan County's community partners, to get a better understanding of what current plans for broadband and digital access activities are already in place.

#1

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Wednesday, May 31, 2023 9:20:54 AM
Last Modified: Wednesday, May 31, 2023 9:27:16 AM
Time Spent: 00:06:21
IP Address:

Page 1: Organization Information

Q1

Contact Information

Name	
Organization	**Morgan County School District**
Department	
Phone	
Email	
City/Town	**Morgan**
Brief description of involvement with broadband	**Oversee the broadband connection for the district**

Q2

Do you currently have any broadband or digital access projects, plans, or initiatives underway?

Yes

Page 2: Broadband Projects and Initiatives

Q3

Broadband Project Information

Broadband Project Name	**Internet**
Project Manager or Company	**UEN**

Q4

What is the status of this broadband project?

Completed,

Other (please specify):

Morgan School District has access to broadband internet through UEN, ISP Provider for schools are as follows. MGMS, Dist. Office, MHS, MMS and MES Centurylink. MGES Beehive, Transportation Utopia

Q5

Estimated Duration of Project (by months)

Respondent skipped this question

Q6

Estimated Total Project Cost

Respondent skipped this question

Q7

Is funding for this project secured? If so, please describe amounts and sources.

Respondent skipped this question

Q8

Describe the economic benefits of this project and how these benefits can be measured.

Respondent skipped this question

Q9

Do you have additional broadband projects, plans, or initiatives?

Respondent skipped this question

Page 3: Broadband Projects and Initiatives

Q10

Broadband Project Information

Respondent skipped this question

Q11

What is the status of this broadband project?

Respondent skipped this question

Q12

Estimated Duration of Project (by months)

Respondent skipped this question

Q13

Estimated Total Project Cost

Respondent skipped this question

Q14

Is funding for this project secured? If so, please describe amounts and sources.

Respondent skipped this question

Q15

Describe the economic benefits of this project and how these benefits can be measured.

Respondent skipped this question

Q16

Do you have additional broadband projects, plans, or initiatives?

No

Page 4: Broadband Projects and Initiatives

Q17

Broadband Project Information

Respondent skipped this question

Q18

What is the status of this broadband project?

Respondent skipped this question

Q19

Estimated Duration of Project (by months)

Respondent skipped this question

Q20

Estimated Total Project Cost

Respondent skipped this question

Q21

Is funding for this project secured? If so, please describe amounts and sources.

Respondent skipped this question

Q22

Describe the economic benefits of this project and how these benefits can be measured.

Respondent skipped this question

Q23

Do you have additional broadband projects, plans, or initiatives?

Respondent skipped this question

Page 5: Broadband Projects and Initiatives

Q24

Please list any additional broadband projects, plans, or initiatives.

Respondent skipped this question

Page 6: Broadband Staffing

Q25

Does your organization have any dedicated positions related to broadband expansion?

Yes

Page 7: Broadband Staffing

Q26

Please list the position, employment status, and roles for any dedicated broadband positions.

Contact Name	**Terry Allen**
Title	**IT DIrector**
Department	**Technology**
Status (full-time, part-time, volunteer)	**FT**

Q27

Are there additional broadband-specific positions within your organization currently?

No

Page 8: Broadband Staffing

Q28

Please list the position, employment status, and roles for any dedicated broadband positions.

Respondent skipped this question

Q29

Are there additional broadband-specific positions within your organization currently?

Respondent skipped this question

Page 9: Broadband Staffing

Q30

Please list the position, employment status, and roles for any dedicated broadband positions.

Respondent skipped this question

Q31

Are there additional broadband-specific positions within your organization currently?

Respondent skipped this question

Q32

Please list any additional broadband-specific positions and contacts within your organization (include name, title, department, status, and role).

Respondent skipped this question

Q33

Has your organization explored or had interest in additional, broadband-specific staffing?

No

Page 10: Broadband Planning

Q34

To your knowledge, have any local county or city organizations in your area undertaken any data collection efforts as it relates to broadband? If yes, please select the efforts undertaken.

Community broadband survey,

Internet Speed Test

Q35

Outline any known policy and/or regulatory impediments to the expansion of broadband in your organization. Does your area have any plans to create policies that allow aid to be given in broadband expansion?

Respondent skipped this question

Q36

Are there areas in your city or county where you commonly hear complaints regarding the lack of high-speed internet?

Those that live on the outside of the Morgan City border.

Page 11: Partner Coordination

Q37

Broadband expansion may be expedited through shared resources and access to existing physical resources to cut costs and quicken expansion. What physical infrastructure does your organization have that it could leverage for broadband expansion?

Other (please specify):

UEN would have to approve any sharing of resources due to the use of Erate funding for our resources.

Q38

Does your organization have any upcoming capital projects that could be leveraged to deploy broadband infrastructure (conduit or fiber)? For example, any road construction, sewer system repair, or new building projects that could be coupled with broadband deployment.

No

Q39

Please list the upcoming capital projects that could be coupled with broadband expansion in your community.

Respondent skipped this question

Q40

What support does your organization need from the Utah Broadband Center moving forward?

Respondent skipped this question

Page 12: Broadband Coalition

Q41

Does your organization have a broadband committee or similar working group tasked with expanding broadband?

No

Q42

If a community or broadband action team has been established, select the organizations or sectors that are represented in that group. Select all that apply.

Respondent skipped this question

#2

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Wednesday, May 31, 2023 10:23:08 AM
Last Modified: Wednesday, May 31, 2023 10:44:56 AM
Time Spent: 00:21:47
IP Address:

Page 1: Organization Information

Q1

Contact Information

Name	
Organization	**Weber Human Services**
Department	**Aging (senior center)**
Phone	
Email	
City/Town	**Morgan**

Q2 **No**

Do you currently have any broadband or digital access projects, plans, or initiatives underway?

Page 2: Broadband Projects and Initiatives

Q3 **Respondent skipped this question**

Broadband Project Information

Q4 **Respondent skipped this question**

What is the status of this broadband project?

Q5 **Respondent skipped this question**

Estimated Duration of Project (by months)

Q6 **Respondent skipped this question**

Estimated Total Project Cost

Q7

Is funding for this project secured? If so, please describe amounts and sources.

Respondent skipped this question

Q8

Describe the economic benefits of this project and how these benefits can be measured.

Respondent skipped this question

Q9

Do you have additional broadband projects, plans, or initiatives?

Respondent skipped this question

Page 3: Broadband Projects and Initiatives

Q10

Broadband Project Information

Respondent skipped this question

Q11

What is the status of this broadband project?

Respondent skipped this question

Q12

Estimated Duration of Project (by months)

Respondent skipped this question

Q13

Estimated Total Project Cost

Respondent skipped this question

Q14

Is funding for this project secured? If so, please describe amounts and sources.

Respondent skipped this question

Q15

Describe the economic benefits of this project and how these benefits can be measured.

Respondent skipped this question

Q16

Do you have additional broadband projects, plans, or initiatives?

Respondent skipped this question

Page 4: Broadband Projects and Initiatives

Q17

Broadband Project Information

Respondent skipped this question

Q18

What is the status of this broadband project?

Respondent skipped this question

Q19

Estimated Duration of Project (by months)

Respondent skipped this question

Q20

Estimated Total Project Cost

Respondent skipped this question

Q21

Is funding for this project secured? If so, please describe amounts and sources.

Respondent skipped this question

Q22

Describe the economic benefits of this project and how these benefits can be measured.

Respondent skipped this question

Q23

Do you have additional broadband projects, plans, or initiatives?

Respondent skipped this question

Page 5: Broadband Projects and Initiatives

Q24

Please list any additional broadband projects, plans, or initiatives.

Respondent skipped this question

Page 6: Broadband Staffing

Q25

Does your organization have any dedicated positions related to broadband expansion?

I don't know

Page 7: Broadband Staffing

Q26

Please list the position, employment status, and roles for any dedicated broadband positions.

Respondent skipped this question

Q27

Are there additional broadband-specific positions within your organization currently?

Respondent skipped this question

Page 8: Broadband Staffing

Q28

Please list the position, employment status, and roles for any dedicated broadband positions.

Respondent skipped this question

Q29

Are there additional broadband-specific positions within your organization currently?

Respondent skipped this question

Page 9: Broadband Staffing

Q30

Please list the position, employment status, and roles for any dedicated broadband positions.

Respondent skipped this question

Q31

Are there additional broadband-specific positions within your organization currently?

Respondent skipped this question

Q32

Please list any additional broadband-specific positions and contacts within your organization (include name, title, department, status, and role).

Respondent skipped this question

Q33

Has your organization explored or had interest in additional, broadband-specific staffing?

I don't know

Page 10: Broadband Planning

Q34

To your knowledge, have any local county or city organizations in your area undertaken any data collection efforts as it relates to broadband? If yes, please select the efforts undertaken.

Community broadband survey

Q35

Outline any known policy and/or regulatory impediments to the expansion of broadband in your organization. Does your area have any plans to create policies that allow aid to be given in broadband expansion?

Respondent skipped this question

Q36

Are there areas in your city or county where you commonly hear complaints regarding the lack of high-speed internet?

Yes, I hear complaints from those in the city and county of slow internet along with connection problems.

Page 11: Partner Coordination

Q37

Broadband expansion may be expedited through shared resources and access to existing physical resources to cut costs and quicken expansion. What physical infrastructure does your organization have that it could leverage for broadband expansion?

Public lands,

Utility poles

Q38

Does your organization have any upcoming capital projects that could be leveraged to deploy broadband infrastructure (conduit or fiber)? For example, any road construction, sewer system repair, or new building projects that could be coupled with broadband deployment.

I don't know

Q39

Please list the upcoming capital projects that could be coupled with broadband expansion in your community.

Respondent skipped this question

Q40

What support does your organization need from the Utah Broadband Center moving forward?

Respondent skipped this question

Page 12: Broadband Coalition

Q41

Does your organization have a broadband committee or similar working group tasked with expanding broadband?

I don't know

Q42

If a community or broadband action team has been established, select the organizations or sectors that are represented in that group. Select all that apply.

State, county, or municipal entities,

Schools ,

Libraries,

Health care organizations,

Public safety or emergency management,

Economic development organizations,

Local internet service providers,

Other governmental entities

Appendix C: Notes from Stakeholder Meetings

The following pages include notes from stakeholder meetings and workshops gathered as part of the Morgan County local broadband planning outreach.

MORGAN COUNTY WORKSHOP
HOSTED BY THE UTAH BROADBAND CENTER
JAN. 25, 2023

- ISPs in your community
  - AllWest
    - Putting in Peterson
  - Verizon
  - T-Mobile
  - Utopia
  - Beehive (a few spots in Mountain Green in old network, also toward East Canyon, used for watering and indoor growing room). Sometimes will have a few days when wifi is out, messes up watering schedule when it goes out. Do some fiber in certain neighborhoods
  - CenturyLink (not the most reliable)
  - Liberty Broadband
  - Many are wireless except for Beehive and Utopia
- Where are the needs/gaps?
  - Ranch
    - Veterans come in the summer, stay a week, do therapy sessions (equine). Ranching side, sell beef directly to consumer, need to contact people a lot but service is so spotty sometimes have to drive into town to message a customer back or people can't get directions so can't find it. Cellular and Wi-Fi service is very spotty there
    - UDOT mentioned that it has been difficult to get cellular providers to come in and build new towers, experimenting with smaller towers in other canyons
    - Rights of way are a big issue with rights of ways up there
    - Have ISPs that are interested in building out this county, need more info
    - Lynn can help put state roads in her plan, will put down conduit in the ground when renovating roads; have trading practices with ISPs
    - Up in canyon, have need, on Hwy 66
    - Veterans connect via website. When they come for the day, usually reach out to them, have two Gold Star weeks where they recruit families through veterans associations. Webmaster located in Mountain Green, has better connection there.
    - Commissioner recommended coverage through Liberty; built out there now
      - Biggest problem is once or twice a year they lose power and everything goes down
      - Not sure if people know that Liberty is available, haven't promoted it yet because of unstable tower
  - Online school
    - Not a lot of needs currently, some students that don't do work but not sure if it is affordability issue or a behavior issue.
      - Not aware of ACP, would be helpful but ACP is complicated
      - UBC mentioned looking for people who are willing to help support people
      - Could survey parents to see if they have internet

        - District IT has a list of kids who don't have access
    - School district
        - Wi-Fi built out to parking lots, on all campuses now so people can access outside
        - Finding students that are hotspotting through the phones, they have access but not wired at home
    - Library
        - Internet is complicated in Morgan anyway, people have so many providers
        - Have external Wi-Fi at library as well
    - Peterson
        - Have Rise Broadband
        - Son in Peterson tried CenturyLink, Rise, now on T-Mobile, seems to be working
        - AllWest came off freeway, working toward the south, options are coming to Peterson
        - Beehive strung a line through Peterson, not sure if anyone has hooked up
        - Challenge is that things are scattershot, not sure whose wires are whose, looks like not a lot of transparency about coverage areas or plans
        - New ski resort, Wasatch Peaks is a new subdivision
    - Croyden
        - AllWest pulled off, didn't continue to Croyden
        - Wi-Fi Cow is a wireless provider, comes form Henefer and gets beamed over to Croyden. AllWest has plans to get Croyden, have funding to build out
        - Beehive doesn't go into Croyden
    - Library
        - Fairly affluent community, most people have found sort of access
        - Devices, the same; school provides Chromebooks so most families have at least one device at home
        - Biggest need is senior community, not interested in computers, do a lot of one-on-one help. More education, digital skills ed
        - Seeing a lot of questions about applying for jobs (including for unskilled jobs), accessing email, anything government, family history and church, young moms wanting to print and do crafting (most of them are hobby)
            - Haven't had a lot of medical questions/telehealth
        - Most small businesses are doing things on their phones
        - Haven't done a lot of community education classes, but can see a need for that
        - Affordability; some affordability issues, but people may have some phone connectivity even if don't have home computer
        - Morgan has 5 hotspots, can check out for 2 weeks at a time. A lot of new move-ins will use it, a lot of small business owners will use it as well. Verizon hotspots
        - UDOT Fiber Director mentioned that UDOT has free wifi spots in their sheds (UWDN). Pushing signal out beyond the gates (right by the freeway, public works building)
        - Signal is 24/7, as is the schools. Haven't really promoted it, can increase signage, etc.
- Horrocks Public Involvement representative mentioned existing surveys as a tool that can be used, or can share own data and share back with us
- Chamber
    - Work from home a lot

    - Want to make sure that have connections for those teleworking
    - Not sure how many small business people will be working from home, but have a lot of small businesses registered in the county. Make sure that people have access to working from home.
    - Do a lot of things electronically (ask for tax docs, etc.) but some clients don't have the technology or know-how to do it, increasing transportation time and costs for people to deliver things
- Top priorities for Morgan County
    - Stability of network—need something reliable out there
    - Want to get all information consolidated and verified so we know what is where
        - Lot of new people in Morgan, wasn't until Utopia provided to the city that people understood they didn't live the city. Didn't know where they lived until it became a matter of internet.
        - Lot of people are going to whatever they can
    - Not sure how will get people to take speed test
        - Maybe schools can request parents to do it
        - Send out through utilities, etc.

County Commissioner

- Said that the 6% we displayed in our presentation that don't have internet access is very low and should actually be a much higher percentage
- Mentioned that in the middle of the day when he used to work at the schools he couldn't connect to the internet because everyone was on at the same time
- Utopia, Verizon, T-Mobile, Beehive has a few spots in Mountain Green on the old cable network, Rise Broadband, Denny Anderson's broadband, Allwest has gone through the area and to certain businesses but residents around it can't get it
- Liberty is going up the canyon by Warrior Ranch

Morgan School District Representative

- Look into putting language in the Speed Test that clarifies we want information on which ISP they use/how much they pay and what infrastructure they use/how much they pay
- Wanted to know if he should run all 300 of his computers for the Internet Speed Test at the same time
- Internet is terrible on Sunday after church hours because everyone gets on at the same time
- Suggested look into more data points that we may be "resistant to", there are so many variables that could skew results- variety of tests, multiple times a day
- They are a 1:1 district - they supply 3800 Chromebooks
- Their pipeline/backbone is through Weber State University
- 3 providers for their district - one to the transportation district, UETN, Mountain Green area
- Mentioned that providers only have to have their advertised speeds for a few seconds a day to qualify for the speeds they advertise - but a lot of the time they don't actually run those speeds the majority of the day
- They have students that participate but their parents choose not to have internet at home
- Knows of at least 155 students who don't have internet at their home

- All of their campuses have parking lot connections for school issued devices and a guest network for other devices
- A lot of their online students are connecting through hot spots on their phones

Library Representative

- The ACP is complicated and many people say it's not worth the trouble of applying
- Pretty affluent community - most people have found some sort of access
- Most of their families have devices (especially through the
- Their biggest concern is digital literacy especially in their older populations
- They help a lot of older adults with emails and signing up for things online
- They see a lot of people asking for help with job applications online ("lower skilled jobs")
- Everything government is online now
- Haven't had a lot of medical online questions
- Older populations want help with temple appointments and family history
- Younger moms want help with printing, some a small business owners
- They haven't done a lot of community connectivity programs yet but she sees an opportunity
- They have one library branch and they checkout 5 hotspots (a lot of new move ins and new businesses will use this)
    - Some families check them out for road trips so the kids can watch movies
    - They are usually checked out
- Isn't sure how we'll get people to take the speed test

Morgan Chamber Representative

- Allwest just recently dug up the Peterson City Pipeline
- Internet is complicated in Morgan because there are so many nuances with the providers in the area
- She has Wireless Rise
- Her son in Peterson tried Century Link and Rise and they were bad (if he used his microwave the internet would go out)
    - She isn't aware of anyone connected to Beehive
- Private ski resort - Peterson Area (Wasatch Peaks Ranch)
- There is a lot of unhappiness with Beehive

CPA that also represents the chamber

- Works from home half the time
- He can't work from his parent's home in Peterson
- A lot of small businesses in Morgan County
- Wants to make sure people have access to work from home at all times of the day
- A lot of his clients don't have the know-how to digitally submit W-2 forms so they have to drive to his office

Warrior Risen Ranch Representative

- Beehive up towards green canyon
- Sometimes they have a few days where the water is out and it messes up their crops and they have to water by hand
- Provide services to veterans in the summer (horse therapy, therapy)
- They sell all of their beef directly to the consumer - but service is so spotty that they have to drive into the town to get any service at all
- T-Mobile has almost no service up there
- They are located off of State Highway 66

    - They have a website
    - They gave a contact of someone that does the outreach in Mountain Green, she can't do it at the ranch because it's too spotty of service
    - They do two gold star family weeks - Veteran Services help point people to them
    - They want stability and reliable in the network at their ranch
- **Chamber Representative**
    - A lot of residents use wireless connections
    - Peterson City has Century Link but "it's a joke"
    - There are lots of rumors and uncertainty about connectivity in Morgan
    - Wifi Cow (wificow.com) coming from Hennifer into Croyden
    - Wants all the information consolidated and verified so people can find the information about ISPs in a verified, helpful place
        - People get confused about if they live in the "city" or not
- **Online Schools in Morgan**
    - They could conduct a survey to parents in the district about their internet connectivity
    - Suggested sending something out with the students at schools about the Internet Speed Tests

Appendix D: Notes from Internet Service Provider Meetings

The following pages contain notes from meetings held with ISPs as part of the Morgan County local broadband planning efforts.

Utopia | April 28, 2023

Attendees:

- Utopia – Brian Kelsey, Aaron Leach
- Morgan County – Blaine Fackrell
- Horrocks Engineers – Jason Libert, Eleise Lowe

Meeting Summary:
Discussion on the possibility of expanding Utopia service beyond Morgan City to Mountain Green, along Hwy 84, and along Hwy down to East Canyon reservoir. Discussed construction costs on projects.

Need to provide Utopia with the unserved locations in the Morgan County to continue the discussion.

Liberty Broadband | May 8, 2023

Attendees:

- Liberty Broadband – Michael Zindel, James Ebert
- Morgan County – Blaine Fackrell
- Horrocks Engineers – Jason Libert, Eleise Lowe

Meeting Summary:
Liberty intends to continue to connect Morgan County, primarily on aerial power poles.

Morgan's topography makes it difficult for some residents to connect to fixed wireless towers.

Discussed the importance of requiring HDPE conduit if County or any cities create requirement to install conduit for fiber in new developments.

High cost areas:

- $500,000 to build from Morgan City to East Canyon campground
- $340,000 to build 12 miles of Lost Creek Canyon, which only has 12 serviceable locations

Connext | May 9, 2023

Attendees:

- Connext – David Brown
- Morgan County – Blaine Fackrell
- Horrocks Engineers – Jason Libert, Eleise Lowe

Meeting Summary:
Discussed the possibility of Connext providing service to Morgan County. Blaine likes the subscriber pricing, but Connext is not presently in the Morgan County area and there would need to be redundant network paths out of the county for it to make sense to build there. If UDOT connected Trappers Loop Rd it might make sense for them.

Appendix E: Sample Specifications and Policies

Attachments in this section include:

1. UDOT specifications for fiber conduit
2. UDOT standard drawing for fiber junction box and utility vault
3. “Dura-line Dig Once Best Practices” with state legislation examples

SECTION 13553

ATMS CONDUIT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. ATMS conduit for communications and fiber optic cables.

B. Detectable pull tape, conduit, and all materials, labor, workmanship, equipment, and incidental items required for a complete system of conduit.

1.2 RELATED SECTIONS

A. Section 02056: Embankment, Borrow, and Backfill

B. Section 02221: Remove Structures and Obstruction

C. Section 02705: Pavement Cutting

D. Section 02741: Hot Mix Asphalt (HMA)

E. Section 02776: Concrete Sidewalk, Median Filler, and Flatwork

F. Section 02842: Delineators

G. Section 03575: Flowable Fill

1.3 REFERENCES

A. ASTM D 2241: Poly-Vinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series)

B. ASTM F 2160: Solid Wall High Density Polyethylene (HDPE) Conduit based on Controlled Outside Diameter (OD).

C. National Electrical Code (NEC)

D. National Electrical Manufacturers Association (NEMA)

E. State of Utah Administrative Rules

F. Underwriters Laboratories (UL)

1.4 DEFINITIONS Not Used

1.5 SUBMITTALS

A. Manufacturer's product data sheets and recommended installation instructions.

B. Manufacturer's warranties and parts lists

C. Conduit Mandrel Test Form prior to substantial completion.

D. Refer to http://www.udot.utah.gov/go/standardsreferences for blank forms for this Section.

PART 2 PRODUCTS

2.1 MATERIALS

A. Conduit and fittings for ATMS communication and fiber optic conduit
   1. Schedule 40 PVC rated at 194 degrees F as specified in NEMA TC-2, NEMA TC-3, ASTM D 2241,
   2. High Density Polyethylene (HDPE) SDR11 rated complying with ASTM F 2160.
      a. HDPE conduit with smooth outer wall and ribbed or smooth interior wall.
      b. Fittings and couplers rated for a minimum of 130 psi.
      c. Mechanical type couplers when joining HDPE and PVC conduits.
   3. Microduct
      a. HDPE microduct with an outside/inside diameter of 0.500/0.394 inch (12.7/10 mm) or 0.630/0.512 inch (16/13 mm) or 0.709/0.551 (18/14 mm), as shown.
      b. Microduct having a ribbed interior.
      c. Watertight couplers rated for a minimum of 200 psi.
      d. Microduct bundle within a single 0.100 inch thick polyethylene oversheath.
      e. Microduct bundles must contain a factory installed #14 AWG solid, insulated locate wire and a minimum of two rip cords for removal of oversheath.

B. Conduit Banks
   1. New, prefabricated
   2. ATMS Multi-duct Conduit Types
      a. 1D = four 1.25-inch conduits

b. 2D = eight 1.25-inch conduits
c. 4D = sixteen 1.25-inch conduits

3. Color-code each conduit or cell as follows:
   a. One, two, or three conduits gray
   b. 1D Bank 1 blue, orange, green and brown
   c. 2D Bank 1 blue, orange, green, and brown
      Bank 2 slate, white, red, and black
   d. 4D Bank 1 blue, orange, green, and brown
      Bank 2 slate, white, red, and black
      Bank 3 same as bank 1 with a contrasting stripe
      Bank 4 same as bank 2 with a contrasting stripe
4. Microduct types:
   a. Individual 0.500/0.394 inch (12.7/10 mm) or 0.630/0.512 inch (16/13 mm) microducts installed loosely within new or existing conduit.
   b. MD2, MD3, MD4 and MD7: microduct bundle containing two, three, four or seven 0.709/0.551 inch (18/14 mm) microducts respectively.
   c. Factory-assembled bundles for bundled applications.
5. Color-code microducts and oversheaths as follows:
   a. Individual microducts installed loosely within conduit or bundled within oversheath:
      1) blue
      2) orange
      3) green
      4) brown
      5) slate
      6) white
      7) red
      8) black
   b. Oversheaths:
      Bundle #1 blue
      Bundle #2 orange
      Bundle #3 green
      Bundle #4 brown

C. Meet or exceed all of the conduit manufacturer's recommendations for materials used in the installation of conduits including sweeps, adapters, couplings, glue, plugs, and fittings.
   1. Conduit plugs must seal the conduit and allow the secure fastening of detectable pull tape.

D. PVC conduit sections – Nominal 20 ft sections. Couplings and fittings must provide watertight integrity.

E. Sweeps – factory manufactured sweeps (11¼, 22½, 45, and 90 degree angles) complete with bell and spigot.

F. Detectable Pull Tape – flat profile, low stretch polyester, detectable, sequential footage marked, 1,200 lb tensile strength pull tape in each conduit.

G. Backfill
   1. Flowable Fill – Refer to Section 03575.
   2. Free Draining Granular Backfill – Refer to Section 02056.
   3. Sand
      a. Friable natural river or bank aggregate, free of loam, detrimental, or soluble or organic matter.
      b. 3/8 inch minus, well graded.
   4. Hand-mix grout
      a. Minimum strength – 50 psi
      b. Maximum strength – 150 psi
      c. Slump – 5 inches to 10 inches

H. Rigid Metal Conduit (RMC) complying with UL-6. Zinc galvanized exterior coating complying with ANSI C80.1.

I. Liquidtight Flexible Metal Conduit (LFMC), -30 degrees C to 80 degrees C rated, UL 360 listed.

J. Liquidtight Flexible Nonmetallic Conduit (LFNC), 80 degrees C dry, 60 degrees C wet rated, sunlight resistant, UL 1660 listed.

PART 3 EXECUTION

3.1 GENERAL

A. Maximum spacing between junction boxes and vaults
   1. 500 ft for electrical cable.
   2. 1,000 ft for fiber optic cable on tangent surface street installations.
   3. 2,500 ft for fiber optic cable on tangent highway installations.
   4. Reduce maximum spacing if horizontal or vertical deflection incurred during installation prevents the installation of cable within maximum pulling tension rating of the cable.
   5. Notify the Engineer if utility avoidance requires junction box and conduit locations differing from requirements for deflection in this Section, article 3.2.

B. Minimum Cover of Conduit
   1. Minimum cover under pavement is 4ft and minimum cover under sidewalks is 3 ft.
   2. Minimum cover in highway right-of-way, greater than 20 ft from the edge of the pavement is 3 ft.
   3. Minimum cover in highway right-of-way, within 20 ft of the edge of the pavement is 5 ft.
   4. Refer to State of Utah Administrative Rule 930-7

3.2 INSTALLATION

A. Prevent conduit from deflecting vertically or horizontally along its length by a ratio greater than 10:1, (no more than 4-inch deflection per 40 inch in length) when installing conduit that houses communication cable.

B. Prevent sum total of the vertical and horizontal conduit deflection or bend between any two junction boxes from exceeding 270 degrees when installing conduit.

C. Install conduit within 1 ft of existing parallel conduit run if the planned location of conduit is parallel to the existing traffic signal or ATMS conduit.

D. Obtain approval for field bending of conduit with the Engineer in cases where factory sweeps are not appropriate. Field bending must be performed using a heat box or heat blanket. Torch heating conduit is prohibited. Install all conduit bends to have a radius that is not less than the following:
   1. 24 inches within the cabinet and pole foundations
   2. 36 inches in all other locations
   3. 46 inches for MD7 microduct bundle
   4. 40 inches for MD4 microduct bundle
   5. 36 inches for MD3 microduct bundle
   6. 32 inches for MD2 microduct bundle
   7. 12 inches for individual microduct

E. Install conduits that cross finished curbs and gutters, sidewalks, concrete flatwork, or textured or decorative surfaces by boring, jacking, or drilling. Replace any damaged concrete sections, joint to joint. Refer to Section 02221.

F. Proof all conduit before installation of cabling and detectable pull tape.
   1. Use a mandrel at least 80 percent of the conduit diameter, at least twice as long as the conduit diameter, and composed of rigid material.
   2. Schedule proofing with the Engineer at least 5 working days in advance of performing the work.

3. Proof all conduit with a Department representative witness present.
4. Complete and submit a completed Conduit Mandrel Test Form for all ATMS conduit.
5. Proof microducts using proofing balls.
6. Proofing balls must maintain a minimum 80 percent fill ratio of inside diameter of the microduct being tested.
7. Proofing must occur after all junction boxes have been installed to final grade, including placement of flowable fill or hand-mix grout at junction box walls, and after all excavation in the immediate proximity of the conduit system has been completed.
    a. Re-proof any conduit segment where excavation has occurred near the conduits following initial proof testing.

G. Provide detectable pull tape in all conduits.
1. Install continuously between junction boxes.
2. Fasten securely to conduit plug and leave 6 ft of pull tape slack inside of the conduit.
3. Do not splice detectable pull tape in conduit.
4. Use flat profile, low stretch polyester, 1,200 lb tensile strength detectable pull tape that is sequential footage marked.
5. Verify that the pull tape is detectable throughout its entire length by performing a continuity test or equivalent verification.
6. Detectable pull tape not required in microducts.

H. Encase open trench conduit in sand backfill covered by flowable fill within existing roadway, proposed roadway and sidewalk pavement areas only.
1. Seal junction box wall around conduits using flowable fill or approved hand-mix grout.
2. Use 6 inches of sand backfill covered with native material in all other areas.
3. Refer to AT Series Standard Drawings.

I. Use rigid metal conduit or schedule 80 PVC conduit for above ground application.
1. Liquidtight flexible metal conduit (LFMC) or liquidtight flexible non-metallic conduit (LFNC) is permitted in lengths not exceeding 6 ft where not subject to physical damage.
2. Apply corrosion protection to any portion of rigid metal conduit buried in the ground or encased in concrete.

J. Use PVC or HDPE conduit for underground application.

K. Warning Tape
1. Install orange warning tape with black legend “Caution - Buried Communication Cable,” in all trenches containing multi-duct conduit or conduit containing communication cables.

2. Install red warning tape with black legend “Caution - Buried Electric” in all other trenches.
3. Not required when flowable fill is directly overlaid with asphalt pavement or PCCP.
4. Not required when boring or plowing conduit.

L. Install a bushing or adapter at ends of all conduits that contain a conductor according to the NEC.

M. Furnish and install Utility Marker Posts along the longitudinal conduit running line. Refer to AT Series Standard Drawings and Section 02842.

N. Install a #14 AWG solid, insulated locate wire inside of new or existing conduit with individual microducts.
1. Verify that all locate wires are detectable throughout their entire length by performing a continuity test or equivalent verification.

3.3 TRENCH

A. Paved Asphalt Surface
1. Install T-patch over trenched area according to AT Series Standard Drawings.
2. Cut pavement from roadway surface to roadway base on both sides of trench to provide a clean, straight wall for T-patch before any backhoe use according to Section 02705.
3. Refer to AT Series Standard Drawings for depth of flowable fill under paved surfaces.
4. Evenly apply tack coat on final backfill before installing T-patch.
5. Place restoration patch – match the composition, density, and elevation (±¼ inch), of the existing surface according to Section 02741.
6. Apply a hot-pour rubberized asphalt joint sealant or approved equal after the patch is installed.

B. Sidewalk or Decorative Pavement
1. Use flowable fill to bottom of new pavement or sidewalk.
2. Match existing pavement thickness. New pavement thickness must be 3½ inches minimum and 8 inches maximum.
3. Restore sidewalk or decorative pavement to original condition or better after work is completed. Refer to Section 02776.

C. Unpaved Surface
1. Backfill using native material, if suitable, that matches the composition, density, and elevation (±0.2 inch), of the existing surface according to Section 02056.

2. Dispose of surplus material promptly.
3. Sand Backfill
    a. Use sand backfill in trench sections outside of existing roadway, proposed roadway, and sidewalk pavement areas, including exposed conduit locations when plowing or boring.
    b. Provide 6 inches of sand backfill above conduit in trench.
        1) Backfill trench above sand to finished grade using native material.
            a) Backfill and tamp in 6 inch lifts.
    c. Compaction of sand backfill is not required.

D. Sleeve foreign utilities that cross a trench so they are not encased in flowable fill.

E. Place all conduits in the same trench whenever possible.

F. Flowable Fill or Hand-mix Grout
1. Install flowable fill or approved hand-mix grout to the wall of junction box to seal conduit entry into junction box.
2. Clean excess flowable fill or hand-mix grout from the inside of the junction box.

G. Install all conduits so the flowable fill or sand backfill completely encases all exterior surfaces of the conduit.
1. Separate multi-duct conduits using a commercially available conduit spacer or approved equivalent.
2. Place spacers no more than 4 ft apart and not more than 2 ft from each coupler.

H. Anchor the conduit in trench at 16 ft intervals to maintain the required conduit depth during flowable fill placement.

I. Minimum separation between all conduits and the wall of the trench is 1½ inches.

3.4 BORE OR PLOW

A. Immediately contain, remove, and properly dispose of all excess drilling fluid.

3.5 USE OF EXISTING OR OCCUPIED CONDUIT

A. Maintain the physical condition and functional integrity of all cabling and wiring in existing or occupied conduit.

B. Cable or wire installation in an existing or occupied conduit.

1. Remove any existing fiber optic cable or copper wire.
2. Test the integrity and clean the conduit by successfully pulling a Department-approved mandrel through the conduit.
3. Re-pull existing and new fiber optic cable or copper wire together.
4. Perform all necessary splices and replace any impacted fiber cable and spider fan-out kits according to Section 13594.

C. Use existing conduit in-situ only if shown and as approved by the Engineer.

D. Intercept individual microducts from existing microduct bundle mid-span and reroute to new junction box location:
   1. Type II-PC junction box
      a. Bury at existing microduct bundle depth.
      b. Notch the 24-inch box walls and install junction box over existing microduct bundle.
      c. Provide 12 inches of free draining granular backfill borrow underneath junction box.
      d. Encase all conduit in flowable fill orhand-mix grout where the conduit enters the junction box.
      e. Place locate ball or disk in junction box.
      f. Ground rod, and grout floor are not required.
   2. Conduit and microduct bundle inside of buried Type II-PC junction box.
      a. Install conduit from buried junction box to new junction box location for rerouting of individual microducts. Provide #14 AWG solid, insulated locate wire inside of new conduit between junction boxes.
      b. Extend conduit and microduct oversheath 6 inches beyond inside wall of the junction box.
      c. Expose microducts by removing no more than 20 inches of oversheath.
      d. Identify and cut only the individual microducts to be rerouted.
      e. Use approved couplers and extend microducts to new junction box using corresponding microduct color.
      f. Splice all locate wires together using an approved waterproof connector.
         1) Verify that the locate wire conductors are not exposed.
   3. New junction box location
      a. Install new junction box within 20 ft of buried junction box or within 20 ft of edge of roadway when existing microduct bundle is underneath roadway, to provide access to locate wire for mapping and locating purposes.

3.6 REPAIR OR RESTORATION

A. Restore all areas, including landscaping, concrete pavement, asphalt, finished curbs and gutters, box culverts, sewers, underground water mains, sprinkler systems, sidewalks, concrete flatwork, colored, textured, or decorative surfaces damaged during conduit and junction box installation.

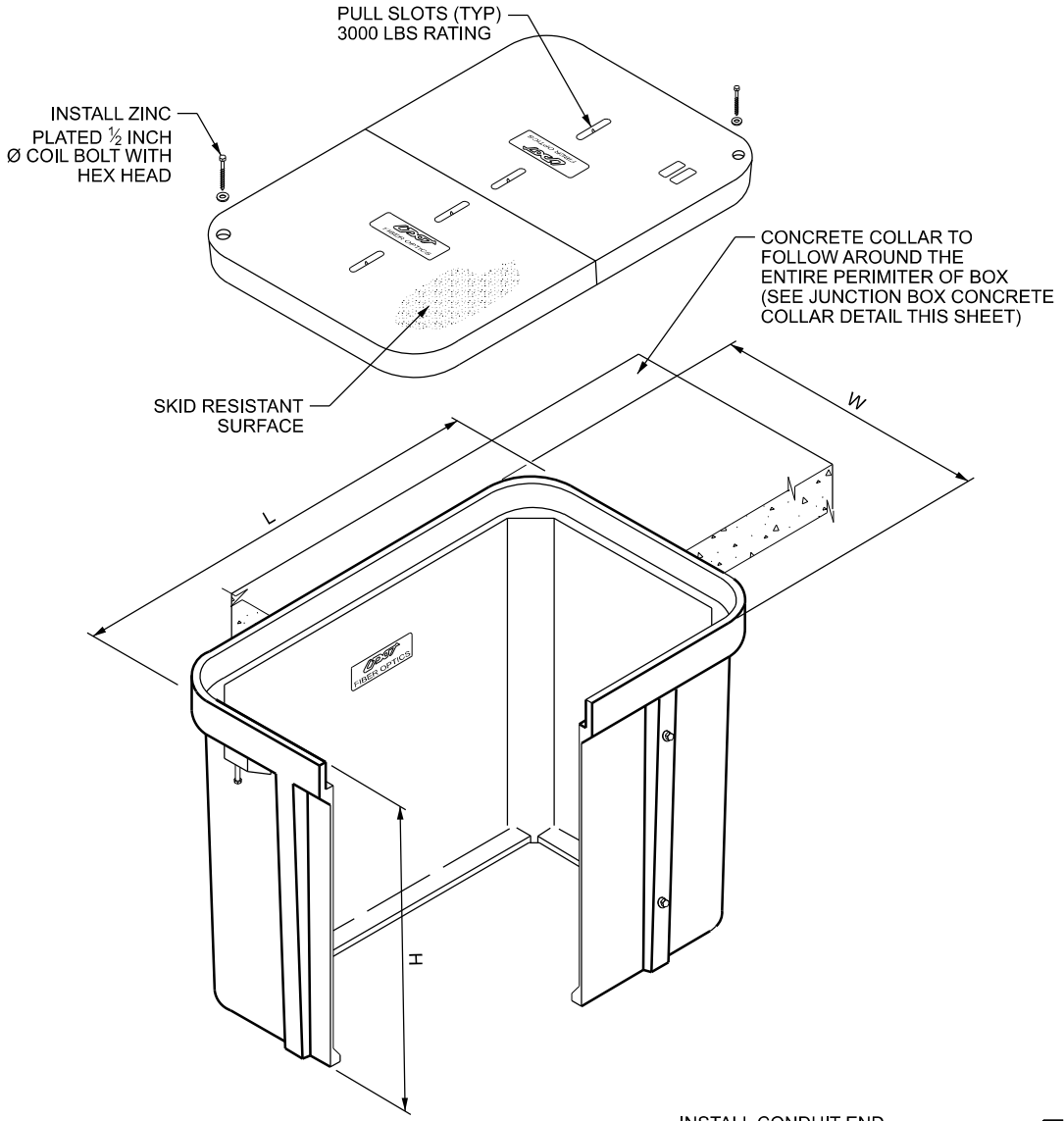
B. Coordinate with local utilities for utility repair.

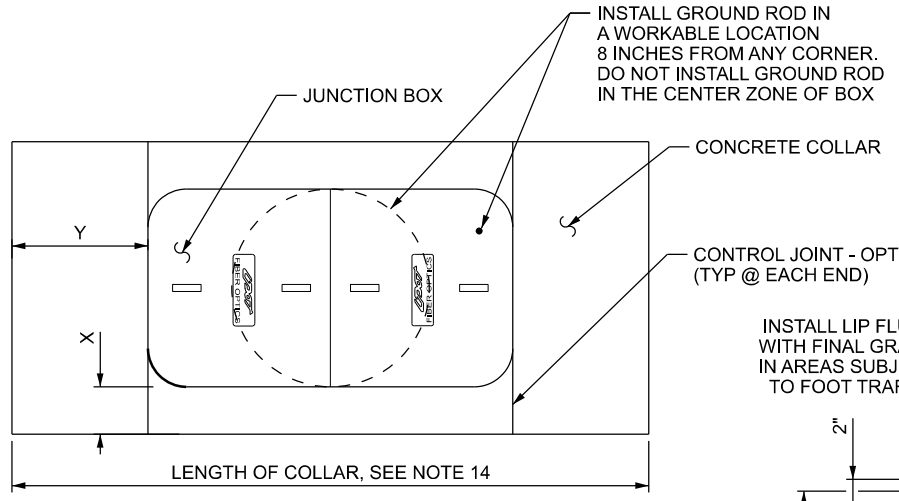
C. Notify the Engineer of all necessary repairs.

D. Replace all damaged facilities in kind.

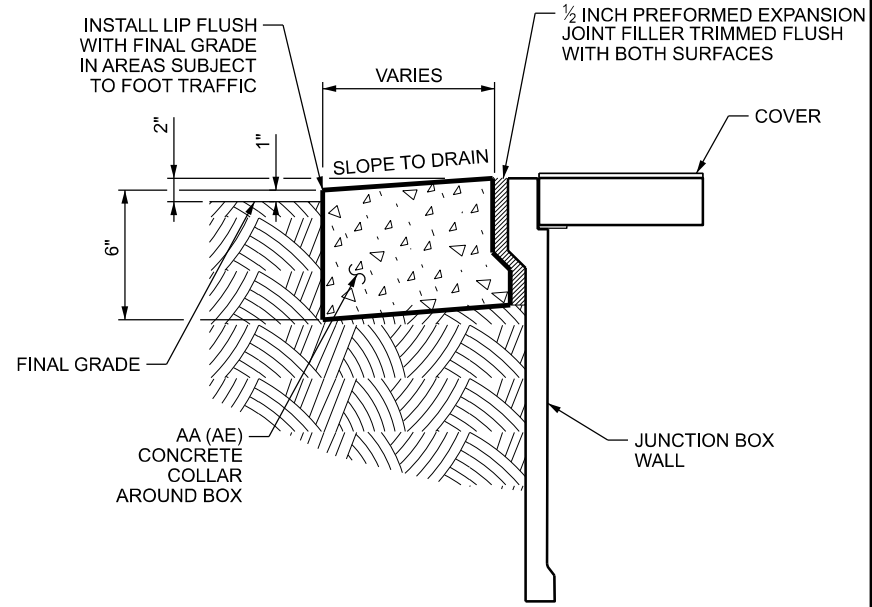
E. Buried microduct bundle coupling and repair:
   1. Expose microducts by removing no more than 12 inches of oversheath beyond area to be coupled or repaired.
      a. Trim microducts to length as necessary to eliminate all bends and deflection.
   2. Use approved couplers.
   3. Splice the locate wires together using an approved waterproof connector.
      a. Verify that the locate wire conductors are not exposed.
   4. Protect exposed microducts, couplers and locate wire using split duct.
      a. Seal split duct joints and split duct ends around microduct bundle oversheath using approved waterproof sealing tape or other approved methods prior to backfill.
      b. Do not use heat-shrink or cold-shrink protection methods.

END OF SECTION





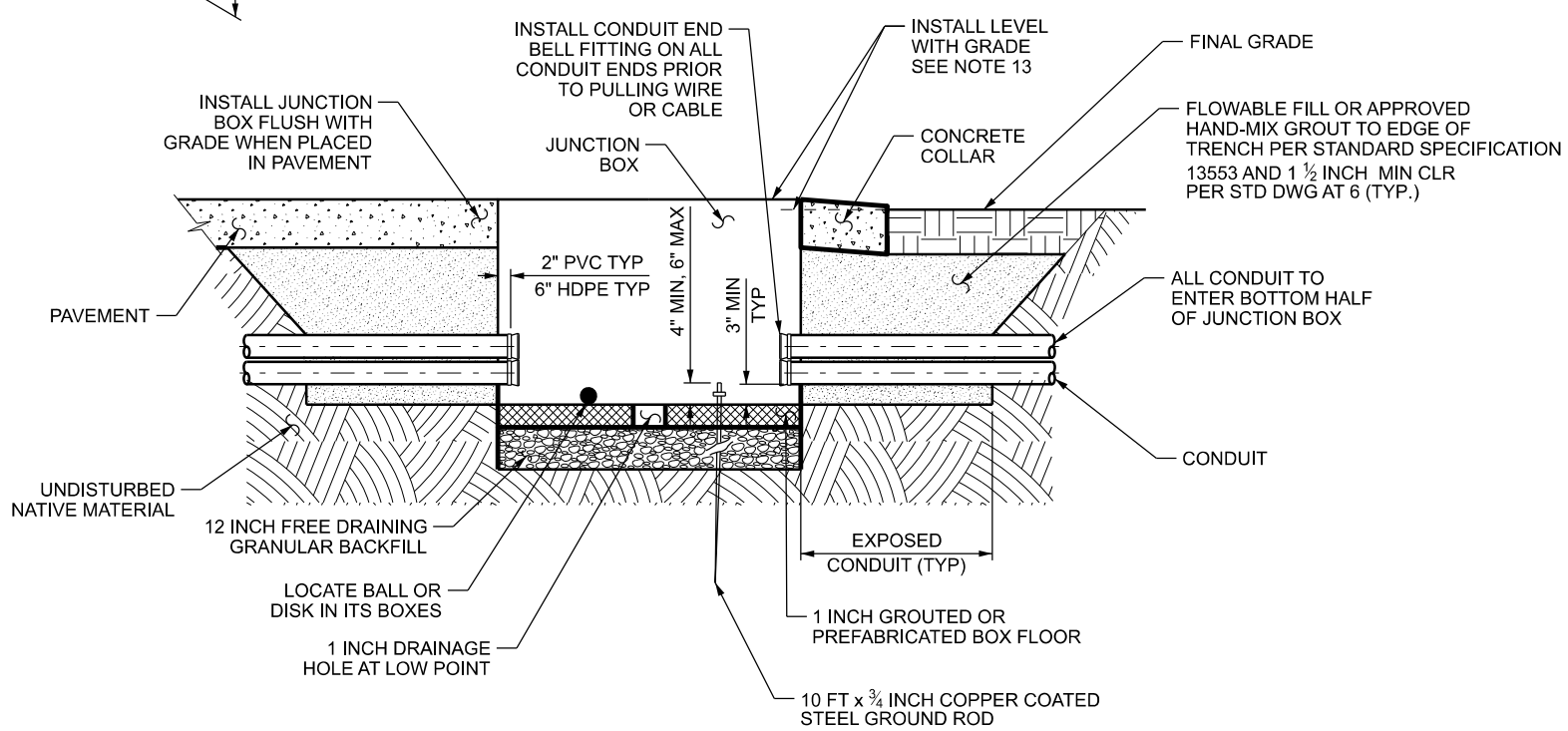
PLAN VIEW - JUNCTION BOX AND CONCRETE COLLAR



JUNCTION BOX CONCRETE COLLAR DETAIL

TABLE OF DIMENSIONS

BOX TYPE	"W" inch	"L" inch	"H" inch	"X" inch	"Y" inch	LOADING
I-PC	13	24	24	10	10	TIER 22
II-PC	24	36	36	10	24	TIER 22
III-PC	30	48	36	10	24	TIER 22



JUNCTION BOX CONDUIT PENETRATION DETAIL

NOTES:

1. BOX LOGO OR NAME PLATE, REFER TO STANDARD SPECIFICATION 13554.
2. DO NOT PLACE JUNCTION BOXES IN THE TRAVELED WAY OR ON FREEWAY SHOULDERS.
3. CONCRETE COLLAR WIDTH VARIES WHEN ADJACENT TO ITS CABINETS. REFER TO AT AND SL SERIES STD DWGS.
4. PROVIDE CONCRETE COLLARS EXCEPT WITHIN CONCRETE PAVED AREAS.
5. INSTALL CONDUIT PLUG PER STANDARD SPECIFICATION 13554.
6. ALIGN ITS CONDUIT BY COLOR ON EACH SIDE OF THE JUNCTION BOX.
7. PROVIDE TYPE III-PC JUNCTION BOXES WITH A SPLIT LID.
8. CONFORM TO ANSI/SCTE-77 "SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY" TIER 22 LOADING FOR ALL JUNCTION BOXES. TIER 22 ID PLATE TO BE VISIBLE ON BOX.
9. EXTEND GROUND ROD A MINIMUM OF 4 INCHES AND A MAXIMUM OF 6 INCHES ABOVE BOTTOM OF JUNCTION BOX.
10. USE INTER SYSTEM GROUNDING BRIDGE CLAMP FOR BONDING TO GROUND ROD. ATTACH NOT MORE THAN 4 WIRES PER CLAMP.
11. DO NOT CUT GROUND RODS.
12. PROVIDE CLEAR SPACE OF AT LEAST 36 INCH FOR PERSONNEL TO PULL LID OFF BOX WITHOUT CONFLICT.
13. PLACE JUNCTION BOXES AND CONCRETE COLLARS LEVEL WITH GRADE ON SLOPES 6:1 OR FLATTER. REFER TO PLANS FOR DETAILS OF JUNCTION BOX PLACEMENTS ON SLOPES STEEPER THAN 6:1. SLOPE CONCRETE COLLAR TO DRAIN AS SHOWN.
14. INSTALL ENTIRE PAD UNIFORMLY TO LONGEST LENGTH WHEN SEVERAL JUNCTION BOXES ARE BEING PLACED ADJACENT TO ONE ANOTHER.

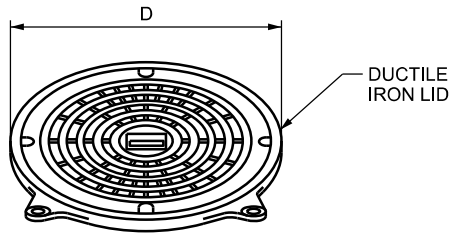
NO.	DATE	APPR.	REMARKS
1	12/07/22	MAA	CHANGE ATMS TO ITS
	4/30/20	MAA	ADDED "OPTIONAL" TO CONCRETE COLLAR DETAIL

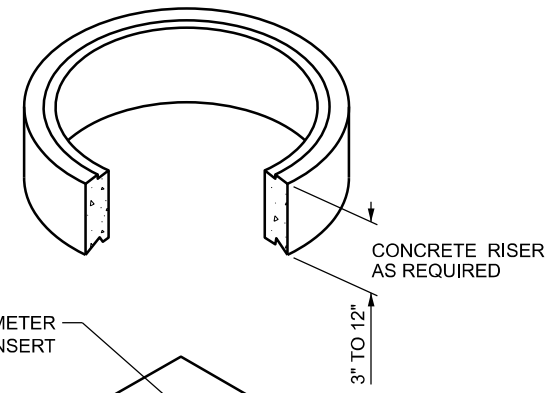
UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH
STANDARD DRAWING EDITION

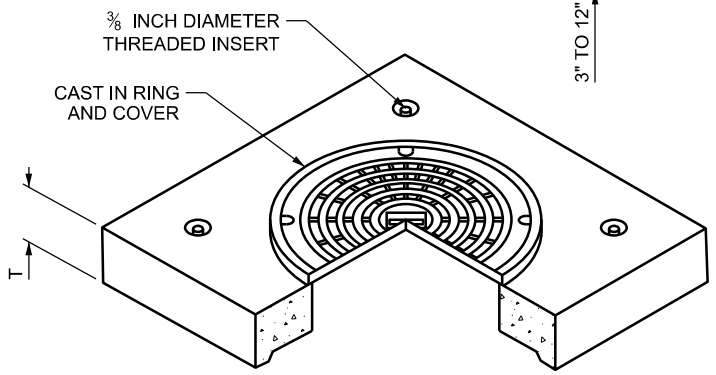
2024 Standard Drawing

POLYMER CONCRETE JUNCTION BOX DETAILS
STANDARD DRAWING TITLE

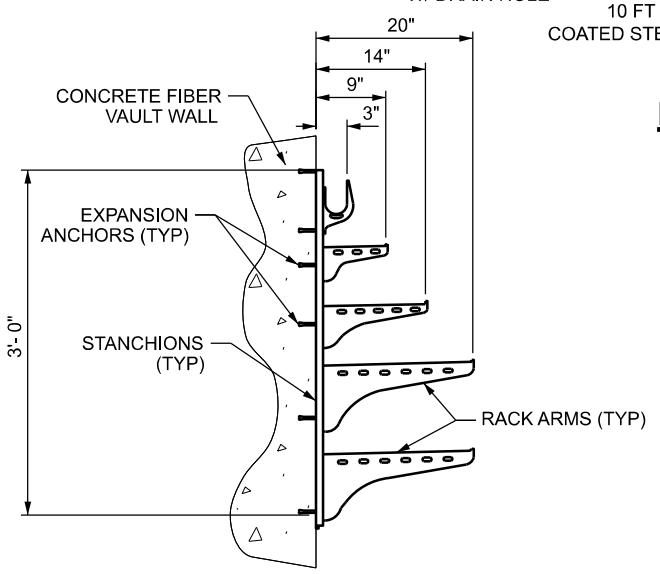
STD. DWG. NO.
AT 7A



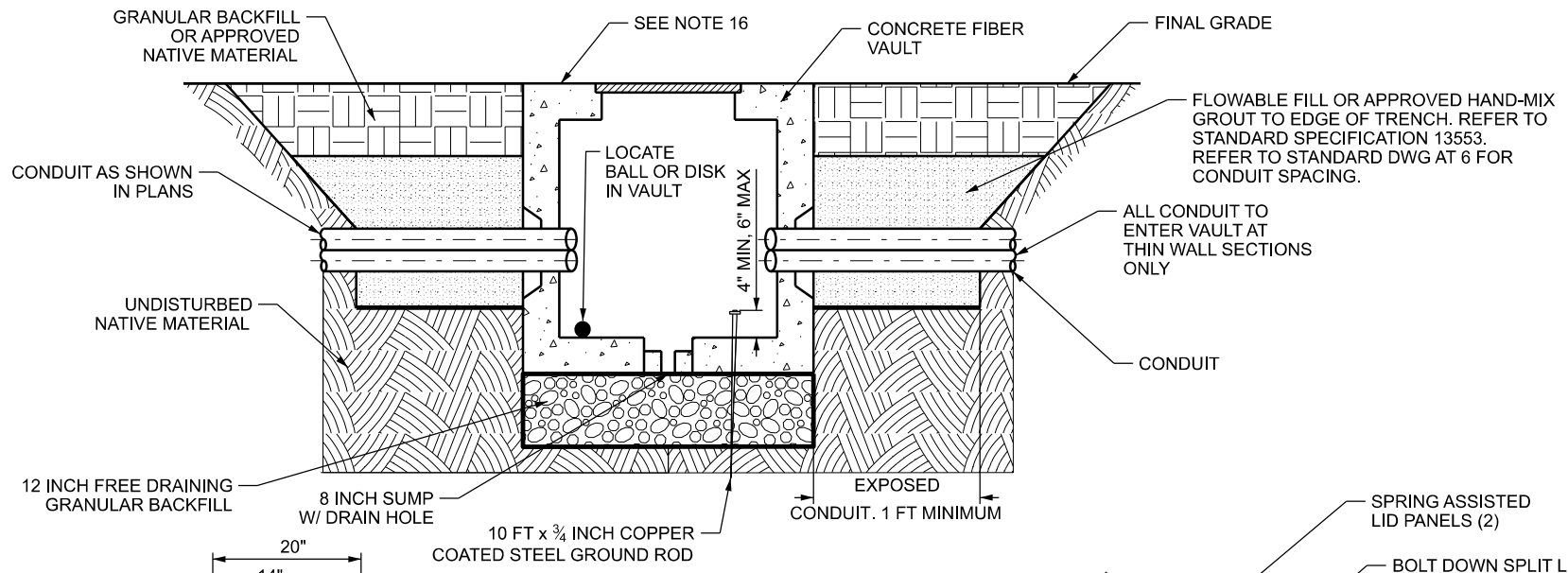




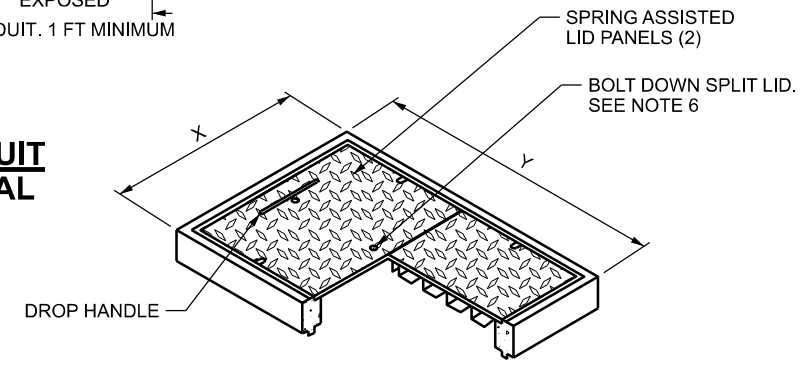
CONCRETE FIBER VAULT WITH MANHOLE LID



TYPICAL CABLE RACK



FIBER VAULT CONDUIT PENETRATION DETAL



METAL LID FOR TYPE IV-CV FIBER VAULT

VAULT DIMENSIONS

VAULT TYPE	"L" INCH	"W" INCH	"H" INCH	"T" INCH	LID	"X" INCH	"Y" INCH	"D" INCH
IV-CV	48	48	48	6 MIN	HINGED OR MANHOLE	24	36	36
V-CV	48	72	72	6 MIN	MANHOLE ONLY	N/A	N/A	36

NOTES:

1. SUPPLY TYPE IV FIBER VAULT WITH A TAMPERPROOF HINGED METAL LID FOR UNPAVED AREAS, OR A TAMPERPROOF HEAVY DUTY MANHOLE-STYLE LID IN PAVED AREAS. SUPPLY FIBER VAULTS, LIDS, AND COVERS RATED FOR AASHTO LRFD HL-93 LOADING.
2. SUPPLY TYPE V-CV FIBER VAULT WITH A MANHOLE-STYLE LID ONLY.
3. SUPPLY MANHOLE LIDS WITH A HOLE OR SLOT FOR REMOVAL WITH A LEVER OR HOOK. SUPPLY HINGED METAL LIDS WITH DROP HANDLES.
4. SUPPLY VAULTS WITH A PERMANENT INTERNAL LADDER.
5. PROVIDE FIBER VAULT LIDS MARKED, "UDOT FIBER OPTIC" USING MIN 3 INCH HIGH LETTERING WITH ⅛ INCH THICKNESS. FORM LETTERS BY ENGRAVING, CASTING, STAMPING, OR WITH A PRECISE WELD BEAD.
6. PROVIDE HINGED METAL LID WITH A MINIMUM OF 3⁄32 INCH HIGH DIAMOND PATTERN OR SIMILAR SURFACE.
7. PROVIDE FIBER VAULTS WITH A HEAVY-DUTY NON-METALLIC CABLE STORAGE RACK SYSTEM. PROVIDE RACK ARMS AND STANCHIONS CAPABLE OF SUPPORTING A MINIMUM OF 250 LB FOR TYPE IV-CV FIBER VAULT RACKS, INCLUDE A MINIMUM OF 36 INCH RACK STANCHIONS AND 4 RACK ARMS. FOR TYPE V-CV FIBER VAULTS, INCLUDE A MINIMUM OF 45 INCH RACK STANCHIONS AND 5 RACK ARMS.
8. CONDUITS PENETRATE FIBER VAULT AT THIN WALL SECTIONS ONLY. CORE DRILL HOLE IN THIN WALL SECTION TO CONDUIT SIZE PLUS ¼ INCH. DO NOT "KNOCK OUT" THE THIN WALL SECTION.
9. COMPLY WITH OSHA REQUIREMENTS FOR ENCLOSED WORK SPACES.
10. BOND AND GROUND ALL EXPOSED METALLIC COMPONENTS OF THE FIBER VAULT PER NEC 250 IF ARMORED FIBER OPTIC CABLE IS USED.
11. INSTALL CONDUIT PLUGS ACCORDING TO STANDARD SPECIFICATION 13553.
12. ALIGN ATMS CONDUIT BY COLOR ON EACH SIDE OF FIBER VAULT.
13. EXTEND GROUND ROD A MINIMUM OF 4 INCHES AND A MAXIMUM OF 6 INCHES ABOVE BOTTOM OF FIBER VAULT.
14. USE GROUND ROD BRIDGE CLAMP FOR BONDING TO GROUND ROD. ATTACH NOT MORE THAN 4 WIRES PER CLAMP.
15. DO NOT CUT GROUND RODS.
16. INSTALL VAULT PLUMB AND LEVEL. GRADE BACKFILL FLUSH WITH VAULT.

NO.	DATE	APPR.	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH
STANDARD DRAWING EDITION

2024 Standard Drawing

PRECAST CONCRETE
FIBER OPTIC AND
UTILITY VAULT DETAILS
STANDARD DRAWING TITLE

STD. DWG. NO.
AT 7B

Dig Once Best Practices Overview

SECTION 1: GOALS OF THE LEGISLATION

Economic Viability Exists in a Digital Connection

No one can predict the demand for data in the next 10 to 20 years, but we know our lives are going to be even more connected. By consolidating the installation of broadband infrastructure at the time of road construction, communities are positioned to participate in the digital economy in the most cost-effective way for the taxpayers.

Saving Tax-Payers Dollars

The U.S. DOT's Intelligent Transportation Systems Joint Program Office estimates the average cost of deploying fiber-optic cable is about $27,000 per mile. According to the Federal Highway Administration, the Dig Once legislation has the potential to eliminate up to 90 percent of the cost of deployment.

Dig Once U.S. Federal Legislation

In an effort to make high speed broadband more affordable and accessible, the U.S. Federal Government passed "Dig Once" legislation. After a decade of various versions of the concept, the bill received overwhelming bi-partisan support with more than 30 co-sponsors.

Eliminating Duplicate Expenses

Essentially, the legislation provides for the notification of federally funded road construction projects where conduit or fiber could be included at the same time. Digging one time for two or more projects and enabling future upgrades without additional expense brings tremendous added value and efficient use of resources.

Digging Deeper into Saving Taxpayer's Money

The law allows for some flexibility: installation of fiber, conduit, or both fiber and conduit. If fiber is direct buried alone, it will still be a leap forward in streamlining and investing in broadband infrastructure. However, when an upgrade is needed, it eventually means more digging to replace the fiber cable.

The Federal Communications Commission, or FCC, recommended State policies should require contractors to install spare fiber and empty conduit to accommodate "reasonably anticipated" future demand. The use of a conduit network system provides the flexibility of upgrading (adding additional fiber) without the cost of digging. Fiber can be placed by air-jetting into the conduit quickly and easily without the expense and disruption of construction. Burying empty conduits in the ground at the time of road construction allows the potential for expansion when it is necessary and can be immediately revenue-generating by leasing or renting.

SECTION 2: BEST PRACTICES OF DIG ONCE POLICIES

The law allows for some flexibility: installation of fiber, conduit, or both fiber and conduit. The Federal Communications Commission, or FCC, recommended State policies should require contractors to install spare fiber and empty conduit to accommodate "reasonably anticipated" future demand.

Best Practice #1: Education

- The extra effort spent on educating the stakeholders will result in on-going cooperation
- Explain the cost-savings benefits
- Demonstrate the high-speed broadband connectivity economic impact
- Clarify the definition of "reasonably anticipated" future demand in conjunction with the installation of fiber, conduit, or both fiber and conduit
- Describe the ability to upgrade for the future (if conduit is used)

Best Practice #2: Ordinances (see pages 3-9: https://broadbandnow.com/report/dig-once-digital-divide/)

- Use existing laws and practices and integrate ideas into statutes and processes
- Explain expectations for compliance and how to cope with expectations
- Underscore who is responsible in the text of ordinance
- Encourage or require companies to use your conduit
- Maintain public ownership of conduit as much as possible

Best Practice #3: Coordination

- Establish relationships and expectations by keeping track of private projects and streamlining bureaucratic systems
- Create effective coordination committees
- Provide clear explanation of costs
- Line up departments' budgets for potential large projects

Best Practice #4: Installation of Conduit Network Systems (see pages 10-13)

- Create a master plan
- Publish clear and consistent guidelines (with engineering standards)
- Choose the type of conduit that makes sense for your community — plan for the future
- Do not underestimate the added value of MicroTechnology and MicroTrenching *(Note: MicroTrenching is different than NanoTrenching, which puts the conduit only a few inches below the surface and is unproven. MicroTrenching has been around 10+ years and is a proven installation method with the correct reinstatement material.)*
- Document and verify your conduit

NOTE: Incremental funding required to pass 90 percent of U.S. households with high-speed fiber broadband by 2025 is estimated at a cost of $70 billion.* Dig Once has the potential to reduce that expense significantly. *(*Source: Cartesian, FCC Form 477, US Census, American Community Survey, Company Presentations)*

SECTION 3: STATE LEGISLATION EXAMPLES

(SOURCE: https://broadbandnow.com/report/dig-once-digital-divide/)

NORTH CAROLINA

Law(s): Executive Order 91 forming the Task Force on Connecting North Carolina
Date enacted: 2019
Description: The Governor of North Carolina formed the Task Force on Connecting North Carolina in March 2019, aimed at increasing Internet access to North Carolina residents and aligning state agencies policies in order to remove barriers to broadband deployment. It's comprised of officials representing an array of state departments, including the department of transportation (DOT) and the department of information technology (DIT). The governor asked representatives from the DOT and DIT to jointly develop and implement a statewide "Dig Once" policy promoting the installation of broadband conduit or cables during road construction projects by July 1st, 2019.

UTAH

Law(s): R907-64. Longitudinal and Wireless Access to Interstate System Rights-of-Way for Installation of Telecommunication Facilities; Section 72-7-108
Date enacted: 1999
Description: Utah's state government began implementing Dig Once policies ahead of the 2002 Salt Lake City Olympics. The state's DOT has since expanded the policy, requiring the installation of oversized conduit for certain road construction projects, while interested telecom parties can then extend that infrastructure to neighboring communities. The state's DOT owns the conduit and leases it to telecom companies that want to use it. The state's Telecommunications Advisory Council reviews and approves valuations and trades between the state's DOT and telecom companies for access to conduit, and maintains a map of fiber locations.

ARIZONA

Law(s): Arizona REV. STAT. ANN. § 28-7381
Date enacted: 2012
Description: Arizona's Dig Once policies are targeted specifically at expanding broadband access to rural communities. The policy states that during road construction projects along rural highways, the DOT can coordinate with telecom companies to install conduit and it enables the agency to lease the conduit to telecom providers at a cost-based rate.

MINNESOTA

Law(s): 116J.39-116J.40: Coordination of Broadband Infrastructure Development
Date enacted: 2013
Description: Minnesota's state laws encourage the state's Office of Broadband Development to coordinate with the state's DOT for "Dig Once" measures in planning, relocation, installation, or improving broadband conduit within a right-of-way. It enables the Office of Broadband Development to evaluate procedures and criteria for contracts or lease agreements with telecom companies, as well as pricing requirements. It also allows for co-location of fiber and conduit with other utilities in the same trench.

NEVADA

Law(s): SB 53, creating the Nevada Telecommunications Advisory Council
Date enacted: 2017
Description: Nevada state legislature formed the Telecommunications Advisory Council within the state's DOT in 2017, outlining parameters and regulations for the DOT in coordinating with telecom companies for access to rights-of-way for installing telecommunications equipment. The law charges the council with seeking input from telecommunications providers and the public relating to broadband access, providing recommendations to the state DOT on offering access to rights-of-way to telecommunications providers, as well as approving or denying proposed fiber trade agreements between the DOT and a telecom provider. The DOT is also authorized to enter into agreements with telecom companies and charge fees to access to public rights-of-way or receive in-kind compensation.

MARYLAND

Law(s): SB 717 –Connecting Rural Maryland Act of 2017, creating the Task Force on Rural Internet, Broadband, Wireless, and Cellular Service; HB 961-Rural Broadband Communication Services
Date enacted: 2017-present
Description: Maryland's DOT coordinates with telecom providers and local utilities for installing conduit. The Connecting Rural Maryland Act created the Task Force on Rural Internet, Broadband, Wireless and Cellular Service, which was charged with facilitating cooperation between telecom providers to reduce redundancy, save money, and ensure that the all fiber assets are being used efficiently. The task force focused on facilitating cooperation between electric cooperatives and telecom companies. The task force's last report recommended the state include fiber optic cable as part of the state's definition of telecommunications equipment, and that it allow utilities to lease excess fiber and/or pole attachment rights for telecommunications, including broadband, without obtaining a separate easement, in order to promote broadband access in rural parts of the state. It has requested that the state's legislature draft authority for electric cooperatives to coordinate with telecom providers in laying fiber. That bill was expected to be introduced in 2019. HB 961, meanwhile, specifies that nonprofit telecommunications services providers in rural and underserved areas of the State must be allowed to use the right-of-way or easement of specified State agencies for the installation of broadband communication infrastructure without being charged to do so.

GEORGIA

Law(s): SB 402 — Achieving Connectivity Everywhere (ACE) Act
Date enacted: 2018
Description: Georgia state legislature passed the ACE bill in 2018, which enables the state DOT to develop and implement a long-term policy allowing public rights-of-way to be used for the deployment of broadband services and other "emerging communication technologies" either by the state or private providers. It also requires local governments' comprehensive plans to include elements to facilitate the deployment of broadband services, and it amends the OneGeorgia Authority Act to include broadband services. Finally, the bill authorizes the Georgia Technology Authority to establish policies and programs necessary to coordinate

statewide efforts to promote broadband deployments between state agencies, local governments and industry representatives.

WEST VIRGINIA

Law(s): HB 4447, creating new codes §17 – 2 E- 1-E-9
Date enacted: 2018
Description: West Virginia's state government has developed a uniform system for conduit installation for telecom companies that are applying to install telecom infrastructure. Telecom companies must enter into an agreement with the state's Division of Highways for installing conduit in public rights-of-way; companies must also notify the West Virginia Broadband Enhancement Council and all other carriers on record within the state of their installation permit. Other telecom companies that are interested in installing their own fiber have 30 days to notify the applicant of interest in sharing the trench. The telecom company is also required to run an advertisement in the relevant media for two weeks advertising the project to allow other carriers the opportunity to respond. The law also allows the Division of Highways to charge fees for access to public rights-of-way, or accept in-kind compensation from sources such as conduit, dark fiber, access points, other telecom equipment or services, or even bandwidth.

MAINE

Law(s): Chapter 344, Sec. 1. 35-A MRSA §2503, sub-§2
Date enacted: 2018
Description: Maine's law requires any public entity involved in a construction project to install broadband conduit and authorizes that entity to lease the conduit to telecom companies for installing broadband and/or wireless facilities for the purpose of providing service.
The law states that telecom companies proposing broadband deployments must notify the ConnectME Authority with the location and description of the proposed facility and that the Authority must then disseminate that information to all other telecom companies or other entities that may be interested in installing broadband at the same time. The Authority is also tasked with maintaining a map of broadband conduit installations through the state.

ILLINOIS

Law(s): 605 ILCS 5/9-131) Sec. 9-131.
Date enacted: 2009
Description: Illinois state law requires the state DOT and the Department of Central Management Services (DCMS) to collaborate in installing fiber network conduit, where it does not already exist, in every new state-funded construction project that opens trenches along state-owned roadways. Either department is authorized to allow a third-party company to manage the leasing of the conduit to telecom companies, as long as the state can receive market-based pricing for the lease. The state's DOT also coordinates with the Illinois Broadband Deployment Council to compile Dig Once best practices and draft ordinances for county and city agencies within the state.

CALIFORNIA

Law(s): Section 14051 of the Government Code
Date enacted: 2016
Description: California requires the state DOT to notify telecom companies of state-led highway construction projects through its website to enable companies to collaborate with the state on installing conduit in public rights-of-way during each project.

SECTION 4: CITY AND COUNTY LEGISLATIONS EXAMPLES

(SOURCE: https://broadbandnow.com/report/dig-once-digital-divide/)

LOMA LINDA, CA

Law: Ord. 629 §1
Date enacted: 2004
Description: The city of Loma Linda requires all new construction to connect to the city's existing fiber network through ordinances laid out in their Loma Linda Connected Community Program. Residential and commercial builders in Loma Linda are required to include broadband-capable internal wiring and fiber-optic interfaces in new structures. Loma Linda was one of the first communities in the US to adopt a comprehensive future-facing dig once construction policy, and one of the only ones to extend the ordinance to building wiring specifications.

BRENTWOOD, CA

Law: Ordinance No. 609
Date enacted: 1999
Description: Brentwood began implementing Dig Once policies 20 years ago. The city requires developers to design and install two advanced technology system conduits dedicated to the city within public rights-of-way during new construction and to each lot line within the development. It goes on to require developers to install a fiber optic system in one of the two conduits designed to serve the development by either the city itself or a licensed franchisee. The second conduit must remain empty and is reserved for future use by other franchisees. Over the last 20 years, the city now has 150 miles of conduit passing over 8,000 homes. ISP Sonic.net has relied heavily on the conduit to provide broadband service to residents.

SANDY, OR

Law: Development code 17.84.60
Description: The city of Sandy requires private developers to install conduit when disturbing existing roads or building new ones and offers maps of existing installations so that developers can be strategic in how they install conduit. The city has added broadband fiber to the list of municipal infrastructures (such as water, sewer, power lines and mailboxes) that all new developments must include.

BOSTON, MA

Date enacted: 1998; expansion in 1994
Description: Boston is possibly the very first city to implement a Dig Once policy, back in 1988. Initially, the city required all construction projects that involved excavators in a public right-of-way to install conduit and the city then leased that conduit to telecom companies through a one-time fee plus a $5 per foot annual charge. However, the city found its offering wasn't attractive enough to telecom companies, who had begun building their own conduit along parallel streets. The city has since revised its laws to require telecom companies to lease space from the installed conduit before being allowed to install their own conduit, thereby encouraging companies to make use of what's already been installed. In 1994, Boston implemented a policy that required all telecom companies to install conduits in the same trench at the same time, on a shared-cost basis. This policy requires a lead company to

coordinate with other telecom entities in drafting engineering plans and estimating costs for the trenching and conduit installation.

BERKELEY, CA

Law: Ord. 7083-NS § 4 (part) Excavations for video and telecommunications systems
Date enacted: 2009
Description: Berkeley has implemented a suite of policies and procedures outlining best practices for telecom companies in order to minimize the inconveniences of installation, maintenance, and removal of telecom facilities in public rights-of-way. The city requires existing facilities be moved underground alongside new facilities when feasible, and that telecom companies coordinate construction projects with utilities installing infrastructure in public rights-of-way. Telecom companies must also alert the city to any excess or surplus conduit to be installed, and that new facilities be installed within existing facilities where there is sufficient excess capacity.

BELLEVUE, WA

Description: The city of Bellevue doesn't have a formal Dig Once policy in place, but the city has set Dig Once conditions within some of its development projects in the past. The city asks excavator projects include installing conduit along roads when feasible, as well as during street lighting and traffic signal upgrades. It also requires transportation projects that interrupt public sidewalks to include installed conduit.

GONZALES, CA

Law: "Dig Once" Policy for Public Works Projects in Gonzales
Date enacted: 2016
Description: Gonzales city government has implemented a Dig Once policy for public works projects that requires the city to install conduit during projects such as construction and maintenance of utility infrastructure or public roadways, or during excavations for installing communications, in public rights-of-way. The conduit is owned by the city.

ARLINGTON COUNTY, VA

Description: Arlington County does not have a specific Dig Once policy, but the county has reached "Dig Once" agreements with utility providers in the past. The county entered into one such agreement with electric utility Dominion Virginia Power. The utility needed to install underground conduit along a congested urban public right-of-way. The county required the utility to install fiber in parallel conduit for the county's use. The county is in the midst of installing a fiber network and is building extra capacity for use at a later date.

SAN FRANCISCO, CA

Law: Ordinance 220-14
Date enacted: 2014
Description: San Francisco laws requires any government-led construction project involving a public right-of-way to include improvements to communications infrastructure when feasible. It also requires a telecom company applying to install communications infrastructure to notify the city's Department of Technology so the department can participate in installing conduit at

the same time. The law encourages the department to participate to create a more efficient delivery of broadband services to the public and for the city's needs.

MONTEREY, CA

Law: MBEP/CCBC Shadow Conduit Specifications version 1.0
Date enacted: 2016
Description: The city of Monterey and the Central Coast Broadband Consortium (CCBC) have developed a set of conduit specifications and guidelines for reducing redundancy in installation. Its recommendations range from the conduit size and number of conduits to install, whether future conduit installation would be problematic or impossible, and whether any partners or customers will make immediate use of it. However, the specifications leave out guidance on when conduit installation is required and who should be required to install it.

SANTA CRUZ, CA

Law: Telecommunications Improvement Ordinance
Date enacted: 2014
Description: The city of Santa Cruz, also part of the Central Coast Broadband Consortium (CCBC), adopted the Santa Cruz county's ordinance in 2014, which in turn, was based on the city of San Francisco's Dig One policy. It requires that any entity proposing construction projects in public rights-of-way for utility improvements also install conduit or other telecommunications equipment when practical and feasible. City staff will work with contractors to identify the most cost-effective approach to installing conduit to meet the city requirements and will notify and coordinate with other telecom companies to join the project.

SAN BENITO COUNTY, CA

Law: Multi-use streets policy
Date enacted: 2015
Description: San Benito County, part of the CCBC, implemented a Dig Once practice as part of its multi-use streets policy. It requires county roadway construction projects to include installation of underground utility conduit. The county, which is part of a municipal broadband network, can then use the conduit to expand the network. The county may also utilize the CCBC's shadow conduit policy, which recommends trenching digging projects include a 60-day window so other telecom or utility providers who may be interested in installing conduit at the same time may be notified. The county encourages local jurisdictions to adopt similar policies.

CHICAGO, IL

Description: The City of Chicago has created a specific office that handles coordinating construction projects across agencies and companies to minimize disruptions to the public. The Project Coordination Office, within the city's DOT, was formed in 2012 at the direction of Mayor Rahm Emanuel to coordinate projects within public rights-of-way between different service providers and utilities. In 2013, the mayor expanded the scope of the office to include telecommunications. The office has helped the city save an estimated $150 million in construction costs since 2012.

CELINA, TX

Law: Subdivision Ordinance; Division 4. Design Standards; Section 10.03.126: Improvements; Subsection 10.03.126(i)
Date enacted: 2017
Description: The city of Celina has adopted a conduit ordinance that requires any city-led or developer-led construction project that includes underground excavation to install conduit and fiber-optic cable at the same time to accommodate future telecommunications uses. Private developers must pay for the conduit installation, which then becomes the property of the city. The city also requires that telecom companies looking to install fiber make use of the city's fiber assets when available first and pay fees to the city for access to the infrastructure.

MOUNT VERNON, WA

Law: Municipal code 12.20.015 Construction standards for the regulation of use of public rights-of-way and public property.
Date enacted: 1999
Description: Mount Vernon requires private developers to install conduit when engaging in construction projects that either disturb existing roads or create new roads. The city maintains maps of conduit installations so developers can strategically place the conduit.

EL DORADO COUNTY, CA

Law: Broadband Infrastructure Installation Policy
Date enacted: 2018
Description: El Dorado County adopted a conduit installation requirement for capital improvement projects. The policy requires construction projects from the county's Department of Transportation, the Facilities Division and the Parks, Trails and Rivers Division to include installing conduit when digging trenches or excavating underground as part of the construction.

HUMBOLDT COUNTY, CA

Law: General Plan
Date enacted: 2017
Description: Humboldt county's 2017 updated general plan includes provisions to expand broadband access that include implementing Dig Once policies. The plan recommends that new residential and commercial development projects include requiring developers to install conduit within joint utility trenches for future telecommunications use. It also recommends flexibility in conduit placement requirements in order to allow for retrofitting of communications systems.

POULSBO, WA

Law: 12.02.010 Construction and development standards
Date enacted: 2003
Description: Poulsbo requires any new public street construction, by either the city or a private developer, to include the installation of conduit that can accommodate two telecom companies' fiber infrastructures. The law requires that the conduit be dedicated to the city upon completion and any telecom company looking to deploy infrastructure must first lease conduit space from the city if available.

SECTION 5: CONDUIT NETWORK SYSTEMS

A well-engineered plan will ensure the application can achieve benefits well in excess of the costs of the plan and the conduit network system deployment. Generally, the actual cost of the conduit network systems is only approximately three percent of the overall project costs. Conduit is widely used in most industries, accommodating simpler initial installations and providing a Dig Once permanent pathway.

It is common for cables to be buried in ducts to provide further protection, allowing for simple repair, and potentially providing upgrade paths. In some circumstances, ducts are only used for sections of deployment (e.g. under roads or rivers) where excavation would pose a difficulty, but increasingly ducts are being used for the entire route. This is possible because conduits can provide several benefits without a significant project cost impact.

Brief History of Conduit Network Systems

In the early to mid-1980s, tremendous growth occurred in the deployment of fiber optic cables, linking major metropolitan areas. Fiber optic cables were quickly becoming the technology of choice for streaming huge amounts of voice, video, and data. These cables were installed in very long lengths, up to 30,000 feet, with the goal of using as few splice points as possible to minimize signal attenuation. Because of the more fragile qualities of these long, thin strings of glass, individually no thicker than a strand of human hair, they needed more protection and different handling procedures than traditional jacketed metallic cables. There was an immediate need for a conduit system that offers improved installation efficiencies and cable protection.

Existing conduit network systems typically were 3.5 inches to 6 inches in diameter to accommodate the very large diameter of copper cables that filled the duct banks. As copper cables were being replaced with fiber optic cables, which are much smaller in diameter, smaller high-density polyethylene (HDPE) conduits ranging from 1 inch to 1.25 inches were pulled into the vacated conduit creating multiple pathways to be used for initial and future fiber optic cable placement and for redundancies if a cable got damaged.

This new method of deployment using MicroDucts in existing pathways was called “innerducts” and is still used today. Additionally, now conduit suppliers offer bundled MicroDucts under one oversheath for ease of placement and to maximize fiber count in limited underground and aerial spaces. Multiple variations of standard HDPE conduit and bundled HDPE MicroDucts are available. The installation methods and tools are the same for both.

In addition to traditional trenching, over the years newer installation methods also evolved to minimize the above and below ground surface damage, restoration requirements, and disruption to traffic: plowing, horizontal directional drilling (HDD), and MicroTrenching.

In 1999, new technology was introduced to help solve the issue of overcrowded right-of-ways. Using the same installation methods and tools as traditional HDPE standard conduit, bundled MicroDucts under one oversheath maximized the fiber count in the same space. As technology advances, fiber optic cables are higher capacity in a smaller size, called MicroCables, and conduits are following in size, called MicroDucts. Multiple configurations allow for easy connection to existing networks and efficient transition to current technology.

All conduit is not created equal, and the type of conduit can determine which type of fiber cable you need. Conduit has an inner diameter (ID) and an outer diameter (OD); the standard is to refer to the outer diameter when describing the conduit. A common engineering practice is to not fill each conduit subduct more than about 65 percent full of fiber cables. This space is necessary to air-jet, or pull, the fiber through the conduit without damaging the fiber.

As fiber technology continues to evolve, the fiber cable diameter will continue to get smaller. Microfiber cables can fit many strands of fiber in small diameter conduit. MicroTechnology continues to improve. For decades, conduit has been the preferred manner of installing fiber cable underground and now even in aerial applications.

Installation Advantages

It is easier to install, as it can be put in section-by-section between access points, with the fiber cable later air-assisted and pushed or pulled in as a continuous run.

It is also easier to handle unexpected changes in the route, such as having to go around an obstacle, as compared to directly placing fiber cable.

The continuous run of fiber cable can help reduce the cost of splice points and improve the fiber loss budget and performance for the total system.

The conduit itself can be locatable, which allows the fiber cable to be constructed with only non-conductive dielectric materials which can allow easier access to the fibers.

Protection of the Fiber

The conduit provides mechanical protection of the fiber cable, both during installation of the fiber cable and over the entire life of the fiber cable.

Typically, direct buried fiber cables require additional design enhancements to withstand environmental conditions, whereas the conduit can provide that environmental, tensile and crush protection itself. This enables the fiber density to increase significantly for a given outer diameter cable.

Permanent Pathways

Conduit provides for an always-present pathway for upgrades and changes whenever needed. For example:

1. Remove and change out a fiber cable that is damaged
2. Swap out with improved technology
3. Use the additional empty conduits for increasing capacity
4. Re-route the conduit pathway if there is a change in route

The Dig Once legislation stresses the importance of burying conduit once, with the possibility to add new cables, upgrade existing ones, and increasing capacity. By planning for the future by installing extra permanent pathways, the networks are able to adapt to changes more quickly.

Communication Needs

Communication needs could be for telecommunications, cameras, data transfer, security and many others.

Revenue Opportunity

There is a financial opportunity that network and right-of-way owners are realizing and planning whereby empty pathways can be used, to grant access to difficult right-of-ways or be leased to carriers.

By installing multiple MicroDucts, take full advantage of the new high-density MicroCables that fiber cable providers are shrinking and improving year over year.

It is important to realize that there are different types of conduits suited for different purposes:

- In a more traditional system, 1, 2, or 3 standard conduits could be installed together. However, the outside diameter of these conventional ducts is often quite large compared to the smaller outer diameter of MicroDucts now available. While these large dimensions, perhaps 1.5 inches or 2 inches in diameter, are still used in the industry, they were developed at a time when fiber cables were of much larger diameter with lower fiber density. Since typically only one cable is placed per duct, they actually limit the number of fiber cables that can be placed in a right-of-way.

- Smaller diameter MicroDucts are designed to take advantage of the advances the higher fiber density MicroCables that have much smaller outer diameter. Amazingly, there are 288 and 432 fiber cable diameters on the market on the order of 8 to 10mm, so by sizing the MicroDucts for better space utilization, you can achieve much greater overall fiber density in any right-of-way space.

SECTION 6: ADDED VALUE OF FIBER OPTIC SENSING OPPORTUNITIES

Distributed Acoustic Sensing in Conduit

Optical fiber sensing (FOS) interrogator companies have been installing commercial sensing system in conduit of many years. Information from several market leading companies has indicated that as approximately 50 percent of sensing systems are comprised of fiber cables installed within conduit pathways. The reasons for doing this included conduit pathways provide tremendous added protection, easier installation, flexibility for changes, repairs, and technology upgrades, as well as added capacity for additional use and monetization. When it comes to distributed acoustic sensing, however, an additional reason is that commercially sensitive systems work extremely well in conduit. FOS use is increasing in many vertical markets, with new applications and use cases growing with experience. The following presents an overview of common applications and finding relative to sensing using the advantages of conduit.

Predominant Vertical Markets

- The Security and Asset Integrity Market
- The Pipeline Market
- Emerging Smart City applications

Monitor Assets

- Manual excavation (perimeter security)
- People walking
- Traffic flow
- Leak prevention (oil and gas line)

Research Shows

- Standard telecom-grade fiber is well suited for DAS installations
- Cable design specifically engineered for FOS purposes does impact DAS performance
- For current commercial quality Fiber Optic Sensing systems, there is a negligible difference between performance of a cable in a duct and a cable not in a duct. The protection and advantage the conduit offers far outweighs any difference in signal sensitivity in most all commercial cases.
- The cable to conduit fill-ratio should be considered when selecting a conduit and cable mix, in that an overly large conduit with too much air gap may impact performance. The conduit can be sized for both easily installation through jetting or pulling into the conduit, with sensing consideration also accommodated.
- Typical cable Installed in conduit: Gel-filled, loose tube, unarmored

About Dura-Line

At Dura-Line we aspire to a more connected world, because we believe every company, every community, every person deserves the chance to advance their lives through better access to high-speed broadband. Strengthening our fiber optic network and conduit system infrastructure is critical to supporting the next wave of digitization. And, Dura-Line is at the forefront of the industry creating strategic solutions that solve the issue of the unpredictable needs of tomorrow's fiber cable requirements.

As a TL 9000 and ISO 9001 rated manufacturer, Dura-Line takes pride in our state-of-the-art quality products and being recognized a key partner with all of the major telecommunications companies across the world. In one year, Dura-Line produced over 1.4 billion feet of digital network infrastructure. Through our innovative product solutions and unparalleled customer insight, we are the ones who enable the physical build-out of this new technology realm that impacts education, healthcare, agriculture, energy, transportation, industry, and more.

SILICORE™

Several advanced manufacturing techniques set Dura-line apart as an industry-leader, including low friction SILICORE™ permanently lubricated lining. SILICORE™ is proven to reduce installation time, thus reducing installation costs.

Advantages of Dura-Line's FuturePath (multi-bundled MicroDuct conduit)

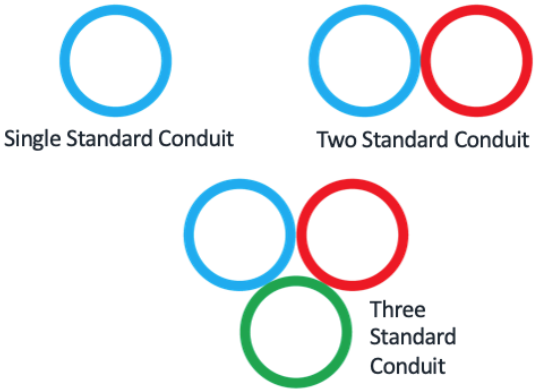
Dura-Line manufactures FuturePath, which are smaller MicroDucts are packaged together under one sheath. There are combinations of FuturePath all the way from 2-MicroDucts, under a single sheath to 24-MicroDucts under a single sheath. Other configurations have mixed sizes of MicroDucts and standard conduit to accommodate both smaller and larger diameter cables.

Dura-Line's FuturePath HDPE Product Line is Sustainable

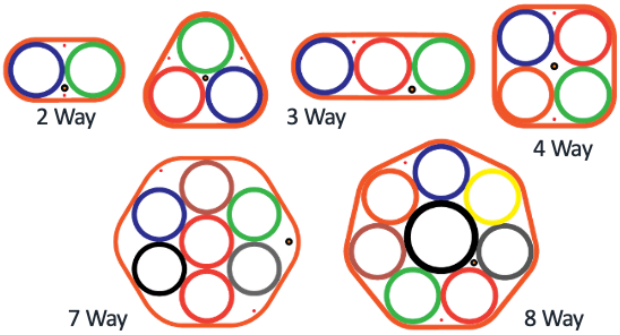
- Supports Dig Once initiatives
- Saves space in overcrowded right-of-ways
- Requires fewer and smaller handholes
- Reduces manpower and machine power for installation
- Reduces fuel consumption, gas emissions, and lower material handling requirements
- Lessens soil displacement Environmental Benefits of HDPE
- Non-leaching
- Flexible, non-rusting materials minimizes leaks common in corroded steel pathways
- Resin and pipe have a superior resistance to failure, corrosion, tuberculation, deposits, and rapid crack propagation (RCP)
- Modern manufacturing methods allow for hundreds, or even thousands, of feet of continuous extrusion, which results in fewer joints
- High performance in extreme temperatures, which greatly reduces compromised pathways Reduced transportation, handling, and installation due to quick installation with less heavy machinery which reduces fuel and labor usage as well as ground disturbance when compared with installation of steel counterparts

- Joints typically use a mechanical coupler, rather than a glue-based solvent which gives off noxious fumes
- Fewer and smaller handholes required
- Low lifecycle costs
- Useful life of HDPE is estimated at 50+ years
- Studies have shown that HDPE can withstand scratching and gouging up to 10-20 percent with no detrimental effects to the long-term performance of the pipe
- Versatility of design allows for multiple applications in several industries

Standard Conduit with a single fiber cable



MicroDucts or FuturePath with high-density fiber cables



Appendix F: Outreach Collateral

Collateral created and distributed as part of the local broadband planning outreach is included within this appendix.

MORGAN COUNTY BROADBAND PLAN OUTREACH PACKAGE

FLYER

- Morgan County Overview Flyer

GRAPHICS

- Social Media Survey Graphic
  - Facebook
  - Instagram
  - Twitter

SOCIAL MEDIA SAMPLE POSTS

Shareable Social Media Post #1

Channel Suggestion: Facebook or Instagram

Visual: Facebook or Instagram Social Media Survey Graphic

Copy:

Access to high-speed, reliable, and affordable internet is becoming more essential to our daily lives than ever. Morgan County is developing a broadband plan to expand internet availability, access, and affordability in the region. Please complete the internet survey and speed test by May 10 so your input and perspective can be reflected in our local broadband plan: connectingutah.com/morgancounty.

Shareable Social Media Post #2:

Channel Suggestion: Twitter

Visual: Twitter Social Media Survey Graphic

Copy:

Is internet connectivity in your area great, slow, nonexistent, or too expensive? Take this quick online survey and internet speed test by May 10 so your input and perspective can be reflected in the plan to expand high-speed internet availability, access, and affordability in the region! connectingutah.com/morgancounty

WEBSITE/NEWSLETTER CONTENT

Headline: Help Expand High-Speed Internet Access in Morgan County

Copy:

You can help shape the future of high-speed internet in Morgan County. Is your internet service slow, nonexistent, or too expensive? Your input is needed! Here's how you can help get Morgan County online:

- Take the 60-second Utah Internet Speed Test at speedtest.utah.gov. Information gathered from the tests will impact where broadband expansion occurs. *Your internet speeds can vary during the day based on a variety of factors, so please take the speed test multiple times where you work, live, or anywhere you connect to the internet.*
- Share your story by taking the High-Speed Internet Survey at connectingutah.com/morgancounty.
- Encourage your family, friends, neighbors, and colleagues to take the speed test and survey. **The more you help spread the word, the greater impact it will have on the future of high-speed internet in your community.**

If you don't have internet, we still need to hear from you. Please share your input by calling **435-264-8880**.

Morgan County has received funds to develop a broadband plan to expand high-speed internet availability, access, and affordability in the region. Morgan County needs your help to identify gaps in internet connectivity and plan for a future where every resident and business in the area has access to the digital world. **Please complete the survey and speed test by Wednesday, May 10, so your input and perspective can be reflected in the planning process.**

To learn more about the Morgan County broadband plan, visit connectingutah.com/morgancounty. For questions, contact a planning representative at 435-264-8880 or connectingutah@utah.gov.

There is also funding available through the Affordable Connectivity Program (ACP) to help those who qualify for access to high-speed internet. This program provides eligible households $30 off their monthly internet bill and up to $100 off a connected device. Visit acp.utah.gov for more information.

ADDITIONAL CONNECTING UTAH COLLATERAL

The following materials have been created and distributed to inform the Utah Broadband Center's statewide Digital Connectivity Plan. Morgan County may utilize and adapt these materials to fit any outreach or planning need

English

- Utah Internet Speed Test General Public Poster
- Utah Internet Speed Test General Public Flyer
- Utah Internet Speed Test Bookmark

Spanish

- Utah Internet Speed Test General Public Flyer
- Utah Internet Speed Test Bookmark
- Connecting Utah General Public Flyer
- Affordable Connectivity Program Flyer

MORGAN COUNTY

MORGAN COUNTY CONNECTIVITY

Access to high-speed internet is no longer a luxury, but an essential utility to connect Utahns to work, education, health care, and commerce. Did you know that more than 201 households in Morgan County do not have access to the internet?

Morgan County is developing a broadband plan to expand high-speed internet availability, access, and affordability in the region.

SHARE YOUR STORY BY MAY 10, 2023

Morgan County needs your help to identify gaps in internet connectivity and plan for a future where every resident and business in the Morgan County area has access to high-speed internet.

1. INTERNET SURVEY

Tell us about your internet service. Is it too slow, expensive, or even nonexistent? This survey will help us know what internet connectivity looks like for you right now and guide us in closing the gap between those with and without access to the digital world.

connectingutah.com/morgancounty

2. UTAH INTERNET SPEED TEST

- Share your internet speed with us by completing a quick and easy test. Your Speed Test results will help identify gaps in high-speed internet service and areas in need of infrastructure expansion.
- Don't just take the test once! ***We need you to take the test multiple times*** – at home, at work, during lunch, and at the end of the day. All these factors impact internet speeds.

INTERNET SPEED TEST
SPEEDTEST.UTAH.GOV

speedtest.utah.gov

DO YOU QUALIFY FOR THE AFFORDABLE CONNECTIVITY PROGRAM?

If you or someone in your household participates in any of the following programs, you automatically qualify for $30 off your monthly internet bill or up to $100 off a connected device.

- Free/Reduced School Lunch
- SNAP
- Medicaid
- Lifeline
- Federal Public Housing Assistance
- Federal Pell Grant
- WIC

For more information go to:
acp.utah.gov

CONTACT INFORMATION

HOTLINE: 435-264-8880 **EMAIL:** connectingutah@utah.gov **WEBSITE:** connectingutah.com/morgancounty

Morgan County
P.O. Box 886
Morgan, UT 84050

HOW FAST IS YOUR INTERNET?

Loading ...

MORGAN COUNTY

MORGAN COUNTY NEEDS YOUR HELP TO EXPAND HIGH-SPEED INTERNET IN YOUR AREA

Morgan County is developing a broadband plan to expand high-speed internet availability, access, and affordability in the region. **Access to high-speed internet is no longer a luxury**, but an essential utility to connect Utahns to work, education, health care, and commerce.

SHARE YOUR SPEED BY MAY 10, 2023

Share your internet speed with this quick and easy test. Your Speed Test results will help us find gaps in high-speed internet service. Take it at home and work – each time helps inform our plan to bring high-speed internet to Morgan County.

Learn more at **connectingutah.com/morgancounty**

INTERNET SPEED TEST

SPEEDTEST.UTAH.GOV

MORGAN COUNTY

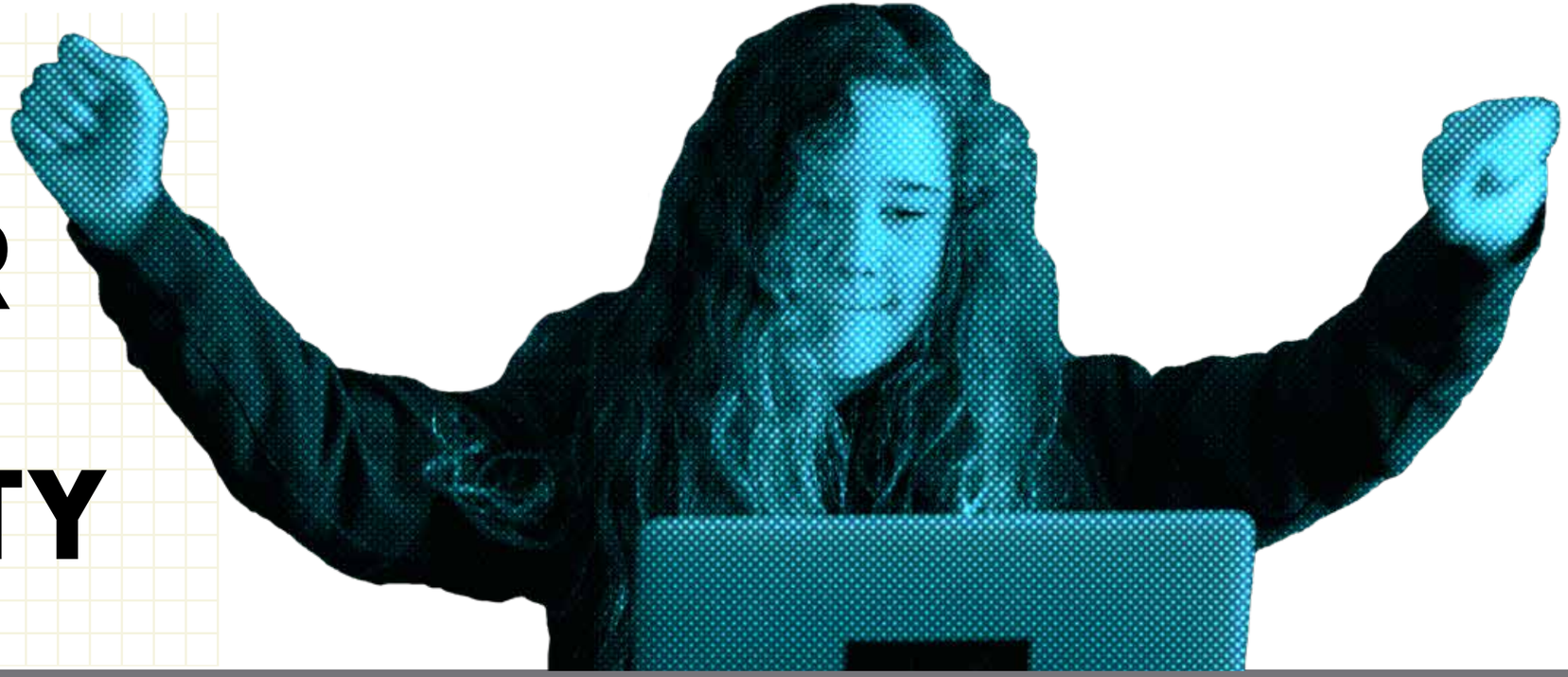
TELL US ABOUT YOUR INTERNET CONNECTIVITY

CONNECTING UTAH

connectingutah.com/morgancounty

MORGAN COUNTY

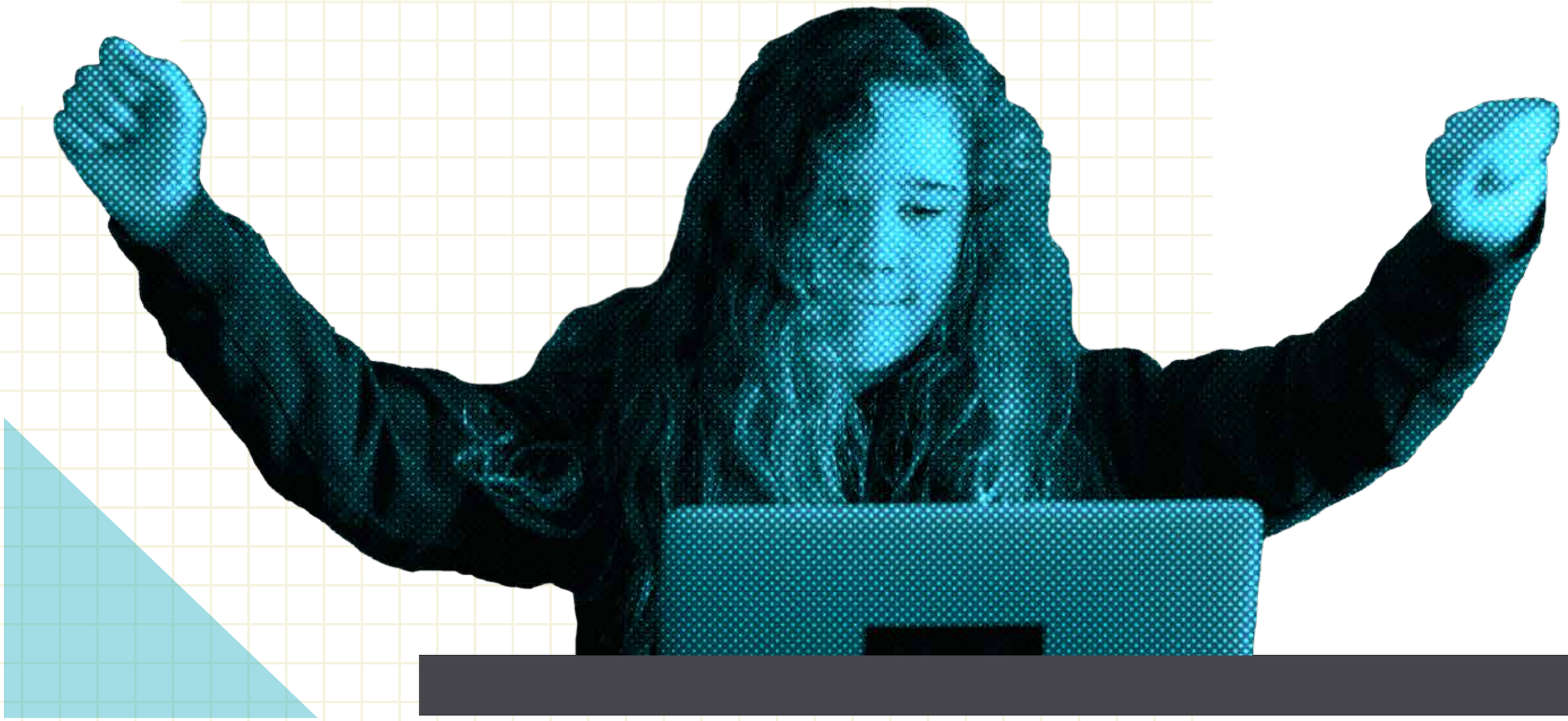
TELL US ABOUT YOUR INTERNET CONNECTIVITY



CONNECTING UTAH

connectingutah.com/morgancounty

MORGAN
COUNTY



TELL US ABOUT YOUR INTERNET CONNECTIVITY

CONNECTING UTAH

connectingutah.com/morgancounty