City of Columbia Water and Light Mill Creek - Perche Creek 161-kV Transmssion Line Route Selection Matrix

Page 1 Evaluated Scores	Routes -	Mill Creek to Perche 100 Series (Red Route)	Mill Creek to Perche 200 Series (Blue Route)	Mill Creek to Perche 300 Series (Green Route)	
(Importance factors range from -10 to +10, with negative values indicating negative characteristi and positive values indicting positive characteristics.)	cs Segments 	A100, A110, A120, A130, A140, A150	A200, A210, A220, A230, A240, A250, A260, A270	A300, A310, A320, A330, A340, A350, A360, A370, A380	
Evaluatiion Criteria	Importance	Scores			
Transmission Line Characteristics	5	% of evaluatiion			
Total Length *	0	0.0	0.0	0.0	
Length Overhead	0	0.0	0.0	0.0	
Length Underground *	0	0.0	0.0	0.0	
Length Along Public Rights-of-Way Length Along Private Rights-of-Way	-3	4.1 -3.0	4.7 -1.0	5.0 -0.5	
Length Along Railroad	10	0.0	0.0	0.0	
Length Parallel to Existing Lines	5	2.4	2.5	5.0	
Length Double Circuit with 69-kV Length Double Circuit with 161-kV	0	0.0	0.0	0.0	
Distribution Overbuild *	0	0.0	0.0	0.0	
Total Line Angles *	0	0.0	0.0	0.0	
Subtotal		3.5	6.2	9.5	
Buildings and Other Facilities Near Line (Distance	e 35	% of evaluation			
		40.0	5.0	0.7	
Houses 0 - 100 feet Houses 100-200 feet	-10 -8	-10.0 -2.8	-5.9 -7.6	-3.7 -8.0	
Multi-Family 0 - 100 feet	-10	-6.7	-6.3	-10.0	
Multi-Family 100 - 200 feet	-8	-1.8	-5.1	-8.0	
Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet	-5 -3	-5.0 -2.4	-1.3 -2.1	-3.8 -3.0	
Churches 0 - 100 feet	-2	0.0	0.0	0.0	
Churches 100 - 200 feet	-1	-1.0	-0.5	-1.0	
Day Care 0 - 250 feet Day Care 250 - 500 feet	-8 -5	-4.0 0.0	-8.0 0.0	-4.0 0.0	
Schools 0 - 250 feet	-10	0.0	0.0	0.0	
Schools 250 - 500 feet	-5	0.0	0.0	-5.0	
Hospitals 0 - 100 feet Hospitals 100 - 200 feet	-5 -3	0.0	0.0	0.0 0.0	
Nursing Homes 0 - 100 feet	-5	0.0	0.0	0.0	
Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet	-3	0.0	0.0	0.0	
Fire Station 0 - 100 feet Fire Station 100 - 200 feet	0	0.0	0.0	0.0	
Subtotal		-33.8	-36.7	-46.4	
Crossings	10	% of evaluation			
			5.0		
Parcels Along Public R/W Parcels on Private Property	-5 -10	-5.0 -10.0	-5.0 -5.4	-5.0 -4.1	
Road Crossings	10	10.0	011		
Interstate Highways	-5	0.0	0.0	0.0	
Federal and State Numbered Highways Other County Roads	-5 -1	-5.0 0.0	0.0	0.0 0.0	
Railroads	-5	0.0	0.0	0.0	
Perennial Streams, Rivers or Lakes	-1	-0.6	-1.0	-0.6	
Wetlands City or County Parks	-5 -10	-4.1 -6.7	-5.0 -10.0	-2.4 0.0	
State or Federal Parks, Conservation Areas	-10	0.0	0.0	0.0	
Recreational Areas - Other	-2	0.0 -31.4	0.0	0.0	
Subtotal		-31.4	-26.4	-12.2	
Right-of-Way Characteristics	10	% of evaluation			
Right-or-way Characteristics		% of evaluation			
Residential	-10	-5.8	-10.0	-1.5	
(Commercial/Industrial	-5	-5.0	-2.8 2.7	-2.8 0.0	
Commercial/Industrial Agricultural	5	5 ()	/ /		
Agricultural Wooded/Forested	5 -2	5.0 0.0	0.0	0.0	
Agricultural Wooded/Forested Existing R/W		0.0 4.4	0.0 5.0	0.0 8.0	
Agricultural Wooded/Forested	-2	0.0	0.0	0.0	
Agricultural Wooded/Forested Existing R/W	-2	0.0 4.4	0.0 5.0	0.0 8.0	
Agricultural Wooded/Forested Existing R/W Subtotal Costs	-2 8	0.0 4.4 -1.4	0.0 5.0	0.0 8.0	
Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing	-2 8 40 -1 -1	0.0 4.4 -1.4 % of evaluation -1.0 0.0	0.0 5.0 -5.1 -1.0 0.0	0.0 8.0 3.7 -0.2 0.0	
Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing Construction	-2 8 40 -1	0.0 4.4 -1.4 % of evaluation -1.0 0.0 -10.0	0.0 5.0 -5.1 -1.0 0.0 -9.9	0.0 8.0 3.7 -0.2 0.0 -9.5	
Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing	-2 8 40 -1 -1	0.0 4.4 -1.4 % of evaluation -1.0 0.0	0.0 5.0 -5.1 -1.0 0.0	0.0 8.0 3.7 -0.2 0.0	
Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing Construction	-2 8 40 -1 -1	0.0 4.4 -1.4 % of evaluation -1.0 0.0 -10.0	0.0 5.0 -5.1 -1.0 0.0 -9.9	0.0 8.0 3.7 -0.2 0.0 -9.5	
Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing Construction Subtotal	-2 8 40 -1 -1	0.0 4.4 -1.4 % of evaluation -1.0 0.0 -10.0	0.0 5.0 -5.1 -1.0 0.0 -9.9	0.0 8.0 3.7 -0.2 0.0 -9.5	
Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing Construction Subtotal Weighted Scores Transmission Line Characteristics Buildings and Other Facilities Near Line	-2 8 40 -1 -1 -10 -10	0.0 4.4 -1.4 % of evaluation -1.0 0.0 -10.0 -11.0	0.0 5.0 -5.1 -1.0 0.0 -9.9 -10.9	0.0 8.0 3.7 -0.2 0.0 -9.5 -9.7	
Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing Construction Subtotal Weighted Scores Transmission Line Characteristics Buildings and Other Facilities Near Line Crossings	-2 8 40 -1 -1 -10 -10 5 35 10	0.0 4.4 -1.4 % of evaluation -1.0 0.0 -10.0 -11.0 1.9 -25.5 -10.0	0.0 5.0 -5.1 -1.0 0.0 -9.9 -10.9 -3.3 -27.7 -8.4	0.0 8.0 3.7 -0.2 0.0 -9.5 -9.7 -9.7	
Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing Construction Subtotal Weighted Scores Transmission Line Characteristics Buildings and Other Facilities Near Line Crossings Right-of-Way Characteristics	-2 8 40 -1 -1 -10 -10	0.0 4.4 -1.4 % of evaluation -1.0 0.0 -10.0 -11.0	0.0 5.0 -5.1 -1.0 0.0 -9.9 -10.9	0.0 8.0 3.7 -0.2 0.0 -9.5 -9.7	
Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing Construction Subtotal Weighted Scores Transmission Line Characteristics Buildings and Other Facilities Near Line Crossings Right-of-Way Characteristics Costs Total	-2 8 40 -1 -1 -10 -10 5 35 10 10	0.0 4.4 -1.4 % of evaluation -1.0 0.0 -10.0 -11.0 1.9 -25.5 -10.0 -2.7 -40.0 -76.3	3.3 -27.7 -8.4 -10.0 -39.6 -82.5	0.0 8.0 3.7 -0.2 0.0 -9.5 -9.7 -9.7 -35.0 -3.9 7.2 -35.3 -62.0	
Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing Construction Subtotal Weighted Scores Transmission Line Characteristics Buildings and Other Facilities Near Line Crossings Right-of-Way Characteristics Costs	-2 8 40 -1 -1 -10 -10 5 35 10 10	0.0 4.4 -1.4 % of evaluation -1.0 0.0 -10.0 -11.0 1.9 -25.5 -10.0 -2.7 -40.0	0.0 5.0 -5.1 -1.0 0.0 -9.9 -10.9 3.3 -27.7 -8.4 -10.0 -39.6	0.0 8.0 3.7 -0.2 0.0 -9.5 -9.7 -9.7 -5.0 -35.0 -3.9 7.2 -35.3	

^{*} Certain "Transmission Line Characteristics" criteria are given 0 importance factor, as those criteria are also included in the "Costs" criteria. This avoids double evaluation of like criteria.



City of Columbia Water and Light Mill Creek - Perche Creek 161-kV Transmssion Line Route Selection Matrix

Page 2 Line Routes	Mill Creek to Perche 100 Series (Red Route)	Mill Creek to Perche 200 Series (Blue Route)	Mill Creek to Perche 300 Series (Green Route)	
Line Segments	A100, A110, A120, A130, A140, A150	A200, A210, A220, A230, A240, A250, A260, A270	A300, A310, A320, A330, A340, A350, A360, A370, A380	
Transmission Line Characteristics				
Total Length (feet)	29430	29138	30205	
Length Overhead (feet)	29430		30205	
Length Underground (feet)	0	· · ·	0	
Length Along Public Rights-of-Way (feet)	23995		29286	
Length Along Private Rights-of-Way (feet) Length Along Railroad (feet)	5435	1837	919	
Length Parallel to Existing Lines (feet)	13459	· ·	27773	
Length Double Circuit with 69-kV (feet)	11109		3934	
Length Double Circuit with 161-kV (feet)	0	0	0	
Distribution Overbuild (feet)	0	-	0	
Total Line Angles (degrees)	711	918	581	
Buildings and Other Facilities Near Line (Distance for	rom C/L)			
Houses 0 - 100 feet	92	54	34	
Houses 100-200 feet	32	86	90	
Multi-Family 0 - 100 feet	18		27	
Multi-Family 100 - 200 feet	12	33	52	
Commercial Structures 0 - 100 feet	8		6	
Commercial Structures 100 - 200 feet Churches 0 - 100 feet	13		16 0	
Churches 100 - 200 feet	2	1	2	
Day Care 0 - 250 feet	1	2	1	
Day Care 250 - 500 feet	0	0	0	
Schools 0 - 250 feet Schools 250 - 500 feet	0	0	0	
Hospitals 0 - 100 feet	0		0	
Hospitals 100 - 200 feet	0		0	
Nursing Homes 0 - 100 feet	0	-	0	
Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet	0		0	
Fire Station 100 - 200 feet	0		0	
Crossings				
Parcels Along Public R/W	143	143	143	
Parcels on Private Property	63	34	26	
Interstate Highways	0		0	
Federal and State Numbered Highways Other County Roads	2	0	0	
Railroads	0		0	
Perennial Streams, Rivers or Lakes	7	12	7	
Wetlands (feet)	269		158	
City or County Parks (feet) State or Federal Parks, Conservation Areas (feet)	3827	5752 0	10	
Recreational Areas - Other (Trails) (feet)	0	0	0	
Right-of-Way Characteristics				
	0000	F-74.F	077	
Residential (feet) Commercial/Industrial (feet)	3302 2317	5715 1295	877 1295	
Agricultural (feet)	8389		0	
Wooded/Forested (feet)	0	0	0	
Existing R/W (feet)	15419	17621	28033	
Costs	I			
Right-of-Way	\$125,543	\$122,423	\$29,917	
Clearing	\$0	\$0	\$0	
Construction	\$5,193,693		\$4,923,665	
Total Delta	\$5,319,236 \$365,654		\$4,953,582 \$0	
Delta %	7.38%	\$322,572 6.51%	0.00%	



City of Columbia Water and Light Mill Creek - Grindstone 161-kV Transmssion Line Route Selection Matrix

rage 1 valuated Scores	Routes -	Mill Creek to Grindstone 100 Series (Red Route)	Mill Creek to Grindstone 100B Series (Yellow/Red Route)	Mill Creek to Grindstone 200 Series (Blue Route)	Mill Creek to Grindstone 300 Series (Green Route)
mportance factors range from -10 to +10, with egative values indicating negative characteristic nd positive values indicting positive haracteristics.)	s Segments	B100, B110, B120, B130, B140	B100, B105, B115, B120, B130, B140	B200, B210, B220, B230, B240, B250	B300, B310, B320, B330, B340, B350
Evaluatiion Criteria	Importance	Scores			
ransmission Line Characteristics	5		1		
Total Length *	0	0.0	0.0	0.0	0.0
Length Overhead	0	0.0	0.0	0.0	0.0
Length Underground * Length Along Public Rights-of-Way	0 5	0.0 3.0	0.0 3.0	0.0 2.6	0.0 5.0
Length Along Public Rights-of-Way	-3	-0.7	-1.7	-2.8	-3.0
Length Along Railroad	10	0.0	0.0	0.0	0.0
Length Parallel to Existing Lines Length Double Circuit with 69-kV	5 0	1.0 0.0	1.4 0.0	2.5 0.0	5.0 0.0
Length Double Circuit with 161-kV	0	0.0	0.0	0.0	0.0
Distribution Overbuild *	0	0.0	0.0	0.0	0.0
Total Line Angles * Subtotal	0	0.0	0.0 2.7	0.0 2.2	0.0 7.0
Subiolai		3.3	2.1	2.2	7.0
Buildings and Other Facilities Near Line (Distance	35				
Houses 0 - 100 feet	-10	0.0	0.0	-10.0	-5.7
Houses 100-200 feet	-8	-6.2	-6.2	-5.8	-8.0
Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet	-10 -8	-0.4 -3.6	0.0 -3.2	-10.0 -8.0	-7.5 -6.3
Commercial Structures 0 - 100 feet	-8 -5	-3.6 -5.0	-3.2 -4.4	-8.0 -2.5	-6.3 -2.5
Commercial Structures 100 - 200 feet	-3	-2.9	-3.0	-0.8	-0.6
Churches 0 - 100 feet	-2	-2.0	-2.0	0.0	0.0
Churches 100 - 200 feet Day Care 0 - 250 feet	-1 -8	0.0	0.0	0.0	0.0 -8.0
Day Care 250 - 500 feet	-5	0.0	0.0	0.0	0.0
Schools 0 - 250 feet	-10 -5	0.0	-3.3 0.0	-3.3 0.0	-10.0 -5.0
Schools 250 - 500 feet Hospitals 0 - 100 feet	-5 -5	0.0	0.0	0.0	-5.0 0.0
Hospitals 100 - 200 feet	-3	0.0	0.0	0.0	0.0
Nursing Homes 0 - 100 feet	-5	0.0	0.0	-5.0	0.0
Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet	-3 0	0.0	0.0	0.0	0.0
Fire Station 100 - 200 feet	0	0.0	0.0	0.0	0.0
Subtotal		-20.1	-22.2	-45.4	-53.6
rossings	10				
Parcels Along Public R/W	-5	-1.6	0.0	-5.0	-4.4
Parcels on Private Property	-10	-2.5	0.0	-7.5	-10.0
Road Crossings		0.0	0.0	0.0	0.0
Interstate Highways Federal and State Numbered Highways	-5 -5	0.0 -1.7	0.0 -1.7	0.0 -1.7	0.0 -5.0
Other County Roads	-1	0.0	0.0	0.0	0.0
Railroads	-5 -1	0.0	0.0 -1.0	0.0 -0.2	0.0 -0.6
Perennial Streams, Rivers or Lakes Wetlands	-1 -5	-0.8 0.0			
City or County Parks	-10		0.0	0.0	
Ctoto on Fordaged Daules One " " "		0.0	0.0 0.0	0.0	0.0 0.0
State or Federal Parks, Conservation Areas	-10	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0 0.0
State or Federal Parks, Conservation Areas Recreational Areas - Other Subtotal		0.0	0.0	0.0	0.0 0.0
Recreational Areas - Other	-10	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0 0.0
Recreational Areas - Other Subtotal	-10	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0 0.0
Recreational Areas - Other Subtotal Light-of-Way Characteristics	-10 -2	0.0 0.0 0.0 -6.5	0.0 0.0 0.0 -2.7	0.0 0.0 0.0 -14.4	0.0 0.0 0.0 0.0 -20.0
Recreational Areas - Other Subtotal	-10 -2 10 -10 -5	0.0 0.0 0.0 -6.5	0.0 0.0 0.0 -2.7 -10.0 -2.5	0.0 0.0 0.0 -14.4 -10.0 -5.0	0.0 0.0 0.0 0.0 -20.0
Recreational Areas - Other Subtotal Light-of-Way Characteristics Residential Commercial/Industrial Agricultural	-10 -2 10 -10 -5 5	0.0 0.0 0.0 -6.5 0.0 -2.1	-10.0 -2.5 0.0	-10.0 -5.0 0.0	0.0 0.0 0.0 0.0 -20.0
Recreational Areas - Other Subtotal Eight-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested	-10 -2 10 -10 -5	0.0 0.0 0.0 -6.5	0.0 0.0 0.0 -2.7 -10.0 -2.5	0.0 0.0 0.0 -14.4 -10.0 -5.0	0.0 0.0 0.0 0.0 -20.0
Recreational Areas - Other Subtotal Light-of-Way Characteristics Residential Commercial/Industrial Agricultural	-10 -2 10 -10 -5 5 -2	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0	-10.0 -2.5 0.0 0.0 -2.7	-10.0 -5.0 0.0 -0.0 -14.4	-10.0 -1.0 0.0 -20.0
Recreational Areas - Other Subtotal Right-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal	-10 2 -10 10 5 5 2 	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5	-10.0 -2.5 0.0 -2.8 0.0 -4.8	-10.0 -5.0 0.0 -14.4	-10.0 -1.0 0.0 -20.0
Recreational Areas - Other Subtotal Light-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal	-10 -2 -10 -10 -5 5 -2 8	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5	-10.0 -2.5 0.0 0.0 -2.7	-10.0 -5.0 0.0 -14.4	-10.0 -1.0 0.0 -20.0 -1.0 -2.0 8.0 -5.0
Recreational Areas - Other Subtotal Right-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way	-10 -2 10 -10 -5 5 -2 8 40	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5	-10.0 -2.5 0.0 0.0 -2.7	-10.0 -5.0 0.0 -14.4 -10.9	-10.0 -1.0 0.0 -20.0 -1.0 -1.0 -2.0 8.0 -5.0
Recreational Areas - Other Subtotal Light-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal	-10 -2 -10 -10 -5 5 -2 8	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5	-10.0 -2.5 0.0 0.0 -2.7	-10.0 -5.0 0.0 -14.4	-10.0 -20.0 -20.0 -1.0 -2.0 -5.0
Recreational Areas - Other Subtotal Right-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal Right-of-Way Clearing	-10 -2 10 -10 -5 5 -2 8 40 -1 -1	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5	-10.0 -2.5 0.0 0.0 -2.7	-10.0 -5.0 0.0 -14.4 -10.9 -10.0 -5.0 0.0 4.1 -10.9	-10.0 -10.0 -20.0 -20.0 -10.0 -1.0 -2.0 8.0 -5.0
Recreational Areas - Other Subtotal Right-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal Right-of-Way Clearing Construction	-10 -2 10 -10 -5 5 -2 8 40 -1 -1	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5 -0.4 0.0 -5.7	-10.0 -2.7 -10.0 -2.5 -0.0 -0.0 4.8 -7.7 -0.6 -0.6 -0.0 -6.6	-10.0 -10.0 -5.0 0.0 -10.0 -5.0 0.0 4.1 -10.9	-10.0 -10.0 -20.0 -20.0 -10.0 -1.0 -1.0 -2.0 8.0 -5.0 -0.5 -1.0 -10.0
Recreational Areas - Other Subtotal Right-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing Construction Subtotal Veighted Scores	-10 -2 10 -10 -5 5 -2 8 40 -1 -1 -10	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5 -0.4 0.0 -5.7 -6.0	0.0 0.0 0.0 -2.7 -10.0 -2.5 0.0 0.0 4.8 -7.7 -0.6 0.0 -6.6 -7.1	0.0 0.0 0.0 -14.4 -10.0 -5.0 0.0 0.0 4.1 -10.9 -1.0 0.0 -6.3 -7.3	0.0 0.0 0.0 0.0 -20.0 -10.0 -1.0 0.0 -2.0 8.0 -5.0 -0.5 -1.0 -10.0 -11.5
Recreational Areas - Other Subtotal Light-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal Costs Right-of-Way Clearing Construction Subtotal Veighted Scores Transmission Line Characteristics Buildings and Other Facilities Near Line	-10 -2 10 -10 -5 5 -2 8 40 -1 -1 -10 -5 5 -2	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5 -0.4 0.0 -5.7 -6.0	0.0 0.0 0.0 -2.7 -10.0 -2.5 0.0 0.0 4.8 -7.7 -0.6 0.0 -6.6 -7.1	0.0 0.0 0.0 -14.4 -10.0 -5.0 0.0 0.0 4.1 -10.9 -1.0 0.0 -6.3 -7.3	0.0 0.0 0.0 -0.0 -20.0 -10.0 -1.0 0.0 -2.0 8.0 -5.0 -10.0 -11.5
Recreational Areas - Other Subtotal Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal Right-of-Way Clearing Construction Subtotal Veighted Scores Transmission Line Characteristics Buildings and Other Facilities Near Line Crossings	-10 -2 10 -10 -5 5 -2 8 40 -1 -1 -10 -10 -1 -10 -10 -10 -10 -10	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5 -0.4 0.0 -5.7 -6.0 2.3 -13.1 -3.3	0.0 0.0 0.0 -2.7 -10.0 -2.5 0.0 0.0 4.8 -7.7 -0.6 0.0 -6.6 -7.1	0.0 0.0 0.0 -14.4 -10.0 -5.0 0.0 0.0 4.1 -10.9 -1.0 0.0 -6.3 -7.3	0.0 0.0 0.0 0.0 -20.0 -10.0 -1.0 0.0 -2.0 8.0 -5.0 -0.5 -1.0 -10.0 -11.5
Recreational Areas - Other Subtotal Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal Right-of-Way Clearing Construction Subtotal Veighted Scores Transmission Line Characteristics Buildings and Other Facilities Near Line Crossings Right-of-Way Characteristics	-10 -2 10 -10 -5 5 -2 8 40 -1 -1 -10 -5 5 -2	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5 -0.4 0.0 -5.7 -6.0 2.3 -13.1 -3.3 2.3	0.0 0.0 0.0 -2.7 -10.0 -2.5 0.0 0.0 4.8 -7.7 -0.6 0.0 -6.6 -7.1 1.9 -14.5 -1.3 -7.0	-10.0 -14.4 -10.0 -5.0 0.0 4.1 -10.9 -1.0 0.0 -6.3 -7.3 -7.3	0.0 0.0 0.0 0.0 -20.0 -10.0 -1.0 0.0 -2.0 8.0 -5.0 -0.5 -1.0 -10.0 -11.5 5.0 -35.0 -10.0 -4.6
Recreational Areas - Other Subtotal Right-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal Right-of-Way Clearing Construction Subtotal Veighted Scores Transmission Line Characteristics Buildings and Other Facilities Near Line Crossings Right-of-Way Characteristics Costs Total	-10 -2 10 -10 -5 5 -2 8 40 -1 -1 -10 -10 -10 -10 -10 -10	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5 -0.4 0.0 -5.7 -6.0 2.3 -13.1 -3.3 2.3 -20.9 -32.7	0.0 0.0 0.0 -2.7 -10.0 -2.5 0.0 0.0 4.8 -7.7 -0.6 0.0 -6.6 -7.1 1.9 -14.5 -1.3 -7.0 -24.8 -45.7	0.0 0.0 0.0 -14.4 -10.0 -5.0 0.0 0.0 4.1 -10.9 -1.0 0.0 -6.3 -7.3 -7.3	0.0 0.0 0.0 0.0 -20.0 -10.0 -1.0 0.0 -2.0 8.0 -5.0 -0.5 -1.0 -10.0 -11.5 5.0 -35.0 -10.0 -4.6 -40.0 -84.6
Recreational Areas - Other Subtotal Right-of-Way Characteristics Residential Commercial/Industrial Agricultural Wooded/Forested Existing R/W Subtotal Right-of-Way Clearing Construction Subtotal Veighted Scores Transmission Line Characteristics Buildings and Other Facilities Near Line Crossings Right-of-Way Characteristics Costs	-10 -2 10 -10 -5 5 -2 8 40 -1 -1 -10 -10 -10 -10 -10 -10	0.0 0.0 0.0 -6.5 0.0 -2.1 0.0 0.0 4.5 2.5 -0.4 0.0 -5.7 -6.0 2.3 -13.1 -3.3 2.3 -20.9	-10.0 -2.5 -0.0 -0.0 -2.5 -0.0 -0.0 -1.7 -1.7 -1.1 -1.9 -14.5 -1.3 -7.0 -24.8	-10.0 -14.4 -10.0 -5.0 0.0 0.0 4.1 -10.9 -1.0 0.0 -6.3 -7.3 -7.3	0.0 0.0 0.0 -20.0 -10.0 -1.0 0.0 -2.0 8.0 -5.0 -0.5 -1.0 -10.0 -11.5 5.0 -35.0 -10.0 -4.6 -40.0

^{*} Certain "Transmission Line Characteristics" criteria are given 0 importance factor, as those criteria are also included in the "Costs" crite double evaluation of like criteria.



City of Columbia Water and Light Mill Creek - Grindstone 161-kV Transmssion Line Route Selection Matrix

Page 2 Line Routes	Mill Creek to Grindstone 100 Series (Red Route)	Mill Creek to Grindstone 100B Series (Yellow/Red Route)	Mill Creek to Grindstone 200 Series (Blue Route)	Mill Creek to Grindstone 300 Series (Green Route)
Line Segments	B100, B110, B120, B130, B140	B100, B105, B115, B120, B130, B140	B200, B210, B220, B230, B240, B250	B300, B310, B320, B330, B340, B350
Transmission Line Characteristics				
Total Length (feet)	12835 12835	14341 14341	14071 14071	24060 24060
Length Overhead (feet) Length Underground (feet)	12035	14341		24060
Length Along Public Rights-of-Way (feet)	11856	12006	10216	19990
Length Along Private Rights-of-Way (feet)	979	2335		4070
Length Along Railroad (feet)	0	0	•	0
Length Parallel to Existing Lines (feet) Length Double Circuit with 69-kV (feet)	4450 4058	6294 4058		22095
Length Double Circuit with 161-kV (feet)	1038			0
Distribution Overbuild (feet)	0	0	0	0
Total Line Angles (degrees)	229	388	494	499
Buildings and Other Facilities Near Line (Distance f	r			
·		0	1.1	0
Houses 0 - 100 feet Houses 100-200 feet	0 14	0 14		8
Multi-Family 0 - 100 feet	2	0		39
Multi-Family 100 - 200 feet	19		42	33
Commercial Structures 0 - 100 feet	8		4	4
Commercial Structures 100 - 200 feet Churches 0 - 100 feet	19		5	
Churches 100 - 200 feet	0	•	ŭ	0
Day Care 0 - 250 feet	0	0	_	1
Day Care 250 - 500 feet	0	0	0	0
Schools 0 - 250 feet	0	1	1	3
Schools 250 - 500 feet Hospitals 0 - 100 feet	0	0		1
Hospitals 100 - 200 feet	0	0	·	0
Nursing Homes 0 - 100 feet	0	0	1	0
Nursing Homes 100 - 200 feet	0	0		0
Fire Station 0 - 100 feet	0	0		0
Fire Station 100 - 200 feet	0	0	1	0
Crossings				
Parcels Along Public R/W	26	0	83	73
Parcels on Private Property	3	0		12
Interstate Highways	0	0	0	0
Federal and State Numbered Highways	1	1	1	3
Other County Roads Railroads	0	0	0	0
Perennial Streams, Rivers or Lakes	4	5	1	3
Wetlands (feet)	0	0		0
City or County Parks (feet)	0	0	•	0
State or Federal Parks, Conservation Areas (feet) Recreational Areas - Other (Trails) (feet)	0	0	0	0
Right-of-Way Characteristics	1			
Residential (feet)	0	543	543	543
Commercial/Industrial (feet)	1315	1577	3154	655
Agricultural (feet) Wooded/Forested (feet)	0	0	0	2591
Existing R/W (feet)	11520	12221	10374	20271
Costs				
Right-of-Way	\$18,113	\$29,201	\$50,923	\$25,424
Clearing	\$0	\$0	\$0	\$2,974
Construction	\$2,167,699	\$2,514,119		\$3,833,447
Total	\$2,185,812	\$2,543,320		\$3,861,845 \$1,676,033
Delta Delta %	\$0 0.00%	\$357,509 16.36%	\$275,499 12.60%	\$1,676,033 76.68%
23114 /0	0.0076	10.5076	12.0070	7 0.00 /0



City of Columbia Water and Light Mill Creek - McBaine 161-kV Transmssion Line Route Selection Matrix

Inportance factors range from -10 to +10, with gative values indicating negative characteristics indicating positive values values indicating positive values valu	Importance 5	C100, C110, C115, C120, C130, C140, C150 0.0 0.0 0.0 0.0 4.9 -1.1 0.0 3.7 0.0 0.0 0.0 0.0 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	C200, C210, C220, C230, C240, C250, C260 Sco 0.0 0.0 0.0 0.0 3.7 -1.4 0.0 3.9 0.0 0.0 0.0 0.0 0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	C300, C310, C320, C330 res 0.0 0.0 0.0 0.0 5.0 -0.2 0.0 0.0 0.0 0.0 0.0 0.0 9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	C400, C410, C420 C430, C440 0.0 0.0 0.0 0.0 1.2 -3.0 0.0 0.0 0.0 0.0 0.0 -0.6 -0.9 -0.3 0.0 0.0 0.0 -3.3 -1.5 0.0 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Total Length * Length Overhead Length Underground * Length Along Public Rights-of-Way Length Along Private Rights-of-Way Length Along Railroad Length Parallel to Existing Lines Length Double Circuit with 69-kV Length Double Circuit with 69-kV Length Double Circuit with 161-kV Distribution Overbuild * Total Line Angles * Subtotal Ididings and Other Facilities Near Line (Distance Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Churches 100 - 200 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 0 - 250 feet Boschools 0 - 250 feet Hospitals 0 - 100 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Tossings Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	5 0 0 0 0 5 -3 10 5 0 0 0 0 0 0 0 0 0 35 -10 -8 -10 -8 -5 -3 -2 -1 -1 -8 -5 -3 -2 -1 -1 -8 -5 -3 -3 -2 -1 -1 -8 -5 -3 -3 -0 0 0	0.0 0.0 4.9 -1.1 0.0 3.7 0.0 0.0 0.0 0.0 0.0 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 0.0 0.0 0.0 3.7 -1.4 0.0 3.9 0.0 0.0 0.0 0.0 0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 5.0 -0.2 0.0 5.0 0.0 0.0 0.0 0.0 0.0 9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 1.2 -3.0 0.0 1.2 0.0 0.0 0.0 0.0 0.0 -0.6 -0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Total Length * Length Overhead Length Underground * Length Along Public Rights-of-Way Length Along Private Rights-of-Way Length Along Railroad Length Parallel to Existing Lines Length Double Circuit with 69-kV Length Double Circuit with 161-kV Distribution Overbuild * Total Line Angles * Subtotal ### Total Line Angles * Subtotal ### Subtotal ### Total Line Angles * Subtotal	0 0 0 5 -3 10 5 0 0 0 0 0 0 0 0 0 0 0 0 0 -10 -8 -10 -8 -5 -3 -2 -11 -8 -5 -3 -5 -3 -5 -3 -5 -3 -3 -5 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	0.0 0.0 4.9 -1.1 0.0 3.7 0.0 0.0 0.0 0.0 0.0 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 0.0 0.0 3.7 -1.4 0.0 3.9 0.0 0.0 0.0 0.0 0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 0.0 -1.0 -8.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 5.0 -0.2 0.0 5.0 0.0 0.0 0.0 0.0 0.0 9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 1.2 -3.0 0.0 1.2 0.0 0.0 0.0 0.0 0.0 -0.6 -0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Length Overhead Length Underground * Length Along Public Rights-of-Way Length Along Private Rights-of-Way Length Along Railroad Length Parallel to Existing Lines Length Double Circuit with 69-kV Length Double Circuit with 161-kV Distribution Overbuild * Total Line Angles * Subtotal Lildings and Other Facilities Near Line (Distance Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Day Care 0 - 250 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 250 - 500 feet Hospitals 100 - 200 feet Hospitals 100 - 200 feet Fire Station 0 - 100 feet Nursing Homes 0 - 100 feet Fire Station 100 - 200 feet Subtotal Lossings Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	0 0 5 -3 10 5 0 0 0 0 0 0 0 0 0 0 -10 -8 -10 -8 -5 -3 -2 -11 -8 -5 -10 -5 -3 -2 -11 -5 -3 -5 -3 -5 -3 -5 -3 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0	0.0 0.0 4.9 -1.1 0.0 3.7 0.0 0.0 0.0 0.0 0.0 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 0.0 0.0 3.7 -1.4 0.0 3.9 0.0 0.0 0.0 0.0 0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 0.0 -1.0 -8.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 5.0 -0.2 0.0 5.0 0.0 0.0 0.0 0.0 0.0 9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 1.2 -3.0 0.0 1.2 0.0 0.0 0.0 0.0 0.0 -0.6 -0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Length Underground * Length Along Public Rights-of-Way Length Along Private Rights-of-Way Length Along Railroad Length Parallel to Existing Lines Length Double Circuit with 69-kV Length Double Circuit with 161-kV Distribution Overbuild * Total Line Angles * Subtotal Alildings and Other Facilities Near Line (Distance Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 0 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Day Care 0 - 250 feet Day Care 0 - 250 feet Day Care 0 - 250 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 0 - 100 feet Hospitals 0 - 100 feet Fire Station 0 - 200 feet Fire Station 0 - 200 feet Fire Station 100 - 200 feet Fire Station 100 - 200 feet Fire Station 100 - 200 feet Fire Station 4 - 100 feet Fire Station 5 - 100 feet Fire Station 6 - 100 feet Fire Station 100 - 200 feet Fire Station 100 - 200 feet Fire Station 100 - 200 feet Subtotal Cossings Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	35 -10 -8 -10 -8 -10 -8 -5 -3 -2 -1 -10 -5 -5 -3 -2 -1 -8 -5 -3 -0 0 0	0.0 4.9 -1.1 0.0 3.7 0.0 0.0 0.0 0.0 0.0 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 3.7 -1.4 0.0 3.9 0.0 0.0 0.0 0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 0.0 -1.0 -8.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-6.6 -3.5 -2.6 -0.0 -5.0 -5.0 -5.0 -5.0 -5.0 -5.0 -5.0	0.0 1.2 -3.0 0.0 1.2 0.0 1.2 0.0 0.0 0.0 0.0 -0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Length Along Public Rights-of-Way Length Along Private Rights-of-Way Length Along Railroad Length Parallel to Existing Lines Length Double Circuit with 69-kV Length Double Circuit with 161-kV Distribution Overbuild * Total Line Angles * Subtotal Lilidings and Other Facilities Near Line (Distance Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 0 - 100 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 0 - 250 feet Boshols 0 - 250 feet Hospitals 100 - 200 feet Hospitals 100 - 200 feet Fire Station 0 - 100 feet Nursing Homes 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-3 10 5 0 0 0 0 0 0 0 35 -10 -8 -10 -8 -5 -3 -2 -1 -1 -8 -5 -3 -2 -1 -1 -8 -5 -3 -0 0 0	4.9 -1.1 0.0 3.7 0.0 0.0 0.0 0.0 0.0 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	3.7 -1.4 0.0 3.9 0.0 0.0 0.0 0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-0.2 0.0 5.0 0.0 0.0 0.0 0.0 0.0 9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	1.2 -3.0 0.0 1.2 0.0 0.0 0.0 0.0 0.0 0.0 -0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Length Along Railroad Length Parallel to Existing Lines Length Double Circuit with 69-kV Length Double Circuit with 161-kV Distribution Overbuild * Total Line Angles * Subtotal Lilidings and Other Facilities Near Line (Distance Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Churches 0 - 200 feet Churches 0 - 250 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 0 - 100 feet Fire Station 100 - 200 feet Nursing Homes 0 - 100 feet Fire Station 100 - 200 feet Subtotal Cossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	10 5 0 0 0 0 0 0 0 35 -10 -8 -10 -8 -5 -3 -2 -1 -8 -5 -10 -5 -3 -5 -10 -5 -3 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -10 -5 -5 -10 -5 -5 -10 -5 -5 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	0.0 3.7 0.0 0.0 0.0 0.0 0.0 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 3.9 0.0 0.0 0.0 0.0 0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 5.0 0.0 0.0 0.0 0.0 0.0 9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 -5.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 1.2 0.0 0.0 0.0 0.0 0.0 0.0 -0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Length Parallel to Existing Lines Length Double Circuit with 69-kV Length Double Circuit with 161-kV Distribution Overbuild * Total Line Angles * Subtotal Lildings and Other Facilities Near Line (Distance Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Churches 0 - 100 feet Day Care 250 - 500 feet Day Care 250 - 500 feet Schools 250 - 500 feet Hospitals 100 - 200 feet Hospitals 100 - 200 feet Fire Station 0 - 100 feet Nursing Homes 0 - 100 feet Nursing Homes 0 - 100 feet Fire Station 0 - 100 feet Subtotal Lossings Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	5 0 0 0 0 0 0 35 -10 -8 -10 -8 -5 -3 -2 -1 -1 -8 -5 -5 -10 -5 -5 -10 -5 -5 -10 -5 -5 -10 -5 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	3.7 0.0 0.0 0.0 0.0 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	3.9 0.0 0.0 0.0 0.0 0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	5.0 0.0 0.0 0.0 0.0 9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0	1.2 0.0 0.0 0.0 0.0 -0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0
Length Double Circuit with 69-kV Length Double Circuit with 161-kV Distribution Overbuild * Total Line Angles * Subtotal Lildings and Other Facilities Near Line (Distance Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 0 - 100 feet Hospitals 0 - 100 feet Fire Station 0 - 200 feet Subtotal Lindings Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	0 0 0 0 0 0 35 -10 -8 -10 -8 -5 -3 -2 -1 -1 -8 -5 -10 -5 -3 -2 -1 -10 -8 -5 -3 -2 -1 -10 -5 -3 -5 -10 -5 -3 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0	0.0 0.0 0.0 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 0.0 0.0 0.0 0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 -8.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 -0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0
Distribution Overbuild * Total Line Angles * Subtotal Aildings and Other Facilities Near Line (Distance Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Churches 100 - 200 feet Day Care 250 - 500 feet Day Care 250 - 500 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 0 - 100 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	35 -10 -8 -10 -8 -5 -3 -2 -1 -10 -5 -5 -3 -0 0 0	0.0 0.0 7.5 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 -0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0
Total Line Angles * Subtotal Jildings and Other Facilities Near Line (Distance Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Churches 100 - 200 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 0 - 100 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	0 35 -10 -8 -10 -8 -5 -3 -2 -1 -8 -5 -10 -5 -5 -3 -0 0 0	0.0 7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 0.0 -3.0 0.0 0.0 0.0 0.0	0.0 6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 -0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0
Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Churches 0 - 100 feet Churches 0 - 100 feet Churches 100 - 200 feet Churches 100 - 250 feet Day Care 250 - 500 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Possings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	35 -10 -8 -10 -8 -10 -8 -5 -3 -2 -1 -1 -8 -5 -10 -5 -5 -3 -0 0 0	7.5 -10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 0.0 -3.0 0.0 0.0 0.	6.1 -5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0	9.8 -6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 -8.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-0.6 -0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0
Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Churches 0 - 100 feet Churches 100 - 200 feet Churches 100 - 200 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Cossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-10 -8 -10 -8 -10 -8 -5 -3 -2 -1 -1 -8 -5 -10 -5 -5 -3 -5 -3 -0 0	-10.0 -8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 -3.0 0.0 0.0	-5.1 -3.2 -10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0	-6.6 -3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 -8.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-0.9 -0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0
Houses 0 - 100 feet Houses 100-200 feet Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Churches 100 - 200 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 0 - 250 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-10 -8 -10 -8 -10 -8 -5 -3 -2 -1 -1 -8 -5 -10 -5 -5 -3 -5 -3 -0 0	-8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 0.0 -3.0 0.0 0.0	-3.2 -10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0	-3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 -8.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 -5.0 0.0 0.0 0.0
Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Churches 100 - 200 feet Churches 100 - 200 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 0 - 250 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Cossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-8 -10 -8 -5 -3 -2 -1 -8 -5 -10 -5 -5 -10 -5 -5 -3 -3 -0 0	-8.0 -10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 0.0 -3.0 0.0 0.0	-3.2 -10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0	-3.5 -0.6 -8.0 -5.0 -2.6 0.0 0.0 -8.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-0.3 0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0
Multi-Family 0 - 100 feet Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Churches 100 - 200 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 0 - 250 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Cossings Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-10 -8 -5 -3 -2 -1 -8 -5 -10 -5 -5 -3 -5 -3 -0 0	-10.0 -3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 -3.0 0.0 0.0	-10.0 -7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-0.6 -8.0 -5.0 -2.6 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0
Multi-Family 100 - 200 feet Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Churches 100 - 200 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 0 - 250 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Cossings Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-8 -5 -3 -2 -1 -8 -5 -10 -5 -5 -5 -3 -0 0	-3.1 -3.3 -2.6 0.0 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 -3.0 0.0 0.0	-7.0 -3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-8.0 -5.0 -2.6 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 -3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0
Commercial Structures 0 - 100 feet Commercial Structures 100 - 200 feet Churches 0 - 100 feet Churches 100 - 200 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 0 - 250 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Cossings Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-5 -3 -2 -1 -8 -5 -10 -5 -5 -5 -3 -0 0	-3.3 -2.6 0.0 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 -3.0 0.0 0.0	-3.3 -3.0 0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-5.0 -2.6 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-3.3 -1.5 0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0
Churches 0 - 100 feet Churches 100 - 200 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 0 - 250 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-2 -1 -8 -5 -10 -5 -5 -3 -5 -3 0	0.0 0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 -3.0 0.0	0.0 -1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0	0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0	0.0 0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0
Churches 100 - 200 feet Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 0 - 250 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-1 -8 -5 -10 -5 -5 -3 -5 -3 0	0.0 0.0 0.0 0.0 -2.5 0.0 0.0 0.0 -3.0 0.0	-1.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0	0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0	0.0 -8.0 0.0 0.0 -5.0 0.0 0.0 0.0
Day Care 0 - 250 feet Day Care 250 - 500 feet Schools 0 - 250 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-8 -5 -10 -5 -5 -3 -5 -3 0	0.0 0.0 0.0 -2.5 0.0 0.0 0.0 -3.0 0.0 0.0	-8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0	-8.0 0.0 0.0 -5.0 0.0 0.0 0.0 0.0	-8.0 0.0 0.0 -5.0 0.0 0.0 0.0
Day Care 250 - 500 feet Schools 0 - 250 feet Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Possings Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-5 -10 -5 -5 -3 -5 -3 0	0.0 0.0 -2.5 0.0 0.0 0.0 -3.0 0.0 0.0	0.0 0.0 -5.0 0.0 0.0 0.0 0.0	0.0 0.0 -5.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 -5.0 0.0 0.0 0.0
Schools 250 - 500 feet Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-5 -5 -3 -5 -3 0	-2.5 0.0 0.0 0.0 -3.0 0.0	-5.0 0.0 0.0 0.0 0.0 0.0	-5.0 0.0 0.0 0.0 0.0 0.0	-5.0 0.0 0.0 0.0 0.0
Hospitals 0 - 100 feet Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-5 -3 -5 -3 0	0.0 0.0 0.0 -3.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0
Hospitals 100 - 200 feet Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-3 -5 -3 0	0.0 0.0 -3.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0
Nursing Homes 0 - 100 feet Nursing Homes 100 - 200 feet Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-5 -3 0 0	0.0 -3.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0
Fire Station 0 - 100 feet Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	0	0.0 0.0	0.0	0.0	
Fire Station 100 - 200 feet Subtotal Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	0	0.0			0.0
Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-		0.0		0.0
Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other		-4 ∠.0	-45.6	-39.2	-19.0
Parcels Along Public R/W Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	10				
Parcels on Private Property Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other		5.0	0.7	1.1	1.0
Road Crossings Interstate Highways Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-5 -10	-5.0 -5.9	-3.7 -7.4	-4.1 -1.5	-1.0 -10.0
Federal and State Numbered Highways Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	.,	0.0			10.0
Other County Roads Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-5	0.0	0.0	0.0	0.0
Railroads Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-5 -1	-2.5 0.0	-5.0 0.0	-3.8 0.0	-3.8 0.0
Perennial Streams, Rivers or Lakes Wetlands City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-1 -5	0.0	0.0	0.0	0.0
City or County Parks State or Federal Parks, Conservation Areas Recreational Areas - Other	-1	0.0	-0.5	-0.5	-1.0
State or Federal Parks, Conservation Areas Recreational Areas - Other	-5	-0.4	0.0	0.0	-5.0
Recreational Areas - Other	-10 -10	0.0	0.0	0.0	0.0
	-10	0.0	0.0	0.0	0.0
Gubiolai		-13.8	-16.6	-9.9	-20.7
ght-of-Way Characteristics	10			Ι	
Residential	-10	-10.0	-9.3	-2.6	-2.6
Commercial/Industrial	-5	-5.0	-5.0	-5.0	-5.0
Agricultural Wooded/Forested	5 -2	5.0 -0.5	0.0 -0.7	0.0	0.0 -2.0
Existing R/W	8	5.3	6.0	8.0	2.1
Subtotal		-5.2	-8.9	0.4	-7.5
ests	40				
Right-of-Way	-1	-1.0	-0.6	-0.1	-0.9
Clearing	-1	-0.2	-0.4	0.0	-1.0
Construction Subtotal	-10	-10.0 -11.2	-9.5 -10.4	-8.2 -8.4	-9.8 -11.7
		-11.2	-10.4	-0.4	-11.1
eighted Scores					
Transmission Line Characteristics	5	3.8	3.1	5.0	-0.3
Buildings and Other Facilities Near Line Crossings	35 10	-32.7 -6.7	-35.0 -8.0	-30.1 -4.8	-14.5 -10.0
Right-of-Way Characteristics	10	-6. <i>7</i> -5.8	-10.0	0.4	-8.4
Costs	IU	-38.4	-35.6	-28.6	-40.0
Total	40			-58.0	-73.3 -15.2
Delta Delta %		-79.8 -21.8	-85.5 -27.5	0.0	157

^{*} Certain "Transmission Line Characteristics" criteria are given 0 importance factor, as those criteria are also included in the "Costs" crit double evaluation of like criteria.



City of Columbia Water and Light Mill Creek - McBaine 161-kV Transmssion Line Route Selection Matrix

Page 2 Line Routes	Mill Creek to McBaine 100 Series (Red Route)	Mill Creek to McBaine 200 Series (Blue Route)	Mill Creek to McBaine 300 Series (Green Route)	Mill Creek to McBaine 400 Series (Yellow Route)
Line Segments	C100, C110, C115, C120, C130, C140, C150	C200, C210, C220, C230, C240, C250, C260	C300, C310, C320, C330	C400, C410, C420, C430, C440
Transmission Line Characteristics				
Total Length (feet)	26699	23773		24682
Length Overhead (feet) Length Underground (feet)	26699	23773	20695 0	24682 0
Length Along Public Rights-of-Way (feet)	19067	14144	19339	4680
Length Along Private Rights-of-Way (feet)	7632	9629	1356	20002
Length Along Railroad (feet)	0	0	0	0
Length Parallel to Existing Lines (feet)	14424	15142 0	19339	4680
Length Double Circuit with 69-kV (feet) Length Double Circuit with 161-kV (feet)	0	0	-	0
Distribution Overbuild (feet)	0	0	0	0
Total Line Angles (degrees)	487	716	618	746
Buildings and Other Facilities Near Line (Distance	r			
	47	0.4	0.4	
Houses 0 - 100 feet Houses 100-200 feet	47 60	24 24	31 26	4
Multi-Family 0 - 100 feet	18	18		0
Multi-Family 100 - 200 feet	9	20	23	0
Commercial Structures 0 - 100 feet	4	4	6	4
Commercial Structures 100 - 200 feet	7	8		4
Churches 0 - 100 feet Churches 100 - 200 feet	0	·	0	-
Day Care 0 - 250 feet	0	1	1	1
Day Care 250 - 500 feet	0	0	0	0
Schools 0 - 250 feet	0	0	0	0
Schools 250 - 500 feet	1	2	2	2
Hospitals 0 - 100 feet Hospitals 100 - 200 feet	0	0	0	0
Nursing Homes 0 - 100 feet	0	0		
Nursing Homes 100 - 200 feet	1	0		
Fire Station 0 - 100 feet	0	0		0
Fire Station 100 - 200 feet	0	0	0	0
Crossings				
Parada Alana Public PAM	400	00	407	0.5
Parcels Along Public R/W Parcels on Private Property	129 16	96 20	107 4	25 27
Interstate Highways	0	0	0	0
Federal and State Numbered Highways	2	4	3	3
Other County Roads	0	0	0	
Railroads Perennial Streams, Rivers or Lakes	0	3	3	0
Wetlands (feet)	92	0		
City or County Parks (feet)	0	0		0
State or Federal Parks, Conservation Areas (feet)	0	0	0	0
Recreational Areas - Other (Trails) (feet)	0	0	0	0
Right-of-Way Characteristics				
Residential (feet)	2093	1939	546	546
Commercial/Industrial (feet)	263	263	263	263
Agricultural (feet)	6488	0	0	0
Wooded/Forested (feet) Existing R/W (feet)	4652 13203	6556 15015	0 19886	18646 5227
Costs				
Right-of-Way	\$85,707	\$52,906		
Clearing Construction	\$5,340 \$4,198,305	\$7,525 \$3,973,513		\$21,403 \$4,127,633
Total	\$4,196,305	\$4,033,945		\$4,127,633
Delta	\$823,578		\$0	
Delta %	23.76%	16.39%	0.00%	21.89%

