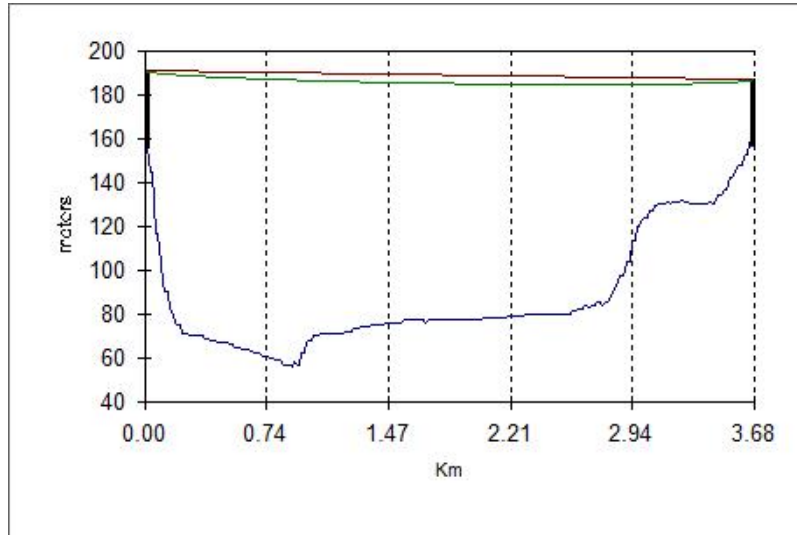


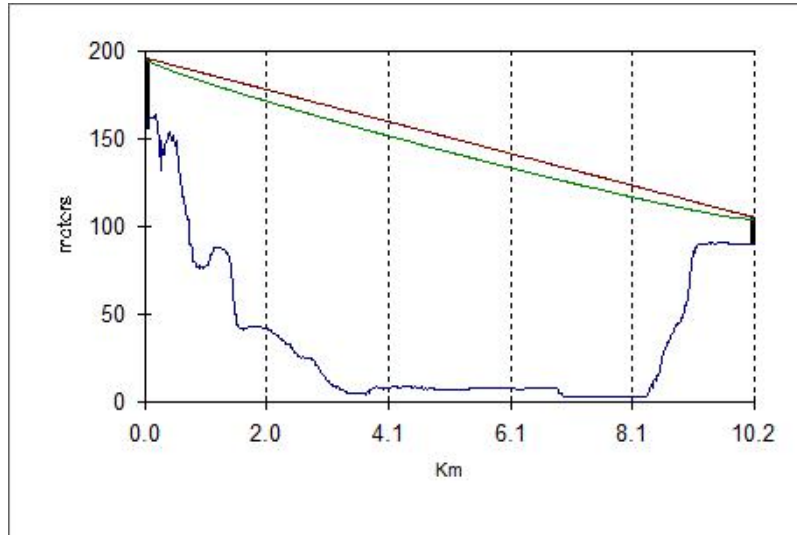
Site A	Path	Site B
RockyButteRd	Distance: 6.8 km	STC1
Lat: 45.5406	Frequency: 18 GHz	Lat: 45.536
Lon: -122.5653	Polarization: Vertical	Lon: -122.479
Gr Elev: 156 m AMSL	1st Fresnel: 100 %	Gr Elev: 59 m AMSL
Ant CL: 40 m	Clearance: 19.8 m at distance 6.7 km	Ant CL: 20 m
Azimuth: 94.3	K Factor: 1.33	Azimuth: 274.3
Ant Elev: -0.992	Free Space Loss: -134.1 dB	Ant Elev: 0.992

Microwave Path Link Budget		
Radio TX Pwr (A):	95MPR11-O128F40-213	+20 dBm
Jumper Loss (A):		-0 dB
Cable Loss (A):		-0 dB
Conn. Loss (A):		-0 dB
Add. Loss (A):		-0 dB
Antenna Gain (A):	SB2-107 STX	+35.1 dBi
	EiRP:	323.6 W
Antenna Gain (B):	SB2-107 STX	+35.1 dBi
Jumper Loss (B):		-0 dB
Cable Loss (B):		-0 dB
Conn. Loss (B):		-0 dB
Add. Loss (B):		-0 dB
	RSL:	-43.9 dBm
	RX Threshold (B):	-67.5 dBm
	Fade Margin:	23.6 dB
Annual Reliability (%-Sec):	99.999971 % - 9.12 secs	
Crane Rain: Crane96 Zone C - Temperate maritime		
Rain Rate : Rain Attenuation	55.63 mm/hr : 23.6 dB	
Annual Rain (%-Sec):	99.997876 % - 669.77 secs	
Annual Reliability + Rain (%-Sec):	99.997847 % - 678.9 secs	
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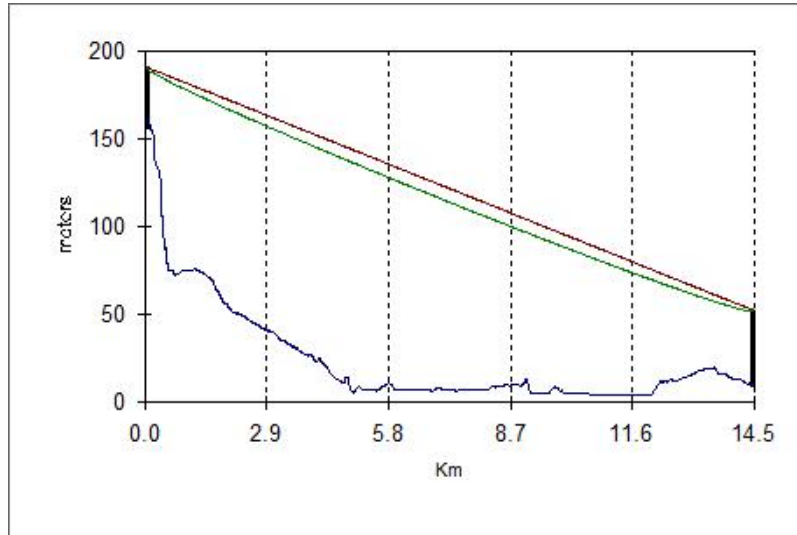
Site A	Path	Site B
RockyButteRd	Distance: 3.68 km	Multnomah
Lat: 45.5406	Frequency: 18 GHz	Lat: 45.5149
Lon: -122.5653	Polarization: Vertical	Lon: -122.5951
Gr Elev: 156 m AMSL	1st Fresnel: 100 %	Gr Elev: 157 m AMSL
Ant CL: 35 m	Clearance: 28.3 m at distance 3.6 km	Ant CL: 30 m
Azimuth: -140.79	K Factor: 1.33	Azimuth: 39.21
Ant Elev: -0.062	Free Space Loss: -128.9 dB	Ant Elev: 0.062

Microwave Path Link Budget		
Radio TX Pwr (A):	95MPR11-O128F40-213	+20 dBm
Jumper Loss (A):		-0 dB
Cable Loss (A):		-0 dB
Conn. Loss (A):		-0 dB
Add. Loss (A):		-0 dB
Antenna Gain (A):	SB2-107 STX	+35.1 dBi
	EiRP:	323.6 W
Antenna Gain (B):	SB2-107 STX	+35.1 dBi
Jumper Loss (B):		-0 dB
Cable Loss (B):		-0 dB
Conn. Loss (B):		-0 dB
Add. Loss (B):		-0 dB
	RSL:	-38.7 dBm
	RX Threshold (B):	-67.5 dBm
	Fade Margin:	28.8 dB
Annual Reliability (%-Sec):	99.999995 % - 1.47 secs	
Crane Rain: Crane96 Zone C - Temperate maritime		
Rain Rate : Rain Attenuation	119.49 mm/hr : 28.8 dB	
Annual Rain (%-Sec):	99.999877 % - 38.8 secs	
Annual Reliability + Rain (%-Sec):	99.999872 % - 40.27 secs	
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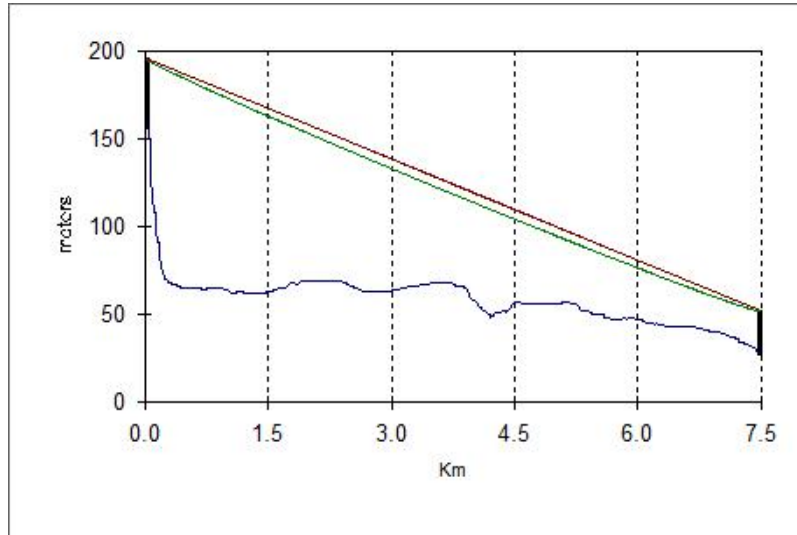
Site A	Path	Site B
RockyButteRd	Distance: 10.2 km	Vancouver East
Lat: 45.5406	Frequency: 11 GHz	Lat: 45.6255
Lon: -122.5653	Polarization: Vertical	Lon: -122.6142
Gr Elev: 156 m AMSL	1st Fresnel: 100 %	Gr Elev: 90 m AMSL
Ant CL: 40 m	Clearance: 14.2 m at distance 10.1 km	Ant CL: 15 m
Azimuth: -22.05	K Factor: 1.33	Azimuth: 157.95
Ant Elev: -0.512	Free Space Loss: -133.4 dB	Ant Elev: 0.512

Microwave Path Link Budget		
Radio TX Pwr (A):	95MPR11-O128F40-213	+20 dBm
Jumper Loss (A):		-0 dB
Cable Loss (A):		-0 dB
Conn. Loss (A):		-0 dB
Add. Loss (A):		-0 dB
Antenna Gain (A):	SB2-107 STX	+35.1 dBi
	EiRP:	323.6 W
Antenna Gain (B):	SB2-107 STX	+35.1 dBi
Jumper Loss (B):		-0 dB
Cable Loss (B):		-0 dB
Conn. Loss (B):		-0 dB
Add. Loss (B):		-0 dB
	RSL:	-43.2 dBm
	RX Threshold (B):	-67.5 dBm
	Fade Margin:	24.3 dB
Annual Reliability (%-Sec):	99.999977 % - 7.12 secs	
Crane Rain: Crane96 Zone C - Temperate maritime		
Rain Rate : Rain Attenuation	119.42 mm/hr : 24.3 dB	
Annual Rain (%-Sec):	99.999877 % - 38.8 secs	
Annual Reliability + Rain (%-Sec):	99.999854 % - 45.92 secs	
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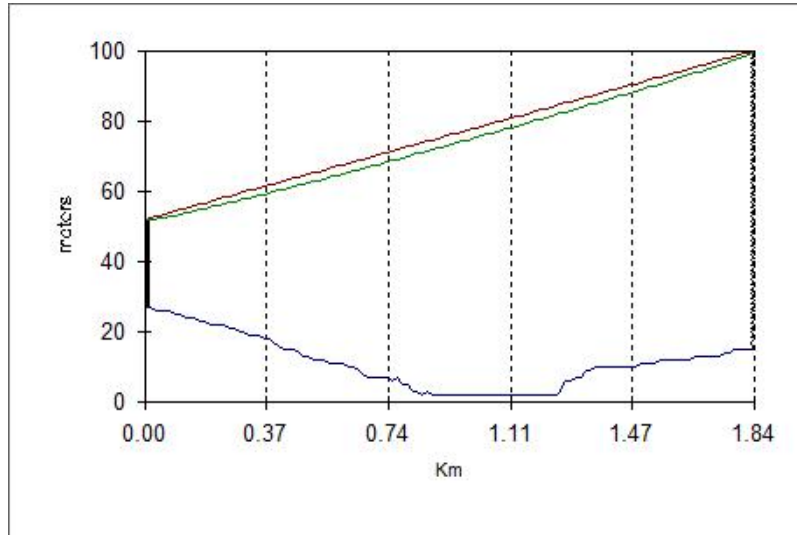
Site A	Path	Site B
RockyButteRd	Distance: 14.5 km	Vancouver West
Lat: 45.5406	Frequency: 18 GHz	Lat: 45.6365
Lon: -122.5653	Polarization: Vertical	Lon: -122.692
Gr Elev: 156 m AMSL	1st Fresnel: 100 %	Gr Elev: 9 m AMSL
Ant CL: 35 m	Clearance: 28.1 m at distance 0.1 km	Ant CL: 43 m
Azimuth: -42.89	K Factor: 1.33	Azimuth: 137.11
Ant Elev: -0.548	Free Space Loss: -140.8 dB	Ant Elev: 0.548

Microwave Path Link Budget		
Radio TX Pwr (A):	95MPR11-O128F40-213	+20 dBm
Jumper Loss (A):		-0 dB
Cable Loss (A):		-0 dB
Conn. Loss (A):		-0 dB
Add. Loss (A):		-0 dB
Antenna Gain (A):	SB2-107 STX	+35.1 dBi
	EiRP:	323.6 W
Antenna Gain (B):	SB2-107 STX	+35.1 dBi
Jumper Loss (B):		-0 dB
Cable Loss (B):		-0 dB
Conn. Loss (B):		-0 dB
Add. Loss (B):		-0 dB
	RSL:	-50.6 dBm
	RX Threshold (B):	-67.5 dBm
	Fade Margin:	16.9 dB
Annual Reliability (%-Sec):	99.999712 % - 90.8 secs	
Crane Rain: Crane96 Zone C - Temperate maritime		
Rain Rate : Rain Attenuation	19.29 mm/hr : 16.9 dB	
Annual Rain (%-Sec):	99.974466 % - 8052.45 secs	
Annual Reliability + Rain (%-Sec):	99.974178 % - 8143.24 secs	
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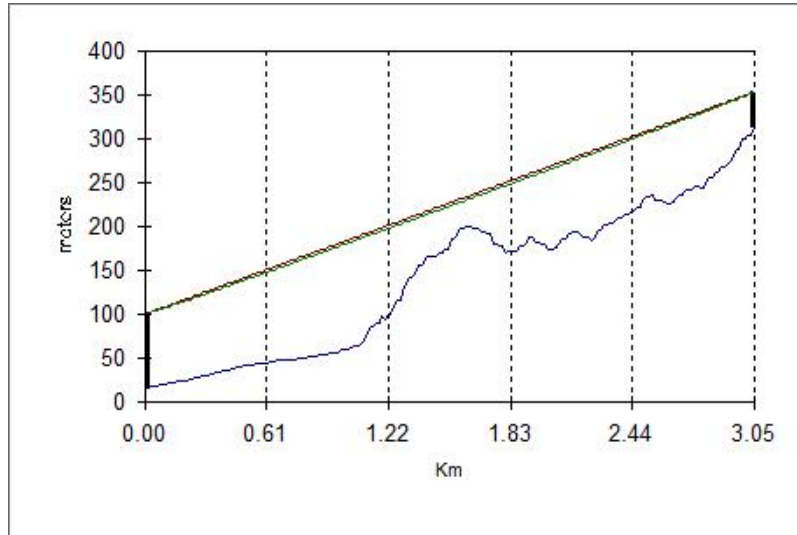
Site A	Path	Site B
RockyButteRd	Distance: 7.5 km	ConventionCenter
Lat: 45.5406	Frequency: 18 GHz	Lat: 45.5254
Lon: -122.5653	Polarization: Vertical	Lon: -122.6582
Gr Elev: 156 m AMSL	1st Fresnel: 100 %	Gr Elev: 27 m AMSL
Ant CL: 40 m	Clearance: 18.6 m at distance 7.0 km	Ant CL: 25 m
Azimuth: -103.06	K Factor: 1.33	Azimuth: 76.94
Ant Elev: -1.107	Free Space Loss: -135 dB	Ant Elev: 1.107

Microwave Path Link Budget		
Radio TX Pwr (A):	95MPR11-O128F40-213	+20 dBm
Jumper Loss (A):		-0 dB
Cable Loss (A):		-0 dB
Conn. Loss (A):		-0 dB
Add. Loss (A):		-0 dB
Antenna Gain (A):	SB2-107 STX	+35.1 dBi
	EiRP:	323.6 W
Antenna Gain (B):	SB2-107 STX	+35.1 dBi
Jumper Loss (B):		-0 dB
Cable Loss (B):		-0 dB
Conn. Loss (B):		-0 dB
Add. Loss (B):		-0 dB
	RSL:	-44.8 dBm
	RX Threshold (B):	-67.5 dBm
	Fade Margin:	22.7 dB
Annual Reliability (%-Sec):	99.999961 % - 12.24 secs	
Crane Rain: Crane96 Zone C - Temperate maritime		
Rain Rate : Rain Attenuation	49 mm/hr : 22.7 dB	
Annual Rain (%-Sec):	99.996917 % - 972.25 secs	
Annual Reliability + Rain (%-Sec):	99.996878 % - 984.49 secs	
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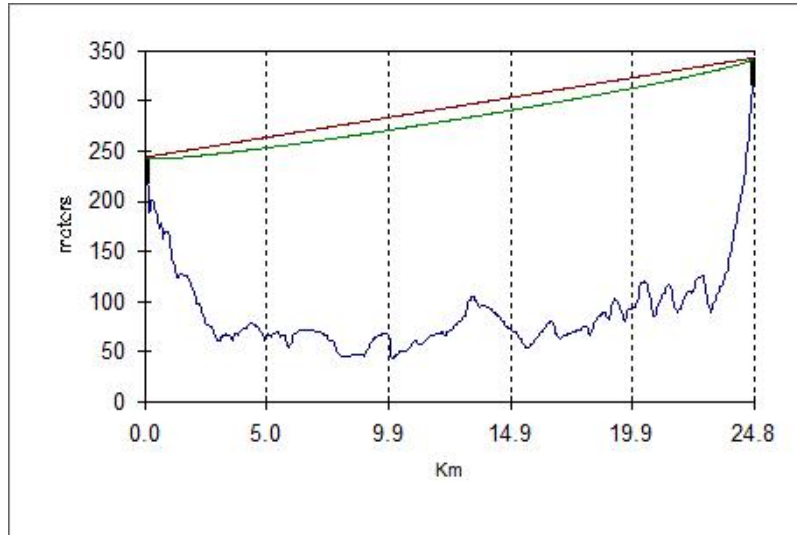
Site A	Path	Site B
ConventionCenter	Distance: 1.84 km	Downtown
Lat: 45.5254	Frequency: 18 GHz	Lat: 45.5151
Lon: -122.6582	Polarization: Vertical	Lon: -122.6767
Gr Elev: 27 m AMSL	1st Fresnel: 100 %	Gr Elev: 15 m AMSL
Ant CL: 25 m	Clearance: 24.9 m at distance 0.0 km	Ant CL: 85 m
Azimuth: -128.45	K Factor: 1.33	Azimuth: 51.55
Ant Elev: 1.494	Free Space Loss: -122.8 dB	Ant Elev: -1.494

Microwave Path Link Budget		
Radio TX Pwr (A):	95MPR11-O128F40-213	+20 dBm
Jumper Loss (A):		-0 dB
Cable Loss (A):		-0 dB
Conn. Loss (A):		-0 dB
Add. Loss (A):		-0 dB
Antenna Gain (A):	SB2-107 STX	+35.1 dBi
	EiRP:	323.6 W
Antenna Gain (B):	SB2-107 STX	+35.1 dBi
Jumper Loss (B):		-0 dB
Cable Loss (B):		-0 dB
Conn. Loss (B):		-0 dB
Add. Loss (B):		-0 dB
	RSL:	-32.6 dBm
	RX Threshold (B):	-67.5 dBm
	Fade Margin:	34.8 dB
Annual Reliability (%-Sec):	99.999999 % - 0.18 secs	
Crane Rain: Rain Attenuation is Insignificant for this Path.		
Rain Rate : Rain Attenuation	N/A	
Annual Rain (%-Sec):	N/A	
Annual Reliability + Rain (%-Sec):	99.999999 % - 0.18 secs	
Red Font: Warning Status Value	Blue Font: Value is Calculated	



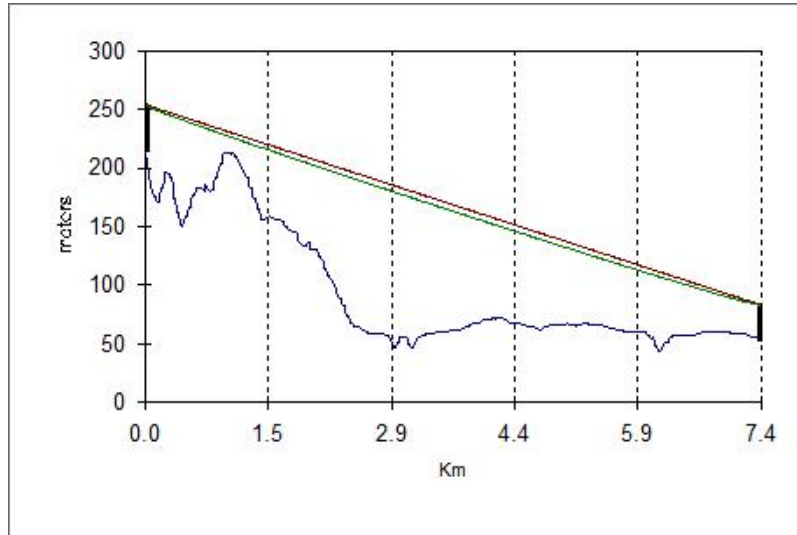
Site A	Path	Site B
Downtown	Distance: 3.04 km	GreenwayAve
Lat: 45.5151	Frequency: 18 GHz	Lat: 45.4995
Lon: -122.6767	Polarization: Vertical	Lon: -122.7086
Gr Elev: 15 m AMSL	1st Fresnel: 100 %	Gr Elev: 313 m AMSL
Ant CL: 85 m	Clearance: 29.2 m at distance 1.6 km	Ant CL: 40 m
Azimuth: -124.84	K Factor: 1.33	Azimuth: 55.16
Ant Elev: 4.757	Free Space Loss: -127.2 dB	Ant Elev: -4.757

Microwave Path Link Budget		
Radio TX Pwr (A):	95MPR11-O128F40-213	+20 dBm
Jumper Loss (A):		-0 dB
Cable Loss (A):		-0 dB
Conn. Loss (A):		-0 dB
Add. Loss (A):		-0 dB
Antenna Gain (A):	SB2-107 STX	+35.1 dBi
	EiRP:	323.6 W
Antenna Gain (B):	SB2-107 STX	+35.1 dBi
Jumper Loss (B):		-0 dB
Cable Loss (B):		-0 dB
Conn. Loss (B):		-0 dB
Add. Loss (B):		-0 dB
	RSL:	-37 dBm
	RX Threshold (B):	-67.5 dBm
	Fade Margin:	30.5 dB
Annual Reliability (%-Sec):	99.99997 % - 0.83 secs	
Crane Rain: Crane96 Zone C - Temperate maritime		
Rain Rate : Rain Attenuation	151.25 mm/hr : 30.5 dB	
Annual Rain (%-Sec):	99.999960 % - 12.55 secs	
Annual Reliability + Rain (%-Sec):	99.999958 % - 13.39 secs	
Red Font: Warning Status Value	Blue Font: Value is Calculated	



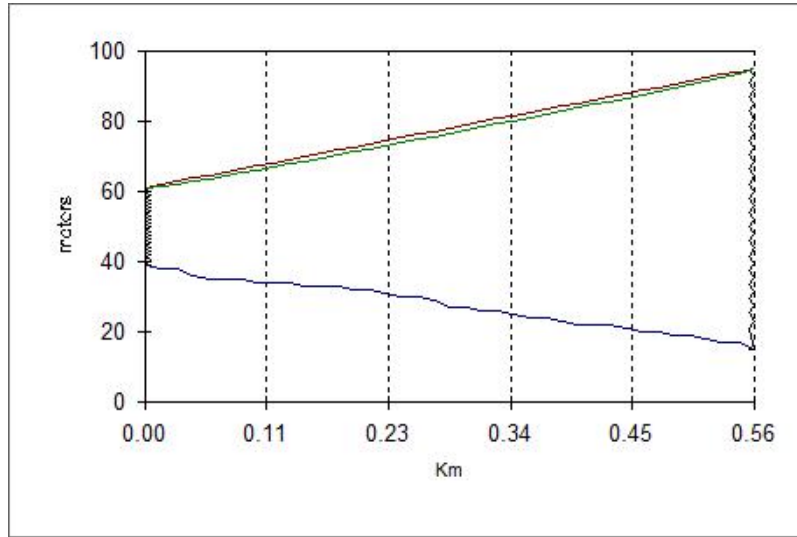
Site A	Path	Site B
Newburg	Distance: 24.8 km	GreenwayAve
Lat: 45.3156	Frequency: 11 GHz	Lat: 45.4995
Lon: -122.8883	Polarization: Vertical	Lon: -122.7086
Gr Elev: 214 m AMSL	1st Fresnel: 100 %	Gr Elev: 313 m AMSL
Ant CL: 30 m	Clearance: 25 m at distance 0.0 km	Ant CL: 30 m
Azimuth: 34.6	K Factor: 1.33	Azimuth: 214.6
Ant Elev: 0.228	Free Space Loss: -141.2 dB	Ant Elev: -0.228

Microwave Path Link Budget		
Radio TX Pwr (A):	95MPR11-O128F40-213	+20 dBm
Jumper Loss (A):		-0 dB
Cable Loss (A):		-0 dB
Conn. Loss (A):		-0 dB
Add. Loss (A):		-0 dB
Antenna Gain (A):	SB2-107 STX	+35.1 dBi
	EiRP:	323.6 W
Antenna Gain (B):	SB2-107 STX	+35.1 dBi
Jumper Loss (B):		-0 dB
Cable Loss (B):		-0 dB
Conn. Loss (B):		-0 dB
Add. Loss (B):		-0 dB
	RSL:	-51 dBm
	RX Threshold (B):	-67.5 dBm
	Fade Margin:	16.5 dB
Annual Reliability (%-Sec):		99.999673 % - 103.16 secs
Crane Rain: Crane96 Zone C - Temperate maritime		
Rain Rate : Rain Attenuation		56.12 mm/hr : 16.5 dB
Annual Rain (%-Sec):		90.654470 % - 654.53 secs
Annual Reliability + Rain (%-Sec):		99.997597 % - 757.68 secs
Red Font: Warning Status Value		Blue Font: Value is Calculated



Site A	Path	Site B
Newburg	Distance: 7.4 km	AmerTower
Lat: 45.3156	Frequency: 18 GHz	Lat: 45.3026
Lon: -122.8883	Polarization: Vertical	Lon: -122.9804
Gr Elev: 214 m AMSL	1st Fresnel: 100 %	Gr Elev: 53 m AMSL
Ant CL: 40 m	Clearance: 12.4 m at distance 1.0 km	Ant CL: 30 m
Azimuth: -101.34	K Factor: 1.33	Azimuth: 78.66
Ant Elev: -1.331	Free Space Loss: -134.9 dB	Ant Elev: 1.331

Microwave Path Link Budget		
Radio TX Pwr (A):	95MPR11-O128F40-213	+20 dBm
Jumper Loss (A):		-0 dB
Cable Loss (A):		-0 dB
Conn. Loss (A):		-0 dB
Add. Loss (A):		-0 dB
Antenna Gain (A):	SB2-107 STX	+35.1 dBi
	EiRP:	323.6 W
Antenna Gain (B):	SB2-107 STX	+35.1 dBi
Jumper Loss (B):		-0 dB
Cable Loss (B):		-0 dB
Conn. Loss (B):		-0 dB
Add. Loss (B):		-0 dB
	RSL:	-44.7 dBm
	RX Threshold (B):	-67.5 dBm
	Fade Margin:	22.8 dB
Annual Reliability (%-Sec):	99.999963 % - 11.79 secs	
Crane Rain: Crane96 Zone C - Temperate maritime		
Rain Rate : Rain Attenuation	49.8 mm/hr : 22.8 dB	
Annual Rain (%-Sec):	99.997056 % - 928.49 secs	
Annual Reliability + Rain (%-Sec):	99.997018 % - 940.28 secs	
Red Font: Warning Status Value	Blue Font: Value is Calculated	



Site A	Path	Site B
Uptown	Distance: 0.56 km	Downtown
Lat: 45.5137	Frequency: 18 GHz	Lat: 45.5151
Lon: -122.6836	Polarization: Vertical	Lon: -122.6767
Gr Elev: 39 m AMSL	1st Fresnel: 100 %	Gr Elev: 15 m AMSL
Ant CL: 22 m	Clearance: 22 m at distance 0.0 km	Ant CL: 80 m
Azimuth: 73.39	K Factor: 1.33	Azimuth: 253.39
Ant Elev: 3.456	Free Space Loss: -112.6 dB	Ant Elev: -3.456

Microwave Path Link Budget		
Radio TX Pwr (A):	95MPR11-O128F40-213	+20 dBm
Jumper Loss (A):		-0 dB
Cable Loss (A):		-0 dB
Conn. Loss (A):		-0 dB
Add. Loss (A):		-0 dB
Antenna Gain (A):	SB2-107 STX	+35.1 dBi
	EiRP:	323.6 W
Antenna Gain (B):	SB2-107 STX	+35.1 dBi
Jumper Loss (B):		-0 dB
Cable Loss (B):		-0 dB
Conn. Loss (B):		-0 dB
Add. Loss (B):		-0 dB
	RSL:	-22.4 dBm
	RX Threshold (B):	-67.5 dBm
	Fade Margin:	45.1 dB
Annual Reliability (%-Sec):		100.000000 % - 0.01 secs
Crane Rain: Rain Attenuation is Insignificant for this Path.		
Rain Rate : Rain Attenuation		N/A
Annual Rain (%-Sec):		N/A
Annual Reliability + Rain (%-Sec):		100.000000 % - 0.01 secs
Red Font: Warning Status Value		Blue Font: Value is Calculated