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Alachua County Fiber Deployment Feasibility Study

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I. Introduction:

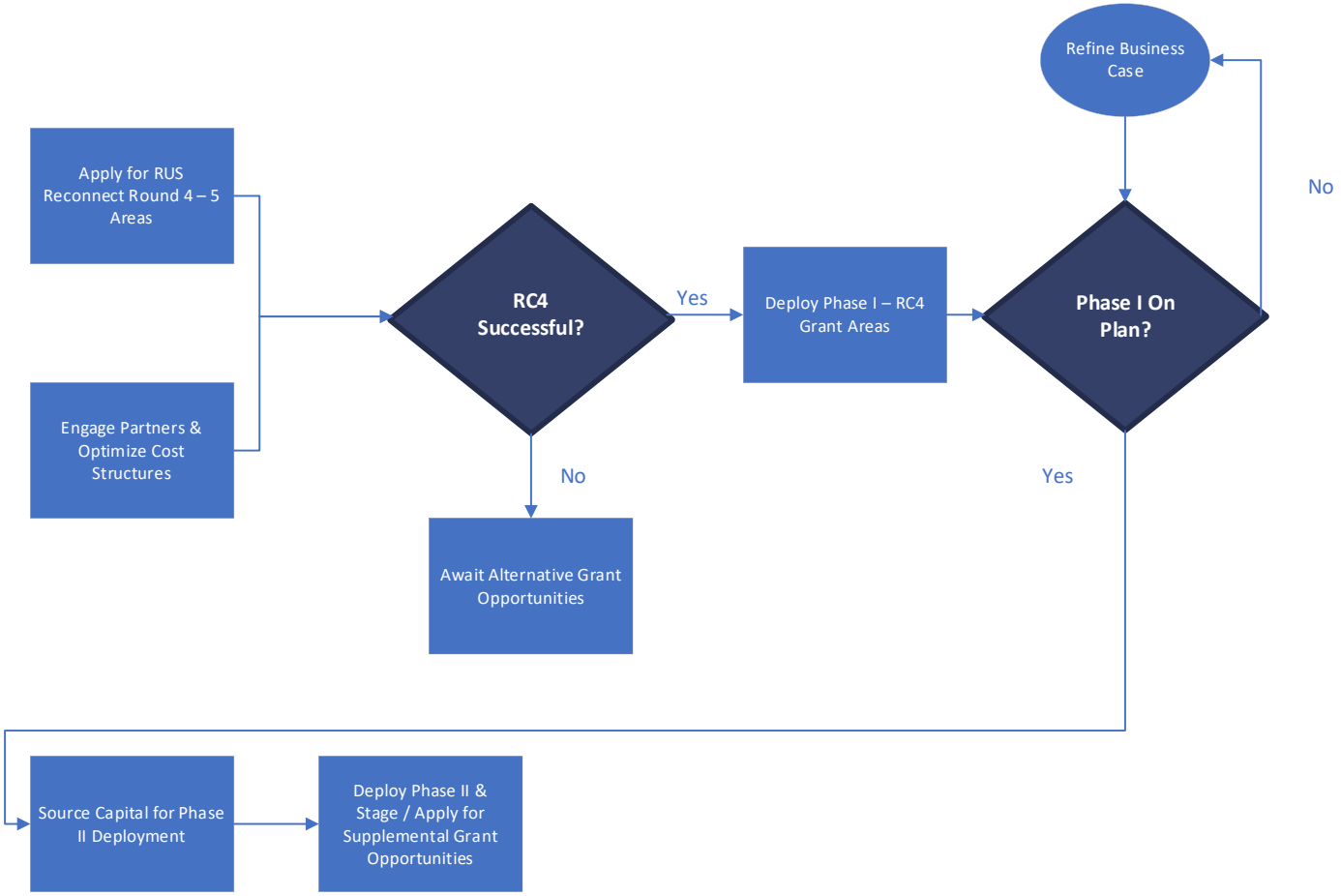
Alachua County ("County") retained JSI to examine the financial feasibility of a county-wide, fiber-based deployment of broadband. The following report was developed in collaboration with County management and its scope includes both a financial assessment of where and under what circumstances a sustainable business case can be made relative to a County-based broadband offering, and the recommended tactical steps necessary to pursue execution of the business case outlined, as well as the recommended sequencing of such tactical steps.

II. Executive Summary and Tactical Recommendations:

- Broadband represents a critical service whose relative availability materially effects a geography's economic vitality, and the quality of life enjoyed by its citizenry.
- The capital-intensive nature of broadband network deployment has often resulted in lower density, third-tier markets being "left-behind" in their access to robust, or even acceptable levels of broadband access.
- Absent public sector financing and or public / private partnerships, many lower density markets will simply remain critically underserved.
- There is a path for the County to pursue a financially sustainable business case for the provision of broadband services to unserved and underserved residents. However, due to the capital-intensive nature of fiber-based broadband networks, a county-wide deployment of broadband to geographies currently lacking meaningful broadband service will require a multi-step, phased approach (*Forecasted CAPEX for build phases I and II total $104.8M*). As a product of our analysis, JSI has crafted a multi-phase strategy whose first phase involves submission of a grant application in connection with the Rural Utilities Service's ("RUS") Reconnect Round 4 ('Reconnect") grant program. Subsequent build out phases would be conditioned upon 1) Receipt of Reconnect 4 Grant Funding, 2) Realization of forecasted financial performance related to initial market deployments, and 3) emergence of additional grant funding opportunities sufficient to underwrite a ubiquitous county-wide deployment of a high-speed broadband network to unserved and underserved geographies. (See Illustration 1 reflecting contemplated evaluation / deployment sequencing).

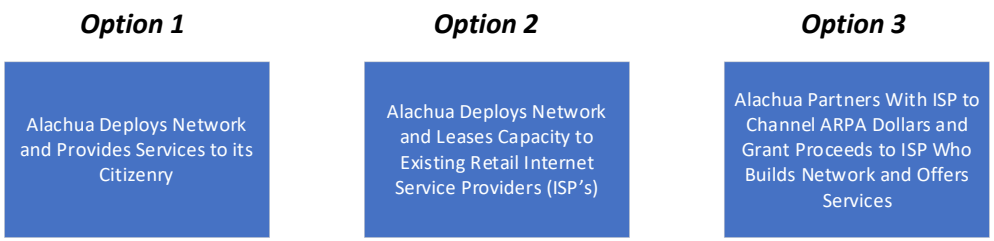
- The analysis conducted was designed to be agnostic to the County's ultimate decision as to its ongoing role in the provision of services. Specifically, at this juncture, the County has not determined whether it wishes to be the provider of broadband services to its constituents, or whether it will seek to partner with an existing service provider to extend services to unserved/underserved areas. The following analysis was designed to examine whether a sustainable business case is possible as it relates to current unserved / underserved geographies, and to chart a logical path that the County could pursue / execute upon in order to realize its public policy / economic development objectives. Should the County be successful in its Reconnect Round 4 application, flexibility exists as to how it may pursue tactical execution of a broadband deployment – i.e., to act as the service provider, or partner with an existing Internet service provider ("ISP") for the provision of broadband services.

Illustration 1 – Chronological Path to County-Wide Deployment of Broadband Services



There are a range of structures the County could pursue / implement to drive deployment of broadband services within the County. Illustration 2 below reflects the primary options available to the County should it elect to pursue implementation of the business case.

Illustration 2 – Primary Options for County Enablement of Broadband Services



III. Forward: Criticality of Broadband Internet and the Role of Governmental Participation / Enablement:

Broadband is widely regarded as the essential service of our age; one whose availability is every bit as connected to the advancement of a community's standard of living and economic vitality as the availability of electricity was a century ago. A range of studies have illustrated the correlation between high-bandwidth broadband availability and subscription and a geography's economic vibrance as reflected by the relative performance of:

- Prevailing Real Estate Values
- Population Growth Rates
- Rate of Business / Job Formation

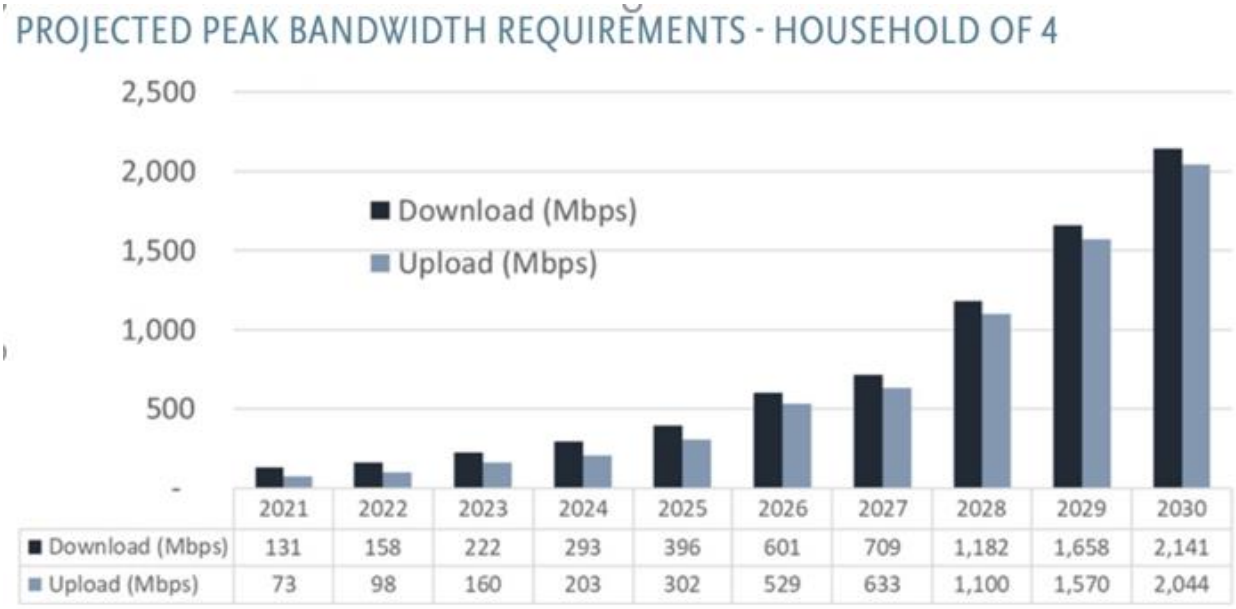
Historically, issues of simple economics have negatively impacted the universal availability of high bandwidth services in many rural, low-density markets. As noted in its 2020 Community Scope paper on the subject, the U.S. Federal Reserve Bank of Richmond Virginia noted in relation to the economic challenges posed by rural broadband deployments that "Low population density and long distances to existing infrastructure make the upfront cost of infrastructure expansion high for providers. Once built, rural areas have lower adoption rates due to lower average incomes, a higher share of the population that is elderly or disabled, and lower average levels of educational attainment. A costly build out combined with low probability of paying for it with customers make some rural places an unattractive business case for broadband service. … To finish broadband expansion in the United States, large subsidies will likely be needed… public-private partnerships may be needed to propel infrastructure projects forward."[1] It is this recognized connection between broadband availability within a geography and the attendant level of economic vitality and standard of living realized that has led to a proliferation of government funding mechanisms designed to significantly enhance broadband availability.

[1] Community Scope, December 2020, Federal Reserve Bank of Richmond.

IV. Technology and Broadband Market Dynamics:

As both the scope and increasing utilization of applications leveraged to support our economy's entertainment options, social communications, and business productivity continue to migrate to the cloud, demand for Broadband speeds and bandwidth continues to experience accelerated growth. As a case in point, between 2020 and 2021, demand for Internet bandwidth increased roughly 40%, and forecasts reflect an ongoing if not accelerating level of demand growth for this increasingly critical service.

Illustration 3 – Forecasted Broadband Bandwidth Demand



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Download (Mbps)	131	158	222	293	396	601	709	1,182	1,658	2,141
Upload (Mbps)	73	98	160	203	302	529	633	1,100	1,570	2,044

The ongoing acceleration of broadband demand is an important data point when examining the prospect for County involvement in a broadband initiative as it informs both the trajectory of the market's demand for such services, and the technologies / deployment methodologies required to effectively address said demand. Recognizing the foregoing considerations, JSI's limited its analysis to assessing the financial feasibility of a Fiber to the Premise ("FTTP") broadband business case. Fiber is the gold standard of Broadband access technologies, and is the sole prevailing technology platform enabling multi-gigabit symmetrical speeds, and a level of "adaptability" necessary to support forecasted marketplace broadband demand over the next decade and beyond.

While a FTTP topology represents the most robust technology available, deploying a FTTP solution is an extremely capital-intensive proposition. The capital-intensive nature of a FTTP solution, when married to its deployment over low density service geographies, creates very real challenges to the formulation of a financially sustainable business case. The magnitude of this financial challenge increases in proportion with the scope of the low-density geography/serviceable locations encompassed by the business case.

The County's principal public policy goal of a ubiquitous deployment of fiber-based broadband across all unserved and underserved geographies within its boundaries creates pointed challenges relating to the ability to financially underwrite such a deployment while ensuring a sustainable business case post deployment.

As the following analysis reflects, JSI's analysis has attempted to "square" the equation by segmenting the County's geography into targeted deployment phases. The design criteria used in designing such a segmented/phased approach is summarized below:

- **Urgency**: Alachua has articulated a desire to begin leveraging ***American Rescue Plan Act ("ARPA")*** dollars earmarked for broadband services to address the County's unserved and underserved population as quickly as practical.
- **Grant Availability**: This objective recognizes that in order to achieve the County's goals, significant capitalization will be required. Emerging grant funding opportunities are diverse, both with regard to their source, and their complexion. By creating a segmented/phased approach to a County-wide broadband deployment, a broadband business case can be staged to take advantage of the ongoing capitalization opportunities enabled as state and federal grant programs sequentially unfold.
- **Economic Sustainability**: Ensuring consistent provision of broadband services requires that the business case produced in the wake of a network deployment is sustainable. The challenges posed in creating a sustainable business case in low/lower density markets can vary across geographies based on a variety of factors including relative access to grant-based capitalization.

As such, a phased business case allows the County to leverage prospective / emerging grant-based capitalization opportunities along with operational cash flows from initial deployment phase(s) to enable an expansion of serviceable geographies.

It is upon the foregoing set of considerations that the following analysis and tactical deployment recommendations were formulated.

V. Scope of Analysis: Financial Feasibility – County-Wide Deployment of Fiber-Based Broadband:

Segmentation / Broadband Deployment Phasing:

As noted above, a principal consideration supporting a phased deployment surrounds the relative availability of grant-based capitalization sources. The most immediate opportunity available to assist the County in the capitalization of its broadband deployment effort is the **Rural Utility Service's Reconnect Program**. The application window surrounding this opportunity is presently open, and JSI is assisting the County in the formulation and submission of an application. There are several grant types supported by the Reconnect Program. JSI is recommending utilization of the Loan/Grant option for two principal reasons:

- **The Loan/Grant option allows for the most significant level of capitalization**. The loan/grant option supports applications of up to $50 million, split equally between the grant and loan components of the program. With regard to the loan component of the program, both principal and interest are deferred for 3 years allowing the County the ability to build a foundational customer base necessary to generate the cash flow necessary to address the instrument's accompanying level of debt service.
- **History suggests this option is subject to less competition/oversubscription than other Reconnect program offerings**. Specifically, all grant programs are limited by a finite budget and the Reconnect Program is no different. While each round of the Reconnect Program is unique, during the previous round of Reconnect grants, the grant / loan program witnessed a far lower application volume than the other options supported under the program.

As such, applicants for the loan/grant program achieved a materially higher success rate than applicants for the 100% grant options.

A principal consideration surrounding the staging of a County-Wide broadband initiative entails determining the scope of geography that could be serviced by a FTTP deployment under a successful Reconnect4 Grant/Loan combination. In addressing this issue, JSI examined geographies that broadly conformed to the following principal design criteria:

- **Their eligibility for grant funding**: The Reconnect programs have specific eligibility criteria defined by a geography's relative access to defined levels of broadband.
- **The relative density of eligible locations**: As a design standard, we attempted to identify unserved/underserved areas with the greatest relative density in order to serve as many locations as possible given the finite funding available.
- **How efficiently a network could be designed to serve unserved / underserved locations**: Again, in service of efficiency, an attempt was made to formulate application boundaries that promoted deployment of an efficiently engineered network.

Based on the preceding criteria, JSI identified a multi-phase deployment / evaluation framework, the specifics of which are set forth below.

Phase I – Rural Utilities Service ("RUS") Reconnect Round 4 Grant Eligible Areas – Initiate Immediately:

Illustration 4 outlines the five geographic areas encompassed by the recommended scope of the County's Reconnect 4 application, while Illustration 5 reflects the forecasted financial performance of the business case assuming a successful Reconnect 4 application.

Illustration 4 – Identified Reconnect Round 4 Geographies

	Project / Market Name	Homes Passed
1	Archer	2,088
2	Hawthorne	2,039
3	Island Grove/Cross Creek	684
4	Micanopy/Evinston	1,272
5	Newberry	2,571

Total Unserved / Underserved Locations: 8,654

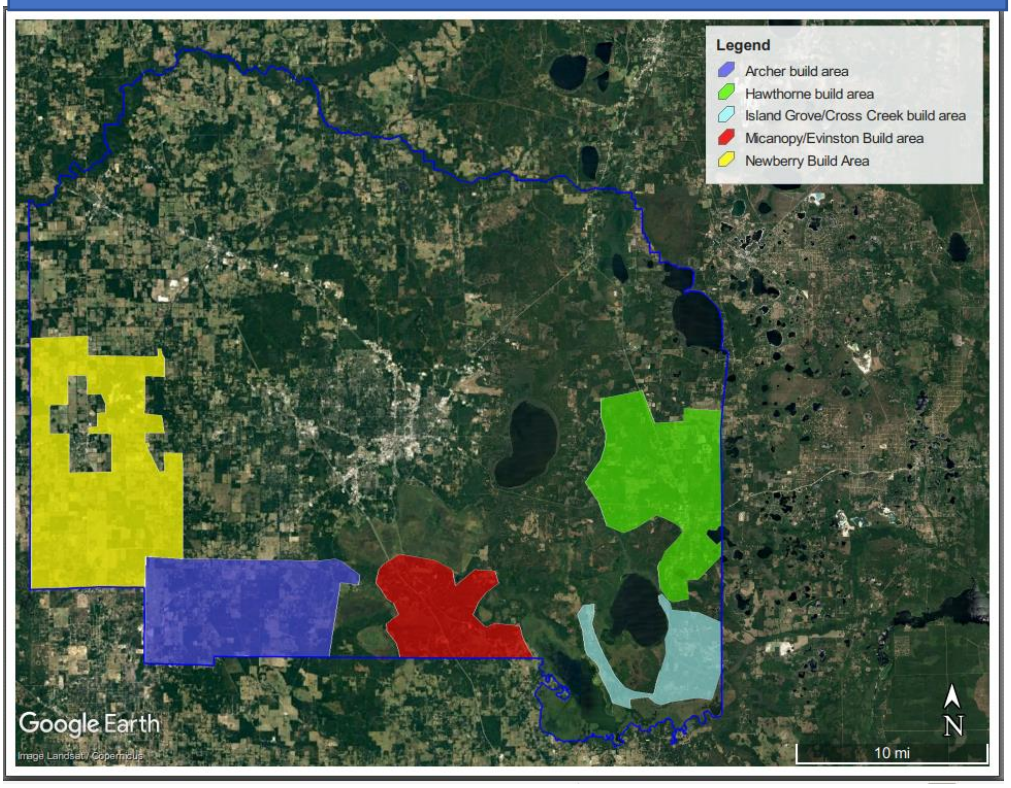


Illustration 5 – Pro Forma Forecast – Phase I Builds – Reconnect Round 4 Grant Application Areas

MARKET																
Market Name																
Total - Grant Related Areas	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	
Forecasted Subscribers	793	3,173	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	4,760	
Revenues																
Broadband Retail Revenue	128,809	1,622,998	3,349,044	3,709,710	3,709,710	3,709,710	3,709,710	3,709,710	3,709,710	3,709,710	3,709,710	3,709,710	3,709,710	3,709,710	3,709,710	
Voice Revenue	3,966	49,977	103,127	114,233	114,233	114,233	114,233	114,233	114,233	114,233	114,233	114,233	114,233	114,233	114,233	
Installation Revenue	79,328	237,985	158,657	-	-	-	-	-	-	-	-	-	-	-	-	
Uncollectible Revenue	(721)	(6,497)	(12,277)	(13,001)	(13,001)	(13,001)	(13,001)	(13,001)	(13,001)	(13,001)	(13,001)	(13,001)	(13,001)	(13,001)	(13,001)	
Total Revenue	$ 211,383	$ 1,904,463	$ 3,598,551	$ 3,810,942	$ 3,810,942	$ 3,810,942	$ 3,810,942	$ 3,810,942	$ 3,810,942	$ 3,810,942	$ 3,810,942	$ 3,810,942	$ 3,810,942	$ 3,810,942	$ 3,810,942	
Expenses																
Broadband COGS	6,143	77,402	159,718	176,918	176,918	176,918	176,918	176,918	176,918	176,918	176,918	176,918	176,918	176,918	176,918	
Voice COGS	278	3,498	7,219	7,996	7,996	7,996	7,996	7,996	7,996	7,996	7,996	7,996	7,996	7,996	7,996	
Sales & Marketing Expense - Acquisition	99,160	297,481	198,321	-	-	-	-	-	-	-	-	-	-	-	-	
Sales & Marketing Expense - Churn Mgt.	3,171	28,567	53,978	57,164	57,164	57,164	57,164	57,164	57,164	57,164	57,164	57,164	57,164	57,164	57,164	
Customer Support & Billing Expense	7,484	94,296	194,580	215,534	215,534	215,534	215,534	215,534	215,534	215,534	215,534	215,534	215,534	215,534	215,534	
Corporate Operations Expense	12,726	114,658	216,650	229,437	229,437	229,437	229,437	229,437	229,437	229,437	229,437	229,437	229,437	229,437	229,437	
Network Maintenance Expense	278,206	278,206	278,206	278,206	278,206	278,206	278,206	278,206	278,206	278,206	278,206	278,206	278,206	278,206	278,206	
Pole Attachment Expenses	27,755	111,020	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	166,530	
Incremental Internal Personnel Expense	122,368	133,493	133,493	133,493	133,493	133,493	133,493	133,493	133,493	133,493	133,493	133,493	133,493	133,493	133,493	
Depreciation / Amortization Expense	-	1,462,502	1,567,895	1,617,625	1,561,606	1,507,526	1,455,320	1,404,921	1,356,268	1,353,453	1,306,582	1,261,335	1,217,654	1,175,486	1,134,778	
Interest Expense	-	-	-	699,784	1,020,457	984,041	946,042	906,389	865,012	821,835	776,780	729,766	680,706	629,513	576,093	
Total Expense	**$ 557,291**	**$ 2,601,123**	**$ 2,976,588**	**$ 3,582,686**	**$ 3,847,340**	**$ 3,756,845**	**$ 3,666,639**	**$ 3,576,588**	**$ 3,486,557**	**$ 3,440,566**	**$ 3,348,640**	**$ 3,256,378**	**$ 3,163,638**	**$ 3,070,276**	**$ 2,976,149**	
Operating Income	**$ (345,908)**	**$ (696,660)**	**$ 621,962**	**$ 228,255**	**$ (36,399)**	**$ 54,096**	**$ 144,303**	**$ 234,354**	**$ 324,384**	**$ 370,376**	**$ 462,301**	**$ 554,564**	**$ 647,304**	**$ 740,665**	**$ 834,793**	
Cumulative Operating Income	**$ (345,908)**	**$ (1,042,568)**	**$ (420,606)**	**$ (192,350)**	**$ (228,749)**	**$ (174,653)**	**$ (30,350)**	**$ 204,004**	**$ 528,388**	**$ 898,764**	**$ 1,361,065**	**$ 1,915,629**	**$ 2,562,933**	**$ 3,303,598**	**$ 4,138,391**	
EBITDA	**$ (345,908)**	**$ 765,842**	**$ 2,189,857**	**$ 2,545,664**	**$ 2,545,664**	**$ 2,545,664**	**$ 2,545,664**	**$ 2,545,664**	**$ 2,545,664**	**$ 2,545,664**	**$ 2,545,664**	**$ 2,545,664**	**$ 2,545,664**	**$ 2,545,664**	**$ 2,545,664**	
EBITDA %	-164%	40%	61%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	
Taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Debt Service $ 21,673,206	**$ -**	**$ -**	**$ -**	**$ 1,238,469**	**$ 1,857,703**	**$ 1,857,703**	**$ 1,857,703**	**$ 1,857,703**	**$ 1,857,703**	**$ 1,857,703**	**$ 1,857,703**	**$ 1,857,703**	**$ 1,857,703**	**$ 1,857,703**	**$ 1,857,703**	
Net Cash Flow	**$ (345,908)**	**$ 765,842**	**$ 2,189,857**	**$ 1,307,195**	**$ 687,960**	**$ 687,960**	**$ 687,960**	**$ 687,960**	**$ 687,960**	**$ 687,960**	**$ 687,960**	**$ 687,960**	**$ 687,960**	**$ 687,960**	**$ 687,960**	
Cumulative Cash Flow - After Debt Service	**$ (345,908)**	**$ 419,934**	**$ 2,609,792**	**$ 3,916,987**	**$ 4,604,947**	**$ 5,292,908**	**$ 5,980,868**	**$ 6,668,829**	**$ 7,356,789**	**$ 8,044,749**	**$ 8,732,710**	**$ 9,420,670**	**$ 10,108,631**	**$ 10,796,591**	**$ 11,484,552**	

Phase II – Non-Grant Underserved Areas – Initiate Upon Successful Grant Application and Associated Successful Deployment of Services to Phase I Geographies:

The design criteria associated with the selection of Phase II markets was principally founded on identifying an interplay between markets that 1) reflected reasonable density, and based on high-level data examined, reflected areas in which prevailing network capabilities limit the bandwidth available to citizens residing in those geographies. Illustration 6 identifies the 12 communities / geographies fitting the foregoing design profile while Illustration 7 reflects the forecasted consolidated financial performance of the Phase II, non-grant related markets. Finally, Illustration 8 reflects the forecasted financial performance combining the forecasted financial performance for both Phase I, Grant related and Phase II, Non-Grant related markets.

Illustration 6 – Identified Phase II Non-Grant Geographies

	Project / Market Name	Homes Passed
6	Arno	1,627
7	Earleton	639
8	High Springs	2,987
9	Jonesville-Tioga	4,583
10	La Crosse	190
11	Melrose	332
12	Newberry Town	2,506
13	Orange Heights	507
14	Rochelle	99
15	Santa Fe	245
16	Waldo	723
17	Windsor	315

Total Unserved / Underserved Locations: 14,753

Illustration 7 - Pro Forma Forecast – Phase II Builds – Identified Phase II Non-Grant Geographies

	MARKET															
	Market Name															
	Total - Non-Grant Areas	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Forecasted Subscribers		572	2,371	4,338	5,733	5,901	5,901	5,901	5,901	5,901	5,901	5,901	5,901	5,901	5,901	5,901
Revenues																
	Broadband Retail Revenue	101,418	1,292,764	2,925,943	4,499,403	4,982,936	5,024,636	5,024,636	5,024,636	5,024,636	5,024,636	5,024,636	5,024,636	5,024,636	5,024,636	5,024,636
	Voice Revenue	2,859	36,439	82,473	126,824	140,453	141,629	141,629	141,629	141,629	141,629	141,629	141,629	141,629	141,629	141,629
	Installation Revenue	57,173	179,916	196,707	139,533	16,791	-	-	-	-	-	-	-	-	-	-
	Uncollectible Revenue	(549)	(5,131)	(10,897)	(16,204)	(17,477)	(17,565)	(17,565)	(17,565)	(17,565)	(17,565)	(17,565)	(17,565)	(17,565)	(17,565)	(17,565)
Total Revenue		$ 160,901	$ 1,503,987	$ 3,194,225	$ 4,749,557	$ 5,122,704	$ 5,148,699	$ 5,148,699	$ 5,148,699	$ 5,148,699	$ 5,148,699	$ 5,148,699	$ 5,148,699	$ 5,148,699	$ 5,148,699	$ 5,148,699
Expenses																
	Broadband COGS	4,857	61,874	140,044	215,357	238,505	240,501	240,501	240,501	240,501	240,501	239,954	239,954	239,954	239,954	239,954
	Voice COGS	200	2,551	5,773	8,878	9,832	9,914	9,914	9,914	9,914	9,914	9,914	9,914	9,914	9,914	9,914
	Sales & Marketing Expense - Acquisition	71,467	224,894	245,883	174,417	20,989	-	-	-	-	-	-	-	-	-	-
	Sales & Marketing Expense - Churn Mgt.	2,414	22,560	47,913	71,243	76,841	77,230	77,230	77,230	77,230	77,230	77,230	77,230	77,230	77,230	77,230
	Customer Support & Billing Expense	5,394	68,753	155,610	239,292	265,007	267,225	267,225	267,225	267,225	267,225	267,225	267,225	267,225	267,225	267,225
	Corporate Operations Expense	9,687	90,547	192,307	285,946	308,411	309,976	309,976	309,976	309,976	309,976	309,976	309,976	309,976	309,976	309,976
	Network Maintenance Expense	209,472	269,053	269,053	269,053	269,053	269,053	269,053	269,053	269,053	269,053	269,053	269,053	269,053	269,053	269,053
	Pole Attachment Expenses	11,800	50,833	97,133	131,633	138,900	138,900	138,900	138,900	138,900	138,900	138,900	138,900	138,900	138,900	138,900
	Incremental Internal Personnel Expense	132,289	165,507	165,507	165,507	165,507	165,507	165,507	165,507	165,507	165,507	165,507	165,507	165,507	165,507	165,507
	Depreciation / Amortization Expense	-	950,756	1,524,247	1,600,437	1,636,501	1,590,837	1,535,746	1,482,562	1,431,220	1,447,423	1,406,956	1,358,232	1,311,196	1,265,788	1,221,953
	Interest Expense	572,560	1,925,465	2,227,816	2,321,054	2,286,102	2,197,269	2,098,993	1,995,668	1,961,821	1,876,236	1,756,669	1,627,900	1,492,515	1,350,174	1,200,519
Total Expense		**$ 1,020,138**	**$ 3,832,794**	**$ 5,071,289**	**$ 5,482,817**	**$ 5,415,648**	**$ 5,266,414**	**$ 5,113,047**	**$ 4,956,538**	**$ 4,871,348**	**$ 4,801,967**	**$ 4,641,386**	**$ 4,463,893**	**$ 4,281,471**	**$ 4,093,723**	**$ 3,900,233**
Operating Income		**$ (859,237)**	**$ (2,328,807)**	**$ (1,877,063)**	**$ (733,260)**	**$ (292,944)**	**$ (117,714)**	**$ 35,653**	**$ 192,161**	**$ 277,351**	**$ 346,732**	**$ 507,314**	**$ 684,806**	**$ 867,228**	**$ 1,054,977**	**$ 1,248,467**
Cumulative Operating Income		**$ (859,237)**	**$ (3,188,043)**	**$ (5,065,107)**	**$ (5,798,367)**	**$ (6,091,311)**	**$ (6,209,025)**	**$ (6,173,372)**	**$ (5,981,211)**	**$ (5,703,860)**	**$ (5,357,128)**	**$ (4,849,814)**	**$ (4,165,008)**	**$ (3,297,780)**	**$ (2,242,804)**	**$ (994,337)**
EBITDA		**$ (286,677)**	**$ 547,414**	**$ 1,875,000**	**$ 3,188,231**	**$ 3,629,659**	**$ 3,670,392**	**$ 3,670,392**	**$ 3,670,392**	**$ 3,670,392**	**$ 3,670,392**	**$ 3,670,939**	**$ 3,670,939**	**$ 3,670,939**	**$ 3,670,939**	**$ 3,670,939**
EBITDA %		-178%	36%	59%	67%	71%	71%	71%	71%	71%	71%	71%	71%	71%	71%	71%
Taxes		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Cash Flow - Net of Interest Payment		(859,237)	(1,378,050)	(352,817)	867,177	1,343,557	1,473,123	1,571,398	1,674,723	1,708,570	1,794,156	1,914,270	2,043,038	2,178,424	2,320,765	2,470,420
Cumulative Cash Flow		$ (859,237)	$ (2,237,287)	$ (2,590,104)	$ (1,722,927)	$ (379,370)	$ 1,093,753	$ 2,665,151	$ 4,339,874	$ 6,048,444	$ 7,842,600	$ 9,756,870	$ 11,799,908	$ 13,978,332	$ 16,299,096	$ 18,769,516
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Service	$ 80,616,142	**$ 854,159**	**$ 3,243,538**	**$ 3,777,057**	**$ 4,028,292**	**$ 4,105,698**	**$ 4,109,951**	**$ 4,109,951**	**$ 4,109,951**	**$ 4,211,193**	**$ 4,259,928**	**$ 4,262,830**	**$ 4,262,830**	**$ 4,262,830**	**$ 4,262,830**	**$ 4,262,830**
Net Cash Flow		**$ (1,140,836)**	**$ (2,696,123)**	**$ (1,902,057)**	**$ (840,061)**	**$ (476,038)**	**$ (439,560)**	**$ (439,560)**	**$ (439,560)**	**$ (540,802)**	**$ (589,537)**	**$ (591,892)**	**$ (591,892)**	**$ (591,892)**	**$ (591,892)**	**$ (591,892)**
Cumulative Cash Flow - After Debt Service		**$ (1,140,836)**	**$ (3,836,960)**	**$ (5,739,017)**	**$ (6,579,078)**	**$ (7,055,116)**	**$ (7,494,676)**	**$ (7,934,236)**	**$ (8,373,795)**	**$ (8,914,597)**	**$ (9,504,134)**	**$ (10,096,026)**	**$ (10,687,918)**	**$ (11,279,810)**	**$ (11,871,702)**	**$ (12,463,593)**

Illustration - 8 - Pro Forma Forecast – Consolidated View – Phase I & II – Grant and Non-Grant Geographies

MARKET																
Market Name																
Total - GRANT & NON-GRANT AREAS	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
	2023	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
Forecasted Subscribers	1,365	5,544	9,098	10,493	10,661	10,661	10,661	10,661	10,661	10,661	10,661	10,661	10,661	10,661	10,661
Revenues															
Broadband Retail Revenue	230,228	2,915,762	6,274,987	8,209,113	8,692,646	8,734,346	8,734,346	8,734,346	8,734,346	8,734,346	8,734,346	8,734,346	8,734,346	8,734,346	8,734,346
Voice Revenue	6,825	86,416	185,600	241,057	254,686	255,862	255,862	255,862	255,862	255,862	255,862	255,862	255,862	255,862	255,862
Installation Revenue	136,502	417,901	355,363	139,533	16,791	-	-	-	-	-	-	-	-	-	-
Uncollectible Revenue	(1,270)	(11,628)	(23,174)	(29,205)	(30,478)	(30,567)	(30,567)	(30,567)	(30,567)	(30,567)	(30,567)	(30,567)	(30,567)	(30,567)	(30,567)
Total Revenue	$ 372,284	$ 3,408,450	$ 6,792,776	$ 8,560,499	$ 8,933,646	$ 8,959,641	$ 8,959,641	$ 8,959,641	$ 8,959,641	$ 8,959,641	$ 8,959,641	$ 8,959,641	$ 8,959,641	$ 8,959,641	$ 8,959,641
Expenses															
Broadband COGS	11,000	139,275	299,762	392,275	415,423	417,419	417,419	417,419	417,419	417,419	416,872	416,872	416,872	416,872	416,872
Voice COGS	478	6,049	12,992	16,874	17,828	17,910	17,910	17,910	17,910	17,910	17,910	17,910	17,910	17,910	17,910
Sales & Marketing Expense - Acquisition	170,627	522,376	444,204	174,417	20,989	-	-	-	-	-	-	-	-	-	-
Sales & Marketing Expense - Churn Mgt.	5,584	51,127	101,892	128,407	134,005	134,395	134,395	134,395	134,395	134,395	134,395	134,395	134,395	134,395	134,395
Customer Support & Billing Expense	12,878	163,049	350,190	454,826	480,542	482,759	482,759	482,759	482,759	482,759	482,759	482,759	482,759	482,759	482,759
Corporate Operations Expense	22,413	205,205	408,957	515,382	537,847	539,412	539,412	539,412	539,412	539,412	539,412	539,412	539,412	539,412	539,412
Network Maintenance Expense	487,677	547,259	547,259	547,259	547,259	547,259	547,259	547,259	547,259	547,259	547,259	547,259	547,259	547,259	547,259
Pole Attachment Expenses	39,555	161,853	263,663	298,163	305,430	305,430	305,430	305,430	305,430	305,430	305,430	305,430	305,430	305,430	305,430
Incremental Internal Personnel Expense	254,657	299,000	299,000	299,000	299,000	299,000	299,000	299,000	299,000	299,000	299,000	299,000	299,000	299,000	299,000
Depreciation / Amortization Expense	-	2,413,259	3,092,142	3,218,062	3,198,106	3,098,363	2,991,065	2,887,483	2,787,487	2,800,877	2,713,538	2,619,567	2,528,850	2,441,274	2,356,731
Interest Expense	572,560	1,925,465	2,227,816	3,020,838	3,306,560	3,181,310	3,045,035	2,902,057	2,826,833	2,698,071	2,533,449	2,357,666	2,173,221	1,979,687	1,776,612
Total Expense	**$ 1,577,429**	**$ 6,433,917**	**$ 8,047,877**	**$ 9,065,503**	**$ 9,262,989**	**$ 9,023,259**	**$ 8,779,685**	**$ 8,533,126**	**$ 8,357,906**	**$ 8,242,533**	**$ 7,990,026**	**$ 7,720,271**	**$ 7,445,109**	**$ 7,163,999**	**$ 6,876,381**
Operating Income	**$ (1,205,145)**	**$ (3,025,466)**	**$ (1,255,101)**	**$ (505,005)**	**$ (329,343)**	**$ (63,618)**	**$ 179,955**	**$ 426,515**	**$ 601,735**	**$ 717,108**	**$ 969,615**	**$ 1,239,370**	**$ 1,514,532**	**$ 1,795,642**	**$ 2,083,260**
Cumulative Operating Income	**$ (1,205,145)**	**$ (4,230,611)**	**$ (5,485,713)**	**$ (5,990,717)**	**$ (6,320,060)**	**$ (6,383,678)**	**$ (6,203,723)**	**$ (5,777,207)**	**$ (5,175,472)**	**$ (4,458,365)**	**$ (3,488,749)**	**$ (2,249,379)**	**$ (734,848)**	**$ 1,060,794**	**$ 3,144,054**
EBITDA	$ (632,585)	$ 1,313,257	$ 4,064,857	$ 5,733,895	$ 6,175,323	$ 6,216,055	$ 6,216,055	$ 6,216,055	$ 6,216,055	$ 6,216,055	$ 6,216,602	$ 6,216,602	$ 6,216,602	$ 6,216,602	$ 6,216,602
EBITDA %	-170%	39%	60%	67%	69%	69%	69%	69%	69%	69%	69%	69%	69%	69%	69%
Taxes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Cash Flow	(1,205,145)	(612,208)	1,837,041	2,713,057	2,868,764	3,034,745	3,171,021	3,313,998	3,389,223	3,517,984	3,683,153	3,858,937	4,043,381	4,236,916	4,439,991
Cumulative Cash Flow	$ (1,205,145)	$ (1,817,353)	$ 19,688	$ 2,732,745	$ 5,601,509	$ 8,636,254	$ 11,807,275	$ 15,121,273	$ 18,510,495	$ 22,028,480	$ 25,711,633	$ 29,570,570	$ 33,613,951	$ 37,850,867	$ 42,290,857
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2023	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
Debt Service $ 79,797,077	**$ 854,159**	**$ 3,243,538**	**$ 3,777,057**	**$ 5,266,761**	**$ 5,963,401**	**$ 5,967,655**	**$ 5,967,655**	**$ 5,967,655**	**$ 6,068,896**	**$ 6,117,632**	**$ 6,120,534**	**$ 6,120,534**	**$ 6,120,534**	**$ 6,120,534**	**$ 6,120,534**
Net Cash Flow	**$ (1,486,744)**	**$ (1,930,281)**	**$ 287,800**	**$ 467,134**	**$ 211,922**	**$ 248,401**	**$ 248,401**	**$ 248,401**	**$ 147,159**	**$ 98,424**	**$ 96,069**	**$ 96,069**	**$ 96,069**	**$ 96,069**	**$ 96,069**
Cumulative Cash Flow - After Debt Service	**$ (1,486,744)**	**$ (3,417,025)**	**$ (3,129,225)**	**$ (2,662,091)**	**$ (2,450,169)**	**$ (2,201,768)**	**$ (1,953,368)**	**$ (1,704,967)**	**$ (1,557,808)**	**$ (1,459,384)**	**$ (1,363,316)**	**$ (1,267,247)**	**$ (1,171,179)**	**$ (1,075,110)**	**$ (979,042)**

As reflected in the consolidated results of the twelve non-grant related markets examined (see Illustration 7) the forecasted cash flow generated from the provision of broadband services to the cited Phase II markets is insufficient to service the contemplated debt service related to the capital investment required to serve them.

As discussed further below, however, Alachua's defined service objective centers on optimizing the geographic scope and number of serviceable locations encompassed by the business case and not optimization of ROI. As such, JSI's focus was to craft a combination of markets that 1) maximized the geographic scope and number of serviceable locations encompassed by a County-based broadband initiative while 2) balancing said scope with the ability of the business case within the *overall* contemplated geography to service the debt assumed. Relative to the latter point, while Phase I builds rely on proceeds from previous ARPA awards in combination with assumed Reconnect 4 proceeds, Phase II builds will require supplemental capitalization stemming from a County capitalization mechanism such as a bond offering. *Further, financial sustainability of the business case related to Phase II markets is reliant on the forecasted cash flows generated in connection with the contemplated Phase I broadband deployment*.

Reflecting this point, Illustrations 7 and 8 provide the respective forecasted pro forma results of 1) the consolidated pro forma of the Phase II market deployment, and 2) the consolidated results integrating Phase I and Phase II forecasted results.

Phase I and Phase II Consolidated Deployment Analysis – Guidance on Interpreting Results:

When examining financial forecasts, commercial for-profit concerns principally reference forecasted return on investment estimates in making a determination as to whether entry into a specific market is sufficiently attractive to justify the associated investment. Conversely, a core motivation for governmental-based entities assessing deployment of broadband networks is often rooted in the recognition/view that broadband is a critical piece of infrastructure, and a public good capable of driving the economic development prospects of the underserved area in question, and the standard of living / quality of life of the governing body's residents. Units of local government exploring broadband deployment inherently recognize that the absence of a compelling ROI-based business case is the very reason why geographies within their operating sphere remain unserved/underserved. It is within the foregoing context that units of local government are increasingly viewing their role as an economic development catalyst leveraging broadband infrastructure/access to bring essential broadband services to geographies that would otherwise remain unserved/underserved in a purely traditional ROI-based business model framework.

Unlike purely commercial concerns, provision of broadband services by governmental/public institutions, can be more broadly justified by the attendant benefits realized by a geography through the provision of such services. As noted below, a range of studies have consistently and conclusively correlated the relative vibrance of a community's economy and the quality of life of its residents with the relative existence of high-bandwidth broadband.

- Counties whose broadband availability and speeds resided in the top half of sampled counties realized a growth rate of 10x versus those in the bottom half. The lagging counties, those ranking in the lowest 10% for broadband access, actually lost 0.55 percent of their population on average[2].
- Increased broadband Access and Penetration Leads to Economic Growth[3]:
    - A ten-percentage-point increase of broadband penetration in 2016 would have resulted in more than 806,000 jobs over a three-year period.
    - A ten-percentage-point increase of broadband access in 2014 would have resulted in more than 875,000 additional jobs over a three-year period and $186B in additional economic output.
    - Adding 10Mbps to average download speeds in 2016 would have resulted in 139,400 additional jobs over a three-year period.
- All else held constant, single-family homes with access to a broadband connection have a transaction price that is about $5,977, or 3 percent, more than similar homes in neighborhoods with low bandwidth levels[4].
- Increasing access and usage of broadband infrastructure in rural areas (and the amenities, digital skills, online education, and job search opportunities that come with it) lead to higher property values, increased job and population growth, higher rates of new business formation, and lower unemployment rates.[5]

[2] Broadband Communities – Bad Broadband Equals Low Population Growth – 2014
[3] Deloitte – Broadband For All: Charting a Path to Economic Growth – 2021.

[4] Applied Economics Study – High Speed Internet Access and Housing Values – 2019.
[5] Brookings – The Benefits and Costs of Broadband Expansion – 2021.

- A study published by Purdue University examining the potential stimulative effects that would be realized should Indiana's Rural Electric Membership Corporations deploy fiber broadband throughout the state, found that the taxing bodies collecting revenue from such geographies would see a roughly $9M annual increase in receipts. The study further quantified that for every $1 invested in broadband, $3-$4 in stimulative economic activity would be generated[6].

Phase III – Remaining Unserved / Underserved Areas – Timing, TBD

The scope of geography targeted in deployment Phases I and II as recommended herein, was established based on the simple design criteria of identifying the maximum number of underserved locations for which a financially sustainable business case could be constructed leveraging the limited level of grant funding presently available.

While the geography and locations encompassed by Phase I and II as detailed herein span both significant geography and serviceable locations, material geography remains unserved / underserved (See illustration ___ below).

The geographies remaining are generally reflective of very low-density areas with very high costs to serve on a composite per location basis. At present, there is simply insufficient grant funding to provide the supplemental funding necessary to render service to such areas financially sustainable.

There are, however, a range of grant opportunities emerging over the next 12 months. JSI recommends the County focus its efforts on assessing and, if deemed warranted, executing on the network and service deployment related to Phases I and II, and stage for participation in emerging grant opportunities that may enable ongoing expansion of the County's serviceable footprint.

[6] Purdue University Study – Estimation of the Net Benefits of Indiana Statewide Adoption of Rural Broadband – 2018.

Appendix A – Assumptions

Revenue Assumptions:

Product Scope: The business case assumes the provision of business and residential broadband services as well as the provision of voice services to these two distinct market segments. With regard to voice services, the forecast assumes Alachua would procure access to a private label voice platform and provide that solution on a resale basis as an over the top ("OTP") broadband-based solution.

Market Share: Market share assumptions were discretely developed for grant and non-grant area market service areas. In grant related areas, the study assumes a 55% terminal market share acquired over a two-year period, while in non-grant areas, terminal market share was assumed to be 40% acquired over a three-year period. The delta between the two foregoing assumptions relates to the dearth of options available to subscribing customers in grant area geographies. Market share for voice services was indexed to 12% of subscribing broadband customers.

Churn: Churn relates to the loss of customers previously acquired. For the purpose of our analysis, we assumed that once terminal market share is achieved, incremental organic growth would offset system churn leading to a net zero effect on forecasted customer levels.

Average Revenue Per User ("ARPU"): Composite ARPU across business / residential customers was assumed to be $64.95 for broadband services and $16.67 for voice.

Provision for Uncollectible Revenue: Uncollectible revenue was indexed to .34% of top line revenue.

Expense Assumptions:

Backhaul: This relates to the ongoing costs incurred to connect the contemplated network constructed by the County to the Internet. This cost is indexed to 5% of top line revenues.

Marketing: Forecasted marketing expenses were calculated in two discrete ways. First, the forecast assumes a customer acquisition cost of $125. Second, in order to manage churn, ongoing marketing costs were indexed to 1.5% of top line revenue.

Incremental Headcount: As a general assumption, the forecast assumed the County would leverage an outsourcing model for the bulk of operational activity required to provision the network and provide the associated services to its constituent subscribers. The model, however, also assumed a director level position to oversee the operation at an annual, fully loaded compensation cost of $195k and a division Controller position at an annual, fully loaded compensation cost of $104k.

Corporate Operations: This expense relates to the range of expenses either incrementally incurred to support services rendered, or those allocated to the business case associated with the cost related to existing resources which spend time in service of the broadband business case. This expense was indexed at 6% of revenue.

Customer Support & Billing: Costs to support customer service and billing functions were indexed at $3.77 per month per subscriber. This level is sufficient to acquire services from firms specializing in the provision of such services.

Network Maintenance: Annualized costs to support the network were indexed at .78% of total, gross plant investment.

Pole Attachment Costs: Annualized pole attachment costs were based on an annual per pole cost of $24 applied to an assumption of 25 poles per fiber route mile.

Capital Investment Assumptions:

Mainline and Distribution Fiber Plant: JSI's engineering team conducted a high-level engineering study designed to formulate capital investment forecasts attributable to the geographies identified herein. The pro forma forecasts assume the deployed plant would be split evenly between aerial and buried fiber-based deployments. Composite aerial and buried costs per mile were discretely developed for both aerial and buried deployment scenarios on a market-by-market basis based on the proportion or rural to non-rural mileages. Aerial costs per mile range from $45,750 to $58,500 while buried costs formulated range between $76,750 to $108,250 per mile.

Drop Costs and Customer Premise Equipment ("CPE"): A cost per drop cost foot of $5.00 was applied to an average drop length of 203 feet. A CPE cost of $665 was also assumed.

Capitalized Labor: Installation costs of $213 per subscriber were assumed related to install activity.

Financing Assumptions:

Financing Assumptions – Grant Related Areas: The forecast assumes a successful Rural Utility Service Round 4 Reconnect application leveraging the program's 50% grant, 50% loan option. With regard to the loan component of the program, a 20-year loan term was assumed at an interest rate of 4.25%.

Financing Assumptions – Non-Grant Related Areas: The forecast assumes non-grant related geographies would be financed through a long-term financing vehicle in which a 20-year term is assumed carrying an interest rate of 5%.