

K42 Rebuild Benefit/Cost Analysis Worksheet																		9/21/2023			
										Societal Present Value		VT Utility Present Value		Assumptions							
I. Quantitative benefits for new single pole/single conductor line instead of in-kind replacement of all structures:																					
Value of lost load of 1 - 12hr event during replacement of risky structures (for in-kind replacement)										\$	83,404,456	\$	83,404,456	(109.192MW x 1,000kW/MW x 12hrs x \$63.65/kWh VOLL)							
														(In-kind replacement of 35 deadends/angles (10hrs each + 2hrs restoration) leaves single contingency risk for northern loop load)							
														(If one single contingency event occurs this would be the value of lost customer load)							
														(Excludes human life risks/impacts from auto crashes, medical equipment, hospitals, etc. due to power outage)							
Value of additional 75' of ROW for 16.7 miles										\$	2,710,356	\$	2,710,356	(75' easement value + cost to clear 50% + condem/lit. avoidance + ROW legal/agent costs)							
														(Excludes cost of potential home/building takings in a new ROW situation)							
Avoided DU lost generation revenue during incremental 25 days of outages (for in-kind replacement)										\$	339,359	\$	339,359	(\$43.93/MWh for lost KCW, Sheffield generation @ 30% CF; 2024/2025 futures summer only ATC from Pricing Analysis ss - Alt. onpeak pricing is \$53.37/MWh)							
														(35 outage days for in-kind replacement - 10 outage days for rebuild = 25 days incremental)							
														(Sheldon Springs, Coventry, Highgate Falls, & Newport Hydro are allowed to generate)							
														(Highgate Falls & Newport Hydro are load reducers; others allowed to generate due to KCW, Sheffield, & Converter off-line)							
Avoided DU lost generation REC value during incremental 25 days of outages (for in-kind replacement)										\$	231,750	\$	231,750	(\$30/MWh Class 1 REC)							
														(Lost KCW, Sheffield generation @ 30% CF)							
														(Sheldon Springs, Coventry, Highgate Falls, & Newport Hydro are allowed to generate)							
Benefits										\$	86,685,922	\$	86,685,922								
Incremental costs w/ contingency for single pole line/reconductor to replace H-frame line										\$	27,282,495	\$	1,091,300	(With PTF funding VT's cost is 4% load ratio share)							
II. Quantitative benefits for double conductor instead of single conductor:																					
Savings from reduced PTF line losses										\$	1,398,654	per yr	\$	700,158	per yr	(Societal from VT loss valuation analysis ss; energy, capacity, CO2 costs)					
										\$	15,496,828	PV	\$	4,593,980	PV over 10 yrs	(VT savings from DEA Generator Revenues ss; For 10yrs due to current HQ PPA maximum '26-'35; assumes Sheffield contracts extended to VT DUs)					
														(VT savings: increased gen/PPA revenues due to reduced losses/congestion in SHEI LMPs)							
														(PVs calculated via Vermont_loss_valuation_analysis ss; real discount rates for Societal & VELCO)							
PV Benefits										\$	15,496,828		\$	4,593,980							
PV Incremental costs w/ contingency for second conductor										\$	7,555,994		\$	277,062		(With PTF funding VT's cost is 4% load ratio share; PV over 2yrs of construction investment)					