

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
ASSUMPTIONS**

Bellingham to Cedarville run is split 50/50 in capital cost estimate for the revenue model

Revenue Model - Each Run includes all costs/revenues for Cedarville East and Cedarville North runs independent of each other. Cost for the Bellingham to Cedarville segment is included in each model (duplicated).

Financial Model does not include network operating center (NOC) revenues or expenses and other pass through costs

Loaded revenue model includes a 30% management fee for contracted management services.

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
CONSTRUCTION COST ESTIMATE SUMMARY**

Segment	Individual Cost Estimate	Combined Cost Est.
Segment 1 - Bellingham to Cedarville/East	\$2,038,196.93	\$ 1,701,811.60
Segment 2 - Bellingham to Cedarville/North	\$2,963,469.94	\$ 2,627,084.61
Total Construction Cost	N/A	\$ 4,328,896.22

*Allocates 50% of the cost of Bellingham to Cedarville run to each segment

Segment 3 - Highway 9 Connector \$2,508,302.64

Total Construction Cost w/Seg 3 Hwy 9	\$6,837,198.86
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Segment 1 - Fiber Run - Bellingham to Cedarville/East				
Placement	Count	Length	Unit Cost	Extended Cost
FO Cable W/Slack	NA	216,440.4	\$1.65	\$357,126.74
Aerial	NA	194,530.5	\$3.50	\$680,856.75
Bore	NA	9,658.6	\$21.00	\$202,830.60
Buried	NA	10,558.0	\$11.00	\$116,138.00
Vaults	16	NA	\$1,263.00	\$20,208.00
Sub Total				\$1,377,160.09
25% Construction Contingency				\$344,290.02
5% HDWRE/Splicing				\$68,858.00
18% Estimated Engineering Cost				\$247,888.82
Total				\$2,038,196.93

Segment 2 - Fiber Run - Bellingham to Cedarville/North				
Placement	Count	Length	Unit Cost	Extended Cost
FO Cable W/Slack	NA	362,226.5	\$1.65	\$597,673.70
Aerial	NA	331,830.5	\$3.50	\$1,161,406.75
Bore	NA	9,892.6	\$21.00	\$207,744.60
Buried	NA	1,047.5	\$11.00	\$11,522.50
Vaults	19	NA	\$1,263.00	\$23,997.00
Sub Total				\$2,002,344.55
25% Construction Contingency				\$500,586.14
5% HDWRE/Splicing				\$100,117.23
18% Estimated Engineering Cost				\$360,422.02
Total				\$2,963,469.94

Segment 3 - Fiber Run - Highway 9 Deming to Sedro-Woolley				
Placement	Count	Length	Unit Cost	Extended Cost
FO Cable W/Slack	NA	33,091.9	\$1.65	\$54,601.68
Aerial	NA	0.0	\$3.50	\$0.00
Bore	NA	31,218.8	\$21.00	\$655,594.80
Buried	NA	82,390.6	\$11.00	\$906,296.60
Vaults	62	NA	\$1,263.00	\$78,306.00
Sub Total				\$1,694,799.08
25% Construction Contingency				\$423,699.77
5% HDWRE/Splicing				\$84,739.95
18% Estimated Engineering Cost				\$305,063.83
Total				\$2,508,302.64

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
ANNUAL REVENUE & EXPENSE SUMMARY**

	----- Annual Revenue Projections -----			Annual Operating Expense	
	Mid Mile	Last Mile	Total		
Segment 1	\$ 47,606.36	\$ 134,976.00	\$ 182,582.36	\$	20,964.22
Segment 2	\$ 58,426.88	\$ 73,872.00	\$ 132,298.88	\$	36,022.99
Segment 3 Hwy 9	\$ 13,008.00	\$ 13,680.00	\$ 26,688.00	\$	3,873.07

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
ROI SUMMARY**

Without Grant Funding

	Estimated Capital Investment	Year 5		Year 10		Year 15		Year 20	
		Estimated Revenues	Estimated ROI	Estimated Revenues	Estimated ROI	Estimated Revenues	Estimated ROI	Estimated Revenues	Estimated ROI
Segment 1	\$ (1,921,399.43)	\$ 121,478.36	-34.37%	\$ 121,478.36	-20.19%	\$ 121,478.36	-2.14%	\$ 121,478.36	1.15%
Segment 2	\$ (2,841,891.07)	\$ 193,402.88	-33.48%	\$ 193,402.88	-8.80%	\$ 193,402.88	-1.39%	\$ 193,402.88	1.80%
Segments 1 and 2 Combined	\$ (4,090,225.04)	\$ 314,881.24	-31.38%	\$ 314,881.24	-7.13%	\$ 314,881.24	-0.02%	\$ 314,881.24	2.98%
Segment 3 Hwy 9	\$ (2,309,065.51)	\$ 26,688.00	-55.14%	\$ 26,688.00	-27.78%	\$ 26,688.00	-16.87%	\$ 26,688.00	-11.30%

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
REVENUE MODEL - SEGMENT 1 and SEGMENT 2 SEPARATE**

Segment 1 - Bellingham to Cedarville East						Segment 2 - Bellingham to Cedarville/North					
Year	Mid Mile	Last Mile	Cost/Return			Year	Mid Mile	Last Mile	Cost/Return		
			\$ (1,127,973.44)	ROI					\$ (2,142,242.75)	ROI	
1	2019	\$11,901.59	\$11,080.80	\$22,982.39		2019	\$19,475.63	\$20,246.40	\$39,722.03		
2	2020	\$23,803.18	\$22,161.60	\$45,964.78		2020	\$38,951.25	\$40,492.80	\$79,444.05		
3	2021	\$47,606.36	\$33,242.40	\$80,848.76		2021	\$58,426.88	\$60,739.20	\$119,166.08		
4	2022	\$47,606.36	\$44,323.20	\$91,929.56		2022	\$58,426.88	\$80,985.60	\$139,412.48		
5	2023	\$47,606.36	\$73,872.00	\$121,478.36	-25.35%	2023	\$58,426.88	\$134,976.00	\$193,402.88	-28.80%	
6	2024	\$47,606.36	\$73,872.00	\$121,478.36	-17.30%	2024	\$58,426.88	\$134,976.00	\$193,402.88	-20.54%	
7	2025	\$47,606.36	\$73,872.00	\$121,478.36	-11.72%	2025	\$58,426.88	\$134,976.00	\$193,402.88	-14.79%	
8	2026	\$47,606.36	\$73,872.00	\$121,478.36	-7.68%	2026	\$58,426.88	\$134,976.00	\$193,402.88	-10.59%	
9	2027	\$47,606.36	\$73,872.00	\$121,478.36	-4.64%	2027	\$58,426.88	\$134,976.00	\$193,402.88	-7.41%	
10	2028	\$47,606.36	\$73,872.00	\$121,478.36	-2.30% *	2028	\$58,426.88	\$134,976.00	\$193,402.88	-4.94%	
11	2029	\$47,606.36	\$73,872.00	\$121,478.36	-0.47%	2029	\$58,426.88	\$134,976.00	\$193,402.88	-2.99%	
12	2030	\$47,606.36	\$73,872.00	\$121,478.36	1.00%	2030	\$58,426.88	\$134,976.00	\$193,402.88	-1.42% *	
13	2031	\$47,606.36	\$73,872.00	\$121,478.36	2.19%	2031	\$58,426.88	\$134,976.00	\$193,402.88	-0.14%	
14	2032	\$47,606.36	\$73,872.00	\$121,478.36	3.16%	2032	\$58,426.88	\$134,976.00	\$193,402.88	0.91%	
15	2033	\$47,606.36	\$73,872.00	\$121,478.36	3.96%	2033	\$58,426.88	\$134,976.00	\$193,402.88	1.79%	
16	2034	\$47,606.36	\$73,872.00	\$121,478.36	4.64%	2034	\$58,426.88	\$134,976.00	\$193,402.88	2.53%	
17	2035	\$47,606.36	\$73,872.00	\$121,478.36	5.20%	2035	\$58,426.88	\$134,976.00	\$193,402.88	3.16% *	
18	2036	\$47,606.36	\$73,872.00	\$121,478.36	5.69% *	2036	\$58,426.88	\$134,976.00	\$193,402.88	3.70%	
19	2037	\$47,606.36	\$73,872.00	\$121,478.36	6.10%	2037	\$58,426.88	\$134,976.00	\$193,402.88	4.16%	
20	2038	\$47,606.36	\$73,872.00	\$121,478.36	6.45%	2038	\$58,426.88	\$134,976.00	\$193,402.88	4.56%	
21	2039	\$47,606.36	\$73,872.00	\$121,478.36	6.75%	2039	\$58,426.88	\$134,976.00	\$193,402.88	4.90%	
22	2040	\$47,606.36	\$73,872.00	\$121,478.36	7.02%	2040	\$58,426.88	\$134,976.00	\$193,402.88	5.20%	

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
REVENUE MODEL - SEGMENTS 1 & 2 COMBINED**

Segment 1 and 2 Combined					
Year	Mid Mile	Last Mile	Cost/Return		
			\$	(2,528,964.53)	ROI
1	2019	\$31,377.22	\$31,327.20	\$62,704.42	
2	2020	\$62,754.43	\$62,654.40	\$125,408.83	
3	2021	\$106,033.24	\$93,981.60	\$200,014.84	
4	2022	\$106,033.24	\$125,308.80	\$231,342.04	
5	2023	\$106,033.24	\$208,848.00	\$314,881.24	-22.82%
6	2024	\$106,033.24	\$208,848.00	\$314,881.24	-14.77%
7	2025	\$106,033.24	\$208,848.00	\$314,881.24	-9.27%
8	2026	\$106,033.24	\$208,848.00	\$314,881.24	-5.31%
9	2027	\$106,033.24	\$208,848.00	\$314,881.24	-2.37%
10	2028	\$106,033.24	\$208,848.00	\$314,881.24	-0.13%
11	2029	\$106,033.24	\$208,848.00	\$314,881.24	1.63%
12	2030	\$106,033.24	\$208,848.00	\$314,881.24	3.01%
13	2031	\$106,033.24	\$208,848.00	\$314,881.24	4.13%
14	2032	\$106,033.24	\$208,848.00	\$314,881.24	5.04%
15	2033	\$106,033.24	\$208,848.00	\$314,881.24	5.79%
16	2034	\$106,033.24	\$208,848.00	\$314,881.24	6.41%
17	2035	\$106,033.24	\$208,848.00	\$314,881.24	6.93%
18	2036	\$106,033.24	\$208,848.00	\$314,881.24	7.37%
19	2037	\$106,033.24	\$208,848.00	\$314,881.24	7.75%
20	2038	\$106,033.24	\$208,848.00	\$314,881.24	8.06%
21	2039	\$106,033.24	\$208,848.00	\$314,881.24	8.34%
22	2040	\$106,033.24	\$208,848.00	\$314,881.24	8.57%

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
REVENUE MODEL - SEGMENT 3 HIGHWAY 9**

Hwy 9					
Year	Mid Mile	Last Mile	Cost/Return		
			\$	(1,563,285.37)	ROI
1	2019	\$6,504.00	\$2,052.00	\$8,556.00	
2	2020	\$13,008.00	\$4,104.00	\$17,112.00	
3	2021	\$13,008.00	\$6,156.00	\$19,164.00	
4	2022	\$13,008.00	\$8,208.00	\$21,216.00	
5	2023	\$13,008.00	\$13,680.00	\$26,688.00	-50.99%
6	2024	\$13,008.00	\$13,680.00	\$26,688.00	-42.78%
7	2025	\$13,008.00	\$13,680.00	\$26,688.00	-36.47%
8	2026	\$13,008.00	\$13,680.00	\$26,688.00	-31.47%
9	2027	\$13,008.00	\$13,680.00	\$26,688.00	-27.43%
10	2028	\$13,008.00	\$13,680.00	\$26,688.00	-24.12%
11	2029	\$13,008.00	\$13,680.00	\$26,688.00	-21.36%
12	2030	\$13,008.00	\$13,680.00	\$26,688.00	-19.04%
13	2031	\$13,008.00	\$13,680.00	\$26,688.00	-17.06%
14	2032	\$13,008.00	\$13,680.00	\$26,688.00	-15.36%
15	2033	\$13,008.00	\$13,680.00	\$26,688.00	-13.89%
16	2033	\$13,008.00	\$13,680.00	\$26,688.00	-12.61%
17	2033	\$13,008.00	\$13,680.00	\$26,688.00	-11.48%
18	2033	\$13,008.00	\$13,680.00	\$26,688.00	-10.48%
19	2033	\$13,008.00	\$13,680.00	\$26,688.00	-9.60%
20	2033	\$13,008.00	\$13,680.00	\$26,688.00	-8.81%
21	2033	\$13,008.00	\$13,680.00	\$26,688.00	-8.10%
22	2033	\$13,008.00	\$13,680.00	\$26,688.00	-7.46%

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
MID MILE REVENUE BY SEGMENT**

Fiber Segment 1 - Bellingham to Cedarville/East						
Provider	Footage	Mileage	Unit Cost	Total Mont	Total Annual	
CLEC	209468	39.67197	25	\$991.80	\$11,901.59	
CLEC	209468	39.67197	25	\$991.80	\$11,901.59	
ISP	209468	39.67197	25	\$991.80	\$11,901.59	
ISP	209468	39.67197	25	\$991.80	\$11,901.59	
			Total	\$3,967.20	\$47,606.36	

Fiber Segment 2 - Bellingham to Cedarville/North						
	Footage	Mileage	Unit Cost	Total Mont	Total Annual	
CLEC	342771	64.91875	25	\$1,622.97	\$19,475.63	
ISP	342771	64.91875	25	\$1,622.97	\$19,475.63	
ISP	342771	64.91875	25	\$1,622.97	\$19,475.63	
			Total	\$4,868.91	\$58,426.88	

Total Annual Revenue - Mid Mile Segments	\$106,033.24
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Fiber Segment 3 - Hwy 9						
	Footage	Mileage	Unit Cost	Total Mont	Total Annual	
CLEC	342771	21.68	25	\$542.00	\$6,504.00	
ISP	342771	21.68	25	\$542.00	\$6,504.00	
			Total	\$1,084.00	\$13,008.00	

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
LAST MILE REVENUE BY SEGMENT**

Segment 1 - Bellingham to Cedarville/East		
Participating Runs	Monthly Revenue	Yearly Revenue
Bellingham to Cedarville	\$4,408	\$52,896
Cedarville East	\$1,748	\$20,976
Total	\$6,156	\$73,872

Segment 2 - Bellingham to Cedarville/North		
Participating Runs	Monthly Revenue	Yearly Revenue
Bellingham to Cedarville	\$4,408	\$52,896
Cedarville North	\$5,928	\$71,136
Birch Bay to Lummi	\$912	\$10,944
Total	\$11,248	\$134,976

Segment 3 - Hwy 9		
Participating Runs	Monthly Revenue	Yearly Revenue
Hwy 9	\$1,140	\$13,680
Total	\$1,140	\$13,680

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
LAST MILE SERVICE SUMMARY**

Study Run	Government	Schools	Tribal	Private	Total	
Bellingham to Cedarville	25		25	0	8	58
Birch Bay to Lummi	1		1	1	9	12
Cedarville East	7		8	4	4	23
Cedarville North	17		16	0	45	78
Highway 9 Deming to Sedro-Woolley	4		2	0	9	15
Totals	54		52	5	75	186

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
NON-STAFF OPERATING EXPENSES**

Pole Attachment Annual Fees	Count	Unit Cost	Extended Cost
Segment 1 - Bellingham to Cedarville/East	811	\$ 25.00	\$ 20,275.00
Segment 2 - Bellingham to Cedarville/North	1426	\$ 25.00	\$ 35,650.00
Total	2237	25	\$ 55,925.00

One Call System and Locates Costs	Buried Feet	Miles	Per Month Cost @ \$15/mile/month	Annual Cost
\$15.00 per mile, per month				
Segment 1 - Bellingham to Cedarville/East	20217	3.83	\$ 57.43	\$ 689.22
Segment 2 - Bellingham to Cedarville/North	10941	2.07	\$ 31.08	\$ 372.99
Segment 3 - Hwy 9	113610	21.52	\$ 322.76	\$ 3,873.07

APPENDIX D - DETAIL FINANCIAL ANALYSIS
NRC TEMPLATE

LABOR & MATERIAL LIST				
Name:				Project No.
QTY	UOM	Description	Unit Price	Total
0	Lineal Foot	Trench & Place up to 4' Depth	\$ 11.00	\$ -
0	Lineal Foot adder to BTP Unit	Trench and Place Additional 1' Depth Increments over 4' Depth	\$ 2.50	\$ -
0	Lineal foot	Trench and Relocate Fiber	\$ 18.50	\$ -
0	Lineal Foot	Rock Breaking or Sawing up to 3' depth	\$ 16.50	\$ -
0	Lineal Foot adder to BRP Unit	Rock Breaking or Sawing Additional 1' Depth Increments over 3'	\$ 5.00	\$ -
0	Lineal Foot	Hand trenching	\$ 11.50	\$ -
0	Lineal Foot	Plow & Place 4' Depth	\$ 2.50	\$ -
0	Lineal Foot	Directional Bore up to 2" hole	\$ 15.50	\$ -
0	Lineal Foot	Directional Bore up to hole size 4"	\$ 27.00	\$ -
0	Lineal Foot	Directional Bore Rock up to 2" hole	\$ 85.00	\$ -
0	Lineal Foot	Directional Bore Rock, hole size 4"	\$ 106.00	\$ -
0	Lineal Foot	Jack / Push / Dry Bore up to 4" Steel Casing	\$ 31.00	\$ -
0	Lineal Foot	Concrete Encasement	\$ 13.00	\$ -
0	Each	Handhole Placement	\$ 265.00	\$ -
0	Each	Vault placement	\$ 511.00	\$ -
0	Each	Handhole Relocation	\$ 522.00	\$ -
0	Each	Vault Relocation	\$ 776.00	\$ -
0	Square Foot.	Asphalt Restoration	\$ 12.00	\$ -
0	Square Foot.	Concrete Remove & Restore	\$ 18.00	\$ -
0	Wall to Wall	Rod and Rope Conduit	\$ 0.78	\$ -
0	Wall to Wall	Pull Fiber thru Duct	\$ 1.00	\$ -
0	Lineal Foot	Blow Fiber Cable thru Duct	\$ 1.00	\$ -
0	Per Attachment	Pole Transfer (Straight)	\$ 125.00	\$ -
0	Per Location	Pole Transfer (Angle)	\$ 275.00	\$ -
0	Per Location	Pole Transfer (Dead End)	\$ 375.00	\$ -
0	Per Anchor	Anchor Placement New	\$ 185.00	\$ -
0	Per Location	Anchor Transfer and or Removal	\$ 225.00	\$ -
0	Per Strand Foot	Place Strand & Overhead Guys	\$ 2.00	\$ -
0	Per Strand Foot	Lash Fiber Optic Cable	\$ 1.50	\$ -
0	Fiber Cable Ft	Delash & Relash Fiber Cable	\$ 1.00	\$ -
0	Fiber Cable Ft	ADSS Fiber Relocation	\$ 2.00	\$ -
0	Fiber Cable Ft	ADSS Fiber Placement	\$ 1.75	\$ -
0	Fiber Cable Ft	Aerial or UG Fiber Wreckout	\$ 1.00	\$ -
0	Per Strand Foot	Wreckout Stand, Hardware and X-Arms	\$ 1.25	\$ -
0	Per Location	Place New or Transfer X-Arms (Wood)	\$ 65.00	\$ -
0	Per Location	Place New or Transfer Fiber glass Arm	\$ 50.00	\$ -
0	Each	Place New Riser up to 4"	\$ 150.00	\$ -
0	Each	Transfer Existing Riser up to 4"	\$ 350.00	\$ -
0	Each	Removal of Existing Riser.	\$ 200.00	\$ -
0	Each Closure	Placement of New Fiber Optic Enclosure	\$ 200.00	\$ -
0	Each Closure	Splice Closure Re-entry of exiting case	\$ 200.00	\$ -
0	Each Splice	Splice and Test Fiber Cable, 48 fiber and less per W.O.	\$ 35.00	\$ -
0	Each Splice	Splice and Test Fiber Cable, 49 fibers and Above per W.O.	\$ 30.00	\$ -
0	Each Closure	Ring Cut or Mid-Entry Prep	\$ 200.00	\$ -
0	Each Splice	Splicing Hot-Cut	\$ 48.00	\$ -
0	Fiber end tested	Test Fiber, Acceptance Testing	\$ 25.00	\$ -
0	Per Foot	Private Property Fiber Drop in Conduit	\$ 1.25	\$ -
0	Per Foot	Building Fiber Cable Placement	\$ 1.75	\$ -
0	Per Foot	Building Fiber Cable Placement EMT	\$ 1.50	\$ -
0	Each	Core Drill, Building Penetration	\$ 500.00	\$ -
0	Each	Charles Cell Site Cabinet	\$ 900.00	\$ -
0	Each	Remobilization Fee	\$ 1,500.00	\$ -

0	Crew Hour	Traffic Control	\$ 123.00	\$ -
		Construction Services Sub-Total		\$ -
Engineering and Related Services:				
0	Each	Easement and Consent Acquisition	\$ 1,940.00	\$ -
0	Each	City / County R/W Permits	\$ 176.00	\$ -
0	Each	WSDOT Permits	\$ 2,295.00	\$ -
0	Each	Railroad Utility Crossing Permits	\$ 1,825.00	\$ -
0	Each	Utility Pole Data Collection & Application 1 to 10 Poles	\$ 259.00	\$ -
0	Each	Utility Pole Data Collection & Application 11 to 100 Poles	\$ 100.00	\$ -
0	Each	Field Engineer, Design, CAD up to 2,500 ft	\$ 2,470.00	\$ -
0	Per Foot	Field Engineer, Design, CAD 2,501' to 5,000 ft	\$ 0.82	\$ -
0	Per Foot	Field Engineer, Design, CAD up to 5,001' to 25,000 ft	\$ 0.65	\$ -
0	Per Hour	Pre-fielding, 1 OSP Engineer and Vehicle, Under Owner Req.	\$ 95.00	\$ -
		Field Design		\$ -
		Engineering and Related Services Sub-Total		\$ -
Major Materials:				
0	Foot	Fiber include slack	\$ 0.500	\$ -
0	Foot	Misc conduit.	\$ 0.50	\$ -
0	Each	Fiber Patch Panel	\$ 200.00	\$ -
0	Each	Splice Case w/ splice tray	\$ 500.00	\$ -
0	Each	HandHole	\$ 750.00	\$ -
0	Each			\$ -
0	Each	Gravel Restoration		\$ -
		Contractor Provided Materials		\$ -
Subtotal Estimate of Probable Costs				\$ -
Contigency 10%				\$ -
TOTAL ESTIMATE OF PROBABLE COSTS				\$ -