Gainesville, FL
Broadband Feasibility Study

JUNE 20, 2019

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The Feasibility Study - Goals

Primary Goals

- Lower prices and increased speeds for residents
- Lower prices and increased speeds for businesses
- Everyone has access to municipal network in designated areas

Secondary Goals

- Lowest priced gigabit internet for residential service in the United States
- Lowest priced internet for businesses in the United States
- Universal free service to all residents served

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The Feasibility Study

- Market Research – Residential survey, speed tests, customer bill analysis
- Engineering projection of network costs
- Financial feasibility analysis
- Competitive response
- Funding options
- SWOT analysis
- Legal analysis

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The Study Areas

Considered four different study areas:

- City limits of Gainesville.
- Adding the rest of the GRU service territory.
- Adding the urban reserve
- Adding small cities of Alachua, Archer, Hawthorne, High Springs, Newberry, and Waldo.

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The Residential Survey

- 92% of respondents had landline broadband. 64% of those with broadband subscribe to Cox, 29% subscribe to AT&T, and the remainder subscribe to Windstream or another provider.
- 91% of respondents still subscribe to traditional cable TV service.
- 59% of respondents still have a landline telephone.
- 38% support the idea of the city building a fiber network with another 35% saying they need more information to understand the issue.
- 84% liked the goal of having the lowest broadband prices in the country, 62% liked the goal for bringing more competition and choice to the city.

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The Residential Survey

- 49% of respondents said they would definitely or probably buy faster broadband from a city network at market rates. This improved to 56% when asked if they would buy gigabit broadband for $50.
- 43% said they would definitely or probably buy cable TV from a city fiber network.
- 31% said they would definitely or probably buy landline telephone service from a city fiber network.
- 47% of respondents said they would definitely or probably support the idea of having part of their broadband rates to make sure all school students have broadband in their homes.
- We asked how happy residents are with Cox (31%), AT&T (26%) and the City (17%). We've never seen a City rated lower than ISPs.

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Speed Test

- Half of customers getting faster download speeds than they subscribe to.
- Half are getting slower download speeds, with 25% getting significantly slower speeds.

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Customer Bill Analysis

- The incumbents freely negotiate prices with customers.
- Cox cable TV prices includes separate Broadcast Fee and Sports Fee.
- Both incumbents charge separate FCC fees for telephone.
- 100% of Cox customers surveyed were buying a bundle. Many customers believe that a bundle is mandatory (even though standalone broadband is available).
- Cox overall bills higher rates than other big cable companies. This seems to be due to higher cable TV rates, and for the bills we examined, due to smaller and fewer discounts.

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Network Design – Passings

	City Limits	GRU Area	Urban Reserve	Small Cities
Single Family	23,021	17,515	3,731	8,241
2- 4 Units	11,897	1,344	1,179	1,498
Residential	34,918	18,859	4,910	9,739
Business	7,811	955	232	772
Total	42,729	19,814	5,142	10,511
Cumulative	42,729	62,543	67,685	78,196

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Network Design – Miles of Fiber

	City Limits	GRU Area	Urban Reserve	Small Cities
Aerial Fiber	359 Mi	603 Mi	664 Mi	793 Mi
Buried Fiber	293 Mi	494 Mi	543 Mi	604 Mi
Total Fiber	652 Mi	1,097 Mi	1,207 Mi	1,397 Mi

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Network Design – Design Criteria

- Fiber built to pass every home and business
- Excludes MDUs (apartments with more than 4 units)
- Follows existing utilities for aerial / buried fiber construction
- Aerial fiber placed in the power space with access lowered to the communications space
- Fiber costs includes a 6% construction contingency
- Uses passive optical network (PON) technology
- Existing fiber network used as backbone for FTTP network
- Asset costs includes fiber, electronics, fiber drops, and ancillary assets like vehicles, furniture, inventory, etc.

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Network Design – Cost of Assets

	City Limits	GRU Area	Urban Reserve	Small Cities
Other Assets	$ 3.5 M	$ 4.7 M	$ 5.2 M	$ 6.6 M
Electronics	$15.3 M	$ 22.4 M	$ 24.2 M	$ 27.7 M
Fiber Drops	$13.2 M	$ 19.1 M	$ 20.6 M	$ 23.7 M
Fiber	$66.0 M	$111.1 M	$123.3 M	$138.9 M
Total	$98.0 M	$157.3 M	$173.3 M	$196.9 M

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Financial Analysis – Major Assumptions

Base study includes:

- City would be the ISP
- Doesn't build to MDUs greater than 4 units
- Products are triple play plus managed WiFi
- $50 gigabit broadband
- Adds 31 to 46 new employees by year five, depending upon the scenario.
- Bond financing. 25-year loan. 3.25% interest
- 48% customer penetration rate
- 6% construction contingency

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Financial Results - Base

	City Limits	GRU Area	Urban Reserve	Small Cities
Asset Costs	$ 98.0 M	$157.3 M	$173.3 M	$196.9 M
Bond Debt	$116.7 M	$172.8 M	$190.8 M	$213.5 M
Passings	42,729	62,543	67,685	78,196
Penetration Rate	48%	48%	48%	48%
Year Positive Net Income	5	6	6	6
Year Covers Debt	21	21	22	21
Cash 25 Years 3.25%	$ 35.2 M	$ 65.3 M	$ 40.8 M	$ 70.1 M
Cash 25 years 4%	$ 15.5 M	$ 34.9 M	$ 7.8 M	$ 32.9 M
Cash 56% / 4%	$ 80.6 M			

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Financial Analysis – Sensitivity Analysis

Varying the Price

- Base, $50 Gigabit $35.2 M cash after 25 years
- Market Rates $73.2 M cash
- $60 Gigabit $94.0 M cash

Varying the Interest Rate

- Base, 3.25% interest $ 35.2 M cash after 25 years
- Vary interest by 0.50% Plus or Minus $22.3 M cash

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Financial Analysis – Sensitivity Analysis

Varying the Bond Term

- Base, 25 Years — $35.2 M cash after 25 years
- 20 Years — $42.0 M cash
- 15 Years — ($29.3 M) cash

Varying the Penetration Rate

- Base, 48% — $ 35.2 M cash after 25 years
- 44% — $ 2.6 M cash
- 50% — $ 51.7 M cash

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Financial Analysis – Sensitivity Analysis

Varying the Construction Contingency

Base, 6% $35.2 M cash after 25 years

- No Contingency $43.7 M cash
- 10% Contingency $29.6 M cash

Varying the Product Mix

- Base, Triple Play $35.2 M cash after 25 years
- No Cable TV $33.9 M cash
- Broadband Only ($54.1 M) cash

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Financial Analysis – Digital Divide

Three Breakeven Scenarios

- $44.50 Gigabit price for everybody
- $60 regular gigabit

  $21.25 low-income gigabit
- $70 regular gigabit

  $6.25 low-income gigabit

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Free Broadband for All

- Scenario loses $306.1 million over 25 years
- Could be financed with $27.21 / revenue of revenue per customer from some other source
  - Utility fee (San Francisco model)
  - Property tax
  - Sales tax
- The amount grows over time with inflation (is $38.29 per year by year 25).

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Financial Conclusion

- It looks impossible to finance over 15 years, as suggested by Florida law.
- Results are highly sensitive to penetration rate and broadband prices.
- There is economy of scale (the bigger the footprint the more efficient the business.
- It looks like it's mandatory, at least in the beginning, to offer the triple play.
- It looks possible to offer $50 gigabit service, assuming all assumptions are met.
- There are interesting digital divide scenarios worth exploring further.

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Financial Conclusion

- It would be possible to provide free broadband if the City can find $27+ of revenue per household per month from some other source.
- There is substantial risk in all of the scenarios.
  - Financial risk can be reduced by research to solidify the assumptions
  - There is significant operational risk of not building the network or selling to customers on the needed timeline. (City limits – 540 new customers per month; whole county – 850 new customers per month)

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Competitive Response

Expect a significant competitive response

- Florida law provides numerous opportunities for competitors to publicly intervene and comment on your plans
- Incumbents would likely campaign hard against any referendum
- Incumbents will cut prices and offer specials to try to keep customers.
- These same two incumbents sued in Lafayette, LA to try to stop the project.

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Funding Options

- The size of the needed borrowings – ranges from $113M to $213M.
- The market doesn't offer revenue bonds for telecom ventures – needs to be some form of general obligation bond. Could be backed by tax or utility revenues.
- There are no 'telecom' grants available for a city of your size. There might be some non traditional grant money available, such as for law enforcement / homeland security.
- There is an intriguing possibility to attract some private funding through the new Opportunity Zones.

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SWOT Analysis - Strengths

- GRUCom already operate an extensive fiber network
- GRUCom already has a voice switch
- GRUCom already has some of the needed systems / software in place
- GRU already serves residential customers
- Can save construction costs by using the power space

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SWOT Analysis - Weaknesses

- No experience selling residential service in a competitive environment
- The opportunity excludes apartments – adding political risk
- Government purchasing practices add time and costs
- Survey showed consumer dissatisfaction with City brand name
- Significant overheads layered onto any business venture
- Rapid construction and sales are needed to generate enough revenue to cover bond payments

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SWOT Analysis - Opportunities

- The retail broadband scenario can work
- Competition would lower prices in the market for everybody in the City
- It might be possible to solve the digital divide
- A broadband network covers all future fiber needs
- Better broadband brings significant benefits to the community
- Citywide gigabit speeds should bring numerous soft benefits – improved education, promote the work at home economy, stimulate economic development, etc.
- Creates a valuable asset (the fiber business)

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SWOT Analysis - Threats

- The new business could underperform and lose money
- Competitive responses from incumbents
- State legal restrictions
- Can the city borrow enough money?
- Will likely need to pass a referendum
- Huge operational effort needed to implement the business
- Need to shield the business from politics
- Threat from future technologies like 5G

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Implementation Timeline

- Hard to picture getting ready to do this in less than 2 – 3 years.
- Could reasonably have first customer 9 months after bond financing
- Construction schedule – in Gainesville city limits, 3.5 years. For whole study area, 4.5 - 5 years.

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Legal Issues

- GRU grandfathered and excused from numerous early hurdles
- There is ambiguity in law about requirement to use revenue bonds
  - Note that the market doesn't offer a pure revenue bond
  - GRU has been financing for years using G.O. bonds
- There is also ambiguity about the need to hold a referendum. The safest assumption and best strategy is to assume a referendum is needed.
- If after 4 years revenues exceed full operating costs you must hold public hearing and consider if you should close, dispose, sell, or continue to operate the system.

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Identified Hurdles

- We expect a significant competitive response from AT&T and Cox to try to stop the City from building a network, and to intervene at every opportunity if you proceed.
- The Florida state statutes provide numerous opportunities for the incumbents to make noise. However, our overall conclusion is that the Florida laws won't stop you.
- The size of the borrowings is likely a big hurdle, ranging from $113 million to $213 million.
- We foresee political problems due to the fact that any solution would not apply to apartment residents.
- Scaling the business to meet the required size and needed speed of implementation will be a big challenge.
- Setting low prices (the goal of the City) adds risk to the project.

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Conclusions from our Analysis

- Moving forward will almost certainly require a public referendum.
- We interpret the survey to indicate approximately a 48% interest in those that might buy from a new network.
- We believe a fiber network using PON technology will provide the most affordable technology solution.
- The only realistic source of funding is municipal bonds. There are not likely going to be any sizable grants that could help a City of your size. There is an intriguing possibility with Opportunity Zone financing.
- We don't think that offering low prices is compatible with creating a public/private partnership.

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Conclusions from our Analysis

- It looks possible to succeed with a $50 gigabit broadband product. However, there are significant financial downsides from not meeting the key assumptions such as penetration rates, interest rate on debt and a few others.
- There is also the potential for offering a low-price digital divide product. To so would mean increasing the $50 gigabit price.
- The City could offer free broadband if you can find another revenue source of $27.21 per household per month to support the business.

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Next Steps

- Choose between the four scenarios – City limits through whole County.
- Investigate the ability to borrow the needed bond funding.
- Decide approach and policies for solving the digital divide – study lays out different approaches / pricing.
- Develop a plan to deal with Florida statutes and expected response of the incumbents.
- Consider another survey if you want to look harder at digital divide options.
- More in-depth engineering means more reliable cost estimates which means less risk.

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Next Steps

- Need to develop an operational plan to be ready to implement. That would include a marketing plan, staffing plan, identifying key vendors, developing processes, software readiness and regulatory readiness.
- Should create a detailed budget before going for bonds.
- Undertake a review of City processes that affect construction.
- Should start a public education campaign to explain this feasibility and priming for an eventual referendum.

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