

Company: Hartington Telecommunications, Inc.
 Project: North Star
 Date: September 28, 2021

Opinion of Probable Construction Cost - FTTP

		North Star CONSTRUCTION			
		Outside Plant	Electronics	Engineering	Total
BB ACT Area		\$ 1,254,140	\$ 121,643	\$ 376,242	\$ 1,752,025
		Total Grant amount requested:			45% \$ 788,411
		Hartington Telecommunications, Inc. Matching Funds Commitment:			55% \$ 963,614
		Total Project Funds			\$ 1,752,025

NOTES:

1. Costs are meant to include shipping, taxes, installation, cutover and engineering.
2. Above pricing is based upon the FTTP designs for Broadband Bridge Act area
3. Transport electronics and switching costs, if any, are not included in the above.
4. Above costs assume that Active Ethernet OLT/ONT will be deployed.
5. Electronics Cabinet costs are included in the above total.
6. Engineering costs were estimated as a percentage of construction and are meant to include typical services provided by RVW in projects of this type. Actual costs would depend on services performed.
7. Above costs include NID and cutover of subscribers just along the routes for the BB Act indicated by the Green dots.
8. Above Electronics and OSP costs assumed a **100%** take rate within the proposed Service Area. Additional take rates can be generated if desired.

**Hartington Telecommunications, Inc.
Broadband Bridge Act Project**

OSP - North Star Project Area

<u>Unit</u>	<u>Unit Qty</u>	<u>Unit Price</u>	<u>Local Extended Cost</u>
OSP UNDERGROUND SUMMARY			
Conduit			
UD 1-1.25"	0.89 mi	\$ 71,500	\$ 63,700
HBFO	67 ea	\$ 600	\$ 40,200
HH	67 ea	\$ 1,300	\$ 87,100
	<u>Conduit: 0.89 mi</u>		<u>\$ 191,000</u>
UOMST	0.64 mi	\$ 11,290	\$ 7,300
UO 72	0.43 mi	\$ 16,270	\$ 7,000
	<u>Local Underground Fiber: 1.07 mi</u>		<u>\$ 14,300</u>

OSP BURIED FIBER SUMMARY

BFO 288	2.62 mi	\$ 48,780	\$ 127,900
BFO 192	4.45 mi	\$ 37,940	\$ 168,900
BFO 72	3.92 mi	\$ 24,400	\$ 95,700
BFO 60	4.67 mi	\$ 23,050	\$ 107,700
BFO 48	7.30 mi	\$ 21,690	\$ 158,400
BFO 24	0.51 mi	\$ 18,980	\$ 9,700
BFO 12	2.26 mi	\$ 17,630	\$ 39,900
BFO 6 (LD)	2.72 mi	\$ 16,950	\$ 46,200
MST(8)-xx	3 ea	\$ 400	\$ 1,200
MST(12)-xx	5 ea	\$ 460	\$ 2,300
MST splicing	84 ea	\$ 35	\$ 2,940
Small Standby Generator	1 ea	\$ 7,500	\$ 7,500
Electronics Cabinet	1 ea	\$ 30,000	\$ 30,000
Feeder Splices	594 ea	\$ 40	\$ 23,800
CO/RT Fiber Termination	540 ea	\$ 55	\$ 29,700
	<u>Local Buried Fiber: 28.45 mi</u>		<u>\$ 851,840</u>

OSP STATION INSTALLATION SUMMARY

<u>CabinArea</u>	<u>Rural</u>			
SEB:	30	1.42 mi	\$ 20,420	\$ 29,000
SEBi:	88	3.00 mi	\$ 8,500	\$ 25,500
SEB-UD DB:	88	3.00 mi	\$ 31,360	\$ 94,100
OSP Station Installation/cutover		118 ea	\$ 410	\$ 48,400
				<u>\$ 197,000</u>

OUTSIDE PLANT UPGRADE SUMMARY	<u>Cable Construction</u>	<u>Route</u>	<u>Local Extended Cost</u>
	<u>37.83 mi</u>	<u>33.76 mi</u>	<u>\$ 1,254,140</u>

OSP - North Star Project Area Subtotal \$ 1,254,140

**Hartington Telecommunications, Inc.
Broadband Bridge Act Project**

Proposed	Electronics-North Star Project			
COE & Electronics Equipment Description	Unit Qty		Unit Price	Extended Cost
Fiber To The Home				
Startup MXK F219 Chassis	2 ea	@	\$ 947	\$ 1,894
Management Cards	4 ea	@	\$ 1,364	\$ 5,456
Active Ethernet Line card	4 ea	@	\$ 2,732	\$ 10,930
Compact SFP	59 ea	@	\$ 79	\$ 4,673
SFP+ 10GBase-ER, SMF, 40Km	2 ea	@	\$ 619	\$ 1,239
10GE-SFP+-SR	2 ea	@	\$ 100	\$ 200
CPE Equipment (Wireless Access Point)	118 ea	@	\$ 297	\$ 35,046
Indoor ONT (Pricing provided by Goldfield)	118 ea	@	\$ 99	\$ 11,682
NID box	118	@	\$ 39	\$ 4,543
OLT Installation Services	1 ea	@	\$ 11,000	\$ 11,000
DZS Testing/Analytics System & Server HW	1 ea	@	\$ 22,000	\$ 22,000
Access Point Controller	118 ea	@	\$ 110	\$ 12,980
Electronics Equipment - Subscriber Carrier Total				\$ 121,643