

Network Theorems

Lower service price = Greater market share
 Greater minimum bandwidth = Greater market share
 Greater market share = Lower required subsidy per subscriber
 Universal property tax = Lower pricing than Infrastructure fees
 Fewer service speed options = Lower cost per unit
 Greater market share = Lower cost per unit
 Fewer competitors = Greater market share
 All fiber = Best Reliability & Best Speed
 Consumer owned = Greater adoption
 First entrant = Greater market share
 Greater scale = Pricing power

Timeline / Budget

Readfield - Municipal-owned Fiber-to-the-Home Network Project - Timeline / Budget																		
Task	Estimated Costs																	
	Low	High	Mo 1	Mo 2	Mo 3	Mo 4	Mo 5	Mo 6	Mo 7	Mo 8	Mo 9	Mo 10	Mo 11	Mo 12	Mo 13	Mo 14	Mo 15	Mo 16
5-year Financial Operating Pro Forma	\$2,000	\$4,000																
Determine level of taxpayer support	\$2,000	\$4,000																
Engineering RFP Process	\$1,000	\$1,000																
Engineering	\$80,000	\$80,000																
Construction RFP Process	include in OPM																	
Network Operator RFP Process	include in OPM																	
Contract Negotiations	include in OPM																	
PUC Certification	include in OPM																	
Pole Attachment Agreement Negotiation	include in OPM																	
Utility Pole Make-ready process	\$882,024	\$882,024																
Construction	\$1,920,500	\$1,920,500																
Subscriber Turn-up (50% take rate)	\$665,000	\$665,000																
Owners Project Manager (OPM) 5% - 10%	\$177,626	\$355,652																
Subtotal	\$3,730,150	\$3,912,176																
Contingency 10%	\$346,752	\$346,752																
Total	\$4,076,903	\$4,258,929																

Assumptions

Project would not proceed without a minimum quantity of subscribers presubscribed
 Network would not be an open-access network



Conventional Loan vs Bond Financing			
2020 Readfield Real Estate Tax Commitment			
Total RE Assessed Value	\$ 261,478,034		
Total RE Taxes Collected	\$ 4,594,169		
Mil Tax Rate	0.01757		
Conventional Loan			
Construction Cost	\$ 4,200,000		
Borrowed at	3.00%		
For 20 Years	Fixed		
Monthly Payment	\$ 23,293		
Annual Payment	\$ 279,517		
Percent Tax Increase	6.08417%		
Mil Rate Increase	0.00107		
Bond Financing			
Construction Funds Needed	\$ 4,200,000		
Debt Service Reserve	\$ 477,273	10.00%	Of Total Bond Issued
Cost of Issuance Financed	\$ 95,455	2.00%	Of Total Bond Issued
Total Bond Issued	\$ 4,772,727		
Maturity	20 years		
Bond Yield	3.000%		
Monthly Payments	\$ 26,469		
Interest returned on Debt Reserve	\$ (1,193)	3.000%	
Net Monthly Payment	\$ 25,276		
Annual Payment	\$ 303,315		
Percent Tax Increase	6.6022%		
Mil Rate Increase	0.00116		
At maturity of the Bond, the Town gets back its Debt Service Reserve of			\$477,273



Fiber-to-the-Home Financial Proforma						
		Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Year 5 Total
Revenue						
Potential subscribers	1,331					
Market share end of 1st year	40%					
Market share end of 2nd year	40%					
Market share end of 3rd year	40%					
Market share end of 4th year	40%					
Market share end of 5th year	40%					
Subscribers added by month		532	-	-	-	-
Subscribers disconnected by month	0%	0	0	0	0	0
Subscribers in service, net of disconnects		532	532	532	532	532
Monthly recurring revenue	\$ 30	\$ 103,818	\$ 191,664	\$ 191,664	\$ 191,664	\$ 191,664
Non-Recurring Installation Charge per subscriber	\$ 500	\$ -	\$ -	\$ -	\$ -	\$ -
Total Revenue		\$ 103,818	\$ 191,664	\$ 191,664	\$ 191,664	\$ 191,664
Cumulative Revenue since Inception		\$ 103,818	\$ 295,482	\$ 487,146	\$ 678,810	\$ 870,474
Operating Expense						
Expense Inflation per year	3%					
<i>Cost of Goods Sold</i>						
IP Transit (Internet Capacity) - minimum amt	\$ 2,044	\$ 24,528	\$ 24,528	\$ 24,528	\$ 24,528	\$ 24,528
IP Transit (Internet Capacity) - % of MRC	6%					
Pole quantity	2,205					
Annual Pole & conduit license	\$ 20.00	\$ 44,100	\$ 45,423	\$ 46,786	\$ 48,189	\$ 49,635
Utilities / Fuel	\$ 300	\$ 3,600	\$ 3,708	\$ 3,819	\$ 3,934	\$ 4,052
Outside Plant Backbone Mileage	66.8					
Outside Plant Maintenance per mile per month	\$ 25	\$ 20,040	\$ 20,641	\$ 21,260	\$ 21,898	\$ 22,555
Insurance per month	\$ 4,000	\$ 48,000	\$ 49,440	\$ 50,923	\$ 52,451	\$ 54,024
<i>COGS subtotal</i>		\$ 140,268	\$ 143,740	\$ 147,317	\$ 151,000	\$ 154,794
<i>Gross Margin</i>		\$ (36,450)	\$ 47,924	\$ 44,347	\$ 40,664	\$ 36,870
		-35%	25%	23%	21%	19%
<i>Sales / General / Administrative</i>						
Network Operator - Base Management Fee	\$ 98,400	\$ 98,400	\$ 101,352	\$ 104,393	\$ 107,524	\$ 110,750
Network Operator - Fee per subscriber	\$ 15.87	\$ 54,920	\$ 101,390	\$ 101,390	\$ 101,390	\$ 101,390
Admin	\$ 5,000	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628
Postage	\$ 500	\$ 500	\$ 515	\$ 530	\$ 546	\$ 563
Truck Maintenance	\$ 3,000	\$ 3,000	\$ 3,090	\$ 3,183	\$ 3,278	\$ 3,377
Contingency	\$ 10,000	\$ 10,000	\$ 10,300	\$ 10,609	\$ 10,927	\$ 11,255
Annual Accounting / Legal	\$ 5,000	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628
Bad debt (per month)	2%	(\$2,076)	(\$3,833)	(\$3,833)	(\$3,833)	(\$3,833)
Total Operating Expense		\$ 315,011	\$ 366,854	\$ 374,197	\$ 381,761	\$ 389,551
EBITDA		(211,193)	(175,190)	(182,533)	(190,097)	(197,887)
		-203%	-91%	-95%	-99%	-103%
Cumulative EBITDA		(\$211,193)	(\$386,384)	(\$568,917)	(\$759,013)	(\$956,900)
New Subscriber Installation Cost (CAPEX)	\$ 1,000	\$ -	\$ -	\$ -	\$ -	\$ -
Annual Bond Payment	\$ 303,315	\$ 303,315	\$ 303,315	\$ 303,315	\$ 303,315	\$ 303,315
Annual Net Tax Increase		\$ 514,508	\$ 478,505	\$ 485,848	\$ 493,412	\$ 501,202
Annual Mil Rate allocated to FTTH		0.0020	0.0018	0.0019	0.0019	0.0019
Subscriber Impact using Property Taxes						
Assessed Property Value	\$ 200,000					
Monthly Service Price	\$ 30	\$ 30	\$ 30	\$ 30	\$ 30	\$ 30
Monthly Property Tax Impact	\$ 33	\$ 31	\$ 31	\$ 31	\$ 31	\$ 32
Total Subscriber Service Cost	\$ 63	\$ 61	\$ 61	\$ 61	\$ 61	\$ 62
Subscriber Impact using Infrastructure Fee						
Monthly Service Price	\$ 30	\$ 30	\$ 30	\$ 30	\$ 30	\$ 30
Infrastructure Fee	\$ 81	\$ 75	\$ 76	\$ 77	\$ 78	\$ 78
Total Subscriber Service Cost	\$ 111	\$ 105	\$ 106	\$ 107	\$ 107	\$ 108



Tax Impact vs Infrastructure Fee																				
with Marketshare and Pricing Variables																				
Price + Tax Impact @ \$200k Assessed Value					Tax Impact \$200k assessed value @ Variable Marketshare & Price					Service Pricing	Infrastructure Fee @ Variable Marketshare & Price					Price + Infrastructure Fee				
1st Year	2nd Year	3rd Year	4th Year	5th Year	1st Year	2nd Year	3rd Year	4th Year	5th Year		1st Year	2nd Year	3rd Year	4th Year	5th Year	1st Year	2nd Year	3rd Year	4th Year	5th Year
25%	30%	35%	40%	45%	25%	30%	35%	40%	45%		25%	30%	35%	40%	45%	25%	30%	35%	40%	45%
\$64	\$64	\$64	\$64	\$64	\$34	\$34	\$34	\$34	\$34	\$30	\$134	\$113	\$96	\$83	\$73	\$164	\$143	\$126	\$113	\$103
\$73	\$72	\$71	\$70	\$69	\$33	\$32	\$31	\$30	\$29	\$40	\$128	\$103	\$86	\$74	\$64	\$168	\$143	\$126	\$114	\$104
\$81	\$79	\$77	\$76	\$75	\$31	\$29	\$27	\$26	\$25	\$50	\$123	\$94	\$77	\$64	\$54	\$173	\$144	\$127	\$114	\$104
\$90	\$76	\$84	\$82	\$80	\$30	\$16	\$24	\$22	\$20	\$60	\$117	\$84	\$67	\$54	\$44	\$177	\$144	\$127	\$114	\$104
\$98	\$93	\$91	\$88	\$86	\$28	\$23	\$21	\$18	\$16	\$70	\$112	\$75	\$58	\$45	\$35	\$182	\$145	\$128	\$115	\$105
30%	35%	40%	45%	50%	30%	35%	40%	45%	50%		30%	35%	40%	45%	50%	30%	35%	40%	45%	50%
\$64	\$64	\$63	\$63	\$63	\$34	\$34	\$33	\$33	\$33	\$30	\$110	\$94	\$82	\$72	\$65	\$140	\$124	\$112	\$102	\$95
\$72	\$70	\$69	\$69	\$68	\$32	\$30	\$29	\$29	\$28	\$40	\$105	\$85	\$72	\$63	\$55	\$145	\$125	\$112	\$103	\$95
\$80	\$77	\$76	\$74	\$73	\$30	\$27	\$26	\$24	\$23	\$50	\$99	\$75	\$63	\$53	\$45	\$149	\$125	\$113	\$103	\$95
\$89	\$83	\$82	\$80	\$78	\$29	\$23	\$22	\$20	\$18	\$60	\$93	\$66	\$53	\$43	\$36	\$153	\$126	\$113	\$103	\$96
\$97	\$90	\$88	\$86	\$84	\$27	\$20	\$18	\$16	\$14	\$70	\$88	\$56	\$44	\$34	\$27	\$158	\$126	\$114	\$104	\$97
35%	40%	45%	50%	55%	35%	40%	45%	50%	55%		35%	40%	45%	50%	55%	35%	40%	45%	50%	55%
\$63	\$63	\$63	\$62	\$62	\$33	\$33	\$33	\$32	\$32	\$30	\$93	\$81	\$71	\$64	\$57	\$123	\$111	\$101	\$94	\$87
\$71	\$69	\$68	\$67	\$67	\$31	\$29	\$28	\$27	\$27	\$40	\$88	\$71	\$62	\$54	\$48	\$128	\$111	\$102	\$94	\$88
\$79	\$75	\$74	\$72	\$71	\$29	\$25	\$24	\$22	\$21	\$50	\$82	\$62	\$52	\$44	\$38	\$132	\$112	\$102	\$94	\$88
\$87	\$81	\$79	\$78	\$76	\$27	\$21	\$19	\$18	\$16	\$60	\$77	\$52	\$42	\$35	\$29	\$137	\$112	\$102	\$95	\$89
\$95	\$87	\$85	\$83	\$81	\$25	\$17	\$15	\$13	\$11	\$70	\$71	\$43	\$33	\$26	\$19	\$141	\$113	\$103	\$96	\$89
40%	45%	50%	55%	60%	40%	45%	50%	55%	60%		40%	45%	50%	55%	60%	40%	45%	50%	55%	60%
\$63	\$62	\$62	\$62	\$61	\$33	\$32	\$32	\$32	\$31	\$30	\$81	\$70	\$63	\$56	\$51	\$111	\$100	\$93	\$86	\$81
\$71	\$68	\$67	\$66	\$65	\$31	\$28	\$27	\$26	\$25	\$40	\$75	\$61	\$53	\$47	\$42	\$115	\$101	\$93	\$87	\$82
\$78	\$73	\$72	\$71	\$70	\$28	\$23	\$22	\$21	\$20	\$50	\$69	\$51	\$43	\$37	\$32	\$119	\$101	\$93	\$87	\$82
\$86	\$79	\$77	\$76	\$74	\$26	\$19	\$17	\$16	\$14	\$60	\$64	\$41	\$34	\$28	\$23	\$124	\$101	\$94	\$88	\$83
\$94	\$85	\$83	\$80	\$78	\$24	\$15	\$13	\$10	\$8	\$70	\$58	\$32	\$25	\$19	\$14	\$128	\$102	\$95	\$89	\$84
40%	40%	40%	40%	40%	40%	40%	40%	40%	40%		40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
\$63	\$61	\$61	\$61	\$62	\$33	\$31	\$31	\$31	\$32	\$30	\$81	\$75	\$76	\$77	\$78	\$111	\$105	\$106	\$107	\$108
\$71	\$66	\$67	\$67	\$68	\$31	\$26	\$27	\$27	\$28	\$40	\$75	\$65	\$66	\$67	\$68	\$115	\$105	\$106	\$107	\$108
\$78	\$72	\$73	\$73	\$74	\$28	\$22	\$23	\$23	\$24	\$50	\$69	\$54	\$56	\$57	\$58	\$119	\$104	\$106	\$107	\$108
\$86	\$78	\$79	\$79	\$79	\$26	\$18	\$19	\$19	\$19	\$60	\$64	\$44	\$45	\$47	\$48	\$124	\$104	\$105	\$107	\$108
\$94	\$84	\$85	\$85	\$85	\$24	\$14	\$15	\$15	\$15	\$70	\$58	\$34	\$36	\$37	\$38	\$128	\$104	\$106	\$107	\$108
Matrix WKLCBA Proposal for uncabled road segments																				
\$95 for 100Mbps symmetrical																				
\$155 for 200Mbps symmetrical																				
\$10 Infrastructure Fee																				
\$400 Install fee if sign up <u>prior</u> to network construction																				
\$1,500 Install fee if sign up <u>after</u> network construction																				