CITY OF GAINESVILE

Broadband Business Plan: Evaluation of Broadband Areas of Need in Gainesville

Magellan
ADVISORS

AUGUST 2021

WWW.**MAGELLAN-ADVISORS**.COM

Table of Contents

Table of Figures

Table of Tables

1. Introduction

In the Fall of 2020, the City of Gainesville issued a Request for Proposals (RFP) seeking assistance in developing an investor-grade Broadband Business Plan Strategy for the City to function as a broadband utility. The City's goal is to make high-speed fiber internet service available to all residents and businesses at an affordable price in order to address the digital divide.

The expected outcomes for the City to achieve this goal extend well beyond the typical "bottom line" justifications for broadband investment. Gainesville's stated purposes are to diversify the local economy, make local small, minority, and women-owned business more successful and sustainable, and reduce poverty. These desired impacts are far beyond the typical broadband goals of generating revenue.

The recent study produced by CCG defined feasibility in these traditional terms. While it is essential for broadband—or any utility—to cover costs, the larger benefits and goals of the City were not considered in the previous study. Beyond this "big picture" issue of not addressing the City's strategic goals, some conclusions of CCG study may underestimate feasibility or have otherwise been overtaken by events. For example, since the time of the Study the COVID pandemic has swept the country and the federal pandemic response has made significant funds available to local government which can be used for broadband investment. In that regard it is no longer true that there are no grant programs that support construction of fiber networking in Gainesville. Also phased investment and use of outsourced resources based on prioritized areas of broadband need can make construction and deployment more manageable and not such a "tall task".

This analysis of broadband areas of need in Gainesville encompasses a thorough review of "existing documentation and the previous study[1] and supporting documents" called for in Task 1 of the RFP.[2] In this report, we evaluate and update the CCG Study and assess the capabilities of the City's existing digital infrastructure, particularly GRUCom's. We consider how broadband providers perform in the market and identify gaps in Gainesville. Ability to support existing and future initiatives is a key part of this analysis.

---

[1] "Community Broadband Study" performed by CCG Consulting, dated June 20, 2019. (The "Study" or "Community Broadband Study".)

[2] Task 1 of the RFP is "Document Review" and Task 2 is "Business Model Scenarios". These tasks are sequential. RFP #ITDX-210005-GD at page 10. ("RFP")

We also consider how the COVID-19 pandemic impacted connectivity requirements for the City and its neighbors.

From these analyses, we identify opportunities to improve affordability, reliability, and speeds. There are major potential benefits beyond costs and performance included in these opportunities. We also identify gaps in knowledge of existing digital infrastructure and provide insights from other communities to inform effective decision making. We describe **areas of need for broadband expansion** in Gainesville based on updated Census, infrastructure evaluation, and stakeholder interview information, and provide initial recommendations for addressing these needs.

2. Findings and Next Steps

Magellan Advisors has thoroughly reviewed the CCG Community Broadband Study and available underlying data and assumptions. We believe its major points are well stated and we generally concur with the findings regarding expansion of residential broadband services within the City limits by leveraging the GRUCom network.

But it is crucial to note that the COVID-19 pandemic and response has fundamentally altered the broadband marketplace from the time two years ago that CCG delivered its Study – such that the Study was based on a marketplace in which broadband demand has shifted. The "stay at home" orders in response to the pandemic across the country caused many employees and managers, students, parents and teachers, consumers and businesses, doctors, specialists and patients to rely on broadband connections on nearly a "flash cut" basis.

Magellan Advisors has reviewed the Study using its understanding of the importance of broadband service and infrastructure to many facets of daily living as revealed by the COVID-19 pandemic and response. The pandemic accelerated many trends and applications in the broadband marketplace and the City's timing could not be better to consider upgrading broadband infrastructure on a City-wide basis to meet these accelerating trends and applications.

We reviewed the Study's feasibility engineering cost estimate for residential broadband service and confirm its reasonableness. Magellan used its fiber construction cost model and GIS input data from the City to evaluate the CCG network cost estimate and developed our network cost estimate updated with current costs. Our fiber construction modeling includes labor for all activities by type of placement (e.g., buried, aerial, etc.), materials for each type of placement and other equipment (including patch panels and cabinets, etc.), and costs for use of necessary construction equipment. Like the CCG

Study our estimation is for a full buildout of distribution network to all residences in the City limits.

Our evaluation of CCG's estimated costs yielded a very closely comparable estimate of $66.773 million vs. CCG's total of $66.046 million. Our engineering cost estimate also leverages the fiber network investment made by the City over twenty years through GRU/GRUCom – the GRUCom network provides modern fiber backbone facilities which can be used to provide and extend residential broadband service. We believe there are steps that could be taken in detailed design which would push costs down from this level, including relatively greater use of overhead placement of fiber where other utility facilities are aerial, and achieving further economies via strategic placement of pedestals rather than underground vaults.

We noted the Study's financial feasibility modeling and related assumptions but did not evaluate financial modeling in detail. The financial feasibility modeling as presented uses a methodology similar to that which Magellan has developed. CCG's financial modeling appears to be sound in all respects. Detailed updating and evaluation of financial projections would more appropriately be done in concert with developing the Business Plan for residential broadband service if the City elects to move forward in which case detailed financial projections would be required.

The concept of providing a basic level of residential broadband service (e.g., 50 Mbps) to all as basic utility infrastructure which should be available to a community aligns with objectives of closing the "digital divide" and economic development goals but requires more detailed consideration in the context of a business plan. We note that the FCC has a Lifeline service program[3] which the City could consider as a model or participate in for purposes of supporting broadband connections for qualifying low-income consumers.

CCG interpreted the results of its residential survey to indicate that approximately 48% of households and small businesses would take broadband internet service from GRUCom if it were to deploy fiber optic facilities, at the end of a ramp-up period. Take rate estimation is not an exact science. Take rates are influenced by classic demand determinants reflecting consumer needs, tastes and preferences. These factors can and do shift over time and the COVID pandemic and response has caused substantial shift in broadband demand. All else equal, this shift in broadband demand will increase take rates for broadband services.

The "take rate" estimate that CCG derived directly from consumer survey data prior to the COVID-19 pandemic is very consistent with take rates that Magellan has used in

---

[3] See Appendix A for further description of the FCC Lifeline program.

financial modeling for many clients in the past several years. The take-rate would need to be re-estimated based on market research conducted as a next step in determining and finalizing a business plan, financial projections and detailed network design for deploying broadband internet service to residences in the City of Gainesville.

A key assumption in the financial modeling is deciding which services to offer and whether to offer the traditional "triple play" of cable TV service, internet access, and telephone service. We note that GRUCom has installed voice switching to provide voice services to the City and businesses. Voice telephone could be offered to residential consumers with little incremental cost. However, cable TV service is a different story. The CCG Study considered scenarios with and without provision of cable TV service with the traditional linear channel lineup. Magellan's view is that since the time of the Study programming costs continue to rise and streaming video applications are continually being introduced. Consumer demand has shifted to increased preference for streaming video applications over the linear channel lineup offered by traditional cable TV such that the already relatively profitless provision of cable TV is likely to be profitless in the future. If the City elects to provide residential broadband service these facts establish a high bar to clear for provision of cable TV service and instead the capacity for a fiber connection to provide clear uninterrupted video streaming should be emphasized.

The Study contains an analysis and assessment of the broadband marketplace in Gainesville. Magellan considered this assessment and conducted its own updated review of broadband providers in Gainesville. We found that very little had changed regarding broadband availability since the CCG assessment. AT&T has gone through two widely publicized spin-off transactions to eliminate substantial debt and operations associated with the acquisitions of DirecTV and Time Warner, which did not work out as anticipated. AT&T states the debt reduction permitted by the spin-off transactions allows progress toward reduced debt leverage and "increasing investment in growth areas of 5G and fiber". Fiber investment is a broad area for AT&T and includes fiber connectivity for 5G and other wireless towers and antennas. As before AT&T's "capital allocation decisions … will be guided foremost by where management expects to generate the best returns for its shareholder base." There are no known plans for Cox or AT&T to close the digital divide in Gainesville.

The CCG Study excluded multi-dwelling units (MDUs or large apartment and condominium complexes) from the network cost estimate and residential survey, since there are a variety of challenges and issues associated with serving such complexes. In particular, incumbent service providers are marketing long-term bulk contracts to developers and property owners which include exclusive arrangements. However, GRUCom has had some success in the MDU segment of the residential market with its

GATOR NET offering. Provision of service to MDUs is deserving of further study in the context of developing a business plan if GRUCom begins providing residential broadband services.

GRU and the City of Gainesville had the foresight to obtain certification from the Florida Public Service Commission as an "alternative local exchange telecommunications provider" in 1996. This certification "grandfathers" GRUCom from most provisions of F.S. 350.81, "Communications services offered by governmental entities" which otherwise erects barriers to provision of municipal broadband services. Several of the remaining provisions obligate GRUCom to follow "good practices" that GRUCom observes today, such as accounting requirements to keep separate books and records, use of enterprise funds, and adoption of separate operating and capital budgets. There are restrictions on revenue bonding which should be carefully evaluated by the City's bond counsel in the event the City intends to consider options for bond funding for investment in broadband facilities.

Magellan evaluated Digital Inclusion in Gainesville. Our evaluation confirms the City's view that there is a substantial "digital divide" in the City with relatively stark boundaries. The "digital divide" refers to the gap between those who stand to benefit from digital technology and those who do not. Generally, the digital divide results from a person's geographic location and income.

The effect of the digital divide is that less-educated, lower-income individuals, who tend to have more needs for education, employment, healthcare, and public services, face relatively high barriers to getting and using online resources. This negatively impacts those people, their families and caregivers, and the community at large.

Magellan's stakeholder engagement elicited a sense of "over-engagement" from several interviewees. Some stakeholders conveyed the view that the community has been asked many times what its broadband needs are, much input has been provided, and yet there has been very little perceived change or progress. Several interviewees insisted that any further engagement must involve actually delivering something meaningful and useful, rather than just asking what people need. However, there is a gap in knowledge and data of how universal availability of broadband might impact access and adoption, particularly among households with students and seniors, small and startup businesses, and underserved segments of the population. Given that further general survey work is not a practical option, the best way to address these questions is to use targeted deployments. The best way to understand the nature of internet use is to provide broadband to targeted segments of the community and ask them how they plan or want to use it. Determine for what purposes and to what level internet is adopted by working directly with those neighbors who are presently on the other side of the digital divide.

Magellan used a variety of data to identify "broadband areas of need" where further investment by the City could address the digital divide in Gainesville. We combined City GIS and GRUCom data, census data from the American Community Survey (low-moderate income households, households below federal poverty level, households without internet subscription), and broadband availability and speed data from the FCC showing census blocks with internet speeds below the FCC definition of broadband (25 Mbps download/3 Mbps upload). We used this data to identify prioritized "broadband areas of need" which may be viewed at Figure 9.

We used our fiber construction cost model and GIS input data from the City to estimate $12 million would be required to serve the neighbors living in the Priority 1 area in premises located at its 11,299 street addresses. There are numerous subsidized public housing developments in the Priority 1 area and in the Priority 2 and 3 areas. There are 7,651 more residential addresses that could be served in the Priority 2 area of broadband need although we have not yet computed the investment that would be required to serve those addresses pending confirmation of the priority areas by the City.

Magellan requests that the City closely review our delineation of priority areas of broadband need to confirm or modify the areas as being in the appropriate priority level and identify any factors that should be considered in addition to the factors we considered. Investment estimates can then be produced to account for any changes. We also recommend that the City consider further deployment of WiFi in public spaces and in the City's public housing.

We note that many of the GATOR NET locations are adjacent to the Priority 1 "area of need". As such it is illustrative of the digital divide that such a popular and useful internet service is provided adjacent to significant areas of need.

The COVID pandemic response has brought forward recovery funding which includes substantial emphasis on broadband expansion. In particular the American Recovery Plan Act (ARPA) provides significant funding for broadband investment for which the City of Gainesville is slated to receive approximately $32 million. Some of these funds could be directed to serve the identified Priority 1 area of broadband need (Figure 9 for the City's review).

The residential survey conducted by CCG along with our stakeholder interviews demonstrates that there is sufficient demand in the City to support deployment of residential broadband services. Magellan recommends that the City undertake the necessary market research and business planning to make final decisions on such deployment, potentially using the ARPA funds. This would include:

- Detailed review of the organizational structures and implications for GRUCom including review of operational budgets, and engineering estimates and considerations
- Targeted focus groups and surveys to determine actual levels of demand and pricing and service uptake
- Feasibility study and action plan for provision of service to small-to-medium businesses and MDUs
- Begin high level design for backbone and FTTH in the priority areas of broadband need to provide more definitive cost estimates
- Determination of funding sources such as ARPA and/or bonding (guided as needed by bond counsel)
- Development of detailed financial projections suitable for use with lenders or other funders
- Identification and consideration of any implications for GRU operations and lenders/credit raters
- Finalization of business planning efforts and determination of the course of action by City leadership

3. Digital Inclusion in Gainesville

BACKGROUND

The City's goal is to make high-speed fiber internet service available to all residents and businesses to address the digital divide. Specifically, the City seeks to provide affordable broadband via fiber/wired and/or radio/wireless infrastructure to support businesses and residents with a minimum symmetrical speed of 50 megabits per second, but with a capability of up to 1 gigabit per second. The overall goal is to build a resilient local economy for the City. To that end, the City has the following objectives:

1. Increase the number of successful sustainable, small and locally owned businesses.
2. Reduce the poverty level in the Gainesville community.
3. Have the technology infrastructure/community broadband that is fast, reliable and affordable to support businesses and home offices.
4. Have a diverse local economy (industrial and business) insulated from economic trends.
5. Attract new businesses to Gainesville consistent with vision and "targeted" businesses.

6. Develop a successful MWBE (Minority and Women Owned Business Enterprise) program.

The "digital divide" refers to the gap between those who stand to benefit from digital technology and those who do not. Generally, the digital divide results from a person's geographic location and income. Some geographic areas—particularly rural and urban core—tend to have higher per-subscriber costs to deploy services and lower incomes than other areas. Consequently, those areas have fewer options and higher costs for internet access, and residents are less able to afford the cost of service.

The availability, cost, and other economic characteristics of broadband supply is only one aspect of the digital divide. Usability and users' abilities are another important aspect. Some type of device is necessary to use online information, and those with limited broadband options and low incomes often face challenges to acquiring computers that are suitable for online work. They may not know what is required or simply can't afford appropriate devices. Even with adequate devices, online content is often not usable by persons with handicaps and limited skills, including many working age adults as well as seniors. People who lack the confidence and knowledge necessary to effectively use internet resources cannot practically benefit from it, so the digital divide is also an empowerment gap.

The effect of the digital divide is that less-educated, lower-income individuals, who tend to have more needs for education, employment, healthcare, and public services, face relatively high barriers to getting and using online resources. This negatively impacts those people, their families and caregivers, and the community at large. The digital divide makes it practically impossible to achieve the City's objectives, stated above. Thus, digital inclusion, eliminating the digital divide, is a fundamental goal and rationale for the City to invest in broadband, and must be a central element of the business case. To this end, the City has asked Magellan Advisors to answer two general questions:

- What is the nature of broadband internet usage and barriers across different underserved segments so the City of Gainesville can target and prioritize our digital inclusion efforts?
- How will the business model scenarios for the City of Gainesville improve access, adoption, and affordability for low-income households with students, seniors over the age of 65, other underserved segments and small business, incubators, and entrepreneurs?

This section provides some preliminary answers to these questions but addresses the more fundamental issue of *how* to answer these questions. The simple premise is that we cannot effectively resolve an issue if we do not understand exactly what that issue is. The City explicitly seeks to establish a factual basis for its broadband strategy to close

the digital divide. Therefore, it is necessary to identify what we *don't know* about the digital divide in Gainesville, as well as what the divide appears to be based on available information.

To establish a fact base and provide preliminary answers about the digital divide, including identifying missing needed information, Magellan Advisors reviewed available data and interviewed key stakeholder representatives. The different data sources we reviewed include: the survey and report contained in the CCG Study, the City's "Neighbor Survey", available Census data from the ACS 2019 Survey (2020 Census data is not yet available), NTIA data including the new mapping of Indicators of Broadband Need[4], and significant GIS and other data provided by the City of Gainesville.

STAKEHOLDER INPUT

Magellan Advisors interviewed 21 representatives of 13 stakeholder organizations, including multiple City of Gainesville departments. Interviewees are listed in Table 1 along with the organization they represent and the date(s) of their interviews. Input received during interviews is analyzed in in terms of Needs & Issues and Opportunities & Resources for increasing digital inclusion.

Table 1. Stakeholder Interviews

STAKEHOLDER	REPRESENTATIVES	DATE
DEPARTMENT OF MOBILITY AND TRANSPORTATION	Malissa McCreedy, Director Jesus Gomez, Transit Director	4/28/21
DEPARTMENT OF EQUITY AND INCLUSION	Ben Howort, Equity Specialist	4/29/21
GRUCOM	Lewis Walton, Chief Business Services Officer (GRUCom)	4/29/21
DEPARTMENT OF PARKS, REC AND CULTURAL AFFAIRS	Roxana Gonzalez, Interim Director	5/3/21
CITY MANAGER	Lee Feldman, City Manager	5/4/21
DEPARTMENT OF SUSTAINABILITY	Lila Stewart, Strategic Customer Experience Manager	5/14/21

[4] https://broadbandusa.ntia.doc.gov/resources/data-and-mapping The Indicators of Broadband Need mapping is created by the National Telecommunications and Information Administration using American Community Survey data collected by the U.S. Census, speed test data from a variety of sources and various other layers of data which may be viewed on the map.

STAKEHOLDER	REPRESENTATIVES	DATE
DEPARTMENT OF STRATEGIC INITIATIVES	Jackie Stetson, Director	6/11/21
ALACHUA COUNTY DEPARTMENT OF STRATEGIC INITIATIVES	Sean McLendon, Strategic Initiatives Manager	6/16/21
SANTA FE COLLEGE	Bill Penney, CIO Paul Broadie, President Cheryl Calhoun, Dean of Access and Inclusion/ED and Innovation	6/11/21 and 6/14/21
GREATER GAINESVILLE CHAMBER OF COMMERCE	Staci-Ann Bertrand, Vice President of Economic Development	6/17/21
UNIVERSITY OF FLORIDA	Elias Eldayrie, VP and CIO Saira Hasnain, Associate CIO	6/17/21
SHANDS HOSPITAL	Brad Pollitt, VP Facilities	6/18/21
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT	Helen Harris, Senior Executive Assistant Jacqueline Richardson, HCD Manager Vian Cockerham, Block Grant Supervisor	6/23/21
DEPARTMENT OF COMMUNITY ENGAGEMENT	Anne Wolf, Citizen Engagement Program Manager	6/25/21

Needs and Issues

Resilience and "stickiness" are dual needs for Gainesville. Stakeholders felt the local economy, infrastructure, and workforce needed to be better able to weather changes. Business and industry want more reliable utilities and other infrastructure. Workers need more basic skills they can use to adapt to changing needs. At the same time, the area must be able to retain talented workers, specifically university graduates. There need to be relatively high-paying opportunities for them right out of college and for on-going professional advancement and growth.

These things were characterized as part of the need to become a smart city. Typically, this means using digital technology to automate municipal functions, allowing local

government to be more efficient and flexible. For our interviewees, "smart city" seemed to mean deploying resources in a way that served a wide range of residents and created certainty for them. "Citizen centric" was a term used to describe the overall approach to municipal government, which translated into the need to identify and meet neighbors' varied needs throughout life, particularly as the local population ages.

A general issue for Gainesville that is somewhat unusual is over-engagement. Several stakeholder representatives noted that neighbors have been asked what they want many times but not necessarily seen results. As one interviewee put it, "They have already defined the problem." Interviewees expressed concern about cynicism if neighbors feel they have given lots of input but seen very little change or negative change. For example, there was concern that residential property improvements—i.e., gentrification—could drive up housing costs and push long-term residents out of the City. Beyond this trust issue, it was pointed out that people with the greatest need are likely to be the least engaged. Several interviewees insisted that any further engagement must involve actually delivering something meaningful and useful, rather than just asking what people need.

Several interviewees noted that families and individuals on the other side of the digital divide had more pressing issues and needs. "They will say 5 kids just got shot," said one, "not broadband isn't available." Local high school graduates need to be better prepared to succeed in college and youths need better ways to connect with better opportunities to earn and learn. Low-cost broadband isn't meaningful for families struggling to pay their utility bill. Similarly, one interviewee maintained that the digital divide is not as much of an issue as the "medical divide"—lack of affordable healthcare—for many in the community.

The need to show clear benefit to neighbors was an underlying issue, particularly related to infrastructure. There was some sense that the City was forcing neighbors to pay for things that they did not really want and did not benefit them. One interviewee boiled it down to the idea that neighbors could be customers or partners, and the City should expect customers to make decisions based solely on per unit costs rather than relationships and long-term goals. Neighbors need to know improvements can be sustained without hidden costs. An interviewee pointed out that some neighbors may be willing to pay more to subsidize connectivity for the less fortunate, but they would likely chafe at having this arrangement forced on them.

Opportunities and Resources

The City of Gainesville has abundant opportunities and resources for digital inclusion. Beyond the network infrastructure owned by GRUCom, the City has extensive network assets for transportation. Key stakeholders, particularly the University of Florida, also have substantial network assets. The City seems to have especially strong opportunities to leverage these assets to improve mobility, educational support, and wellness. These opportunities generally require additional investment in radio infrastructure to provide wireless connectivity for buses, mobile workers, remote hotspots, security surveillance, and other purposes. The upside is the result would be avoidance and reduction of hard costs for cellular services. There are also opportunities to reduce a range of soft costs including eliminating barriers to deploying other assets such as "smart stops" for buses, traffic management, and intelligent vehicle systems. The same radio infrastructure could be used to provide wireless broadband to neighbors.

Digital inclusion, as noted above, is about more than just low-cost connectivity. The City of Gainesville appears to have even more abundant resources for providing the means for online resources. Opportunities for education, mobility, and recreation and culture are the most apparent. Micro-mobility such as electric scooters, on-demand rides, and fare payments are prime opportunities for transportation, which would be enabled by deploying physical transportation assets with built-in connectivity (bus stops, signal controls, etc., as well as conduit, poles, and other network supporting infrastructure in transportation projects).

There are similar recreational opportunities related to integrated network infrastructure into physical facilities, limited by practical concerns. While playgrounds could be great places for increased connectivity to accommodate caregivers, we heard concerns about socially unacceptable uses. The same goes for natural areas: It would be good to have connectivity for security and for research but not if it diminishes the habitat or quietude. While there did not seem to be specific opportunities in healthcare, technologies deployed by Shands Hospital (and University of Florida) represent opportunities as models that could be extended or replicated in other parts of the community. There is also a general opportunity to increase the level of care at home.

The strongest opportunities are for centers, venues, and other locations designed for gatherings—Albert Ray Massey, Clarence R Kelly Community Center, Depot Park, Downtown, Fred Cone Park, MLK Multipurpose Center, and Thomas Center were all identified as opportunity areas. The Arts Festival, Free Fridays concerts, Grove Street Farmers' Market, Hoggetowne Medieval Faire, and Juneteenth celebration, were notable event opportunities. Similarly, the airport corridor, Community Reinvestment Area

priorities, Enterprise Zone, and HUBZones are opportunity areas, as is the Gainesville Innovation District.

Programming to empower citizens and increase resilience was a clear opportunity area. Not only is this general issue current due to the pandemic, Gainesville has a culture and set of practices that make it an opportunity rather than a need. These run the gamut from service learning at UF and Santa Fe College, through the City's participatory planning practices, to housing assistance programs. There are specific opportunities for broadband included in the comprehensive plan and HUD Block Grant program, as well as other departmental activities.

The general opportunity is to use broadband to benefit seniors and at-risk youths, particularly in historically low-income and African American neighborhoods. The Bob Graham Center for Public Service interns, Community Cultivators, Pace Center for Girls, and Project Youth Build are a few examples of programs that fit with this opportunity. The citizen relationship management (CRM) system recently deployed by the City's Strategic Initiatives department creates an opportunity to gather additional information about community interests.

IMPLICATIONS FOR DIGITAL INCLUSION STRATEGY

Generally, the City of Gainesville has numerous opportunities to increase digital inclusion by integrating broadband into existing programs. Specifically, the comprehensive plan update, housing programs, and development plans are clear opportunities to promote broadband development. Rather than focusing on broadband, per se, stakeholder inputs indicate efforts should focus on applying it and related technologies as solutions to other more fundamental issues. Some input revealed fundamental misunderstanding and unwarranted concerns about these technologies. Also, input indicated some mistrust of City government and concern that neighbors' input and issues were not being put into action.

Based on this input, any effort at digital inclusion must lead with open, sustainable deployment. This means it must start at small scale, capitalizing on existing assets to minimize costs, and have specific, visible results that any neighbor can appreciate. The City must have the technology resources cued up and ready to go, along with clear information about how those resources are being funded. It must ask neighbors for their conceptual and literal buy-in to determine where to deploy the technology.

The technology itself must be a complete "full stack" solution that directly aligns with and supports City priorities, to deliver valued outcomes for the entire community. Digital inclusion efforts should enable neighbors to make better use of their assets—supporting

older, less expensive devices for example—or provide assets they can directly use. It is essential for technology to directly increase neighbors' opportunities to earn more, learn more, and worry less. To the extent that resources are focused to increase digital inclusion, those outside the focus areas must understand the indirect benefits to them. Generally, this means digital inclusion efforts must directly build knowledge and skills as they deliver better, cheaper, faster, and ubiquitous connectivity.

The City of Gainesville's digital inclusion strategy should focus internally, as well. To achieve the City's objectives, its network infrastructure must be very flexible and highly resilient. The network's architecture and functionality should accommodate the full range of City services, making them more accessible but also more transparent and responsive. The network itself should be a point of community engagement. An ideal strategy would use micro-scale demonstration projects that are evident to neighbors and enable them to guide further development. These projects should be approached as learning or upskilling opportunities, focused on areas of need where neighbors are actively engaged, delivering results for neighborhood advocates. They should capitalize on community anchor institutions, particularly higher education, and use the City's stated objectives as criteria for the projects' success.

Decisions about how and where to invest in network infrastructure require good information. Traditionally, these decisions have focused on maximizing profits. The City of Gainesville exemplifies communities that are taking a different approach, approaching broadband as a means to achieve other objectives, which creates additional information requirements. Not only does Gainesville need new ways to measure return on technology investment, it also needs to rethink the means by which that return is achieved: By empowering neighbors through the process as well as the product, incorporating data gathering into the process.

Answering the City's Digital Inclusion Questions

The 2021 Neighbors Survey results found making broadband available throughout Gainesville was third in importance, behind addressing homelessness and making housing more affordable and slightly ahead of ensuring racial equity. It was the sixth priority just behind racial equity and policing standards and slightly higher than traffic safety. While the vast majority—over 90%—of respondents reported having internet access, the question did not distinguish between broadband and other, slower types of internet access. As shown in **Error! Reference source not found.**, about two-fifths of respondents felt internet was too expensive. Altogether, about 60% of respondents indicated they didn't have internet because of usability issues.

Source: ETC Institute (2021)
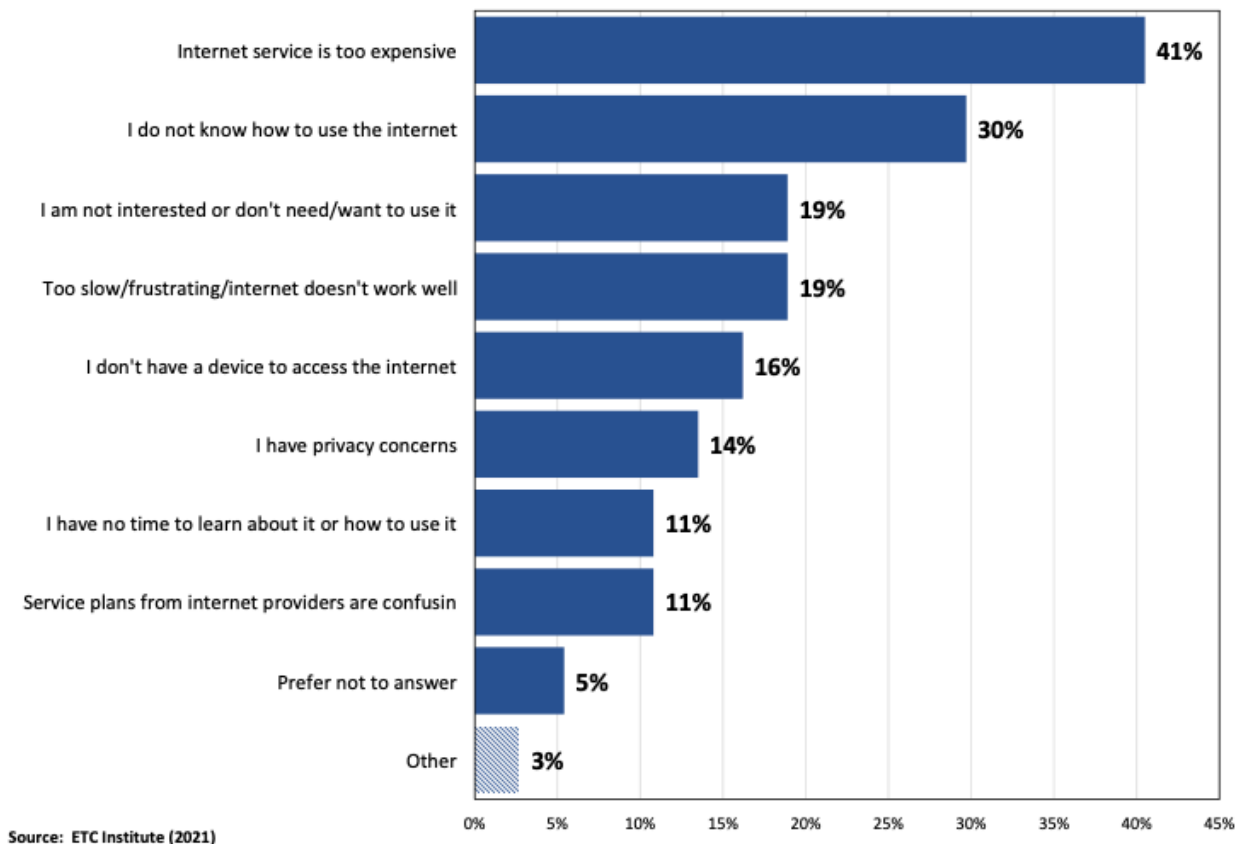
Figure 1: "Why can't you access the internet from where you live?"

The survey conducted by CCG in 2019, which excluded apartment complexes and other multi-dwelling units, found that over 90% of respondents had broadband, while 4% only had cellular internet (i.e., via smartphone). While satisfaction with "the City" was relatively low in these results, it is not clear whether respondents were referring to GRUCom, which is an internet service provider, or the City, which is not.[5] The cost of electricity was the top utility priority among respondents to the 2021 Neighbors Survey. Most respondents to the CCG study did not know GRUCom owned a fiber optic network.

[5] The Survey asked the question: "Please give your perception of the quality of service provided by the following today" for Cox, AT&T and The City. Survey respondents indicated 43% dissatisfaction with the City consisting of 13% extremely dissatisfied and 30% somewhat dissatisfied. However, these results should be taken with a grain of salt for a number of reasons. First, in some respects the results are "apples and oranges" since Cox and AT&T are incumbent broadband providers today while the City does not provide residential broadband services at present. There is no City broadband quality of service with which to be either satisfied or dissatisfied. Second, the dissatisfaction would likely be with GRU's other services including electric service. This would not be surprising given GRU's rates which are acknowledged to be very high relative to other cities and past decisions on energy supply sources made by GRU.

Over half of CCG's respondents would probably or definitely take internet from the City, and over three-quarters said they would switch for lower costs. The biggest issue among these respondents was the possibility of tax increase to cover the cost of broadband.

While these findings suggest that cost is an issue for Gainesville neighbors, it doesn't seem to be a major barrier to usage. Unfortunately, the results are not cross tabulated with demographics or location, so it is impossible to focus on underserved segments. Indeed, the CCG report does not even mention "underserved" or "unserved." Neither study provides information about the nature of internet usage.

As discussed elsewhere, we can estimate how universal availability will impact affordability, particularly since one business model involves providing free broadband. Unfortunately, we don't have sufficient data to assess how this might impact access and adoption, particularly among households with students and seniors, small and startup businesses, and underserved segments of the population.

A more fundamental issue may be the exact or practical definition of these terms. For example, what does "access" mean? What is "adoption"? What is considered "underserved"? We can define these terms in concept, but our definitions may not be those of Gainesville neighbors. Stakeholder inputs and results of the surveys discussed above suggest access has as much to do with devices as with services and that affordability is an issue but not a substantial barrier. There is some sense that adoption is a function of one's knowledge and overall attitude toward technology but that is just informed speculation.

The implication is that we cannot provide answers about the nature of internet usage, let alone say how this issue should be used to focus and prioritize digital inclusion. Adoption, which relates to the nature or purpose of internet use—i.e., the "application"—as well as the level of internet use, is almost entirely unknown. There simply is not enough data to answer these questions. To make matters worse, stakeholder representatives indicate that it is practically out of the question to gather more information on these topics from neighbors.

The overall implication of the data situation reinforces the implications of stakeholder inputs: Use small scale deployments as a means to answer these questions. The best way to understand the nature of internet use is to provide broadband to targeted areas of the community and ask them how they plan or want to use it. Determine for what purposes and to what level internet is adopted by working directly with those neighbors who are presently on the other side of the digital divide. If broadband is effectively free, the issue is no longer "can you get it?" the issue becomes "how does it enable you?"

4. Review of CCG's Community Broadband Study

First it is crucial to note that the COVID-19 pandemic and response has **fundamentally altered the broadband marketplace** from the time two years ago that CCG delivered its Study – such that the Study was based on a marketplace that no longer exists. The "stay at home" orders in response to the pandemic across the country caused many employees and managers, students, parents and teachers, consumers and businesses, doctors, specialists and patients to rely on broadband connections on nearly a "flash cut" basis.

Across the country businesses, consumers, educators, doctors and others were made acutely aware of the capacity (or lack of capacity) of their broadband connection for daily requirements of the online world. Suddenly households had everyone home using a shared broadband connection at the same time for various applications. Abruptly, educators and students had to switch to online teaching and learning. Medical consultations had to be accomplished online in many cases. Almost overnight as facilities closed to non-essential workers, businesses and governments, managers, employees, and customers had to switch to online meetings and interaction – soon "everyone" knew what Zoom was.

The nation was quickly shown the importance of broadband infrastructure, and one-by-one, each citizen learned whether their broadband connection could take the strain or had its inadequacy exposed. The verdict is in and the digital divide has been starkly revealed. Magellan Advisors has reviewed the Study using its understanding of the importance of broadband service and infrastructure to many facets of daily living as revealed by the COVID-19 pandemic and response. The pandemic accelerated many trends and applications in the broadband marketplace and the City's timing could not be better to consider upgrading broadband infrastructure on a City-wide basis to meet these accelerating trends and applications.

NETWORK COST ESTIMATES

The Study estimates required capital investments to serve business and residential premises in Gainesville city limits, for the first five years, to be $98 million, which includes some operational assets such as furniture, computers, spare equipment, vehicles, tools and work gear.[6] The Study estimates required investment of $2,293 per premise passed.[7] The Study "excluded large MDUs (Multi-dwelling units) that consists of either large apartment or condominium buildings and complexes".[8]

Magellan Advisors conducted its own independent analysis of the CCG methodology and resulting cost estimate for expanding the GRUCom fiber network to serve residential consumers and defined areas of need for broadband services. While the Study considered different geographic areas (City limits, GRU service area, GRU service area plus additional urban areas, and adding neighboring small towns), our analysis considers only the "city limits" study area. We used the same type of GIS data from the City used for the Study in 2019 (zoning information, GRU pole, substation and other assets, GRUCom fiber optic assets, fiber optics for traffic control, zoning and community redevelopment areas, locations of business and residential premises) but updated to the current time.

Magellan used its fiber construction cost model to evaluate the CCG network cost estimate and to develop Magellan's network cost estimate updated with current costs. Our fiber construction modeling includes labor for all activities by type of placement (e.g., buried, aerial, etc.), materials for each type of placement and other equipment (including patch panels and cabinets, etc.), and costs for use of necessary construction equipment. Like the CCG Study, our estimation is for a full buildout of distribution network to all residences in the City limits using important existing GRUCom facilities such as GRUCom backbone fiber optic cable and electric pole lines. Our evaluation of the CCG estimated costs yielded a very closely comparable estimate of $66.773 million vs. CCG's total of $66.046 million.

We believe there are steps that could be taken in detailed design which would push costs down from this level, including relatively greater use of overhead placement of fiber where other utility facilities are aerial, and achieving further economies via strategic placement of pedestals rather than underground vaults. Among the benefits of using pedestals is lower materials costs (much less than underground vaults) and easier

[6] Study, at page 151.

[7] Study, at page 146.

[8] Study, at page 53.

placement and installation of drops to each premise served which would save time and money on installations. A downside is pedestals are above ground and subject to damage from traffic. Also, our estimate makes use of boring for placement of conduit and fiber – rather than directly burying fiber in the ground – which has many advantages even though installation and materials costs are higher for placement of fiber in conduit and in fact may be more cost efficient in urban areas. In an urban setting all large culverts, roads, paved or concrete driveways would have to be bored anyway, which leaves little room for plowing direct buried cable efficiently.

These and other options will be discussed in detail with the City and revised as needed in the process of developing detailed financial projections, network design plan and business plan. The business plan development process will include detailed network design work that provides the City with detailed capital investment costs for network construction and deployment to include in financial projections.

PROJECTED CUSTOMER PENETRATION RATES ("TAKE RATES")

CCG interpreted the results of the residential survey to indicate that approximately 48% of households and small businesses would take broadband internet service from GRUCom if it were to deploy fiber optic facilities, at the end of a ramp-up period[9], stating "the survey predicted [a] 3-5-year target goal of around 48%". The "take rate" in the context of the internet service industry is the percentage of households passed by the FTTH distribution network expected to subscribe to internet service. Take rates are a fundamental driver of financial feasibility for all broadband networks.

Take rate estimation is not an exact science. Take rates are influenced by classic demand determinants reflecting consumer needs, tastes and preferences including the following factors:

1. Service Pricing
2. Household Income
3. Educational Attainment
4. Households with Children
5. Age of Head of Household
6. Service options in addition to Internet access, assuming available substitutes in the market
7. Demographics of the population
8. Successful execution of sales and marketing strategies

---

[9] Study, at pages 48 and 153.

Demand determinants (needs, tastes, and preferences) can and do shift over time. We are experiencing in real time a substantial shift in broadband demand due to the COVID pandemic. Broadband plays a vital role during the pandemic, ensuring people can still work, residents can still engage in commercial activity, people can still communicate with family and friends, and people can still gain access to schools, education, and health care.

Broadband has provided the crucial technology platform for continuity of government services and business and commercial activity. Broadband is providing the high-speed technology platform for initiatives to restore public health in the workforce and community and expand economic recovery. The COVID-19 pandemic has accelerated technology trends, which depend on a broadband platform, from pre-COVID days. Consumers are demanding the fastest broadband access they can get to address the need for capacity and speed caused by entire families at home under "stay at home" orders, working at home, and attending school remotely – not to mention streaming video and other entertainment content. This demand shift includes increasing demand for symmetrical upload and download broadband internet access. All else equal, this shift in broadband demand will increase take rates for broadband services.

The "take rate" estimate that CCG derived directly from consumer survey data prior to the COVID-19 pandemic is very consistent with take rates that Magellan has used in financial modeling for many clients in the past several years. The take rate would need to be re-estimated based on market research conducted as a next step in determining and finalizing a business plan, financial projections and detailed network design for deploying broadband internet service to residences in the City of Gainesville.

RESIDENTIAL MULTI-DWELLING UNITS (MDUS)

The CCG Study excluded MDUs – large apartment and condominium complexes – from the network cost estimate and the residential survey. MDUs and their residents were excluded since there are a variety of challenges and issues[10] associated with serving such complexes that make it difficult to estimate demand for broadband connections in MDUs. In particular, incumbent service providers are marketing long-term bulk contracts to developers and property owners.

GRUCom has had some success in the MDU segment of the residential market. "GRUCom today is already engaged in the model where they sell a large broadband

---

[10] These issues are laid out at pages 50 – 51 of the Study.

connection to a property owner that then distributes it to tenants"[11] known as "GATOR NET".   GATOR NET is viewed as a successful service offering and desirable amenity – landlords desire to offer all-inclusive bundles. As described in more detail below, GATOR NET is currently installed in over 50 apartment and condominium properties in Gainesville of which approximately 22 are "gigabit communities". The North Central Florida Apartment Association has approximately 120 apartment community members[12] in Gainesville which suggests GATOR NET is available in perhaps 40% of Gainesville's apartment communities – but it could be less as all apartment communities in Gainesville would not necessarily be association members.

Provision of service to MDUs is deserving of further study in the context of developing a business plan if GRUCom begins providing residential broadband services. We agree with a conclusion of the Study that "chances are if the city was to become a residential ISP that you'd end up serving some portion of this market".[13] For example a large broadband connection could be used to serve these MDUs via WiFi where there is interest from the property owner. The high-level cost estimate for serving all single-family residential premises can be augmented to include the cost of fiber connections to MDU developments.

Exclusive arrangements between internet service providers and property owners and developers are common and prevent the tenant from choosing their internet provider. These arrangements limit access to inside wiring in the MDU such that the tenant is precluded from making their own choice of internet provider. Open access to inside wiring in MDUs would provide the ability for all service providers to compete and for all tenants to have choices. The City could consider requiring all new developments to be open-access "fiber-ready" so that any competing provider could serve a tenant without requiring permission. President Biden issued an Executive Order recently addressing this subject and encouraging the FCC to prevent internet service providers from making deals with landlords that limit tenants' choices and effectively blocking out broadband infrastructure expansion by new providers.[14]

---

[11] Study, at page 51.

[12] North Central Florida Apartment Association Member Directory, https://www.ncfaa.net/members.

[13] Study, at page 51.

[14] Briefing Room Fact Sheet: Executive Order on Promoting Competition in the American Economy, July 9, 2021.

POLICY AND REGULATORY MATTERS

Upon GRUCom's application for certification the Florida Public Service Commission granted certificates to GRU's d/b/a—GRU Communications Service or GRUCom—first as an "Alternative Access Vendor", then additional certification as an "alternative local exchange telecommunications service provider".[15] Since that time, the Florida Legislature passed substantial deregulation pertaining to telecommunications. The most recent broad-scale deregulation occurred via HB 1231 in 2011. Among many other provisions, this legislation compressed the multiple types of telecommunications certificates previously granted by the FPSC into one statewide telecommunications certificate. Along with other providers, GRU's existing certificates were automatically converted to the single type of telecommunications certificate with the effectiveness of HB 1231. The City's foresight in obtaining this certificate is now very beneficial since it grandfathers the City from applicability of many provisions of Section 350.81, which restricts the provision of telecommunications services by municipalities.

Subsequent to GRUCom's certification by the PSC, in 2005 the Florida Legislature passed F.S. 350.81, "Communications services offered by governmental entities". F.S. 350.81 imposes procedures and certain operating practices for counties, cities or other specified governmental entities that sell cable or telecommunications service, including wireless service. But paragraph 4(a) states "If a governmental entity was providing, as of April 1, 2005, advanced services, cable services, or telecommunications services, then it is not required to comply with paragraph (2)(a), paragraph (2)(b), paragraph (2)(c), paragraph (2)(d), sub-subparagraph (2)(e)1.c., paragraph (2)(f), or paragraph (2)(k) in order to continue to provide advanced services, cable services, or telecommunications services, respectively, but it must comply with and be subject to all other provisions of this section." As noted in the CCG Study these waiver provisions provide "relief from many of the most onerous obstacles contained in Section 81 which affect start up projects".[16] The remaining restrictions from F.S. 350.81 applicable to the City's GRUCom operation include:

---

[15] AAV certification granted (Certificate No. 4070) in Docket No. 950654-TA by order dated August 24, 1995. Alternative local exchange provider certification (Certificate No. 4783) granted in Docket No. 961105-TX by order dated December 17, 1996. The following discussion does not constitute a legal opinion and should not be construed as such. Questions about interpretation or applicability of these or other provisions of federal or Florida law should be referred to legal counsel or bond counsel as appropriate.

[16] Study at page 101.

- Restrictions on bonding for capital costs such that revenues may only be pledged in support of bond issuance for services within the county where the operation is located (F.S. 350.81(e)1.a.). This provision should not impede potential provision of residential broadband services by GRUCom.
- Restrictions on revenue bonding for capital costs must be approved by electors if the bonds do not mature within 15 years. This provision should be carefully evaluated by bond counsel in the event the City decides to consider such bonding (F.S. 350.81(e)2.).
- Accounting requirements such as keeping separate books and record according to generally accepted accounting principles and use of a cost allocation plan generally developed according to OMB Circular A-87 (F.S. 350.81(g)). This provision should not impede potential provision of residential broadband services by GRUCom as it already adheres to these "good practice" accounting requirements.
- Establishment of an enterprise fund to account for operation of the communications services (F.S. 350.81(h)). This provision should not impede potential provision of residential broadband services by GRUCom as it already adheres to these "good practice" accounting requirements.
- Adoption of separate operating and capital budgets for the communications services (F.S. 350.81(i)). This provision should not impede potential provision of residential broadband services by GRUCom as it already adheres to these "good practice" accounting requirements.
- Provisions for review of financial results after "the initiation of the provision of communications services" and if "revenues do not exceed operating expenses and payment of principal and interest on the debt", public hearings shall be held within 60 days to determine plans for the future (cease operating, dispose of the system, create a partnership with a private entity or approve continuing provision of services by majority vote). (F.S. 350.81(l)). F.S. 350.81 defines "communications services" as "any 'advanced service', 'cable service', or 'telecommunications service' and shall be construed in the broadest sense." "Telecommunications services" means "the transmission of signs, signals, writing, images, sounds, messages, data, or other information of the user's choosing, by wire, radio, light waves, or other electromagnetic means, without change in the form or content of the information as sent and received by the user and regardless of the facilities used, including, without limitation, wireless facilities." (F.S. 350.81(1)(c) and (h)). This provision could affect operating and capital budget plans in the context of a business plan for GRUCom to provide residential broadband services. The fact that GRUCom began providing telecommunications services decades ago raises questions

regarding the extent to which these provisions would be applicable to further broadband services. In this regard the CCG Study observation is apt: "GRUCom will not be 'initiating the provision of communications services' and has been in the communications business since 1995."[17]

The CCG Study identifies "Bonding and Referendum Issues" at pages 102 – 103.

- The Study notes that F.S. 350.81 does not implicitly or explicitly allow or disallow use of any particular types of bonds, e.g., revenue bonds.
- The Study discusses provisions of F.S. 350.81(2)(e)1. which place certain conditions on issuance of revenue bonds but notes "the section does not implicitly or explicitly disallow the use of other types of bonds for financing the provision of a communications service."
- The Study notes that F.S. 350.81(2)(e)1 requires a referendum if revenue bonds maturing in more than 15 years are the chosen financing vehicle, which referendum must then be conducted as specified in Florida Statutes Chapter 100.

These "Bonding and Referendum Issues" should be considered and evaluated by the City's bond counsel at the point the City is contemplating using bond funding for expanding the GRUCom network.

FCC REPORTED BROADBAND SUPPLY

FCC Baseline Availability Data for Gainesville, FL

The FCC's most recent fixed broadband availability map as of Dec 31, 2018[18] is based on data self-reported by Internet Service Providers. Darker shading indicates a higher number of internet service providers offering speeds of at least 25/3 Mbps.   Black shading represents 12 or more providers. The light green color on the map indicates only 1 or 2 providers of broadband service, but this data may include higher latency satellite service that negatively affects usability for interactive applications such as gaming and voice calls. In addition, like mobile broadband providers, satellite service providers often cap the amount of internet data that can be downloaded and uploaded each month, imposing additional charges for data overages. This map indicates that 99% of the Gainesville area has 25/3 Mbps service available from at least 2 providers.

It is important to mention that this data is self-reported provider data and if the provider serves one address within the census block with 25/3 Mbps service or higher it

---

[17] Study, at page 104.

[18] This is the latest public data and was released June 2020.

is considered served. It also includes satellite providers whose services have issues with latency and reliability. Therefore this data should be used with caution.

The following maps show the service availability for 100/10 Mbps service (left) and 1000/1000 Mbps service (right).
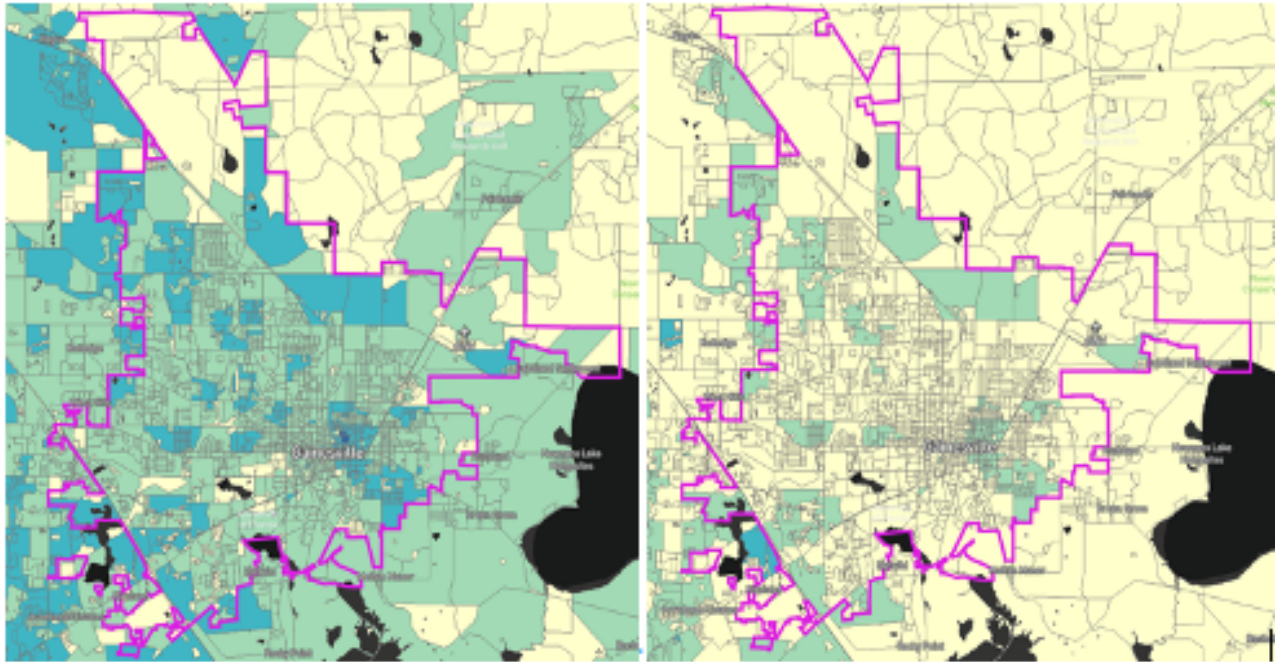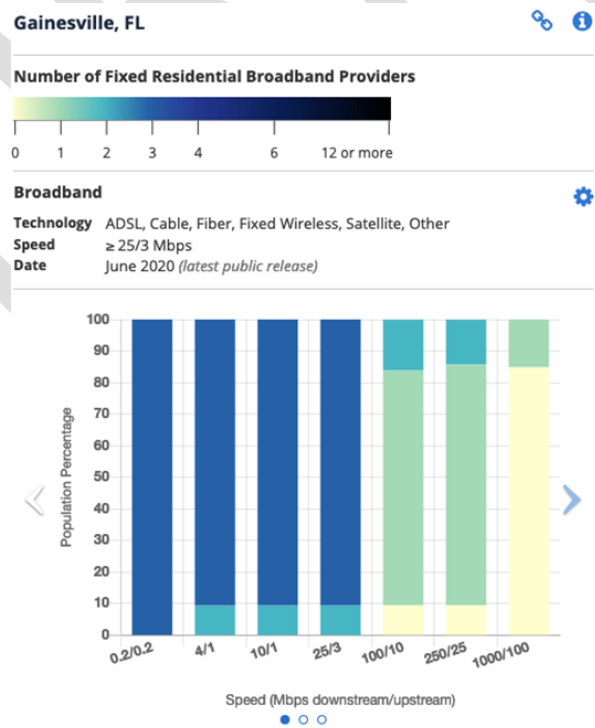

Figure 2: FCC Fixed Broadband Availability Map For 100/10 Mbps and 1000/1000 Mbps Service

The FCC Data indicates that 100/10 Mbps service is available from at least 2 providers for 43% of the service area. However, due to the way the FCC Data is defined and collected not all locations in the same census block may be able to access the same level of service across the entire census block. Gigbit service (1000/1000) is only available to 14% of the City area from one provider based on FCC data. The lighter tan areas in the map indicate no service of that class available.

GAINESVILLE FIXED INTERNET PROVIDERS

Gainesville is reported to have four wired internet providers, with two covering over 80% of the City with 25/3 Mbps service. One fixed wireless company, Rise Broadband, offers service in some areas of the City as well.

Table 2: Broadband Providers in Gainesville, FL

Provider	Type	Download speeds up to
AT&T	Cable/Fiber	1000 Mbps
Cox	Cable	940 Mbps
GRUCom[19]	Fiber	1000 Mbps

Incumbent Telecommunications Service Providers

AT&T and Cox have both evolved from telephone and cable TV providers (respectively) into broadband service providers as telecommunications technology and consumer demand has changed. The network technology used by AT&T began with copper pairs deployed throughout its service territory for telephone service, adapted for broadband internet use via Digital Subscriber Line (DSL) technology, and later deployment of fiber optic cable to various locations on a strategic basis. The network technology used by Cox Communications is similarly affected by the original purpose for its deployment – coaxial cable to provide CATV service has been modified into a hybrid fiber/coax network to support broadband internet service via the "DOCSIS"[20] standard to support internet traffic over cable TV channels. The CCG Study reviewed consumer rates at the time for services and found that "the city has some of the overall highest rates we've seen for the triple play [telephone, internet and cable TV] in the country".[21]

[19] Business services only.

[20] Data Over Cable Service Interface Specifications, a standard for cable modems developed by the CableLabs research consortium. www.cablelabs.com

[21] Study, at page 8.

AT&T

AT&T is a very large telecommunications company which provides mobile wireless and fixed line telecommunications services to all classes of customers (enterprise, international, small to medium sized business, and residential), and is the incumbent telephone company serving Gainesville. In Gainesville, AT&T provisions broadband internet connections over copper wire (DSL[22]), Fiber-to-the-Node network architecture which used the existing copper wire connection from the node to the customer premise, and fiber-to-the-premise.   At the time of the Study AT&T offered "U-verse" as its residential triple-play service but the Study noted AT&T's intent to phase out the U-verse brand. Since the Study, AT&T ceased providing U-verse to new customers and focused on rebranding under the AT&T TV and AT&T Internet names.

AT&T took on substantial debt for two large acquisitions, the acquisition of DirecTV in 2015, and of Time Warner in 2018 (renamed as WarnerMedia). Neither acquisition worked out as anticipated and AT&T earlier this year announced a spin-off of DirecTV, U-verse and AT&T TV into a separate entity and selling a 30% stake in it to TPG Capital.[23] Following this, AT&T announced the combination of the WarnerMedia unit with Discovery Inc. into a new company.[24]

The spin-offs reflect the reality of consumer trends in favor of streaming video entertainment options (e.g., Netflix, Hulu, Disney+, etc.) and away from the traditional cable TV linear channel lineup. The spins also reflect the need for AT&T to reduce its heavy debt burden originally taken on to close the two transactions. AT&T will use $7.8

---

[22] Digital Subscriber Line (DSL) service provides a connection to the Internet through the telephone network. Unlike dial-up, DSL can operate using a single phone line without preventing normal use of the telephone line for voice phone calls. DSL uses the high frequencies, while the low (audible) frequencies of the line are left free for regular telephone communication. These frequency bands are subsequently separated by filters installed at the customer's premises. DSL typically is not the technology of choice if the consumer has options.

[23] AT&T SEC Form 8-K, dated February 25, 2021 announcing "AT&T and TPG to Form New Entity to Operate AT&T's U.S. Video Unit".

[24] AT&T SEC Form 8-K, dated May 17, 2021 announcing "AT&T's WarnerMedia and Discovery, Inc. Creating Standalone Company by Combining Operations".

billion in proceeds from the DirecTV transaction[25], and $43 billion in proceeds from the WarnerMedia transaction[26] to reduce AT&T debt.

AT&T has made recent announcements regarding its capital investment and debt management strategies. The debt reduction permitted by the spin-off transactions allows progress toward reduced debt leverage and "increasing investment in growth areas of 5G and fiber".[27] AT&T "plans to expand the company's fiber footprint to cover 30 million customer locations by year-end 2025, and expectations for its 5G C-band network to cover 200 million people in the U.S. by year end 2023".[28] AT&T also has "an anticipated annual dividend level of $8 billion to $9 billion per year".[29] AT&T's "capital allocation decisions … will be guided foremost by where management expects to generate the best returns for its shareholder base."[30]

Cox Communications

Cox is one of the largest companies providing cable TV and telecommunications services. Cox identifies itself as the "3rd largest cable provider in the U.S.", and "the largest private broadband company in America".[31] The Study outlines the various services provided by Cox including traditional cable TV, broadband internet, telephone service and home automation/security services.[32] Cox markets various bundling options for these services and typically it has been opaque to the customer whether or not broadband internet service can be obtained on a stand-alone basis without bundling.

Like AT&T, Cox's network technology evolution for broadband services has been affected by where it began – with the deployment of end-to-end coaxial cable to provide cable TV service. Like other cable TV companies Cox has added fiber optic cable to its coax cable network which provides internet access using a cable modem on hybrid fiber

---

[25] AT&T SEC Form 8-K, dated February 25, 2021 announcing "AT&T and TPG to Form New Entity to Operate AT&T's U.S. Video Unit", at page 132.

[26] AT&T SEC Form 8-K, dated May 17, 2021 announcing "AT&T's WarnerMedia and Discovery, Inc. Creating Standalone Company by Combining Operations", at page 15.

[27] "AT&T Chief Executive Officer John Stankey Updates Shareholders", May 24, 2021.

[28] *Id*. "The company's plan [will] double the size of AT&T's fiber footprint". AT&T CFO Pascal Desroches Updates Shareholders, June 15, 2021.

[29] "AT&T Chief Executive Officer John Stankey Updates Shareholders", May 24, 2021.

[30] AT&T CFO Pascal Desroches Updates Shareholders, June 15, 2021.

[31] Cox Communications, https://www.coxenterprises.com/businesses/cox-communications.

[32] Study, at pages 24 – 26.

coaxial wiring originally developed to carry television signals. Either fiber optic or coaxial copper cable may connect a node to a customer's location at a connection known as a cable drop. In a cable modem termination system, all nodes for cable subscribers in a neighborhood connect to a cable company's central office via shared transport capacity[33], known as the "head end." The cable company then connects to the Internet using a variety of means – usually fiber optic cable or digital satellite and microwave transmissions. Like DSL, broadband cable provides a continuous "always on" connection with an ISP.

The cable TV industry's research and standards organization, Cable Labs, sets standards for cable modems for internet use. The most current standard, DOCSIS 3.1 was first released in October 2013, and updated several times since. The DOCSIS 3.1 suite of specifications support speeds of up to 10 Gbit/s downstream and 1 Gbit/s upstream. Cox indicates it has completed an upgrade of electronics in Gainesville to DOCSIS 3.1 but there can be other physical limitations in the network such as older types of coax cable or network power technologies that limit achievement of internet speeds available in a laboratory setting.[34]

Cox Enterprises is a private company which purchased Cox Communications in 1985 – thus Cox securities do not trade publicly. Detailed financial information is available only to "qualified institutional buyers" of Cox Communications bonds or other "qualified investors" under the Securities Act of 1933.[35]   Thus, there is no required public disclosure to the investing community on its plans.

Market Supply and Market Analysis Findings

General offerings by AT&T, Cox and GRUCom in Gainesville are provided below. These rates are current rates offered to new customers, otherwise called promotional rates. In order to determine what current customers are truly paying in the market today, Gainesville would need to conduct a survey of residents and businesses to collect this information.

Further assessment of private-sector telecommunications infrastructure, companies and services in the Gainesville, FL area provides context for a more targeted evaluation. It also informs companies of the City's strategies since these companies are prospective

---

[33] Since this capacity is shared among all subscribers served by the node actual speeds can drop during peak usage times when more subscribers are accessing the internet. As observed by one Gainesville consumer "service is pretty bad at night". This can be explained by consumer habits and behavior of using the various streaming video apps in the evening after dinner.

[34] Study, at page 68.

[35] Cox Communications Investor Relations, https://www.cox.com/aboutus/investor-relations.html.

partners and potential competitors. Companies that nominally sell network services in Gainesville are listed in Table 2. Magellan Advisors conducted the market analysis through multiple methods, gathering data from BroadbandNow.com, searching providers websites for offerings for residential and business addresses, and contacting providers to request information for a specific set of addresses throughout the City. The data for the addresses researched is located in Appendix B.

Gainesville is comprised of ZIP codes, 32653, 32601, 32603, 32605, 32606, 32607 and 32609. Figure 3 shows the addresses chosen in various areas of the city within the ZIP codes to check for availability from all the providers.
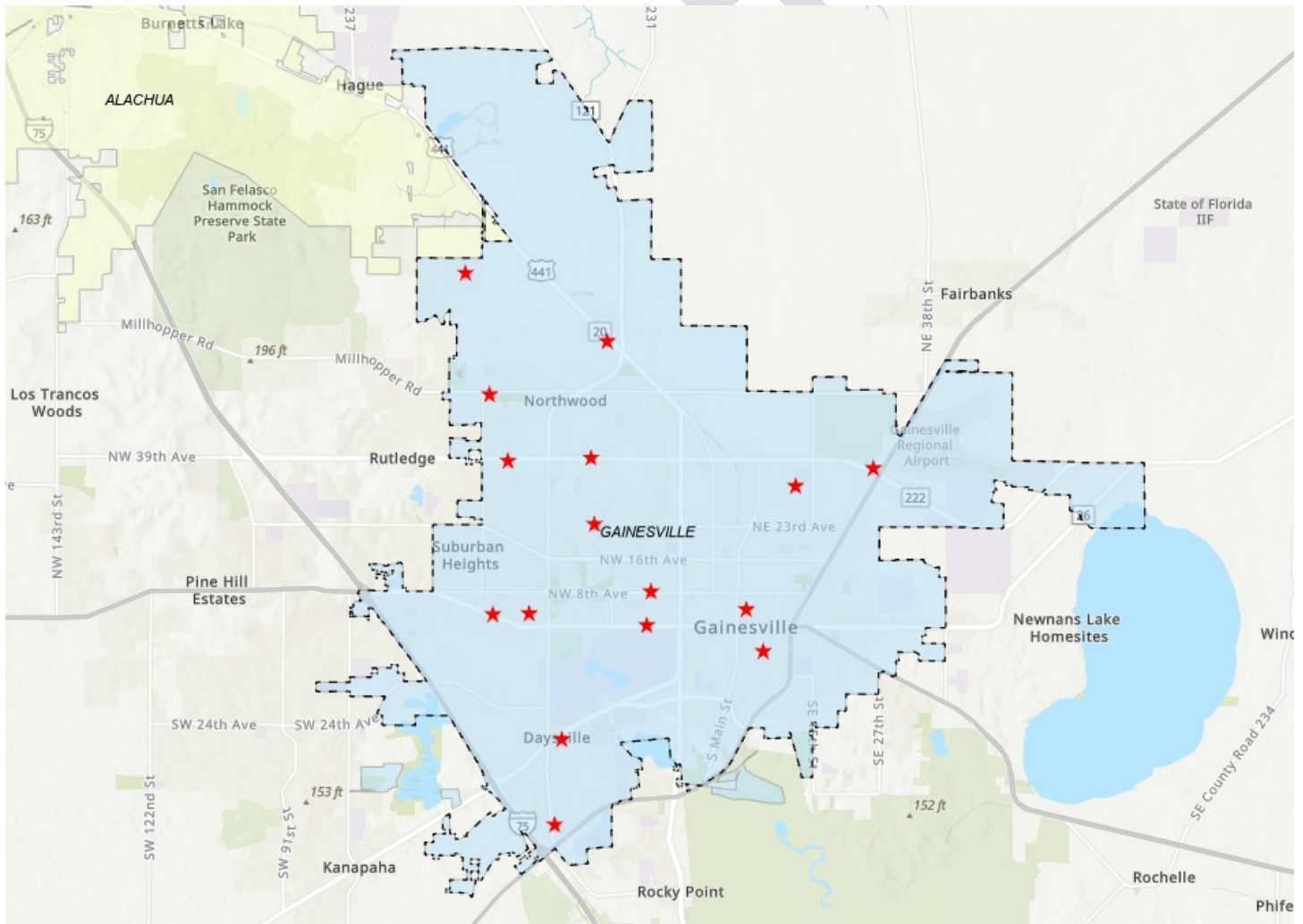
Figure 3: Address Locations for Assessing Service Offerings

The previous study identified AT&T and Cox Communications as incumbent telephone and cable TV service providers in the Gainesville city limits. Both state they have over 98% coverage of the Gainesville Market with DSL and Cable. According to BroadbandNow, Windstream and CCG (Campus Communications Group) provide service

to 24% of the market in Gainesville; however, Magellan's research shows no retail coverage by Windstream or CCG. CCG's website shows service in Bloomington and Champaign-Urbana Illinois, and it is believed that CCG provides contracted services to MDUs in Gainesville as well.

AT&T

For residential services Magellan found AT&T service offerings at five out of eight addresses in Gainesville. Generally, AT&T offers their fiber product with a Gigabit offering for $60.00 per month, for a 12-month period. The price increases $20 after 12 months, and various other conditions and limitations apply. For commercial services Magellan found AT&T service offerings at all eight addresses in Gainesville. Four addresses had access to wireless products only, two to DSL, and two to fiber. Those with DSL had speeds from 487 kpbs to 6 Mbps, with $55 per month costs. Those with fiber had access to speeds ranging from 100 Mbps to 1 Gbps, with pricing ranging from $50 - $120 per month.

Cox

All addresses had access to Cox cable services for residential. Services ranged from 25 to 940 Mbps with pricing ranging from $19.99 to $99.99. There were two addresses that yielded monthly pricing $10 more expensive than the others. For commercial services Magellan found Cox service at all eight addresses researched. Service offerings ranged from 25 Mbps to 100 Mbps with pricing ranging from $40-$125 per month.

GRUCom

We have requested but not yet received pricing information for commercial services. GRUCom does not offer residential services.

Metro and Long-haul Fiber Networks

According to Fiber Locator, Uniti Fiber operates fiber networking within the Gainesville city boundary. Uniti provides "cell site backhaul and small cell for wireless operators and Ethernet, wavelengths and dark fiber for telecom carriers and enterprises".[36] Also there are a number of long-haul fiber networks in the Gainesville area. Long-haul fiber networks do not connect individual or groups of subscribers but instead connect servers, data centers and ISPs to the internet for internet traffic exchange. Gainesville has a high level of long-haul connectivity at the University of Florida and GRUCom collocation sites as well as for networks operated by telecommunications providers

---

[36] Uniti Group, "What we Offer"; https://uniti.com/about/what-we-offer

providing retail services to consumers. Resiliency and diversity are important for long-haul fiber connectivity.

SMART GRID/SMART CITY

The CCG Study concludes that "having fiber everywhere will allow Gainesville to have a far more robust smart city network than cities that must go 100% wireless."[37] Magellan agrees with this assessment. The Study also notes that "the city doesn't yet have a formal smart city plan although one is under development"[38] and goes on to identify a number of smart city ideas that are under consideration. These are all good ideas, and Magellan provides the following additional observations.

Smart grid and smart city are relatively specific (smart grid) and general (smart city) examples of network applications—uses of software for defined purposes that inherently require network infrastructure and/or services. Smart grid focuses on monitoring the performance and use of electric infrastructure and services, which can be extended to include other utilities. It also provides means to automate and control utility system operations. Smart city encompasses similar functions for a wide range of municipal operations but also provides information to people when and where needed. Further, smart city generally includes providing connectivity in public spaces and places where required to access information and support system monitoring, control, and automation.

These applications have numerous hard benefits. They make it possible to avoid costs and problems, increase efficiency, and reduce risk. They also have a variety of soft benefits, generally enabling people to ignore systems as they "take care of themselves." While this is good and important, this line of thinking misses much larger potential benefits related to human values and public strategy.

Cities don't just exist to save costs and so people can ignore the systems on which they depend. Cities exist to enable people to be safe, prosperous, and free. They exist to empower us. Not coincidentally, digital technology has similar purposes, at least in concept. To actually achieve objectives, technology must be methodically applied to them. The City of Gainesville, as a municipality, clearly understands these things and puts them into practice.

The Gainesville Police smartphone app and openGNV, demonstrate that the City is a smart, purpose-driven organization, as does its neighbor-centered design practice. The

---

[37] Study, at page 76.

[38] Study, at page 74.

objectives for the current study are evidence of this as are the principles, means, objectives, and value propositions laid out in the City's strategic plan.[39] Much of this requires connectivity. The City of Gainesville simply can't achieve its purpose if its neighbors are not connected. Therefore, it is smart to invest in network infrastructure and services, to ensure the community is connected.

This is not to say Gainesville should just throw money into broadband. That would not be smart. Any public funds spent on connectivity should be linked directly the City's objectives. Reducing response time to electrical outages—or, better yet, remedying the causes of outages before they occur—is but one of numerous possible results of investing in connectivity. The more such results the City can achieve for each dollar invested, the smarter that investment is.

For example, Objective 4 of Goal 3 in the City's strategic plan is "Have medical and healthcare services available in all neighborhoods and accessible for all Neighbors, focusing on the eastside." Broadband can clearly enable this result with a small marginal investment, reducing costs to neighbors and healthcare providers as well as improving health outcomes. How is it smart to ignore such benefits and focus on a few automation applications? Indeed, why not establish a system for monitoring and alarms that can be applied to all other City systems, including the network itself?

The key to being smart in the sense of smart grid and, more generally, smart cities is to have performance metrics and means for monitoring, logging, and responding to them. Metrics, the raw data about the behavior and usage of resources, link systems or means to objectives and goals. Continuing the example above, the City might define metrics for availability and accessibility and engage neighbors, particularly on the eastside, to gather the data to measure achievement of objectives and goals.

This same approach might be applied to other means and objectives, including broadband, and to the range of touch-points neighbors have with the City. Indeed, it may be most effective and efficient to gather multiple metrics together, at the same time and by the same means, in an integrated, consistent manner. The entire process could be enabled, if not fully automated, via the City's network. Of course, this would require connectivity for all neighbors engaged in the system monitoring performance. Ubiquitous broadband would also enable the City and neighbors to build and foster relationships with stakeholders for the City's strategic goals.

---

[39] *Strategic Plan 2020-2025-2035*, City of Gainesville, FL, May 2020, https://www.cityofgainesville.org/Portals/0/splan/strategic%20plan/Gainesville%20200505%20Strategic%20Plan%202020-2025-2035%20Combined.pdf

The simple point is that networks generate value when they are used to acquire, access, and share data. More applications for a network mean more data and greater benefits from the network. Therefore, the smart thing to do is identify as many uses for the network as possible, generally including innovation and improvement as well as automation. Limiting network applications to automated monitoring of a utility or even various municipal functions fails to realize the full value of the infrastructure and misses most of the potential return on the network investment. The more the network is utilized for strategic purposes, the smarter the City is, and the greater its value to neighbors. This requires the network to be accessible to all neighbors.

5. Gainesville Regional Utilities Systems

Gainesville Regional Utilities has five separate operating systems: electric, water, wastewater, gas, and telecommunications.   Revenue from GRUCom and the other operating systems is overshadowed by electric system revenues, and in fact GRUCom is the smallest operating system when measured by revenues generated. However, GRUCom is very important to GRU as it provides the communications capabilities for the other system operations and GRU represents 9% of GRUCom's revenues. Beyond that, GRUCom is a very important asset for the City as it provides a City-wide modern network available to expand provision of high-speed broadband services to the City's residents.

Table 3: 2020 Actual Revenue by Operating System

System	($ millions)	
Electric System	$274.4	69.38%
Wastewater System	$45.5	11.50%
Water System	$37.4	9.46%
Gas System	$24.8	6.27%
GRUCom	$13.4	3.39%
Total	$395.5	100.00%

Table 4: 2021 Budgeted Revenue by Operating System

System	($ millions)	
Electric System	$387.4	75.74%
Wastewater System	$47.8	9.35%
Water System	$38.2	7.47%
Gas System	$23.9	4.67%
GRUCom	$14.2	2.78%
Total	$511.5	100.00%

GRU outlines a number of significant undertakings in its 2021 Budget:

- Execution of a 50MW solar purchase power agreement in furtherance of expanding renewable energy sources
- Replacement of the Murphree Water Treatment Plant electrical system
- Modernization of two wastewater plants
- Debt restructuring and refinancing to save over $134 million in future interest costs
- Planned outage at Kelly Generating Station to replace the turbine generator
- Retrofit Deerhaven Generating Station to operate 100% using natural gas
- Phased installations of smart meters throughout the GRU service area
- Implemented cloud-based customer service information system.[40]

GRU is in the process of issuing $101.525 million in Utility System Revenue Bonds (2021 Series A) to pay the costs of "acquisition, construction and equipping of certain capital improvements to the System". GRU debt will total approximately $1.739 billion after that bond issuance.[41] The Ratings Agency Presentation also provides a summary of planned capital expenditures:

---

[40] GRU Fiscal Year 2021 Budget, at pages 2 – 3.

[41] Gainesville Regional Utilities Presentation to Fitch Ratings, June 11, 2021, at pages 31 – 32.

Table 5: Future Capital Plans

Summary of Capital Improvement Program – Sources and Uses						
	2021	2022	2023	2024	2025	Total
Use of Funds:						
Construction Projects:						
Electric	38,302,466	59,384,613	43,713,757	29,796,717	32,393,436	203,590,989
Gas	10,239,566	4,490,414	3,195,132	3,146,139	3,502,900	24,574,151
Water	19,936,447	12,127,680	10,922,117	11,852,500	11,777,500	66,616,244
Wastewater	31,307,711	25,516,492	29,908,552	28,172,000	24,226,000	139,130,755
GRUCom	1,563,810	1,180,801	1,110,442	2,032,644	3,100,164	8,987,861
Total Construction	**101,350,000**	**102,700,000**	**88,850,000**	**75,000,000**	**75,000,000**	**442,900,000**
Sources of Funds:						
Bond Financing	38,600,000	38,600,000	38,600,000	38,600,000	38,600,000	193,000,000
Revenues	62,750,000	64,100,000	50,250,000	36,400,000	36,400,000	249,900,000
Total Sources	**101,350,000**	**102,700,000**	**88,850,000**	**75,000,000**	**75,000,000**	**442,900,000**

☐ = Funded with 2021 Series A

Table 5 highlights the high points for capital expenditures for each system in yellow and the capital allocation results among competing needs. Notable here is that GRUCom's capital requirement for "business as usual" apparently is minimal compared to requirements for the other four systems and higher capital expenditures are planned for the other four systems in the next two years while increased capital expenditures for GRUCom are reserved for the later years.

GRU's credit rating was recently reduced by Standard and Poors, from "AA-" to "A". Standard and Poors states the credit rating reflects credit strengths and credit risks[42]:

Strengths

- Stabilizing economic presence of the University of Florida and several hospitals
- Diverse residential customer base providing stability to financial operations
- Fixed cost coverage over 1.4 times with prospect for modest near-term strengthening
- Good liquidity

---

[42] Rating Action, Gainesville Regional Utilities, S&P Global Ratings, May 3, 2021.

Risks

- Renewable power supply includes uncompetitive resources (biomass and solar feed-in tariff)
- Electric rates are among the highest in Florida, driven by uncompetitive resource investments, high debt leverage and fixed costs, and significant general fund transfers
- High rates, planned rate increases and below-average incomes could result in ratepayer backlash, frustrating GRU goals
- High rates coupled with very high debt levels significantly constrain future capital improvements.

GRU's 2021 Budget divides responsibility for debt service costs (principal, amortization and interest payments) among the systems:

Table 6: 2021 Budget for Debt Service[43]

System		Debt Service	
Electric System		$ 68,197,740	73.82%
Wastewater System		$ 9,768,646	10.57%
Water System		$ 7,733,904	8.37%
Gas System		$ 4,527,808	4.90%
GRUCom		$ 2,154,814	2.33%
		$ 92,382,912	100.00%

Assuming debt follows debt service responsibility, this means approximately $40.5 million of GRU's $1.739 billion in debt is attributable to GRUCom. The credit rating viewpoint regarding GRU's "very high debt levels" is a constraint that needs to be considered when evaluating funding options for capital expansion of GRUCom's network to provide residential broadband services.

---

[43] GRU Fiscal Year 2021 Budget, at pages 15 – 19.

6. GRUCom Assets and Operations

EVALUATION OF GAINESVILLE BROADBAND INFRASTRUCTURE AND GRUCOM NETWORK

GRUCom has built an extensive fiber optic network spanning the City and much of Alachua County over a two-decade period. The fact that an original purpose of the network is to provide communications capabilities for electric utility operations means that the GRUCom network by definition is capable of serving all within the City. GRUCom's fiber network runs on "Active Ethernet" or "Active E" which "is essentially a fiber 'home run' from the electronics core directly to the customer".[44] "The current GRUCom network is mostly a star configuration where fiber is built from central locations to reach customers.

An ideal network configuration would be to connect the needed huts by one or more fiber rings. The benefit of fiber rings is that they provide for a redundant electronics path, meaning that if the fiber in the ring is cut, the whole ring will continue functioning via their self-healing capability.[45]

GRUCom adheres to service-level agreements ("SLAs") which define the level of service commitment, the metrics by which that level of service is measured, and penalties or remedies if that service level is not achieved and maintained. These SLAs vary depending on the customer or service type. This is particularly important for the telecommunications carriers that use dedicated wholesale services from GRUCom as it must provide "carrier grade" network reliability, tested and engineered to meet very high availability standards.

The GRUCom network provides an **excellent platform for extension of broadband service to residential customers** if the decision is made to do so.

---

[44] Study, at page 58.

[45] Study, at page 66.

GRUCOM OPERATIONS

As noted above GRUCom provides wholesale and retail services using an active Ethernet network which spans the City and the County.   These services include:

- Internet services[46]
    - Dedicated Internet for larger organizations and enterprises
    - Business broadband connections for small and medium sized businesses
- Colocation data center services[47]: secure climate-controlled facility colocation, backup and disaster recovery, and interconnections
- Data Transport Services[48]
    - Metro Ethernet connecting customer sites using GRUCom's Metropolitan Area Network
    - Point to point connections, using TDM/SONET
- Public sector services[49]
    - Schools: Alachua County Public School District uses a 10 Gigabit metro ethernet network provided by GRUCom, connecting 47 schools, funded using FCC E-Rate funding
    - Libraries: GRUCom provides internet access for each of the Alachua County Library District's 13 locations
    - Public safety: GRUCom provides public safety radio services to police, fire and EMS departments
    - Utilities: GRUCom provides communications services for GRU's gas, electric, water and wastewater utility operations
    - Higher education: GRUCom provides connectivity for the University of Florida and Santa Fe College
- Carrier services provided to telecom carriers[50]
    - Tower leasing: collocation on 11 communications towers and 2 water tanks, with GRUCom fiber connectivity
    - Fiber optic backhaul capacity: carrier-grade reliability, route diversity, and interconnections

---

[46] Internet Solutions; https://www.gru.com/TabID/4021/Default.aspx

[47] Colocation Data Center; https://www.gru.com/GRUComFiberOptics/ColocationDataCenter.aspx

[48] Data Transport and Networking; https://www.gru.com/GRUComFiberOptics/DataTransportNetworking.aspx

[49] Public Sector Services; https://grucom.com/public-sector-services/

[50] Carrier and Wireless Services; https://www.gru.com/GRUComFiberOptics/CarrierWirelessServices.aspx

GRUCom also has offered "GATOR NET" for two decades to MDU and student housing communities surrounding the University of Florida and Santa Fe College in Gainesville. GATOR NET has evolved with technology to include availability of gigabit speeds. GRUCom installs GATOR NET by agreement with property owners and developers which allows the apartment or condominium to promote high-speed internet being included in the rent price. Features of GATOR NET include high-speed internet access as a rental amenity, gigabit WiFi, symmetrical service (equal upload and download speeds), no data caps, and supports bandwidth intensive applications like gaming and HD video streaming. From a landlord's perspective GATOR NET features:

- High-speed fiber-optic based internet service with gigabit speed service available;
- Secure gigabit speed community WiFi;
- Business internet for apartment management offices;
- Turn-key design, installation and support by GRUCom under the GATOR NET Service Level Agreement[51];
- Scalability;
- Local system monitoring, help desk, and tech support;
- Co-marketing availability.[52]

GATOR NET is currently installed in over 50 apartment and condominium properties of which approximately 22 are "gigabit communities".[53] Many of these locations are adjacent to "areas of need" as described below. As such it is also illustrative of the digital divide that such a popular and useful internet service is provided adjacent to significant areas of need. Experience with GATOR NET can assist in extension of high-speed internet services to other residential areas especially including identified areas of need.

---

[51] GATOR NET Service Level Agreement; https://gator.net/gator-net-service-level-agreement/

[52] "GATOR NET" for Property Owners/Managers & Developers; https://gator.net/communities/property-ownersmanagers-developers/

[53] "GATOR NET" Communities; https://gator.net/communities/gator-net-communities/
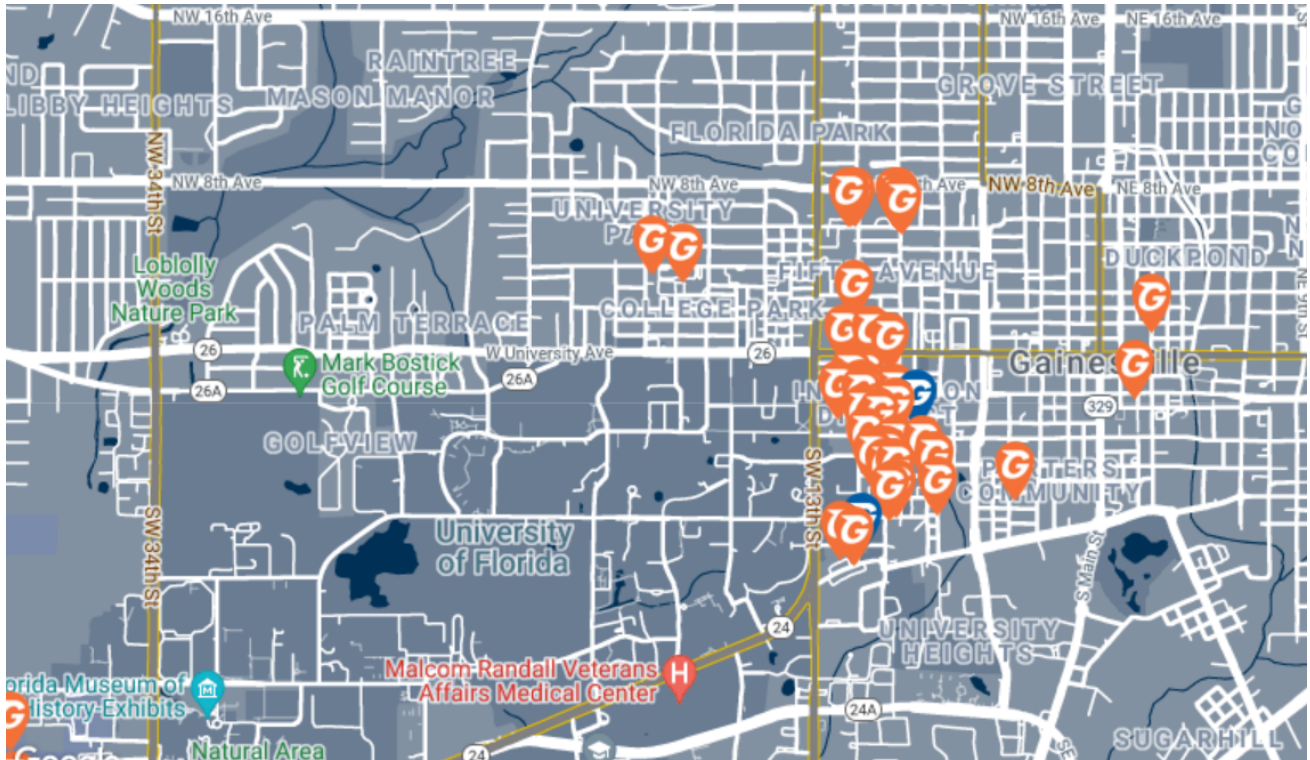
Figure 4: GATOR NET Locations in Gainesville

BUSINESS PLAN IMPLICATIONS

The Study identified a variety of subjects that need to be addressed in more detail in the context of a business plan if the City elects to expand the GRUCom network to provide residential services. These specifics should be addressed in detail if the City decides to pursue expansion of service to the Priority 1 area of broadband need or any other areas.

The City will need to decide specifically where to build and in what phasing by reviewing and finalizing the prioritized areas of need (Figure 9). That decision is necessary to drive specific cost estimations and all the other resource requirements that flow from that such as staffing, operations and financing.

The City will need to address staffing and management issues associated with constructing, deploying and managing additional network facilities for residential services. We note that there is consideration underway for reorganizing GRUCom and extension of service to residential areas should be included in evaluating that reorganization. If residential service is deployed there will be a need to construct and install facilities for customers. This does not necessarily require staffing up GRUCom as these functions can be and often are outsourced. Staffing up GRUCom is not a "hurdle" unless the City chooses to run in that lane.

Further research will be needed on whether and where to include services to apartment and condominium complexes (MDUs).

Ultimately more market research will be needed to aid decisions on pricing and pricing structure and deployment areas to be included in financial projections. It will also be important to make a decision on whether or not to offer cable TV services as this has very substantial implications for the business plan. The change in consumer demand in favor of adopting streaming video options suggests that the City should not undertake to offer that service.

Detailed financial projections will need to be created based on defined service areas and phases. These service areas and phases would then be the subject of detailed engineering estimates for required capital spending. Various other information will need to be included such as estimated take rates, financing sources and costs, pricing, and definition of the services to be offered. Consideration of using American Rescue Plan funds (below) should be included.

The City will need to refer to bond counsel on implications of F.S. 350.81 for any bonding alternatives considered.

7. Broadband Areas of Need

The City provided Magellan Advisors with substantial GIS data including GRU utility facilities data, road centerline data and parcel data. We evaluated this data along with available Census data (2019 American Community Survey or ACS) and telecommunications industry broadband speed and availability data from the FCC. Results of this evaluation are depicted on the following Figures:

- Figure 5 shows the percentage of household units in each census tract[54] that are at or below the "low-moderate income" threshold as defined by Housing and Urban Development (HUD). Those census tracts with a higher percentage are less likely to have broadband internet service for reasons including affordability and availability.
- Figure 6 shows the range of household units by census tract with incomes below the federal poverty level for a family of four ($26,500). Those households below
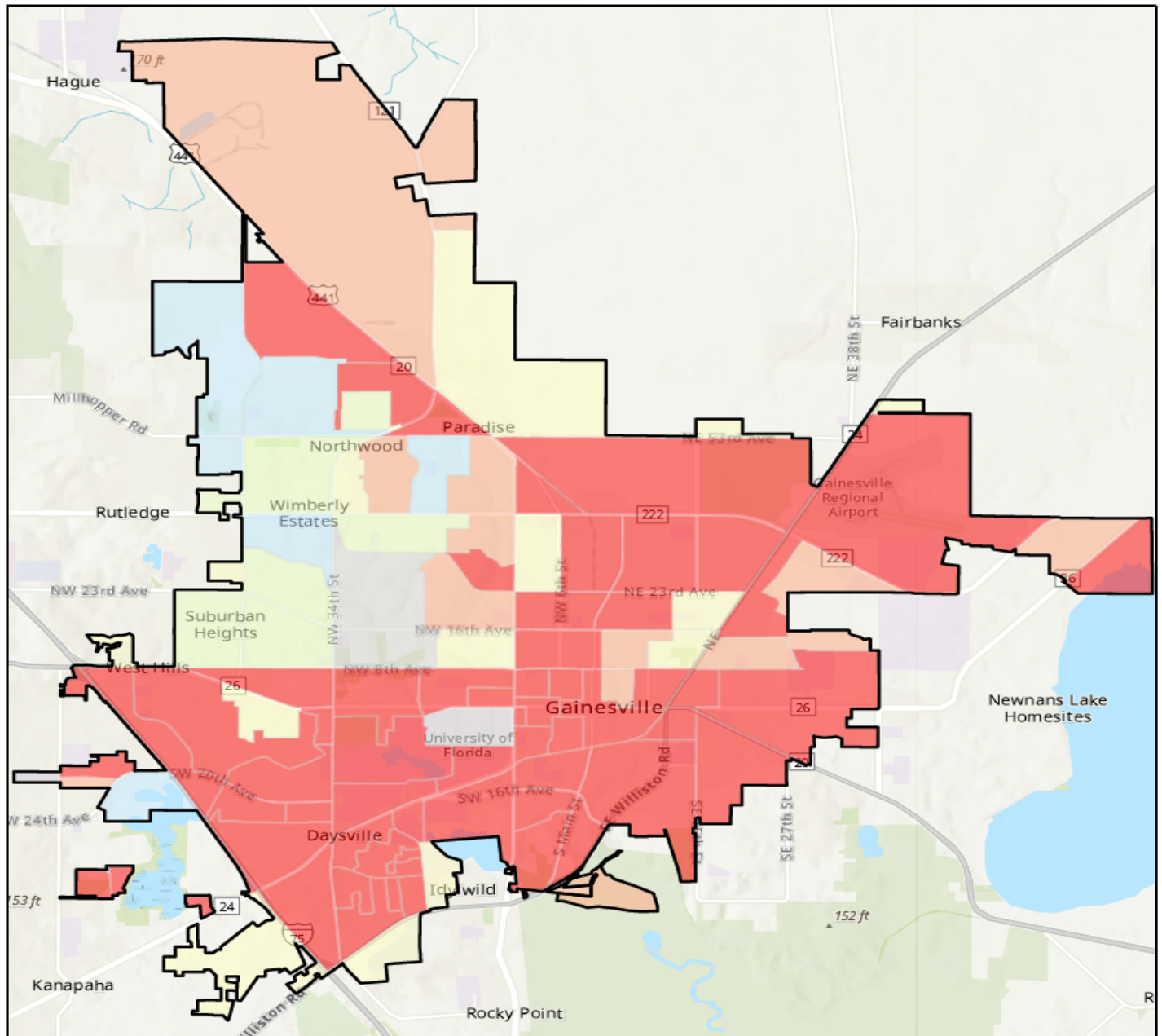
---

[54] Census Tracts are designed to be relatively permanent over time. But census tracts can be split or merged periodically depending on population change. The average population of a census tract is 4000, with a low of 1200 (such tracts may then be merged) and high of 8000 (such tracts may then be split). https://www2.census.gov/geo/pdfs/education/CensusTracts.pdf

the federal poverty level are less likely to have broadband internet service for reasons including affordability and availability.

- Figure 7 shows the percentage of households in each census tract who have a computer but no broadband internet service subscription. Those census tracts with a higher percentage have more households without broadband internet service for reasons including affordability and availability.
- Figure 8 shows FCC speed test data identifying census blocks[55] with broadband internet speeds below the FCC threshold of 25 Mbps download and 3 Mbps upload speeds. This is suggestive of areas which do not have adequate broadband internet access.

Consideration of this mapping data permits tentative identification of "broadband areas of need" which we have identified in Figure 9 for City review. Magellan then used the mapping and identified areas of broadband need to compute high-level cost estimates to construct fiber optic facilities to serve residences and small businesses in the "Priority 1" area of need. The cost estimates would need to be adjusted in line with any adjustments the City makes to the delineation of priority areas of broadband need upon review.

---

[55] Census blocks are the smallest geographic areas for which data is collected and tabulated for the decennial census collecting data from all houses. The population of a census block varies greatly. https://www2.census.gov/geo/pdfs/reference/GARM/Ch11GARM.pdf

Figure 5: HUD Low-Mod Income Percentage

Figure 5 is derived from 2019 American Community Survey Census data. The Low-Moderate Income percentage is used in the administration of Community Development Block Grants to determine income eligibility for affordable housing and other

infrastructure. The redder areas are indicative of census tracts with higher percentage of households that meet the HUD low to moderate income threshold. Moderate income is defined as 80% or less of the average income for the community. As noted above, the digital divide results from a person's geographic location and income. The areas in red are likely to have fewer options and higher costs for internet access and the residents are likely less able to afford the cost of service.
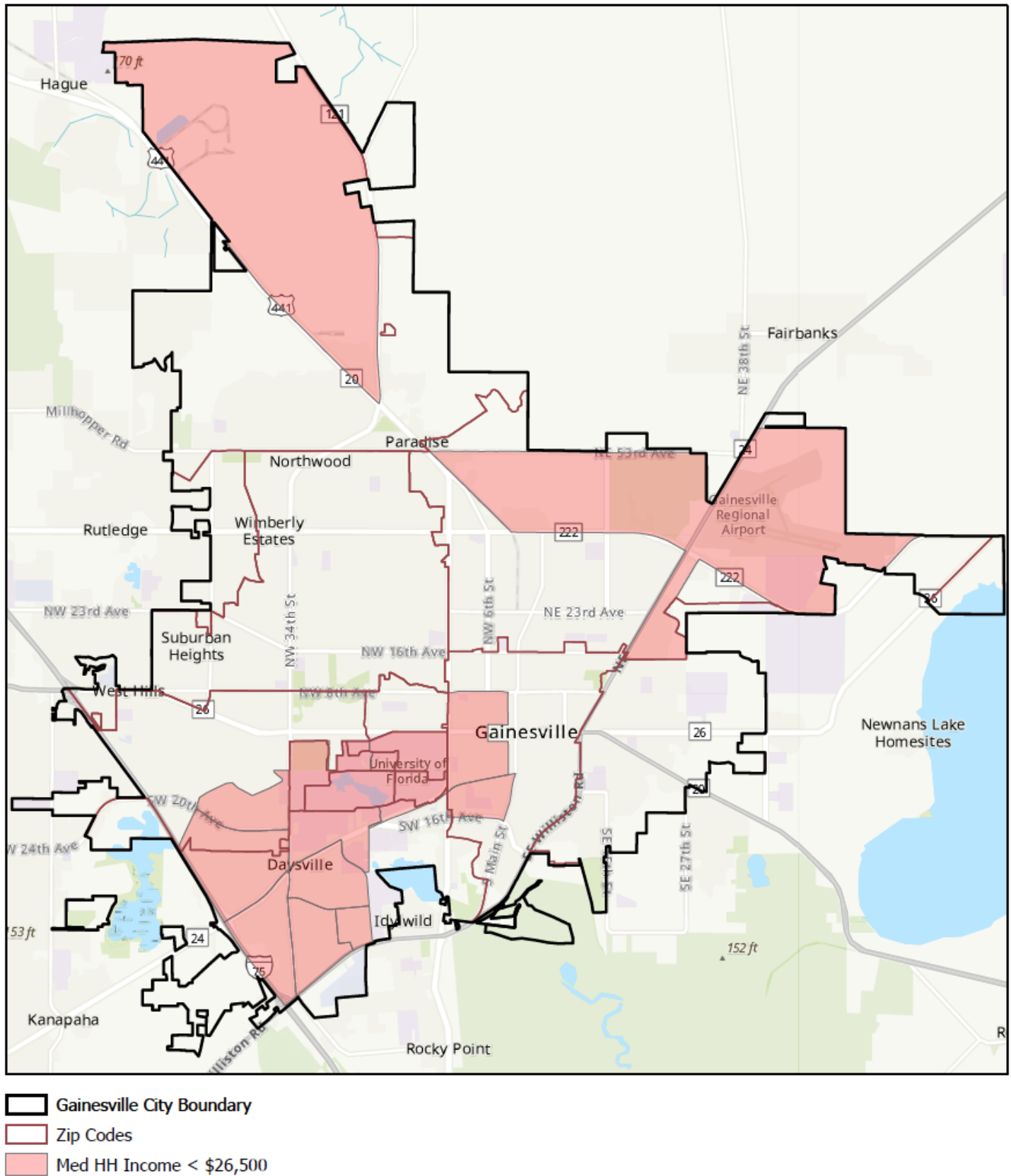
Figure 6: 2019 ACS Survey Median HH Income Below $26,500

Legend:
- Gainesville City Boundary
- Zip Codes
- Med HH Income < $26,500

Figure 6 is derived from 2019 American Community Survey Census data. $26,500 is the current household income level which is the poverty threshhold for a family of four. The red shaded areas are indicative of census tracts where the median household income is below this income threshold. As noted above, the digital divide results from a person's geographic location and income. Lower income areas, indicated in red in Figure 6, are likely to have fewer options and higher costs for internet access and the residents are likely less able to afford the cost of service. It should be noted that the two polygons to the north are less populated and more commercial or industrial in nature, although they do contain a few housing developments.
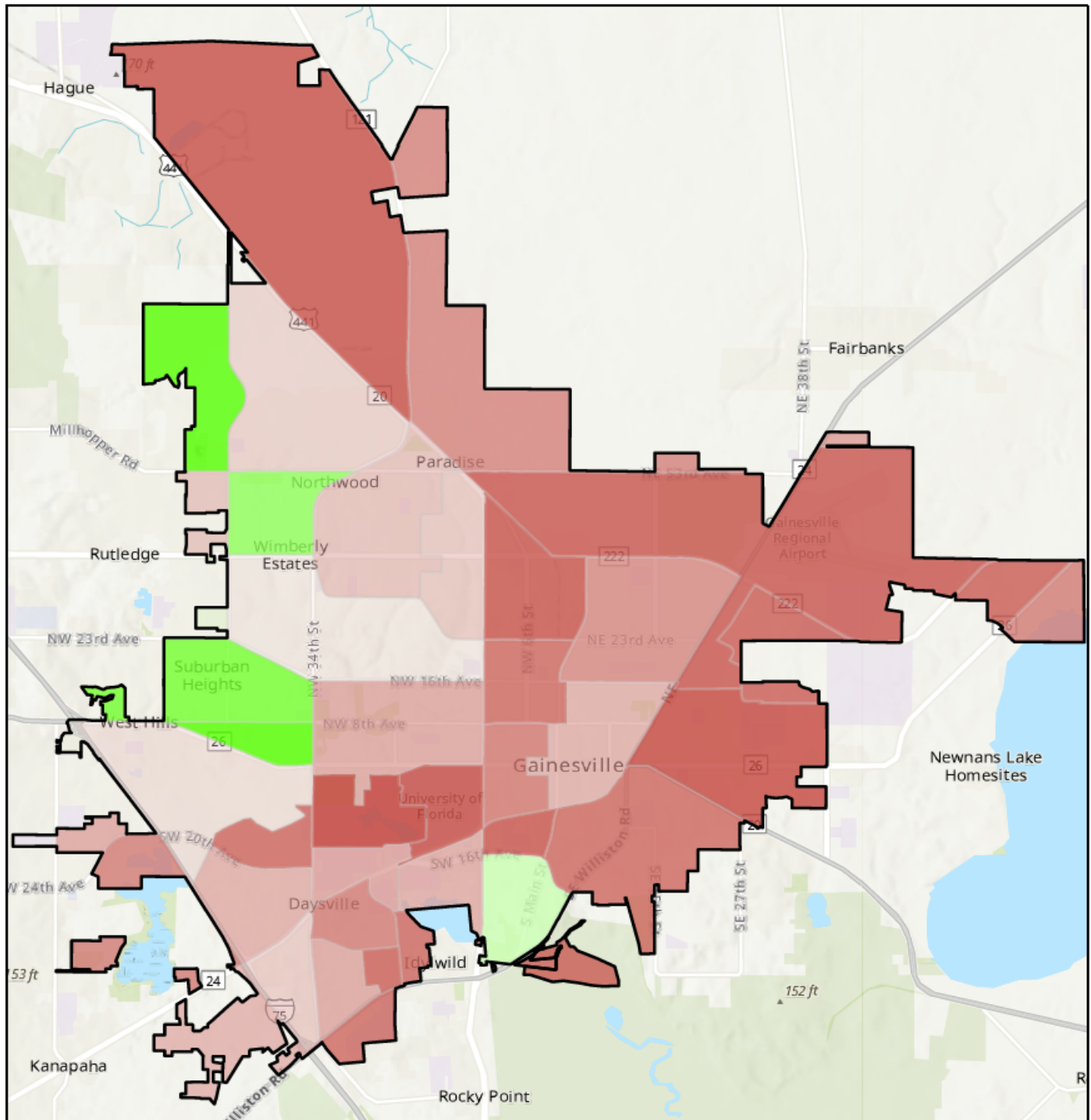
Florida ACS DATA

> 32%   Households that have a computer without broadband internet subscription

< 0%   Households that have a computer with broadband internet subscription

Figure 7: Households with a Computer without Broadband Internet Subscription

Figure 7 is derived from 2019 American Community Survey Census data. The redder shaded areas are indicative of census tracts where there is a greater percentage of households that have a computer but do not have a broadband internet subscription. As noted above, the digital divide results from a person's geographic location and income. The areas in red are likely to have fewer options and higher costs for internet access and the residents are likely less able to afford the cost of service. It should be noted that the northern polygons are less populated and more commercial or industrial in nature, although they do contain some households.
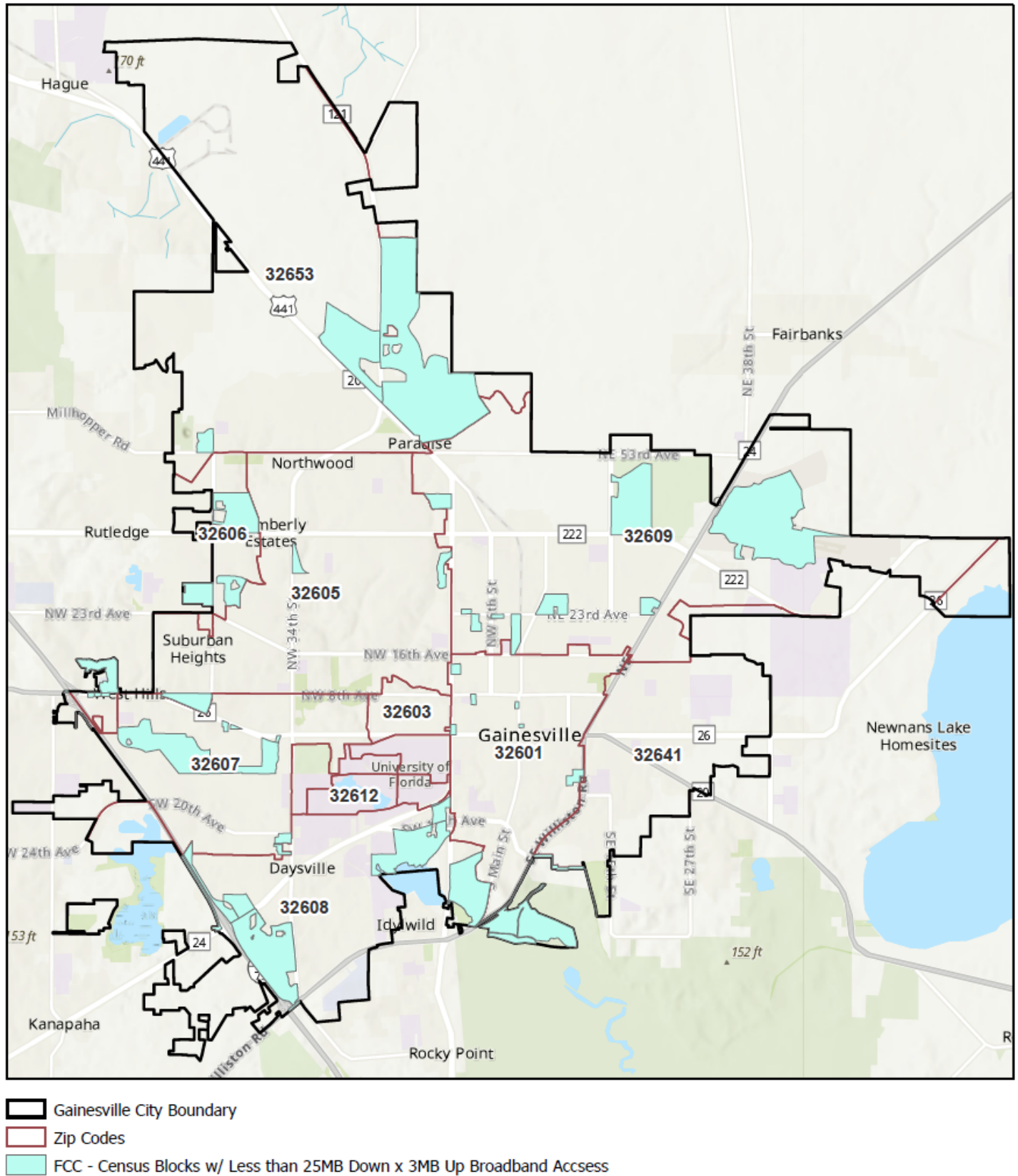
Figure 8: Census Blocks with less than 25 Mb Download/3 Mb Upload Internet Access

Figure 8 depicts results from data collected by the FCC via Form 477. The shaded areas are "unserved" under the FCC definition of broadband. This Form collects information from all facilities-based broadband providers about their broadband connections to customer locations. Service providers self-report to the FCC lists of "all census blocks in which the filer (including affiliates) makes broadband connections available to end-user premises, along with the associated information on technology of transmission[56] …, maximum upload and download speeds (in Mbps), and consumer versus business/government service".[57] Availability is defined as "if the provider does, or could, within a service interval that is typical for that type of connection—that is, without an extraordinary commitment of resources—provision two-way data transmission to and from the Internet with *advertised speeds* exceeding 200 kbps in at least one direction to *end-user premises* in the census block".[58] The FCC's rules for data collection make it very likely that there are more areas in Gainesville with broadband speeds of less than 25/3. Under the FCC rules, a census block is counted as "served" if one service provider has one customer in it which it could reach with broadband service connection with advertised speeds. These rules tend to bias upward the number of census blocks counted as "served" and thus, the areas depicted above likely under-represent the areas of Gainesville that do not have broadband service at or above the 25 Mbps download and 3 Mbps upload threshold.

The small "unserved" shaded polygons scattered through the east side in Figure 8 are generally included in the areas of broadband need, Figure 9 below.

---

[56] Numerous codes for transmission technology are used including xDSL, ADSL, VDSL, Cable Modem by DOCSIS generation, Fiber to the end user, Satellite, fixed wireless, electric power line and other. FCC Form 477 Instructions, June 19, 2021, at page 30.

[57] FCC Form 477 Instructions, June 19, 2021, at page 17.

[58] FCC Form 477 Instructions, June 19, 2021, at page 18.

Figure 9: Prioritized Areas of Need (DRAFT – SUBJECT TO CHANGE)

Figure 9 leavens the previous mapping data with knowledge of the City and shows a tentative priority of potential City broadband investment in five separate areas, denominated as Priority 1 – 5. We have also shown locations of subsidized housing units[59] within these areas. Using the same methods and data we used to update and confirm the CCG investment required to add capacity for residential service to the GRUCom network, **we estimate $12 million would be required to serve the neighbors living in the Priority 1 area in premises located at its 11,299 street addresses**. The construction cost estimate assumes mostly aerial construction using GRU and GRUCom utility and broadband infrastructure with the remainder of the construction assumed to be underground. This Priority 1 estimate and construction cost estimates for the additional areas 2 – 5 should be confirmed with subsequent detailed design costs depending on whether and how the City elects to move forward with residential broadband service, and also based on potential revision to these areas based on City review.

	Priority 1				
	FTG	MILES			
AER	499,709.40	94.64			
UG	177,304.76	33.58			
EST COST	$12,016,848.19				
	Priority Addresses				
	1	2	3	4	5
COM	1,892	1,087	2,187	827	942
RES	11,299	7,651	32,816	11,110	2,774
PUBLIC HOUSING	13	6	7	0	2

Figure 10: Priority 1 Cost Details

The mapping and demographic data suggest the Priority 2 area should follow closely behind Priority 1 network construction. We note that the area directly east of the University of Florida campus in Priority 3 includes numerous locations where GRUCom has already deployed GATOR NET service to apartment complexes and condominiums.

These priority areas are presented for City review, discussion and confirmation/modification. The delineation of the areas can be modified based on those discussions and further review of the data.

---

[59] Blueprint for Affordable Housing: An Action Plan for the City of Gainesville; prepared by the Florida Housing Coalition, September 2020. See, "Subsidized Housing Developments" beginning at page 51.

FUNDING

The COVID-19 pandemic brought broadband to the forefront of Federal attention, resulting in increased funding availability and new program announcements, including American Rescue Plan Act (ARPA) and Economic Development Administration (EDA) funding. Broadband facilities could be deployed in Gainesville in identified Priority 1 areas using ARPA or other funding.

Special Assessment

Florida cities have the authority to fund infrastructure development using special assessment procedures[60]. Special assessments are allowed for expenditures which create a special benefit for the property. Special assessments can be imposed by ordinance and do not require referendum. The City of Gainesville already does this for fire protection service[61]. The "fire services assessment" is defined as "special assessment lawfully imposed by the city commission against assessed property to fund all or any portion of the cost of the provision of fire services, facilities, or programs providing a special benefit to property as a consequence of possessing a logical relationship to the value, use, or characteristics of the assessed property", and the "fire services assessed cost" is defined as "the amount determined by the city commission to be assessed in any fiscal year to fund all or any portion of the cost of the provision of fire services, facilities, or programs which provide a special benefit to assessed property" including specifically enumerated components.

The City of Gainesville could consider a special assessment to fund broadband infrastructure improvements and deployment. This would require determination of a formula method of apportionment for the costs of the broadband infrastructure improvements among the assessed properties. Special assessment funding could be used in concert with American Rescue Plan funding.

American Rescue Plan Act (ARPA)

The COVID-19 Relief bill of 2020 (CARES Act) appropriated over $7 billion in broadband funding mainly allocated to the Federal Communications Commission (FCC) and National Telecommunications and information Administration (NTIA). A second Supplemental Appropriations bill similar to the CARES, the American Rescue Plan Act (ARPA) was passed in early 2021 and allocates $350 billion in new funds to states, territories, tribes, counties, and municipalities, including $10 billion for coronavirus capital projects and

---

[60] See for example, F.S. Section 166.021 (Municipality Powers) and F.S. Section 197.3632 (Uniform method for the levy, collection, and enforcement of non-ad valorem assessments).

[61] G.M.C. Chapter 11, Fire Services Assessment.

$61.5 billion in direct Federal aid to America's counties. As of the writing of this report, the Interim Final Rule for ARPA has been released and at this time, broadband is an eligible use of funding. The City of Gainesville is slated to receive approximately $32 million, a portion of which could be devoted to broadband to assist in funding the estimated $12 million to serve the neighbors in the Priority 1 area of broadband need.

Unlike many grant opportunities, ARPA funds are distributed directly to governments without the need to submit applications or compete for project funding. There are no matching requirements and funds are available even to non-rural communities. ARPA provides for an achievable 5-year window to spend funds and allows for flexible uses of funding to improve communities. It also gives local control and empowerment over how projects are defined, including the ability to own and control fiber and wireless infrastructure, building a foundation for the digital future in each community.

However, there are some guidelines for the use of these funds (**emphasis added**).

Main uses for ARPA funds include:

1. To provide assistance to households, small businesses, and nonprofits, or aid to impacted industries such as tourism, travel, and hospitality. **Assistance includes internet access or digital literacy.**
2. To respond to workers performing essential work during the COVID-19 public health emergency by providing premium pay to eligible workers.
3. To fund **government services** that experienced a reduction in revenue or staff in the most recent full fiscal year prior to the emergency.
4. **To make necessary investments in water, sewer, or broadband infrastructure.**

General guidance for ARPA Projects:

- When assessing whether a program or service "responds to" the Pandemic, identify a need or negative impact from the Pandemic and justify how the program or project addresses it.
- In identifying disproportionately-impacted communities, recipients must document their determination that the Pandemic resulted in disproportionate public health or economic outcomes to disadvantaged populations, households, or geographic areas served by the project.
- Recipients must provide evidence that the project will address the disproportionate public health or economic outcomes impacted by the Pandemic to specific populations, households, or geographic areas.

- Develop a defensible narrative that illustrates how the lack of middle mile broadband access has stifled economic development, job creation and other economic pillars due to the Pandemic.

Narratives and documentation must demonstrate the following:

- How the Pandemic caused economic harm, made worse due to a lack of affordable broadband access.
- Documentation must include percentages of households in poverty,
  - Percentages of individuals experiencing food insecurity,
  - Increase in the number of homeless adults and children since the start of the Pandemic,
  - Percentage of unemployment and increases since the beginning of the Pandemic,
  - High school drop-out rates,
  - Percentage of households without safe drinking water or broadband access,
  - Percentage of deaths caused by COVID-19, and
  - Any other economic indicator of economic or social equity and growth.

Tips for ARPA Funding:

- Use narratives developed for previous projects submitted to USDA Rural Development, HUD-CDBG or EDA grants. ARP rules are not that different.
- Consult with economic development and housing departments at the county/city government to contribute data and narratives.
- Gather national school lunch program data from previous E-Rate projects and seek input from school boards and school superintendents.
- Stakeholder Outreach:
  - Enlist support among local businesses who need better network connectivity
  - Coordinate with rural electric coops or municipal utilities to leverage infrastructure assets and establish partnerships
  - Coordinate with low-income housing advocates and community college leaders about connecting their facilities that will enlist their support.

Other Important Points about ARPA:

- Treasury provides maximum flexibility to fund projects that support economic recovery or revenue losses caused by the Pandemic.
- Permissible expenses include a non-exclusive list of eligible uses for funding as long as they address the negative economic impacts of the Pandemic.

- NEPA review is not required under funds administered by Treasury.
- ARPA funds cannot be used as a match for other Federal funding opportunities.
- ARPA funds can be used as a match for state grants and can be transferred to non-profits.
- Recipients must consult with local community members about their intensions. These engagements must be documented.
- Administrative expenses involving tracking and managing programs is eligible.

Key Dates for ARPA:

- **TREASURY PORTAL** is now open to register and request Recovery Funds
- **AUGUST 31, 2021:** Deadline for counties and local governments to submit first Interim Report to U.S. Treasury
- **OCTOBER 31, 2021:** Deadline for counties to submit first *Quarterly Project and Expenditure Report*
- **DECEMBER 31, 2024:** Funds must be *incurred* and obligated
- **DECEMBER 31, 2026:** Funds must be *expended* to cover obligations and all work must be completed

Economic Development Administration (EDA)

The Economic Development Administration (EDA) Public Works and Economic Adjustment Assistance (EAA) programs help distressed communities revitalize, expand, and upgrade their physical infrastructure. These programs enable communities to attract new industry; encourage business expansion, diversify local economies, and generate or retain long-term, private-sector jobs and investment through the acquisition or development of land and infrastructure improvements needed for the successful establishment or expansion of industrial or commercial enterprises.

EDA program investments help facilitate the transition of communities from being distressed to becoming competitive by developing key public infrastructure, such as technology-based facilities that utilize distance learning networks, smart rooms, and smart buildings, multi-tenant manufacturing and other facilities; business and industrial parks with fiber-optic cable, and telecommunications and development facilities.

In addition, EDA invests in traditional public works projects, including water and sewer systems improvements, industrial parks, business incubator facilities, expansion of port and harbor facilities, skill-training facilities, and brownfields redevelopment. Matching funds are required (anywhere between 20% to 50% of total project costs) and grants range from $100,000 to $3 million. Funding availability is ongoing on a rolling basis.

Criteria for EDA Funds:

- The project's demonstrated alignment with at least one of EDA's current investment priorities as published on EDA's website at www.eda.gov.
- The project's potential to increase the capacity of the community or region to promote job creation and private investment in the regional economy.
- The likelihood that the project will achieve its projected outcomes.
- Ability of the applicant to successfully implement the proposed project, including the applicant's financial and management capacity and the applicant's capacity to secure the support of key public and private sector stakeholders.

EDA Funds through ARPA:

Through ARPA, an additional $3 billion is allotted for the Economic Development Administration (EDA) to continue funding infrastructure projects including middle mile broadband networks. Funds must be spent by 2022. EDA funds can be used to support middle mile infrastructure deployments. Matching funds are required (anywhere between 20% to 50% of total project costs) and grants range from $100,000 to $3 million. Funds will remain available until Sept 30, 2022.

Projects must be focused on creating or retaining jobs in the manufacturing, corporate, technology or related sectors to help communities recover from economic injury caused by the Pandemic. Twenty-five percent of funds must be used for projects in communities that experienced job losses in the travel, tourism and outdoor recreational sectors.

Applications for all EDA programs are processed year-round and managed by the regional EDA offices.

8. Insights from Other Jurisdictions

Thousands of municipalities across the country deploy, own and operate fiber and/or wireless networks. Some do it with a vision of providing ubiquitous high-speed broadband services across their region. While there are several case studies nationally to compare Gainesville to, there are few in the State of Florida due to the impact of barriers to municipal broadband erected by F.S. 350.81. In Florida, both Ocala and Lakeland own and operate significant fiber-optic infrastructure assets. The City of Ocala has long operated a fiber-optic enterprise and has recently deployed Fiber-to-the-Home on a limited basis. Currently, Ocala is only offering new services to businesses and home-based businesses aside from the four neighborhoods they already have infrastructure: Happiness Homes, Windstream, Ocala Highlands, and Bellechase. They are surveying the greater Ocala neighborhoods for further interest in fiber services.

Their current packages offer sustained bandwidth topping out at 20 Mbps with bursts up to 250 Mbps.[62]

The City of Lakeland completed a Fiber-to-the-Home Business Plan in 2019/20 and decided to work with a partner through a structured Public-Private-Partnership (P3). The City of Lakeland is currently working toward a Citywide buildout. In August 2020, Lakeland City Commissioners voted 4-2 to work toward a contract with Summit Broadband for a public-private partnership to expand the City's backbone to a FTTH distribution service. Under Summit's proposal, they would pay the City $12,000 per month for use of the backbone network and 10% of broadband revenues, creating a revenue stream for the City.[63]

Other Florida municipalities like Daytona Beach, Tallahassee, Jupiter, Clermont, and Sunny Isles all own and operate enterprise fiber-optic networks for the benefit of their municipal operation and to enhance communications across their communities.

- City of Cedar Falls, IA – Launched before 2000, Cedar Falls Utilities ("CFU") is the utility provider in the City, providing all utilities, including Garbage, Gas, Electric, Water, Sewer, and Telecom. CFU has attained nearly 90% take rates across its City, providing high-speed Gigabit and Ten Gigabit Internet, as well as other complimentary "triple-play" services. CFU was awarded "Best Gaming ISP for 2021" from PC Magazine, for speeds and quality of service.[i64]

- City of Longmont, CO – Longmont NextLight provides access to nearly 100% of its homes and businesses and in 2019 was ranked by PC Magazine as the "Fastest ISP in America." [65]

- City of Chattanooga, TN – One of the first municipal utility FTTH projects in the US, Chattanooga's EPB now serves over 100,000 subscribers, and has reported recently that most of its net income in the past year has come from its telecommunications business, not its power division.

---

[62] https://www.ocalafl.org/government/city-departments-i-z/ocala-fiber-network

[63] https://www.theledger.com/story/news/2020/08/21/lakeland-looks-negotiate-broadband-contract-summit/3403852001/

[64]http://www.pcmag.com/news/best-gaming-isps-for-2021

[65] http://www.pcmag.com/news/the-fastest-isps-of-2019

- Palo Alto, CA - In 1996, Palo Alto built a 33-mile optical fiber ring routed within the city to enable better internet connections. Palo Alto is now leveraging this fiber optic ring for a phased expansion to connect more city departments, utility operations and neighborhoods throughout Palo Alto.

Appendix A: Lifeline Service Offering

In the event GRUCom began offering residential broadband service it could also consider providing it on a "Lifeline" basis to qualifying low-income consumers using the FCC's Universal Service funding which provides for a $9.25 per month discount.

FEDERAL UNIVERSAL SERVICE FUNDS AVAILABLE TO ETCS FOR LIFELINE SERVICE

The Federal Universal Service program has two funds which are available to Eligible Telecommunications Carriers (ETC). One fund supports provision of broadband services to low-income consumers through its *Lifeline Program* that funds discounts on those services. The Lifeline program provides a basic support amount of $9.25 per line monthly payments to service providers extending that discount to eligible customers.[1] The full amount of this discount reimbursement must be passed through to the subscriber and only one individual at a residential address is eligible for Lifeline reimbursement. If GRUCom offered residential broadband services a Lifeline offering could be part of that. Participation in the FCC's Lifeline program is beneficial for qualifying low-income consumers but certification and compliance obligation should be evaluated in the context of the GRUCom business plan before making final decisions.

ELIGIBLE TELECOMMUNICATIONS CARRIER DESIGNATION

"Eligible Telecommunications Carrier" is a term defined in the Federal Telecommunications Act (FTA) and is a designation that is required to be obtained by a service provider from the state utility commission[1] or the FCC[1] *before the service provider is eligible to receive federal universal service support funds, such as lifeline assistance.* In order to receive the ETC designation a telecommunications provider must demonstrate it will offer the services supported by the universal service fund throughout its designated service area.[1] If GRUCom decides it wants to offer Lifeline broadband services to its members it would need to apply for ETC designation, and demonstrate that it can and will offer voice and broadband service throughout its designated service area which meet minimum service standards established annually by the FCC.[1]

FEDERAL COMMUNICATIONS COMMISSION REQUIREMENTS ASSOCIATED WITH PROVIDING RETAIL SERVICES

The FCC has various reporting and filing requirements for retail telecommunications providers depending on the type of provider (e.g., broadband internet or cable TV). The compliance, reporting and filing requirements which should be reviewed for applicability to GRUCom, in the event it decided to provide residential broadband services, are:

- As a result of current provision of telecommunications services GRUCom likely already has an FCC Registration Number (FRN) from the FCC, and a 499 ID number or "SPIN number"[1] from the Universal Service Administrative Company (USAC).

- If it isn't already, like all other telecommunications providers GRUCom will be required to pay into the universal service fund its collected USF contributions based on retail revenues. Annual reporting occurs on FCC Form 499-A.

- The FCC collects local competition and broadband reporting data and if it isn't already this data must be submitted by GRUCom twice a year on FCC Form 477.

- The FCC assesses an annual regulatory fee which at the *de minimis* level is $1000. GRUCom may be exempt from this fee as a government entity per 47 C.F.R. § 1.1162(b).

- GRUCom will need to comply with Section 222 of the Communications Act which requires protection of customer proprietary network information (CPNI – a customer's billing and subscribed services information) from unauthorized disclosure. An annual certification must be filed stating such compliance. (GRUCom may already be compliant due to existing telecommunications operations.)

- Comply with terms of the Communications Assistance for Law Enforcement Act (CALEA) which requires GRUCom to have technical capabilities that will enable it to assist law enforcement officials in conducting authorized electronic surveillance. (GRUCom may already be compliant due to existing telecommunications operations.)

- Comply with requirements in Section 255 of the Communications Act for disability access and certificate such compliance annually. (GRUCom may already be compliant due to existing telecommunications operations.)

- Compliance with the FCC's "Truth in Billing" rules which have various requirements including identification of the service provider associated with each charge, placement of charges from third parties in a distinct section of the bill separate from GRUCom charges, clearly identify any change in service providers, provide

clear, full and non-misleading descriptions of charges and services, provide a toll-free number for customer inquiries or complaints, notify the consumer of options to block charges from third parties, and not place on the bill charges which have not been authorized by the consumer.

- Provide consumers with Battery back-up options if GRUCom provides VoIP service.

- Comply with transparency and disclosure requirements for internet services, disclosing network management practices (blocking, throttling, traffic prioritization, congestion management, etc.), performance characteristics (service technology, expected and actual speed and latency, etc.), commercial terms (pricing, privacy practices, etc.).

Appendix B: Market Analysis Data

COX - RESIDENTIAL

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
4714 NW 82ND RD	Cable	25 Mbps	$29.99/month	Price for 12 months
		50 Mbps	$39.99/month	Price for 12 months
		150 Mbps	$49.99/month	Price for 24 months; included Panoramic Wifi and Complete Care
		500 Mbps	$59.99/month	Price for 24 months (increases to $149.98) includes Panoramic Wifi and Complete Care
		940 Mbps	$69.99/month	Price for 24 months (increases to $169.98); includes Panoramic Wifi and Complete Care
3143 NE 12TH ST	Cable	25 Mbps	$19.99/month	Price for 12 months (increases to $44.99); includes Pano

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
				and Complete Care
		50 Mbps	$29.99/month	Price for 12 months (increases to $44.99); includes Pano and Complete Care; 1.25 TB data
		150 Mbps	$49.99/month	Price for 12 months (increases to $83.99); includes Pano and Complete Care; 1.25 TB data
		500 Mbps	$69.99/month	Price for 12 months (increases to $99.99); includes Pano and Complete Care; 1.25 TB data
		940 Mbps	$99.99/month	Price for 12 months (increases to $119.99); includes Pano and Complete Care; 1.25 TB data
3864 NW 38TH PL	Cable	25 Mbps	$19.99/month	Price for 12 months (increases to $44.99);

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
				includes Pano and Complete Care
		50 Mbps	$29.99/month	Price for 12 months (increases to $44.99); includes Pano and Complete Care; 1.25 TB data
		150 Mbps	$49.99/month	Price for 12 months (increases to $83.99); includes Pano and Complete Care; 1.25 TB data
		500 Mbps	$69.99/month	Price for 12 months (increases to $99.99); includes Pano and Complete Care; 1.25 TB data
		940 Mbps	$99.99/month	Price for 12 months (increases to $119.99); includes Pano and Complete Care; 1.25 TB data
214 NE 5TH AVE	Cable	25 Mbps	$19.99/month	Price for 12 months (increases to

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
				$44.99); includes Pano and Complete Care
		50 Mbps	$29.99/month	Price for 12 months (increases to $44.99); includes Pano and Complete Care; 1.25 TB data
		150 Mbps	$49.99/month	Price for 12 months (increases to $83.99); includes Pano and Complete Care; 1.25 TB data
		500 Mbps	$69.99/month	Price for 12 months (increases to $99.99); includes Pano and Complete Care; 1.25 TB data
		940 Mbps	$99.99/month	Price for 12 months (increases to $119.99); includes Pano and Complete Care; 1.25 TB data
1750 NW 8TH AVE	Cable	25 Mbps	$19.99/month	Price for 12 months

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
				(increases to $44.99); includes Pano and Complete Care
		50 Mbps	$29.99/month	Price for 12 months (increases to $44.99); includes Pano and Complete Care; 1.25 TB data
		150 Mbps	$49.99/month	Price for 12 months (increases to $83.99); includes Pano and Complete Care; 1.25 TB data
		500 Mbps	$69.99/month	Price for 12 months (increases to $99.99); includes Pano and Complete Care; 1.25 TB data
		940 Mbps	$99.99/month	Price for 12 months (increases to $119.99); includes Pano and Complete Care; 1.25 TB data

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
413 NW 36TH TER	Cable	25 Mbps	$29.99/month	Price for 12 months
		50 Mbps	$39.99/month	Price for 12 months
		150 Mbps	$49.99/month	Price for 24 months; included Panoramic Wifi and Complete Care
		500 Mbps	$59.99/month	Price for 24 months (increases to $149.98) includes Panoramic Wifi and Complete Care
		940 Mbps	$69.99/month	Price for 24 months (increases to $169.98); includes Panoramic Wifi and Complete Care
2701 SW 31ST TER	Cable	25 Mbps	$19.99/month	Price for 12 months (increases to $44.99); includes Pano and Complete Care
		50 Mbps	$29.99/month	Price for 12 months (increases to $44.99);

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
				includes Pano and Complete Care; 1.25 TB data
		150 Mbps	$49.99/month	Price for 12 months (increases to $83.99); includes Pano and Complete Care; 1.25 TB data
		500 Mbps	$69.99/month	Price for 12 months (increases to $99.99); includes Pano and Complete Care; 1.25 TB data
		940 Mbps	$99.99/month	Price for 12 months (increases to $119.99); includes Pano and Complete Care; 1.25 TB data

COX - BUSINESS

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
6510 NW 13TH ST	Cable	25 Mbps	$40/month	Price for 6 months

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
		50 Mbps	$94.99/month	With 12-month agreement
		50 Mbps	$74.99/month	With 36-month agreement
		100 Mbps	$124.99/month	With 12-month agreement
2610 NE 39TH AVE	Cable	25 Mbps	$40/month	Price for 6 months
		50 Mbps	$94.99/month	With 12-month agreement
		50 Mbps	$74.99/month	With 36-month agreement
		100 Mbps	$124.99/month	With 12-month agreement
4115 NW 53RD AVE	Cable	25 Mbps	$40/month	Price for 6 months
		50 Mbps	$94.99/month	With 12-month agreement
		50 Mbps	$74.99/month	With 36-month agreement
		100 Mbps	$124.99/month	With 12-month agreement
2630 NW 39TH AVE	Cable	25 Mbps	$40/month	Price for 6 months

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
		50 Mbps	$94.99/month	With 12-month agreement
		50 Mbps	$74.99/month	With 36-month agreement
		100 Mbps	$124.99/month	With 12-month agreement
605 SE 3RD ST	Cable	25 Mbps	$40/month	Price for 6 months
		50 Mbps	$94.99/month	With 12-month agreement
		50 Mbps	$74.99/month	With 36-month agreement
		100 Mbps	$124.99/month	With 12-month agreement
1826 W UNIVERSITY AVE	Cable	25 Mbps	$40/month	Price for 6 months
		50 Mbps	$94.99/month	With 12-month agreement
		50 Mbps	$74.99/month	With 36-month agreement
		100 Mbps	$124.99/month	With 12-month agreement
4040 NEWBERRY RD STE 925	Cable	25 Mbps	$40/month	Price for 6 months

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
		50 Mbps	$94.99/month	With 12-month agreement
		50 Mbps	$74.99/month	With 36-month agreement
		100 Mbps	$124.99/month	With 12-month agreement
4701 SW 34TH ST	Cable	25 Mbps	$40/month	Price for 6 months
		50 Mbps	$94.99/month	With 12-month agreement
		50 Mbps	$74.99/month	With 36-month agreement
		100 Mbps	$124.99/month	With 12-month agreement

AT&T - RESIDENTIAL

ADDRESS	SERVICE	SPEED	PRICE	NOTES
4714 NW 82ND RD	Fiber	300 Mbps	$35/month	
		500 Mbps	$45/month	
		1000 Mbps	$60/month	Price for 12 months, increases $20 after 12 months
3143 NE 12TH ST	No Service Available			

ADDRESS	SERVICE	SPEED	PRICE	NOTES
3864 NW 38TH PL	No Service Available			
2282 NW 25TH ST	No Service Available			
214 NE 5TH AVE	Fiber	300 Mbps	$35/month	
		500 Mbps	$45/month	
		1000 Mbps	$60/month	
1750 NW 8TH AVE	Fiber	300 Mbps	$35/month	
		500 Mbps	$45/month	
		1000 Mbps	$60/month	
413 NW 36TH TER	Fiber	300 Mbps	$35/month	
		500 Mbps	$45/month	
		1000 Mbps	$60/month	
2701 SW 31ST TER	Fiber	300 Mbps	$35/month	
		500 Mbps	$45/month	
		1000 Mbps	$60/month	

AT&T – BUSINESS

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
6510 NW 13TH ST	AT&T Wireless Broadband	8 Mbps	$80/month	includes 10GB of Business FastTrack
		12 Mpbs	$130/month	includes 10GB of Business FastTrack
		50 Mbps	$200/month	includes 30GB of Business FastTrack

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
		100 Mbps	$300/month	includes 30GB of Business FastTrack
2610 NE 39TH AVE	Business Fiber	100 Mbps	$50/month	
		300 Mbps	$90/month	
		1000 Mbps	$120/month	
4115 NW 53RD AVE	Internet Basic	6 Mbps	$55/month	
2630 NW 39TH AVE	AT&T Wireless Broadband	8 Mbps	$80/month	includes 10GB of Business FastTrack
		12 Mpbs	$130/month	includes 10GB of Business FastTrack
		50 Mbps	$200/month	includes 30GB of Business FastTrack
		100 Mbps	$300/month	includes 30GB of Business FastTrack
605 SE 3RD ST	Internet Basic	768kbps	$55/month	
1826 W UNIVERSITY AVE	AT&T Wireless Broadband	8 Mbps	$80/month	includes 10GB of Business FastTrack
		12 Mpbs	$130/month	includes 10GB of Business FastTrack
		50 Mbps	$200/month	includes 30GB of Business FastTrack
		100 Mbps	$300/month	includes 30GB of Business FastTrack

ADDRESS	SERVICE	SPEEDS	PRICING	NOTES
4040 NEWBERRY RD STE 925	AT&T Wireless Broadband	8 Mbps	$80/month	includes 10GB of Business FastTrack
		12 Mpbs	$130/month	includes 10GB of Business FastTrack
		50 Mbps	$200/month	includes 30GB of Business FastTrack
		100 Mbps	$300/month	includes 30GB of Business FastTrack
4701 SW 34TH ST	Business Fiber	100 Mbps	$50/month	
		300 Mbps	$90/month	
		1000 Mbps	$120/month	