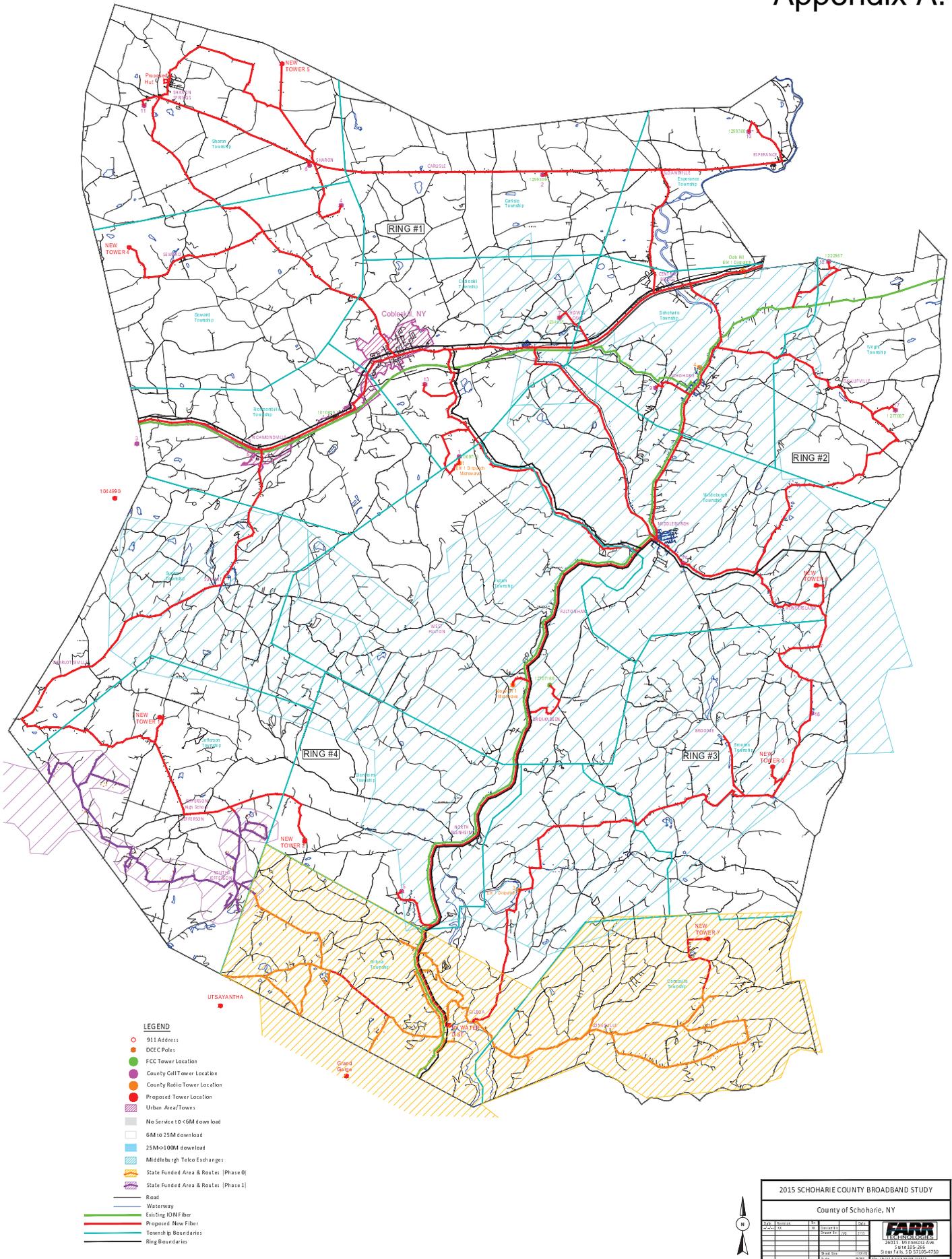


## APPENDICES

- A. Maps
- B. Pro Forma Financial Statements
- C. Pro Forma Financial Statements – Supporting Data
- D. Census Data
- E. Wireless Signal / Bandwidth Technical Data

# Appendix A.1



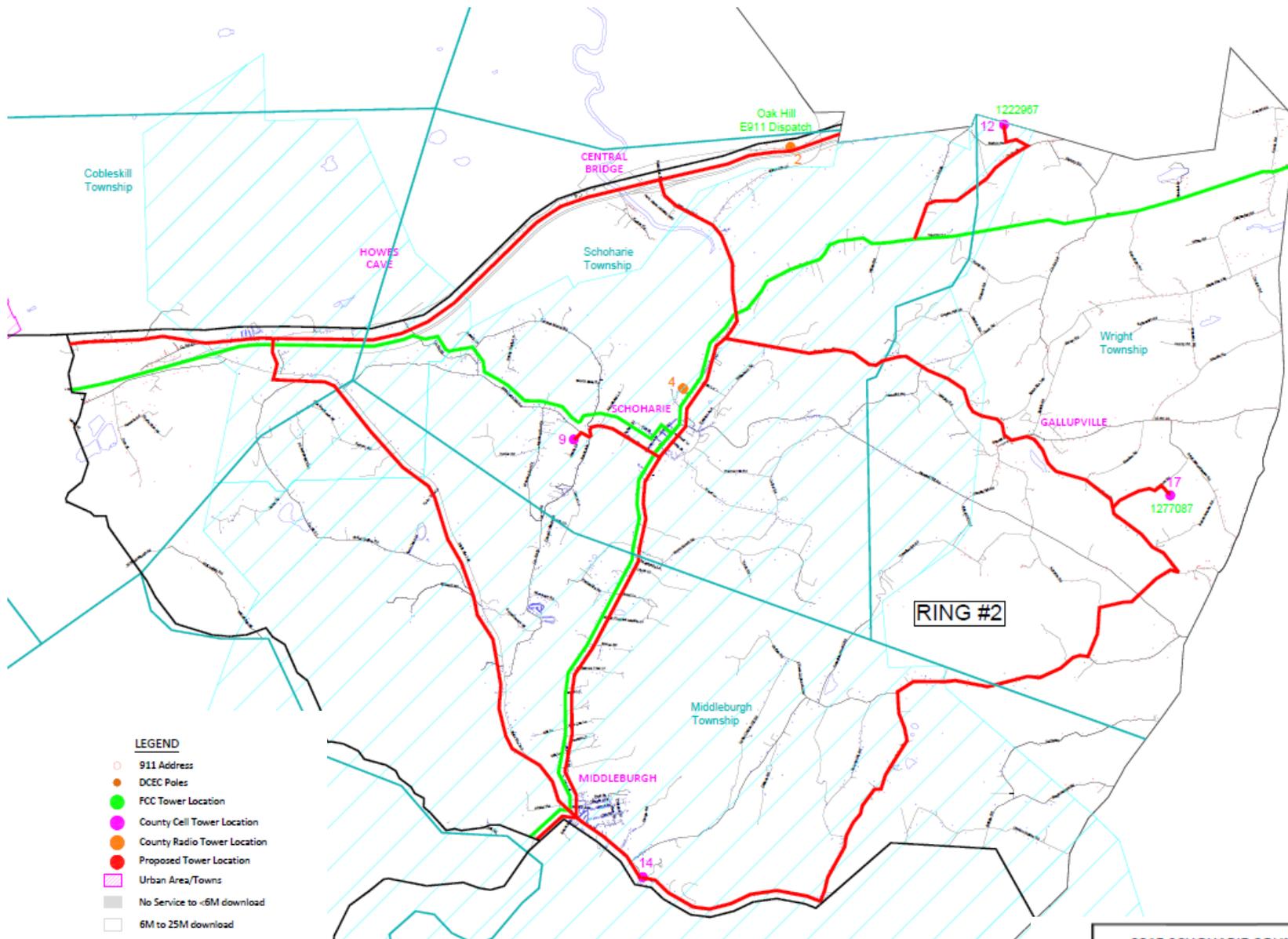
**LEGEND**

- 911 Address
- DCEC Poles
- FCC Tower Location
- County Cell Tower Location
- County Radio Tower Location
- Proposed Tower Location
- Urban Area/Towns
- No Service to GSM download
- 6M to 25M download
- 25M to 100M download
- Middleburgh Telco Exchanges
- State Funded Area & Routes (Phase 0)
- State Funded Area & Routes (Phase 1)
- Road
- Waterway
- Existing ION Fiber
- Proposed New Fiber
- Township Boundaries
- Ring Boundaries

2015 SCHOHARIE COUNTY BROADBAND STUDY			
County of Schoharie, NY			
Date:	By:	Scale:	

**FARR**  
 FARR CONSULTANTS  
 2601 S. Millbrook Ave.  
 Suite 105-205  
 Troy, NY 12182-4792  
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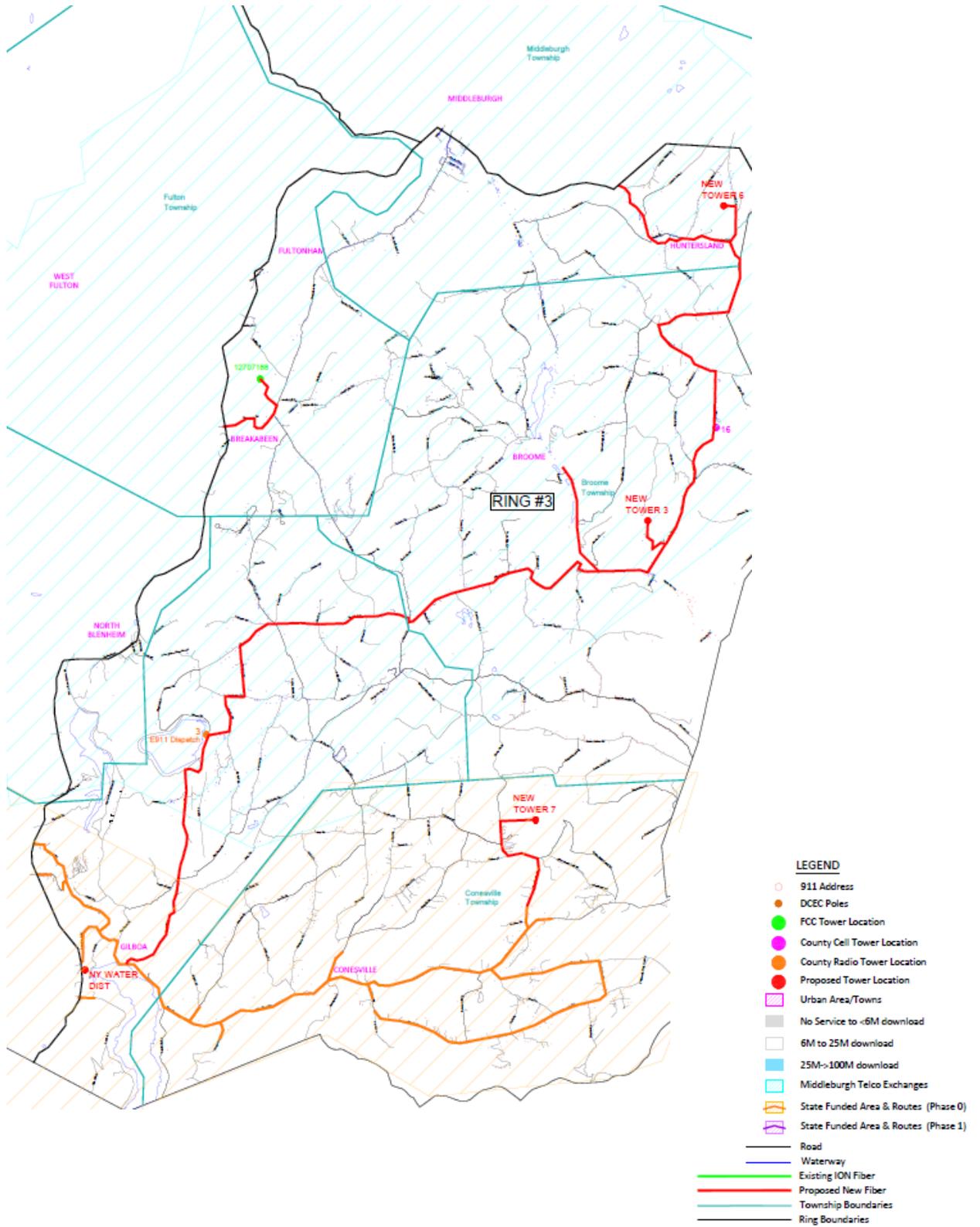
**LEGEND**

- 911 Address
- DCEC Poles
- FCC Tower Location
- County Cell Tower Location
- County Radio Tower Location
- Proposed Tower Location
- Urban Area/Towns
- No Service to <6M download
- 6M to 25M download
- 25M->100M download
- Middleburgh Telco Exchanges
- State Funded Area & Routes (Phase 0)
- State Funded Area & Routes (Phase 1)
- Road
- Waterway
- Existing ION Fiber
- Proposed New Fiber
- Township Boundaries
- Ring Boundaries

**RING #2**



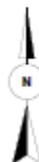
2015 SCHOHARIE COUNTY BROADBAND STUDY				
County of Schoharie, NY				
Date:	Revision:	By:	Drawn By:	Date:
		2601 S. Minnesota Ave. Suite 105-265 Sioux Falls, SD 57105-4750		
		Fax: 605-336-7100		



2015 SCHOHARIE COUNTY BROADBAND STUDY					
County of Schoharie, NY					
Date:	Revision:	By:	Design No:	Date:	
12/15	01	SK	2015	12/15	
			Drawn By:		
			Sheet Size:	18x24	
			Scale:	NONE	



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**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Pro Forma 5-Year Financial Forecast**  
**Income Statement**

<u>Revenues</u>	Forecast Period					
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Network Services Revenues:						
Local Voice Service	856,800	2,163,600	3,675,855	3,887,892	3,965,127	4,044,852
Video Services	0	0	0	0	0	0
Data Services	1,094,580	3,150,090	5,405,670	5,605,740	5,605,740	5,605,740
Network Access Service Revenues	221,911	560,372	933,379	967,924	967,924	967,924
Universal Service Fund	0	0	0	0	0	0
Net Toll Service/Long Distance Voice	0	0	0	0	0	0
Other Operating Revenues	16,565	41,830	69,673	72,252	72,252	72,252
Other Revenues	13,138	33,175	55,258	57,303	57,303	57,303
Amortized Grant Revenue	450,056	865,851	884,695	889,218	893,741	898,264
Uncollectible Revenues	(36,101)	(91,163)	(154,882)	(163,816)	(167,070)	(170,429)
<b>Total Revenues</b>	<b>2,616,949</b>	<b>6,723,755</b>	<b>10,869,648</b>	<b>11,316,513</b>	<b>11,395,017</b>	<b>11,475,906</b>
<u>Expenses</u>						
Plant Specific Operations	578,753	1,181,000	1,578,972	1,634,118	1,658,972	1,684,438
Plant Non-Specific Operations	124,682	219,785	322,147	338,545	346,123	353,896
USAC Contribution Expense	221,888	571,520	971,034	1,027,053	1,047,571	1,068,573
Cost of Internet Services	9,629	24,802	42,140	44,571	45,461	46,373
Customer Operations	123,158	215,862	315,479	331,494	338,932	346,560
Corporate Operations	213,198	352,269	498,920	523,458	535,498	547,851
General Taxes	531	1,040	1,017	962	906	849
Cost of Video Content	0	0	0	0	0	0
<b>Total Expenses</b>	<b>1,271,839</b>	<b>2,566,279</b>	<b>3,729,708</b>	<b>3,900,201</b>	<b>3,973,463</b>	<b>4,048,540</b>
<b>EBITDA</b>	<b>1,345,110</b>	<b>4,157,476</b>	<b>7,139,940</b>	<b>7,416,312</b>	<b>7,421,554</b>	<b>7,427,366</b>
Depreciation Expense on Assets	488,281	749,129	1,421,098	1,486,559	1,498,311	1,510,063
Amortization						
<b>Earnings Before Interest and Taxes</b>	<b>856,830</b>	<b>3,408,347</b>	<b>5,718,842</b>	<b>5,929,753</b>	<b>5,923,243</b>	<b>5,917,303</b>
Interest Expense - Loan ***	398,673	749,382	731,107	697,264	660,920	621,924
Interest Expense - Debt	0	0	0	0	0	0
Interest Income/Expense - Other						
<b>Income Before Taxes</b>	<b>458,157</b>	<b>2,658,965</b>	<b>4,987,735</b>	<b>5,232,489</b>	<b>5,262,323</b>	<b>5,295,379</b>
Income and Property Taxes	331,415	1,304,959	2,453,942	2,572,723	2,588,647	2,605,804
<b>Net Income</b>	<b>126,211</b>	<b>1,352,966</b>	<b>2,532,776</b>	<b>2,658,804</b>	<b>2,672,770</b>	<b>2,688,726</b>
<b>Times Interest Earned Ratio (1.0)</b>	<b>1.32</b>	<b>2.81</b>	<b>4.46</b>	<b>4.81</b>	<b>5.04</b>	<b>5.32</b>

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Pro Forma 5-Year Financial Forecast**  
**Balance Sheet**

<u>Assets</u>	Forecast Period					
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Current Assets</b>						
Cash	\$19,232	\$59,938	\$2,212,486	\$4,807,071	\$7,379,616	\$9,929,459
Temporary Investments / Certificates of Deposit	0	0	0	0	0	0
Accounts Receivable	0	0	0	0	0	0
Notes Receivable	0	0	0	0	0	0
Interest Receivable	0	0	0	0	0	0
Inventory	0	0	0	0	0	0
Prepayments	0	0	0	0	0	0
Prepaid/Deferred Income Taxes	0	0	0	0	0	0
Other Current Assets						
Total Current Assets	\$19,232	\$59,938	\$2,212,486	\$4,807,071	\$7,379,616	\$9,929,459
<b>Non-Current Assets</b>						
Plant in Service New Assets	13,359,859	26,459,415	27,324,540	27,464,234	27,603,928	27,743,622
Accumulated Depreciation New Assets	(488,283)	(1,237,412)	(2,658,510)	(4,145,069)	(5,643,380)	(7,153,443)
Plant Under Construction	0	0	0	0	0	0
Property Held for Future Use	0	0	0	0	0	0
Total Non-Current Assets	\$12,871,576	\$25,222,003	\$24,666,030	\$23,319,165	\$21,960,548	\$20,590,179
<b>Total Assets</b>	\$12,890,808	\$25,281,941	\$26,878,516	\$28,126,236	\$29,340,164	\$30,519,638
<b>Liabilities and Owners' Equity</b>						
<b>Liabilities</b>						
<b>Current Liabilities</b>						
Accounts Payable	\$0	\$0	\$0	\$0	\$0	\$0
Notes Payable	0	0	0	0	0	0
Current Portion - Loan	569,834	616,819	657,554	700,789	746,676	792,495
Current Portion - Other Debt	0	0	0	0	0	0
Current Portion - Deferred Grant Revenue	450,056	865,851	884,695	889,218	893,741	898,264
Customer Deposits	0	0	0	0	0	0
Other Current Liabilities	0	0	0	0	0	0
Total Current Liabilities	\$1,019,890	\$1,482,670	\$1,542,249	\$1,590,007	\$1,640,417	\$1,690,759
<b>Other Noncurrent Liabilities</b>						
Deferred Income Taxes	\$0	\$0	\$0	\$0	\$0	\$0
Deferred Compensation	0	0	0	0	0	0
Obligation Under Loan Guarantee	0	0	0	0	0	0
Existing Debt	0	0	0	0	0	0
Loans	5,893,975	11,514,082	11,139,184	10,506,239	9,827,407	9,102,756
Deferred Grant Revenue	5,850,734	10,806,014	10,185,132	9,359,235	8,528,815	7,693,872
Total Long-Term Liabilities	\$11,744,709	\$22,320,096	\$21,324,316	\$19,865,474	\$18,356,222	\$16,796,628
<b>Total Liabilities</b>	\$12,764,599	\$23,802,766	\$22,866,565	\$21,455,481	\$19,996,639	\$18,487,387
	6,300,790	11,671,865	11,069,827	10,248,453	9,422,556	8,592,136
<b>Stockholder's Equity</b>						
Common Stock	\$0	\$0	\$0	\$0	\$0	\$0
Retained Earnings	126,211	1,479,177	4,011,953	6,670,757	9,343,527	12,032,253
<b>Total Equity</b>	\$126,211	\$1,479,177	\$4,011,953	\$6,670,757	\$9,343,527	\$12,032,253
<b>Total Liabilities and Owner's Equity</b>	\$12,890,809	\$25,281,942	\$26,878,517	\$28,126,237	\$29,340,165	\$30,519,639

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Pro Forma 5-Year Financial Forecast**  
**Statement of Cash Flows**

	Forecast Period					
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Beginning Cash</b>	0	19,232	59,938	2,212,486	4,807,071	7,379,616
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>						
Net Income	126,211	1,352,966	2,532,776	2,658,804	2,672,770	2,688,726
<i>Adjustments to Reconcile Net Margins to Net cash Provided by Operating Activities</i>						
Add: Depreciation Assets	0	0	0	0	0	0
Add: Depreciation Construction Assets	488,281	749,129	1,421,098	1,486,559	1,498,311	1,510,063
Add: Amortization	0	0	0	0	0	0
Less: Amortized Grant Revenue	(450,056)	(865,851)	(884,695)	(889,218)	(893,741)	(898,264)
Deferred Income Taxes	0	0	0	0	0	0
<i>Changes in Current Assets and Liabilities:</i>						
(Increase) Decrease in:						
Receivables	0	0	0	0	0	0
Materials and Supplies	0	0	0	0	0	0
Other Deferred Charges	0	0	0	0	0	0
Increase (Decrease) in:						
Accounts Payable	0	0	0	0	0	0
Accrued Taxes	0	0	0	0	0	0
Other	0	0	0	0	0	0
<b>Net Cash Provided (Used) by Operations</b>	<b>164,436</b>	<b>1,236,244</b>	<b>3,069,179</b>	<b>3,256,145</b>	<b>3,277,340</b>	<b>3,300,525</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>						
Proceeds from Grant	\$6,750,846	\$6,236,926	\$282,657	\$67,844	\$67,844	\$67,844
Proceeds from Construction Loans	6,750,845	6,236,926	282,656	67,844	67,844	67,844
Repayment of Construction Loans	(287,036)	(569,834)	(616,819)	(657,554)	(700,789)	(746,676)
Repayment of Other Loans	0	0	0	0	0	0
Retirement of Common Stock						
<b>Net Cash Provided by Financing Activities</b>	<b>13,214,655</b>	<b>11,904,018</b>	<b>(51,506)</b>	<b>(521,866)</b>	<b>(565,101)</b>	<b>(610,988)</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>						
Capital Expenditures Construction	(12,976,691)	(12,723,852)	(840,313)	(135,688)	(135,688)	(135,688)
Purchase of Other Investments						
Capitalized Interest	(383,168)	(375,704)	(24,812)	(4,006)	(4,006)	(4,006)
Long-Term Investments						
<b>Net Cash Used by Investing Activities</b>	<b>(13,359,859)</b>	<b>(13,099,556)</b>	<b>(865,125)</b>	<b>(139,694)</b>	<b>(139,694)</b>	<b>(139,694)</b>
<b>Net Increase (Decrease) in Cash</b>	<b>19,232</b>	<b>40,706</b>	<b>2,152,548</b>	<b>2,594,585</b>	<b>2,572,545</b>	<b>2,549,843</b>
<b>Ending Cash</b>	<b>19,232</b>	<b>59,938</b>	<b>2,212,486</b>	<b>4,807,071</b>	<b>7,379,616</b>	<b>9,929,459</b>

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Pro Forma Assumptions**

**1. Local Voice Service Revenues are projected as follows:**

Basic Local Service Revenue:

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Serving Area Residential Subs	2,046	8,290	8,927	8,927	8,927	8,927
Residential Rate Per Month	\$30.00	\$30.00	\$30.60	\$31.21	\$31.83	\$32.47
<b>A - Annual Residential Local Service Revenue **</b>	<b>\$736,560</b>	<b>\$1,860,480</b>	<b>\$3,161,041</b>	<b>\$3,343,340</b>	<b>\$3,409,757</b>	<b>\$3,478,316</b>
Serving Area Business Subs	334	1,350	1,454	1,454	1,454	1,454
Business Rate Per Month	\$30.00	\$30.00	\$30.60	\$31.21	\$31.83	\$32.47
<b>B - Annual Business Local Service Revenue **</b>	<b>\$120,240</b>	<b>\$303,120</b>	<b>\$514,814</b>	<b>\$544,552</b>	<b>\$555,370</b>	<b>\$566,536</b>
<b>Total Basic Local Service Revenue (A + B)</b>	<b>\$856,800</b>	<b>\$2,163,600</b>	<b>\$3,675,855</b>	<b>\$3,887,892</b>	<b>\$3,965,127</b>	<b>\$4,044,852</b>

**2. Data Services Revenues are projected as follows:**

Data Service Revenue:

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Sm. Bus./Residential Serving Area DSL - Wireline Subs	749	3,023	3,256	3,256	3,256	3,256
DSL - Wireline Rate Per Month	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00
<b>A - Annual Sm. Bus./Residential Broadband DSL - Wireline Revenue **</b>	<b>\$404,460</b>	<b>\$1,018,440</b>	<b>\$1,695,330</b>	<b>\$1,758,240</b>	<b>\$1,758,240</b>	<b>\$1,758,240</b>
Sm. Bus./Residential Serving Area DSL - Wireless Subs	1,278	6,617	7,125	7,125	7,125	7,125
DSL - Wireless Rate Per Month	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00
<b>B - Annual Sm. Bus./Residential Broadband DSL - Wireless Revenue **</b>	<b>\$690,120</b>	<b>\$2,131,650</b>	<b>\$3,710,340</b>	<b>\$3,847,500</b>	<b>\$3,847,500</b>	<b>\$3,847,500</b>
<b>Total Broadband Data Revenue (A + B)</b>	<b>\$1,094,580</b>	<b>\$3,150,090</b>	<b>\$5,405,670</b>	<b>\$5,605,740</b>	<b>\$5,605,740</b>	<b>\$5,605,740</b>

\*\* = Averages the previous year-end subscribers with current year-end subscribers for calculating revenues.

**3. Network Access Service Revenues are projected as follows:**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Serving Area Residential & Business Subs	2,380	9,640	10,381	10,381	10,381	10,381
Access Revenue Per Month	\$7.77	\$7.77	\$7.77	\$7.77	\$7.77	\$7.77
<b>A - Annual Network Access Service Revenue **</b>	<b>\$221,911</b>	<b>\$560,372</b>	<b>\$933,379</b>	<b>\$967,924</b>	<b>\$967,924</b>	<b>\$967,924</b>
<b>Total Network Access Service Revenues (A)</b>	<b>\$221,911</b>	<b>\$560,372</b>	<b>\$933,379</b>	<b>\$967,924</b>	<b>\$967,924</b>	<b>\$967,924</b>

\*\* = Averages the previous year-end subscribers with current year-end subscribers for calculating revenues.

**4. Toll Service/Long Distance Voice Revenues are projected as follows:**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Serving Area Residential & Business Subs	2,380	9,640	10,381	10,381	10,381	10,381
Toll Service Revenue Per Month	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>A - Annual Toll Service Revenue **</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Toll Service/Long Distance Voice Revenue (A)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

\*\* = Averages the previous year-end subscribers with current year-end subscribers for calculating revenues.

**5. Other Operating Revenues are projected as follows:**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Serving Area Residential & Business Subs	2,380	9,640	10,381	10,381	10,381	10,381
Other Operating Revenue Per Month	\$0.58	\$0.58	\$0.58	\$0.58	\$0.58	\$0.58
<b>A - Annual Other Operating Revenue **</b>	<b>\$16,565</b>	<b>\$41,830</b>	<b>\$69,673</b>	<b>\$72,252</b>	<b>\$72,252</b>	<b>\$72,252</b>
<b>Total Other Operating Revenue (A)</b>	<b>\$16,565</b>	<b>\$41,830</b>	<b>\$69,673</b>	<b>\$72,252</b>	<b>\$72,252</b>	<b>\$72,252</b>

\*\* = Averages the previous year-end subscribers with current year-end subscribers for calculating revenues.

**6. Other Revenues are projected as follows:**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Serving Area Residential & Business Subs	2,380	9,640	10,381	10,381	10,381	10,381
Other Revenue Per Month	\$0.46	\$0.46	\$0.46	\$0.46	\$0.46	\$0.46
<b>A - Annual Other Revenue **</b>	<b>\$13,138</b>	<b>\$33,175</b>	<b>\$55,258</b>	<b>\$57,303</b>	<b>\$57,303</b>	<b>\$57,303</b>
<b>Total Other Revenue (A)</b>	<b>\$13,138</b>	<b>\$33,175</b>	<b>\$55,258</b>	<b>\$57,303</b>	<b>\$57,303</b>	<b>\$57,303</b>

\*\* = Averages the previous year-end subscribers with current year-end subscribers for calculating revenues.

**Schoharie County Economic Development Division  
Broadband Feasibility Study  
Pro Forma Assumptions**

**7. Uncollectible Revenues are estimated based on ' industry operations' uncollectible revenues.**

2013 Uncollectibles	16,589
Total Historical Uncollectibles	16,589
2013 Local Network Service Revenues	897,501
Total End-User Revenues	897,501
Total Historical Uncollectibles/Total End-User Rev	1.85%
Year 0 Local Network Service Revenues	856,800
Year 0 Data Revenues	1,094,580
Year 0 Estimated End-User Revenues	1,951,380
Total Historical Uncollectibles/Total End-User Rev %	1.85%
Year 0 Estimated Uncollectible	36,101

The uncollectible percentage is carried forward and applied to Year 1 through Year 5 end-user revenues as well.

**8. Plant Specific Operations Expense is projected as follows:**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<b>12/31/13 Industry Data</b>						
General Support Expense	\$46,767					
Switch Repairs, Maintenance	\$21,897					
Transmission Eq. , FTTH and NID Expense	\$5,712					
Aerial Fiber Cable Expense	\$102,269					
CPE Expense	\$2,642					
Inside Wire Expense	\$11,281					
<b>Subtotal Plant Specific Operating Expenses</b>	<b>\$190,568</b>					
Calculated Annual Plant Specific Operations Expense	\$190,568					
Divided by Year 0 Voice Subscribers	2,380	9,640	10,381	10,381	10,381	10,381
Annual Plant Specific Operations Expense per sub	\$80.07					
x 2.0% (to reflect estimated annual expense growth)		x 1.02%				
Estimated Plant Specific Operations Expense per sub	\$81.67	\$83.30	\$84.97	\$86.67	\$88.40	\$88.40
Year 1 - 5 Total Average Voice Subscribers	6,010	10,011	10,381	10,381	10,381	10,381
<b>Subtotal Year 1 - 5 Plant Specific Operating Expense</b>	<b>\$490,850</b>	<b>\$833,972</b>	<b>\$882,084</b>	<b>\$899,706</b>	<b>\$917,744</b>	<b>\$917,744</b>
Leased Wireless Towers - Quantity in Use	4	4	14	15	15	15
Pole Attachment Expense - Route Miles in Use	115.72	234.66	234.66	234.66	234.66	234.66
Leased Wireless Tower Expense	\$192,000	\$432,000	\$480,000	\$480,000	\$480,000	\$480,000
Pole Attachment Expense	\$44,148	\$89,532	\$91,323	\$93,149	\$95,012	\$96,912
<b>Subtotal Plant Specific Operating Lease Expenses</b>	<b>\$236,148</b>	<b>\$521,532</b>	<b>\$571,323</b>	<b>\$573,149</b>	<b>\$575,012</b>	<b>\$576,912</b>
<b>Projected Staff Expense</b>						
Switch Technician - Staff Quantity	1	1	1	1	1	1
FTTH Technician (Configuration) - Staff Quantity	1	1	1	1	1	1
FTTH Technician (Installs) - Staff Quantity	1	1	1	1	1	1
Switch Technician Expense	\$55,286	\$61,316	\$63,155	\$65,049	\$67,001	\$69,011
FTTH Technician (Configuration) Expense	\$41,465	\$45,986	\$47,367	\$48,788	\$50,252	\$51,760
FTTH Technician (Installs) Expense	55,286	61,316	63,155	65,049	67,001	69,011
<b>Subtotal Plant Specific Staff Expenses</b>	<b>\$152,037</b>	<b>\$168,618</b>	<b>\$173,677</b>	<b>\$178,886</b>	<b>\$184,254</b>	<b>\$189,782</b>
<b>Total Plant Specific Operating Expenses</b>	<b>\$578,753</b>	<b>\$1,181,000</b>	<b>\$1,578,972</b>	<b>\$1,634,119</b>	<b>\$1,658,972</b>	<b>\$1,684,438</b>

**9. Plant Nonspecific Operations Expense is calculated as follows:**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<b>12/31/13 Industry Data</b>						
Power Expense	\$55,574					
<b>Subtotal Plant Non-Specific Operating Expenses</b>	<b>\$55,574</b>					
Calculated Annual Plant Non-Specific Operations Expense	\$55,574					
Divided by Year 0 Voice Subscribers	2,380	9,640	10,381	10,381	10,381	10,381
Annual Plant Non-Specific Operations Expense per sub	\$23.35					
x 2.0% (to reflect estimated annual expense growth)		x 1.02%				
Estimated Plant Non-Specific Operations Expense per sub	\$23.82	\$24.30	\$24.79	\$25.29	\$25.80	\$25.80
Year 1 - 5 Total Average Voice Subscribers	6,010	10,011	10,381	10,381	10,381	10,381
<b>Subtotal Year 1 - 5 Plant Non-Specific Operating Expense</b>	<b>\$143,141</b>	<b>\$243,203</b>	<b>\$257,233</b>	<b>\$262,372</b>	<b>\$267,632</b>	<b>\$267,632</b>
<b>Projected Staff Expense</b>						
Installation and Maintenance Manager - Staff Quantity	1	1	1	1	1	1
Installation and Maintenance Manager Expense	\$69,108	\$76,644	\$78,944	\$81,312	\$83,751	\$86,264
<b>Subtotal Plant Non-Specific Staff Expenses</b>	<b>\$69,108</b>	<b>\$76,644</b>	<b>\$78,944</b>	<b>\$81,312</b>	<b>\$83,751</b>	<b>\$86,264</b>
<b>Total Plant Non-Specific Operating Expenses</b>	<b>\$124,682</b>	<b>\$219,785</b>	<b>\$322,147</b>	<b>\$338,545</b>	<b>\$346,123</b>	<b>\$353,896</b>

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## 10. Cost of USAC Contribution Expense is calculated as follows:

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
12/31/13 Industry Data						
USAC Contribution Expense	\$221,888					
<b>Subtotal USAC Contribution Expense</b>	<b>\$221,888</b>					
Calculated Annual USAC Contribution Expense	\$221,888					
Divided by Year 0 Voice Subscribers	2,380	9,640	10,381	10,381	10,381	10,381
Annual Plant Non-Specific Operations Expense per sub	\$93.23					
x 2.0% (to reflect estimated annual expense growth)		x 1.02%	x 1.02%	x 1.02%	x 1.02%	x 1.02%
Estimated USAC Contribution Expense per sub	\$95.09	\$96.99	\$98.93	\$100.91	\$102.93	
Year 1 - 5 Total Average Voice Subscribers	6,010	10,011	10,381	10,381	10,381	10,381
<b>Subtotal Year 1 - 5 USAC Contribution Operating Expense</b>	<b>\$571,520</b>	<b>\$971,034</b>	<b>\$1,027,053</b>	<b>\$1,047,571</b>	<b>\$1,068,573</b>	
<b>Total USAC Contribution Expense</b>	<b>\$221,888</b>	<b>\$571,520</b>	<b>\$971,034</b>	<b>\$1,027,053</b>	<b>\$1,047,571</b>	<b>\$1,068,573</b>

## 11. Cost of Internet Services Expense is calculated as follows:

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
12/31/13 Industry Data						
Internet Services Expense	\$9,629					
<b>Subtotal Internet Services Expense</b>	<b>\$9,629</b>					
Calculated Annual Internet Services Expense	\$9,629					
Divided by Year 0 Voice Subscribers	2,380	9,640	10,381	10,381	10,381	10,381
Annual Internet Services Expense per sub	\$4.05					
x 2.0% (to reflect estimated annual expense growth)		x 1.02%				
Estimated Internet Services Expense per sub	\$4.13	\$4.21	\$4.29	\$4.38	\$4.47	
Year 1 - 5 Total Average Voice Subscribers	6,010	10,011	10,381	10,381	10,381	10,381
<b>Subtotal Year 1 - 5 Internet Services Operating Expense</b>	<b>\$24,802</b>	<b>\$42,140</b>	<b>\$44,571</b>	<b>\$45,461</b>	<b>\$46,373</b>	
<b>Total Internet Services Expense</b>	<b>\$9,629</b>	<b>\$24,802</b>	<b>\$42,140</b>	<b>\$44,571</b>	<b>\$45,461</b>	<b>\$46,373</b>

## 12. Customer Operations Expense is calculated as follows:

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
12/31/13 Industry Data						
Advertising, Promotion, etc.	\$27,827					
Customer Services	\$26,223					
<b>Subtotal Customer Operations Expenses</b>	<b>\$54,050</b>					
Calculated Annual Customer Operations Expense	\$54,050					
Divided by Year 0 Voice Subscribers	2,380	9,640	10,381	10,381	10,381	10,381
Annual Customer Operations Expense per sub	\$22.71					
x 2.0% (to reflect estimated annual expense growth)		x 1.02%				
Estimated Customer Operations Expense per sub	\$23.16	\$23.62	\$24.09	\$24.57	\$25.06	
Year 1 - 5 Total Average Voice Subscribers	6,010	10,011	10,381	10,381	10,381	10,381
<b>Subtotal Year 1 - 5 Customer Operations Expense</b>	<b>\$139,217</b>	<b>\$236,535</b>	<b>\$250,181</b>	<b>\$255,179</b>	<b>\$260,295</b>	
<b>Total Customer Operations Expenses</b>	<b>\$123,158</b>	<b>\$215,862</b>	<b>\$315,479</b>	<b>\$331,494</b>	<b>\$338,932</b>	<b>\$346,560</b>
Projected Staff Expense						
Sales Personnel - Staff Quantity	1	1	1	1	1	1
Customer Service - Staff Quantity	1	1	1	1	1	1
Sales Staff Expense	\$44,920	\$49,819	\$51,314	\$52,853	\$54,439	\$56,072
Customer Service Staff Expense	\$24,188	\$26,826	\$27,630	\$28,460	\$29,314	\$30,193
<b>Subtotal Customer Operations Staff Expenses</b>	<b>\$69,108</b>	<b>\$76,645</b>	<b>\$78,944</b>	<b>\$81,313</b>	<b>\$83,753</b>	<b>\$86,265</b>
<b>Total Customer Operations Expenses</b>	<b>\$123,158</b>	<b>\$215,862</b>	<b>\$315,479</b>	<b>\$331,494</b>	<b>\$338,932</b>	<b>\$346,560</b>

## 13. Corporate Operations Expense is calculated as follows:

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
12/31/13 Industry Data						
Executive Expense	\$2,284					
Accounting & Finance	\$2,500					
External Relations	\$30,083					
Human Resources	\$26,180					
Legal	\$2,238					
Other General & Administrative	\$15,684					
<b>Subtotal Corporate Operations Expenses</b>	<b>\$78,969</b>					
Calculated Annual Corporate Operations Expense	\$78,969					
Divided by Year 0 Voice Subscribers	2,380	9,640	10,381	10,381	10,381	10,381
Annual Corporate Operations Expense per sub	\$33.18					
x 2.0% (to reflect estimated annual expense growth)		x 1.02%	x 1.02%	x 1.02%	x 1.02%	x 1.02%
Estimated Corporate Operations Expense per sub	\$33.84	\$34.52	\$35.21	\$35.91	\$36.63	
Year 1 - 5 Total Average Voice Subscribers	6,010	10,011	10,381	10,381	10,381	10,381
<b>Subtotal Year 1 - 5 Corporate Operations Expense</b>	<b>\$203,401</b>	<b>\$345,587</b>	<b>\$365,524</b>	<b>\$372,826</b>	<b>\$380,300</b>	

**Schoharie County Economic Development Division  
Broadband Feasibility Study  
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## 14. Corporate Operations Expense calculation (continued):

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<i>Projected Staff Expense</i>						
General Manager - Staff Quantity	1	1	1	1	1	1
Accountant - Staff Quantity	1	1	1	1	1	1
General Manager Staff Expense	\$99,675	\$110,545	\$113,861	\$117,278	\$120,796	\$124,420
Accountant Staff Expense	\$34,554	\$38,323	\$39,472	\$40,656	\$41,876	\$43,131
<b>Subtotal Corporate Operations Staff Expenses</b>	<b>\$134,229</b>	<b>\$148,868</b>	<b>\$153,333</b>	<b>\$157,934</b>	<b>\$162,672</b>	<b>\$167,551</b>
<b>Total Corporate Operations Expenses</b>	<b>\$213,198</b>	<b>\$352,269</b>	<b>\$498,920</b>	<b>\$523,458</b>	<b>\$535,498</b>	<b>\$547,851</b>

## 15. General taxes are estimated as follows:

Total Company Year 0 General Taxes	\$531	0.0041254%				
Total Company Year 0 Net Plant	\$12,871,576					
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Total Company Net Plant + Dereg Net Plant	\$12,871,576	\$25,222,003	\$24,666,030	\$23,319,165	\$21,960,548	\$20,590,179
x Total Company Property Tax Factor	0.0041254%	0.0041254%	0.0041254%	0.0041254%	0.0041254%	0.0041254%
Total Company Property Taxes	\$531	\$1,040	\$1,018	\$962	\$906	\$849

## 16. Depreciation Expense is calculated as follows:

Depreciation Expense on Year 1 'Additional' Investment is based on information from industry sourced depreciation schedule

Other Work Equipment	7.87%	2,184.00
Office Equipment	11.98%	511.00
Transport Equipment	9.56%	150,031.00
Access Equipment	9.56%	141,335.00
Other Network & Access Equip.	9.56%	157,193.00
Aerial Cable - Fiber	3.35%	214,563.00
Towers	3.35%	70,443.00
Amortizable Assets	10.00%	12,869.00
<b>Total Depreciation Expense</b>		<b>\$749,129.00</b>

Year 2 Depreciation Expense on Year 3 'additional' investment is based upon the following annual rates:

Other Work Equipment	7.87%	11,033.00
Office Equipment	11.98%	2,575.00
Transport Equipment	9.56%	208,564.00
Access Equipment	9.56%	230,575.00
Other Network & Access Equip.	3.35%	358,176.00
Aerial Cable - Fiber	3.35%	408,493.00
Towers	10.00%	188,813.00
Amortizable Assets	10.00%	12,869.00
<b>Total Depreciation Expense</b>		<b>\$1,421,098.00</b>

## 17. Interest Expense associated with the construction year plant additions are capitalized during the first 5 years of the pro forma. Principal and interest payments are calculated under the following terms:

15 Years  
6.00%

## 18. Federal Income Tax Expense is included in this pro forma. Losses from prior years are carried forward. Taxes were only calculated on Net Taxable Income (patronage sourced revenues were excluded from taxable income tax exempt entities). 20xx Information is the basis for Years 0 - 5 income taxes.

	Year 0 Tax	Year 1 Tax	Year 2 Tax	Year 3 Tax	Year 4 Tax	Year 5 Tax
Revenues	\$2,616,949	\$6,723,755	\$10,869,648	\$11,316,513	\$11,395,017	\$11,475,906
Expenses	1,271,308	2,565,239	3,728,691	3,899,239	3,972,557	4,047,691
Property Taxes	531	1,040	1,017	962	906	849
Fixed Charges	398,673	749,382	731,107	697,264	660,920	621,924
Net Income (Loss)	\$946,437	\$4,157,476	\$7,139,940	\$7,416,312	\$7,421,554	\$7,427,366
Income or Cumulative (Loss)	\$946,437	\$4,157,476	\$7,139,940	\$7,416,312	\$7,421,554	\$7,427,366
<b>Total Operating Taxes Balance - FIT</b>	<b>316,830</b>	<b>1,083,433</b>	<b>2,037,368</b>	<b>2,135,985</b>	<b>2,149,206</b>	<b>2,163,450</b>
<b>Total Operating Taxes Balance - SIT</b>	<b>14,585</b>	<b>221,526</b>	<b>416,574</b>	<b>436,738</b>	<b>439,441</b>	<b>442,354</b>
Total Operating Taxes	331,415	1,304,959	2,453,942	2,572,723	2,588,647	2,605,804

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Projected Operating Expense Summary**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Plant Specific Operations Expense:</b>						
<b><u>General Support Expense:</u></b>						
Motor Vehicle Expense	\$0	\$0	\$0	\$0	\$0	\$0
Other Work Equipment Expense	5,735	14,772	25,098	26,546	27,076	27,619
Building Expense	30,274	77,977	132,487	140,130	142,929	145,795
Office Equipment Expense	10,758	27,709	47,078	49,794	50,789	51,807
Computer Expense	0	0	0	0	0	0
Total	\$46,767	\$120,458	\$204,663	\$216,470	\$220,794	\$225,221
<b><u>Central Office Switching Expense:</u></b>						
Switch Technician	\$55,286	\$61,316	\$63,155	\$65,049	\$67,001	\$69,011
Switch Repairs, Maintenance	21,897	56,400	95,825	101,353	103,378	105,451
Total	\$77,183	\$117,716	\$158,980	\$166,402	\$170,379	\$174,462
<b><u>Central Office Transmission Expense:</u></b>						
FTTH Technician (Configuration)	\$41,465	\$45,986	\$47,367	\$48,788	\$50,252	\$51,760
Transmission Eq. , FTTH and NID Expense	5,712	14,712	24,997	26,439	26,967	27,508
Total	\$47,177	\$60,698	\$72,364	\$75,227	\$77,219	\$79,268
<b><u>Cable Facilities Expense:</u></b>						
Buried Fiber Cable Expense	\$0	\$0	\$0	\$0	\$0	\$0
FTTH Technician (Installs)	55,286	61,316	63,155	65,049	67,001	69,011
Aerial Fiber Cable Expense	102,269	263,416	447,554	473,373	482,830	492,510
Leased Wireless Tower Expense	192,000	432,000	480,000	480,000	480,000	480,000
Pole Attachment Expense	44,148	89,532	91,323	93,149	95,012	96,912
Total	\$393,703	\$846,264	\$1,082,032	\$1,111,571	\$1,124,843	\$1,138,433
<b><u>CATV, CPE, I/S Wire &amp; PCS Expense:</u></b>						
CATV Expense	\$0	\$0	\$0	\$0	\$0	\$0
CPE Expense	2,642	6,806	11,563	12,230	12,475	12,725
Inside Wire Expense	11,281	29,058	49,370	52,218	53,262	54,329
PCS Expense	0	0	0	0	0	0
Total	\$13,923	\$35,864	\$60,933	\$64,448	\$65,737	\$67,054
<b>Total Plant Specific Operations Expense</b>	<b>\$578,753</b>	<b>\$1,181,000</b>	<b>\$1,578,972</b>	<b>\$1,634,118</b>	<b>\$1,658,972</b>	<b>\$1,684,438</b>
<b>Plant Nonspecific Operations Expense:</b>						
<b><u>Network Operations Expense:</u></b>						
Installation & Maintenance Manager	\$69,108	\$76,644	\$78,944	\$81,312	\$83,751	\$86,264
Engineering	\$0	\$0	\$0	\$0	\$0	\$0
Power Expense	\$55,574	\$143,141	\$243,203	\$257,233	\$262,372	\$267,632
Network Administration Expense	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$124,682	\$219,785	\$322,147	\$338,545	\$346,123	\$353,896
<b>Total Plant Nonspecific Operations Expense</b>	<b>\$124,682</b>	<b>\$219,785</b>	<b>\$322,147</b>	<b>\$338,545</b>	<b>\$346,123</b>	<b>\$353,896</b>
<b>Depreciation and Amortization Expense:</b>	<b>\$488,281</b>	<b>\$749,129</b>	<b>\$1,421,098</b>	<b>\$1,486,559</b>	<b>\$1,498,311</b>	<b>\$1,510,063</b>

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Projected Operating Expense Summary (Cont'd)**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Access Expense:</b>						
Long Distance Expense	\$0	\$0	\$0	\$0	\$0	\$0
USAC Contribution Expense	\$221,888	\$571,520	\$971,034	\$1,027,053	\$1,047,571	\$1,068,573
Total	\$221,888	\$571,520	\$971,034	\$1,027,053	\$1,047,571	\$1,068,573
<b>Total Access Expense</b>	<b>\$221,888</b>	<b>\$571,520</b>	<b>\$971,034</b>	<b>\$1,027,053</b>	<b>\$1,047,571</b>	<b>\$1,068,573</b>
<b>Internet Services Expense:</b>						
Internet Expense	\$9,629	\$24,802	\$42,140	\$44,571	\$45,461	\$46,373
Computer Expense	\$0	\$0	\$0	\$0	\$0	\$0
Security Sales Expense	\$0	\$0	\$0	\$0	\$0	\$0
WildBlue Install Expense	\$0	\$0	\$0	\$0	\$0	\$0
DSL Modem Expense	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$9,629	\$24,802	\$42,140	\$44,571	\$45,461	\$46,373
<b>Total Internet Services Expense</b>	<b>\$9,629</b>	<b>\$24,802</b>	<b>\$42,140</b>	<b>\$44,571</b>	<b>\$45,461</b>	<b>\$46,373</b>
<b>Customer Operations Expense:</b>						
<b><u>Marketing Expense:</u></b>						
Sales Staff	\$44,920	\$49,819	\$51,314	\$52,853	\$54,439	\$56,072
Advertising, Promotion, etc.	27,827	71,674	121,778	128,803	131,376	134,010
Call Completion, Directory, Number Services	0	0	0	0	0	0
Total	\$72,747	\$121,493	\$173,092	\$181,656	\$185,815	\$190,082
<b><u>Customer Services Expense:</u></b>						
Customer Service Staff	\$24,188	\$26,826	\$27,630	\$28,460	\$29,314	\$30,193
Administrative Assistant	0	0	0	0	0	0
Customer Services	26,223	67,542	114,757	121,378	123,802	126,284
Other Expense	0	0	0	0	0	0
Total	\$50,411	\$94,368	\$142,387	\$149,838	\$153,116	\$156,477
<b>Total Customer Operations Expense</b>	<b>\$123,158</b>	<b>\$215,862</b>	<b>\$315,479</b>	<b>\$331,494</b>	<b>\$338,932</b>	<b>\$346,560</b>
<b>Corporate Operations Expenses:</b>						
<b><u>Executive &amp; Planning Expense:</u></b>						
General Manager	\$99,675	\$110,545	\$113,861	\$117,278	\$120,796	\$124,420
Executive Expense	2,284	5,883	9,996	10,572	10,784	11,000
Accounting & Finance	2,500	6,439	10,939	11,570	11,802	12,038
Total	\$104,459	\$122,867	\$134,796	\$139,421	\$143,381	\$147,458
<b><u>General &amp; Administrative Expense:</u></b>						
Accountant	\$34,554	\$38,323	\$39,472	\$40,656	\$41,876	\$43,131
FCC & State Regulatory Expense	0	0	0	0	0	0
External Relations	30,083	77,486	131,652	139,247	142,029	144,877
Human Resources	26,180	67,432	114,569	121,178	123,599	126,077
Legal	2,238	5,764	9,794	10,359	10,566	10,777
Other General & Administrative	15,684	40,397	68,637	72,596	74,047	75,531
Total	\$108,739	\$229,403	\$364,123	\$384,037	\$392,117	\$400,393
<b>Total Corporate Operations Expense</b>	<b>\$213,198</b>	<b>\$352,269</b>	<b>\$498,920</b>	<b>\$523,458</b>	<b>\$535,498</b>	<b>\$547,851</b>
<b>Total Operating Expenses</b>	<b>\$1,759,589</b>	<b>\$3,314,368</b>	<b>\$5,149,789</b>	<b>\$5,385,798</b>	<b>\$5,470,868</b>	<b>\$5,557,754</b>

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Projected Incremental Operating Expense Detail (Other than Personnel)**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Total Residence Access Lines	2,046	8,290	8,927	8,927	8,927	8,927
Total Business Access Lines	334	1,350	1,454	1,454	1,454	1,454
Total Access Lines	2,380	9,640	10,381	10,381	10,381	10,381
Annual Expense Growth Factor	0.00%	2.00%	2.00%	2.00%	2.00%	2.00%
<b>Motor Vehicle Expense:</b>						
6110 Vehicle Maintenance Cost	\$0	\$0	\$0	\$0	\$0	\$0
Total Motor Vehicle Expense:	\$0	\$0	\$0	\$0	\$0	\$0
<b>Other Work Equipment Expense:</b>						
6110 Other Work Equipment Maintenance Cost	\$5,735	\$14,772	\$25,098	\$26,546	\$27,076	\$27,619
Total Other Work Equipment Expense:	\$5,735	\$14,772	\$25,098	\$26,546	\$27,076	\$27,619
<b>Building Expense:</b>						
6122 Building, Repairs and Maintenance	\$30,274	\$77,977	\$132,487	\$140,130	\$142,929	\$145,795
Total Building Expense:	\$30,274	\$77,977	\$132,487	\$140,130	\$142,929	\$145,795
<b>Office Equipment Expense:</b>						
6123 Office Equipment Repairs and Maintenance	\$10,758	\$27,709	\$47,078	\$49,794	\$50,789	\$51,807
Total Office Equipment Expense:	\$10,758	\$27,709	\$47,078	\$49,794	\$50,789	\$51,807
<b>Computer Expense:</b>						
6124 General Purpose Computer Expense	\$0	\$0	\$0	\$0	\$0	\$0
Total Computer Expense:	\$0	\$0	\$0	\$0	\$0	\$0
<b>Central Office Switching Expense:</b>						
6210 Switch Repairs, Maintenance	\$21,897	\$56,400	\$95,825	\$101,353	\$103,378	\$105,451
Total Central Office Switching Expense:	\$21,897	\$56,400	\$95,825	\$101,353	\$103,378	\$105,451
<b>Central Office Transmission Expense:</b>						
6230	\$0	\$0	\$0	\$0	\$0	\$0
6230 Transmission Eq. , FTTH and NID Expense	\$5,712	\$14,712	\$24,997	\$26,439	\$26,967	\$27,508
6230	\$0	\$0	\$0	\$0	\$0	\$0
Total Central Office Transmission Expense:	\$5,712	\$14,712	\$24,997	\$26,439	\$26,967	\$27,508
<b>Cable Facilities Expense:</b>						
6420 Buried Fiber Cable Expense	\$0	\$0	\$0	\$0	\$0	\$0
6420 Aerial Fiber Cable Expense	\$102,269	\$263,416	\$447,554	\$473,373	\$482,830	\$492,510
6420 Leased Wireless Tower Expense	\$192,000	\$432,000	\$480,000	\$480,000	\$480,000	\$480,000
6420 Pole Attachment Expense	\$44,148	\$89,532	\$91,323	\$93,149	\$95,012	\$96,912
Total Cable Facilities Expense:	\$338,417	\$784,948	\$1,018,876	\$1,046,522	\$1,057,842	\$1,069,422
<b>CATV, CPE, I/S Wire &amp; PCS Expense:</b>						
7991 CATV Expense	\$0	\$0	\$0	\$0	\$0	\$0
7991 CPE Expense	\$2,642	\$6,806	\$11,563	\$12,230	\$12,475	\$12,725
7991 Inside Wire Expense	\$11,281	\$29,058	\$49,370	\$52,218	\$53,262	\$54,329
Total CATV, CPE, I/S Wire & PCS Expense:	\$13,923	\$35,864	\$60,933	\$64,449	\$65,736	\$67,054
<b>Network Operations Expense:</b>						
6530 Engineering	\$0	\$0	\$0	\$0	\$0	\$0
6530 Power Expense	\$55,574	\$143,141	\$243,203	\$257,233	\$262,372	\$267,632
6530 Network Administration Expense	\$0	\$0	\$0	\$0	\$0	\$0
Total Network Operations Expense:	\$55,574	\$143,141	\$243,203	\$257,233	\$262,372	\$267,632
<b>Access Expense:</b>						
6540 Long Distance Expense	\$0	\$0	\$0	\$0	\$0	\$0
6540 USAC Contribution Expense	\$221,888	\$571,520	\$971,034	\$1,027,053	\$1,047,571	\$1,068,573
Total Access Expense:	\$221,888	\$571,520	\$971,034	\$1,027,053	\$1,047,571	\$1,068,573
<b>Cost of Services Expense:</b>						
7991 Internet Expense	\$9,629	\$24,802	\$42,140	\$44,571	\$45,461	\$46,373
7991 Computer Expense	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost of Services Expense:	\$9,629	\$24,802	\$42,140	\$44,571	\$45,461	\$46,373
<b>Customer Operations Expense:</b>						
6610 Advertising, Promotion, etc.	\$27,827	\$71,674	\$121,778	\$128,803	\$131,376	\$134,010
6620 Call Completion, Directory, Number Services	\$0	\$0	\$0	\$0	\$0	\$0
6623 Customer Services	\$26,223	\$67,542	\$114,757	\$121,378	\$123,802	\$126,284
6623 Other Expense	\$0	\$0	\$0	\$0	\$0	\$0
Total Customer Operations Expense:	\$54,050	\$139,217	\$236,535	\$250,181	\$255,179	\$260,295

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Projected Incremental Operating Expense Detail (Other than Personnel)**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Total Residence Access Lines	2,046	8,290	8,927	8,927	8,927	8,927
Total Business Access Lines	334	1,350	1,454	1,454	1,454	1,454
Total Access Lines	2,380	9,640	10,381	10,381	10,381	10,381
Annual Expense Growth Factor	0.00%	2.00%	2.00%	2.00%	2.00%	2.00%
<b>Corporate Operations Expense:</b>						
6710 Executive Expense	\$2,284	\$5,883	\$9,996	\$10,572	\$10,784	\$11,000
6710 Accounting & Finance	\$2,500	\$6,439	\$10,939	\$11,570	\$11,802	\$12,038
6720 FCC & State Regulatory Expense	\$0	\$0	\$0	\$0	\$0	\$0
6725 External Relations	\$30,083	\$77,486	\$131,652	\$139,247	\$142,029	\$144,877
6728 Human Resources	\$26,180	\$67,432	\$114,569	\$121,178	\$123,599	\$126,077
6728 Legal	\$2,238	\$5,764	\$9,794	\$10,359	\$10,566	\$10,777
6728 Other General & Administrative	\$15,684	\$40,397	\$68,637	\$72,596	\$74,047	\$75,531
Total Corporate Operations Expense:	\$78,969	\$203,401	\$345,587	\$365,524	\$372,826	\$380,300
<b>Total</b>	<b>\$846,826</b>	<b>\$2,094,463</b>	<b>\$3,243,793</b>	<b>\$3,399,795</b>	<b>\$3,458,127</b>	<b>\$3,517,829</b>

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Investment Summary - Asset Category**

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Network & Access	\$4,557,702	\$3,543,649	\$459,975	\$0	\$0	\$0
Outside Plant	\$8,262,881	\$9,054,201	\$244,650	\$0	\$0	\$0
Buildings & Misc	\$0	\$0	\$0	\$0	\$0	\$0
Customer Premise	\$0	\$0	\$0	\$0	\$0	\$0
Vehicles	\$0	\$0	\$0	\$0	\$0	\$0
Work Equipment	\$26,966	\$109,262	\$117,658	\$117,658	\$117,658	\$117,658
Office Equipment	\$4,142	\$16,740	\$18,030	\$18,030	\$18,030	\$18,030
Billing Software	\$0	\$0	\$0	\$0	\$0	\$0
Organizational	\$125,000	\$0	\$0	\$0	\$0	\$0
<b>Totals:</b>	<b>\$12,976,691</b>	<b>\$12,723,852</b>	<b>\$840,313</b>	<b>\$135,688</b>	<b>\$135,688</b>	<b>\$135,688</b>

**Total (Years 0-5)** \$26,947,920

**Plus Capitalized Interest** \$795,702

**\$27,743,622**

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Investment Summary - By Type / Year**

**Capital Expenditures**

<b>Description</b>	<b>Year 0</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Totals</b>
Wireless Towers	\$1,941,026	\$3,431,787	\$0	\$0	\$0		\$5,372,813
Transport Network	\$1,524,427	\$594,749	\$0	\$0	\$0		\$2,119,176
Fiber	\$4,274,960	\$4,393,914	\$0	\$0	\$0		\$8,668,874
Customer Drops & Customer Premise Equipment:							
FTTH	\$3,381,725	\$2,135,250	\$425,225	\$0	\$0	\$0	\$5,942,200
Wireless	\$1,597,200	\$2,042,150	\$279,400	\$0	\$0	\$0	\$3,918,750
Startup Costs	\$226,245	\$0	\$0	\$0	\$0		\$226,245
Subtotal	\$12,945,583	\$12,597,850	\$704,625	\$0	\$0	\$0	\$26,248,058
Work Equipment	\$26,966	\$109,262	\$117,658	\$117,658	\$117,658	\$117,658	\$606,860
Office Equipment	\$4,142	\$16,740	\$18,030	\$18,030	\$18,030	\$18,030	\$93,002
Capitalized Interest	\$383,168	\$375,704	\$24,812	\$4,006	\$4,006	\$4,006	\$795,702
Subtotal	\$414,276	\$501,706	\$160,500	\$139,694	\$139,694	\$139,694	\$1,495,564
Total Capital Investment	\$13,359,859	\$13,099,556	\$865,125	\$139,694	\$139,694	\$139,694	\$27,743,622

**Schoharie County Economic Development Division  
Broadband Feasibility Study  
Tower Sites**

No.	Description	Type	Tower No.	Capital Cost
<b>Ring 1</b>				
1	Sharon Springs - Chestnut Street	Existing	11	\$91,788
2	Sharon - Cty Rt 5	Existing	6	\$91,788
3	Sharon - Schoffield Rd	Existing	4	\$91,788
4	Sloansville - Beckers Corner Rd	Existing	2	\$91,788
5	Esperance - Conover Rd	Existing	10	\$91,788
6	Warnerville - Adullam Church	Existing	1010829	\$91,788
7	Richmondville - Winter Dr.	Existing	8	\$91,788
8	Richmondville - North of West Main Street	Existing	5	\$91,788
9	Cobleskill - Clapper Rd	Existing	13	\$91,788
10	Oak Hill - Dispatch	Existing	2	\$91,788
11	New Site - Rosenberg Rd	New	4	\$236,213
12	New Site - North of Sharon - White Rd	New	5	\$236,213
<b>Subtotal</b>				<b>\$1,390,301</b>
<b>Ring 2</b>				
1	Cobleskill	Existing	1	\$91,788
2	Howes Cave - Sagendorf Corners Rd	Existing	7	\$91,788
3	Delanson - Beard Rd	Existing	12	\$91,788
4	Schoharie	Existing	9	\$91,788
5	Wright	Existing	17	\$91,788
6	Middleburgh - Hunters Lands Rd	Existing	14	\$91,788
<b>Subtotal</b>				<b>\$550,725</b>
<b>Ring 3</b>				
1	Broome	Existing	16	\$91,788
2	409 Clauverwie Rd	Existing	12707188	\$91,788
3	423 Clauverwie Rd - E911 Tower	Existing		\$91,788
4	New Site - NY Water Dist.	New		\$236,213
5	New Site 7 - MGVT	New	7	\$236,213
6	New Site 6 - Huntersland Rd	New	6	\$236,213
7	New Site 3 - State Rt 145	New	3	\$236,213
<b>Subtotal</b>				<b>\$2,867,573</b>
<b>Ring 4</b>				
1	Blenheim	Existing	15	\$91,788
2	New Site 1 - Along State Hwy 10	New	1	\$236,213
3	New Site 2 - Along County Rd 2	New	2	\$236,213
<b>Subtotal</b>				<b>\$564,214</b>
<b>Total Tower Sites</b>				<b>\$5,372,813</b>

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Wireless Tower Site - Construction Cost**

		<b>New Tower Site</b>	<b>Existing Tower Site</b>
<b><u>Acquisition Costs:</u></b>			
Land (Lease / Purchase)		\$35,000	\$0
Tower Attachment Negotiation		\$0	\$7,500
Subtotal		<u>\$35,000</u>	<u>\$7,500</u>
<b><u>Tower Construction</u></b>			
Tower Cost		\$75,000	\$0
Site Preparation		\$10,000	\$0
Zoning, Fees, Permits		\$500	\$0
Landscaping, Soil Testing		\$3,000	\$0
Subtotal		<u>\$88,500</u>	<u>\$0</u>
Installation	10%	\$8,850	\$0
Engineering	20%	\$17,700	\$0
Subtotal		<u>\$115,050</u>	<u>\$0</u>
<b><u>Tower Equipment / Electronics</u></b>			
Wireless Tower - Base Station & Cabinets		\$48,000	\$48,000
Power & Batteries w/Utilities		\$2,500	\$1,000
Wireless Tower - Node		\$10,000	\$10,000
Wireless Tower - NID		\$8,000	\$8,000
FTTH Electronics - SFPs		\$400	\$400
FTTH Electronics - SFPs		\$30	\$30
Electrical Power to Cabinet			\$0
Subtotal		<u>\$68,930</u>	<u>\$67,430</u>
Installation	5%	\$3,447	\$3,372
Engineering	10%	\$6,893	\$6,743
Integration/Provisioning	10%	\$6,893	\$6,743
<b>Total Capital Cost</b>		<u><u>\$236,213</u></u>	<u><u>\$91,788</u></u>

**Schoharie County Economic Development Division**  
**Broadband Feasibility Study**  
**Fiber Facilities Construction Cost**

Description	Miles	Estimated Per Mile Cost	Total Cost
<b>Ring 1</b>			
<u>Fiber Build</u>			
288 Fiber Count	62.12	\$36,942	\$2,294,854
<b>Ring 2</b>			
<u>Fiber Build</u>			
288 Fiber Count	53.6	\$36,942	\$1,980,106
<b>Ring 3</b>			
<u>Fiber Build</u>			
288 Fiber Count	37.31	\$36,942	\$1,378,316
<b>Ring 4</b>			
<u>Fiber Build</u>			
288 Fiber Count	81.63	\$36,942	\$3,015,598
<b>Total Project Fiber Build</b>	<b>234.66</b>		<b>\$8,668,874</b>

**Schoharie County Economic Development Division  
Broadband Feasibility Study  
Capital Investments - Transport Network Nodes**

Description	Unit Cost	Ring 1		Ring 2		Ring 3		Ring 4		Totals	
		Qty	Total Cost	Qty	Total Cost	Qty	Total Cost	Qty	Total Cost	Qty	Total Cost
<b>Land &amp; Buildings</b>											
Land	\$20,000	8	\$160,000	3	\$60,000	5	\$100,000	5	\$100,000	21	\$420,000
Acquisition Fees	\$15,500	8	\$124,000	3	\$46,500	5	\$77,500	5	\$77,500	21	\$325,500
Building / Hut / Cabinet	\$15,000	8	\$120,000	3	\$45,000	5	\$75,000	5	\$75,000	21	\$315,000
<b>Subtotal</b>			<b>\$404,000</b>		<b>\$151,500</b>		<b>\$252,500</b>		<b>\$252,500</b>		<b>\$1,060,500</b>
<b>Transport Electronics</b>											
Small Ethernet Node	\$20,000	8	\$160,000	2	\$40,000	4	\$80,000	4	\$80,000	18	\$360,000
Large Ethernet Node	\$75,000	1	\$75,000	1	\$75,000	1	\$75,000	0	\$0	3	\$225,000
FTTH Electronics - 10 GE SFPs	\$2,500		\$90,000		\$60,000		\$0		\$0		\$150,000
FTTH Electronics - GE SFPs	\$200		\$28,800		\$19,200		\$0		\$0		\$48,000
Fiber Jumpers - 5M	\$15		\$2,160		\$1,440		\$0		\$0		\$3,600
Power Equipment & Batteries	\$8,000	9	\$72,000	3	\$24,000	5	\$40,000	4	\$32,000	21	\$168,000
<b>Subtotal</b>			<b>\$235,000</b>		<b>\$115,000</b>		<b>\$155,000</b>		<b>\$80,000</b>		<b>\$585,000</b>
<b>FTTx Electronics</b>											
CO Shelf w/Common Electronics	\$12,000		\$300,000		\$0		\$0		\$0		\$300,000
Voice Gateway Cards - VoIP sup	\$8,700		\$17,400		\$0		\$0		\$0		\$17,400
Uplink Card - GE	\$4,700		\$18,800		\$0		\$0		\$0		\$18,800
Transport Card - 10 GE SFPs	\$3,600		\$180,000		\$0		\$0		\$0		\$180,000
FTTH Electronics - 8 PON Blade	\$12,000		\$39,234		\$47,625		\$22,203		\$43,563		\$152,625
FTTH Electronics - SFPs	\$200		\$5,231		\$6,350		\$2,960		\$5,808		\$20,349
Fiber Jumpers - 10M	\$50		\$1,308		\$1,588		\$740		\$1,452		\$5,088
<b>Fiber Frames</b>											
Fiber Frame - CO	\$3,500		\$31,787		\$38,586		\$17,988		\$35,295		\$123,656
Fiber Splitter/Termination	\$2,500		\$2,500		\$2,500		\$2,500		\$2,500		\$10,000
Fiber Panels w/Pigtails - CO, 14	\$4,500		\$26,424		\$32,076		\$16,711		\$32,789		\$108,000
Fiber Jumpers	\$15		\$12,555		\$15,240		\$7,105		\$13,940		\$48,840
<b>Subtotal</b>			<b>\$635,239</b>		<b>\$143,965</b>		<b>\$70,207</b>		<b>\$135,347</b>		<b>\$984,758</b>
<b>Total Costs</b>			<b>\$870,239</b>		<b>\$258,965</b>		<b>\$225,207</b>		<b>\$215,347</b>		<b>\$1,569,758</b>
Engineering & Design	10%		\$87,024		\$25,897		\$22,521		\$21,535		\$156,976
Installation	10%		\$87,024		\$25,897		\$22,521		\$21,535		\$156,976
Integration and Provisioning	15%		\$130,536		\$38,845		\$33,781		\$32,302		\$235,464
<b>Total Costs - Transport Network Nodes</b>			<b>\$1,174,823</b>		<b>\$349,604</b>		<b>\$304,030</b>		<b>\$290,719</b>		<b>\$2,119,174</b>



**Schoharie County Economic Development Division  
Broadband Feasibility Study  
Organizational Costs**

<b><u>Start Up Expenditures:</u></b>	<b>Amount</b>
<b><u>Professional Services:</u></b>	
Legal	\$25,000
Accounting	\$25,000
Consulting / Project Management	\$75,000
Total Professional Services	<b>\$125,000</b>
<b><u>Network Operations:</u></b>	
Wireless Management System	\$61,500
Management Fee (per base station) <sup>1</sup>	\$15,360
Servers	\$8,560
Installation	\$9,462
Training	\$6,363
Total Network Operation Startup Costs	<b>\$101,245</b>
<b>Total Startup Costs</b>	<b>\$226,245</b>

Notes:  
<sup>1</sup> Cost includes 30 compact base stations.



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State &amp; County QuickFacts

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## Schoharie County, New York

People QuickFacts	Schoharie County	New York
Population, 2014 estimate	31,566	19,746,227
Population, 2013 estimate	31,849	19,695,680
Population, 2010 (April 1) estimates base	32,747	19,378,112
Population, percent change - April 1, 2010 to July 1, 2014	-3.6%	1.9%
Population, percent change - April 1, 2010 to July 1, 2013	-2.7%	1.6%
Population, 2010	32,749	19,378,102
Persons under 5 years, percent, 2013	4.7%	6.0%
Persons under 18 years, percent, 2013	19.1%	21.6%
Persons 65 years and over, percent, 2013	18.2%	14.4%
Female persons, percent, 2013	50.3%	51.5%
-----		
White alone, percent, 2013 (a)	96.3%	70.9%
Black or African American alone, percent, 2013 (a)	1.4%	17.5%
American Indian and Alaska Native alone, percent, 2013 (a)	0.3%	1.0%
Asian alone, percent, 2013 (a)	0.8%	8.2%
Native Hawaiian and Other Pacific Islander alone, percent, 2013 (a)	Z	0.1%
Two or More Races, percent, 2013	1.3%	2.3%
Hispanic or Latino, percent, 2013 (b)	3.0%	18.4%
White alone, not Hispanic or Latino, percent, 2013	93.7%	57.2%
-----		
Living in same house 1 year & over, percent, 2009-2013	85.6%	88.8%
Foreign born persons, percent, 2009-2013	2.4%	22.1%
Language other than English spoken at home, pct age 5+, 2009-2013	3.7%	29.9%
High school graduate or higher, percent of persons age 25+, 2009-2013	87.5%	85.2%
Bachelor's degree or higher, percent of persons age 25+, 2009-2013	19.3%	33.2%
Veterans, 2009-2013	2,798	912,499
Mean travel time to work (minutes), workers age 16+, 2009-2013	29.3	31.6
<b>Housing units, 2013</b>	<b>17,138</b>	8,126,026
Homeownership rate, 2009-2013	77.7%	54.2%
Housing units in multi-unit structures, percent, 2009-2013	14.1%	50.6%
Median value of owner-occupied housing units, 2009-2013	\$146,000	\$288,200
Households, 2009-2013	12,820	7,234,743
Persons per household, 2009-2013	2.40	2.61
Per capita money income in past 12 months (2013 dollars), 2009-2013	\$26,584	\$32,382
Median household income, 2009-2013	\$53,245	\$58,003
Persons below poverty level, percent, 2009-2013	11.5%	15.3%
-----		
Business QuickFacts	Schoharie County	New York
Private nonfarm establishments, 2012	573	527,001 <sup>2</sup>
Private nonfarm employment, 2012	5,440	7,556,521 <sup>2</sup>
Private nonfarm employment, percent change, 2011-2012	1.4%	2.5% <sup>2</sup>
Nonemployer establishments, 2012	1,862	1,612,106
-----		
Total number of firms, 2007	2,307	1,956,733
Black-owned firms, percent, 2007	S	10.4%
American Indian- and Alaska Native-owned firms, percent, 2007	F	0.7%
Asian-owned firms, percent, 2007	S	10.1%

Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	F	0.1%
Hispanic-owned firms, percent, 2007	S	9.9%
Women-owned firms, percent, 2007	S	30.4%
-----		
Manufacturers shipments, 2007 (\$1000)	0 <sup>1</sup>	162,720,173
Merchant wholesaler sales, 2007 (\$1000)	36,031	313,461,904
Retail sales, 2007 (\$1000)	268,923	230,718,065
Retail sales per capita, 2007	\$8,422	\$11,879
Accommodation and food services sales, 2007 (\$1000)	21,552	39,813,499
Building permits, 2013	40	32,581

Geography QuickFacts	Schoharie County	New York
Land area in square miles, 2010	621.82	47,126.40
Persons per square mile, 2010	52.7	411.2
FIPS Code	095	36
Metropolitan or Micropolitan Statistical Area	Albany-Schenectady-Troy, NY Metro Area	

1: Counties with 500 employees or less are excluded.  
 2: Includes data not distributed by county.

(a) Includes persons reporting only one race.  
 (b) Hispanics may be of any race, so also are included in applicable race categories.

D: Suppressed to avoid disclosure of confidential information  
 F: Fewer than 25 firms  
 FN: Footnote on this item for this area in place of data  
 NA: Not available  
 S: Suppressed; does not meet publication standards  
 X: Not applicable  
 Z: Value greater than zero but less than half unit of measure shown

Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits  
 Last Revised: Tuesday, 31-Mar-2015 17:58:24 EDT

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**MEANS OF TRANSPORTATION TO WORK BY PLACE OF WORK--STATE AND COUNTY LEVEL****Universe: Workers 16 years and over****2009-2013 American Community Survey 5-Year Estimates**

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the [Data and Documentation](#) section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the [Methodology](#) section.

Versions of this table are available for the following years:

**2013** ▶

2012

2011

2010

2009

		Schoharie County, New York	
		Estimate	Margin of Error
1 - 31 of 31	Total:	14,307	+/-389
	Worked in state of residence:	14,165	+/-375
	Worked in county of residence	7,894	+/-373
	Worked outside county of residence	6,271	+/-329
	Worked outside state of residence	142	+/-59
	Car, truck, or van - drove alone:	11,301	+/-372
	Worked in state of residence:	11,192	+/-368
	Worked in county of residence	5,856	+/-297
	Worked outside county of residence	5,336	+/-313
	Worked outside state of residence	109	+/-48
	Car, truck, or van - carpoled:	1,389	+/-221
	Worked in state of residence:	1,368	+/-222
	Worked in county of residence	604	+/-125
	Worked outside county of residence	764	+/-176
	Worked outside state of residence	21	+/-29
	Public transportation (excluding taxicab):	220	+/-90
	Worked in state of residence:	215	+/-89
	Worked in county of residence	102	+/-69
	Worked outside county of residence	113	+/-65
	Worked outside state of residence	5	+/-6
	Walked:	635	+/-133
	Worked in state of residence:	631	+/-132
	Worked in county of residence	586	+/-132
	Worked outside county of residence	45	+/-36
	Worked outside state of residence	4	+/-5
	Taxicab, motorcycle, bicycle, or other means:	95	+/-51
	Worked in state of residence:	92	+/-50
	Worked in county of residence	79	+/-50
	Worked outside county of residence	13	+/-12
	Worked outside state of residence	3	+/-5
	Worked at home	667	+/-129

Source: U.S. Census Bureau, 2009-2013 5-Year American Community Survey

## Explanation of Symbols:

An '\*' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.

An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates

falls in the lowest interval or upper interval of an open-ended distribution.

An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.

An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.

An '\*\*\*\*' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.

An '\*\*\*\*\*' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.

An '(X)' means that the estimate is not applicable or not available.

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see [Accuracy of the Data](#)). The effect of nonsampling error is not represented in these tables.

Workers include members of the Armed Forces and civilians who were at work last week.

While the 2009-2013 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau | American FactFinder

## Wireless Signal / Bandwidth

Received Power at remote:

Modulation and Coding Scheme		Max throughput [Mbps]		SINR (dB)				Receiver Sensitivity (dBm)	
				Minimum by DL/UL split		Required SINR at Cell Edge (dB)			
DL MCS	UL MCS	DL	UL	DL	UL	DL	UL	DL	UL
0-QPSK	0-QPSK	1.62 Mbps	0.50 Mbps	-1.2 dB	-1.0 dB	-6.5 dB	-3.5 dB	-102.9 dBm	-99.5 dBm
1-QPSK	1-QPSK	2.10 Mbps	0.65 Mbps	0.0 dB	0.1 dB	-5.5 dB	-2.6 dB	-102.0 dBm	-98.6 dBm
2-QPSK	2-QPSK	2.65 Mbps	0.83 Mbps	0.7 dB	0.7 dB	-4.6 dB	-1.8 dB	-101.0 dBm	-97.7 dBm
3-QPSK	3-QPSK	3.32 Mbps	1.03 Mbps	1.7 dB	1.7 dB	-3.6 dB	-0.7 dB	-100.1 dBm	-96.7 dBm
4-QPSK	4-QPSK	4.18 Mbps	1.30 Mbps	2.7 dB	2.8 dB	-2.6 dB	0.2 dB	-99.0 dBm	-95.7 dBm
5-QPSK	5-QPSK	5.07 Mbps	1.58 Mbps	3.6 dB	3.5 dB	-1.4 dB	1.0 dB	-97.9 dBm	-94.9 dBm
6-QPSK	6-QPSK	5.96 Mbps	1.85 Mbps	4.6 dB	4.2 dB	-0.4 dB	2.0 dB	-96.8 dBm	-94.0 dBm
7-QPSK	7-QPSK	7.07 Mbps	2.20 Mbps	5.6 dB	5.3 dB	0.7 dB	2.9 dB	-95.8 dBm	-93.0 dBm
8-QPSK	8-QPSK	8.16 Mbps	2.54 Mbps	6.5 dB	6.0 dB	2.0 dB	4.0 dB	-94.5 dBm	-91.9 dBm
9-QPSK	9-QPSK	9.16 Mbps	2.85 Mbps	7.6 dB	6.9 dB	2.7 dB	5.3 dB	-93.8 dBm	-90.6 dBm
10-16QAM	10-QPSK	9.16 Mbps	3.16 Mbps	7.7 dB	7.6 dB	2.7 dB	5.9 dB	-93.8 dBm	-90.1 dBm
11-16QAM	11-16QAM	10.16 Mbps	3.16 Mbps	8.3 dB	8.2 dB	3.4 dB	5.9 dB	-93.0 dBm	-90.1 dBm
12-16QAM	12-16QAM	11.48 Mbps	3.57 Mbps	9.1 dB	8.8 dB	4.4 dB	6.8 dB	-92.0 dBm	-89.1 dBm
13-16QAM	13-16QAM	13.26 Mbps	4.13 Mbps	10.2 dB	9.9 dB	5.9 dB	8.2 dB	-90.5 dBm	-87.8 dBm
14-16QAM	14-16QAM	14.73 Mbps	4.58 Mbps	11.3 dB	11.0 dB	6.9 dB	9.1 dB	-89.6 dBm	-86.9 dBm
15-16QAM	15-16QAM	16.39 Mbps	5.10 Mbps	12.4 dB	11.9 dB	8.0 dB	9.6 dB	-88.4 dBm	-86.3 dBm
16-16QAM	16-16QAM	17.69 Mbps	5.50 Mbps	13.0 dB	12.5 dB	8.1 dB	10.4 dB	-88.4 dBm	-85.5 dBm
17-64QAM	17-16QAM	17.69 Mbps	5.91 Mbps	13.7 dB	12.7 dB	8.1 dB	11.3 dB	-88.4 dBm	-84.6 dBm
18-64QAM	18-16QAM	19.01 Mbps	6.61 Mbps	14.0 dB	14.1 dB	8.2 dB	12.4 dB	-88.3 dBm	-83.5 dBm
19-64QAM	19-16QAM	42.46 Mbps	7.06 Mbps	15.2 dB	14.9 dB	13.7 dB	13.4 dB	-82.7 dBm	-82.5 dBm
20-64QAM	20-16QAM	45.40 Mbps	7.89 Mbps	16.0 dB	15.8 dB	14.5 dB	14.9 dB	-81.9 dBm	-81.0 dBm
21-64QAM	21-64QAM	50.70 Mbps	7.89 Mbps	16.8 dB	16.2 dB	16.1 dB	14.9 dB	-80.3 dBm	-81.0 dBm
22-64QAM	22-64QAM	54.26 Mbps	8.44 Mbps	17.7 dB	16.9 dB	17.0 dB	15.8 dB	-79.5 dBm	-80.2 dBm
23-64QAM	23-64QAM	59.04 Mbps	9.18 Mbps	19.0 dB	18.3 dB	18.4 dB	16.9 dB	-78.1 dBm	-79.0 dBm
24-64QAM	24-64QAM	63.71 Mbps	9.91 Mbps	19.9 dB	19.1 dB	19.7 dB	18.1 dB	-76.8 dBm	-77.9 dBm
25-64QAM	25-64QAM	66.35 Mbps	10.32 Mbps	20.5 dB	19.7 dB	20.4 dB	18.7 dB	-76.1 dBm	-77.2 dBm
26-64QAM	26-64QAM	71.35 Mbps	11.10 Mbps	21.8 dB	20.8 dB	20.9 dB	19.8 dB	-75.6 dBm	-76.1 dBm
27-64QAM	27-64QAM	73.80 Mbps	11.48 Mbps	22.3 dB	21.4 dB	21.0 dB	20.3 dB	-75.5 dBm	-75.6 dBm
28-64QAM	28-64QAM	87.22 Mbps	13.57 Mbps	23.7 dB	23.9 dB	21.6 dB	19.9 dB	-74.8 dBm	-76.0 dBm

UL above 21-64QAM are not active in current CPE