Fox Valley Area Study

34 kV Plan - Substation Portion

LOCATION	EQPT	RATING	2001	2002	2003			2004		
						4.0	3.5%		4.0	3.4%
TSS 79	2-40,1-60	121			reserve for cogen @ mallard lake	4.0	co-gen			
Spaulding		MVA			5P030471	-1.9	563			
					5P030461	-2.3	577-12			
	3-40,1-60	173			5P030436	1.2	260			
		MVA			5P030436	-1.7	572			
34 kV		pf=.995	119.2	113.1		116.4			120.4	
						2.5	3.8%		4.5	6.6%
TDC 577	1-40,1-60	68			5P030466,467,470	0.5	577-12			
South Elgin		MVA			5P030003 frm 57736 (sc trfr tr2 @ prairie)	-10.6	56-34			
					proposed sc switching sub2 tr1 from 13154 to 57736	10.7	131-34			
	2-60	102								
		MVA								
34 kV		pf=.986	52.1	65.3		68.4		replace 40 w/ 60 MVA to relieve 577-34	72.9	Repl 40/60
						8.0	4.1%		7.0	3.9%
TSS 131	4-40	181			5P030003 frm 13150 (sc xfr prairie-568)	-2.4	56-34	cut W485 and W553 to new L56902 to rlv 56-34 and L1315	-15.4	569-34
West Chicago		MVA			5P030003 frm 13156 (W485)	-14.3	56-34	extend L13159 to pick up W509 to rlv 111-34	12.0	111-34
					proposed sc switching sub2 tr1 from 13154 to 57736	-10.7	577-34			
34 kV		pf=.986	187.7	197.3		177.9			181.5	
						2.0	2.1%		4.0	4.6%
TSS 56	4-20	87			5P030004 (9.0), 5p030490 (1.4)	-10.4	56-34	instl DC2 to rlv 56-12	-6.0	56-34
North Aurora		MVA			5P030490	-0.6	111-34			
12 kV		pf=.986	95.0	96.0		87.0			85.0	
						8.5	6.6%		7.5	4.3%
TSS 56								instl DC2 to rlv 56-12	6.0	56-12
North Aurora					5P030003 frm 13150 (sc xfr prairie-568)	2.4	131-34	cut W485 and W553 to new L56902 to rlv 56-34 and L1315	-14.4	569-34
					5P030003 frm 13156 (W485)	14.3	131-34	rlv DCW50	-1.0	106-34
	4-40	179			5P030004 (9.0), 5p030490 (1.4)	10.4	56-12	install 3.6MVAR cap bank at W511 to rlv L5635	-0.5	
		MVA			5P030468	0.4	569-12			
					5P030003 frm 57736 (sc trfr tr2 @ prairie)	10.6	577-34			
34 kV		pf=.981	126.9	129.5		176.1	4th 40		173.7	
						5.0	3.5%		4.8	3.4%
TSS 111	2-60	143			lucent	-6.0	Naperville			
Electric Junction		MVA			5P031403	-1.0	581-12			
					5P030490	0.6	56-12			
								extend L13159 to pick up W509 to rlv 111-34	-12.0	131-34
	3-60	210								
		MVA								
34 kV		pf=.999	149.8	142.4		141.0			133.8	
						1.3	3.7%		1.3	4.0%
TDC 569	1-40,1-20	34			5P030468	-0.4	56-34			
Sugar Grove		MVA			5P030491	-3.7	106-34			
12 kV		pf=.988	30.7	35.4		32.6			33.9	
TDC 569	1-60	30						install L56902 to rlv 56-34 and L13156	14.4	56-34
Sugar Grove		MVA						install L56902 to rlv 56-34 and L13156	15.4	131-34
	2-60	102								
		MVA								
34 kV			0.0	0.0		0.0		install new TDC w/ 1 60 MVA	29.8	1st 60
TDC 584	1-40	30								
Orchard Road		MVA								
	2-40	68								
12 kV		MVA	0.0	0.0		0.0			0.0	
TSS	1-40	50								
Elburn		MVA								
34 kV			0.0	0.0		0.0			0.0	

TOTAL AREA LOAD	761.4	779.0	799.4	831.0
ANNUAL AREA GROWTH			31.3	33.1
sum of 12kv load			119.6	118.9
sum of 12kv allowables			121.0	121.0
sum of 34kv load			679.8	712.1
sum of 34kv allowable			692.0	756.0
AVERAGE 12KV AREA LOADING			99%	98%
AVERAGE 34KV AREA LOADING			98%	94%

Fox Valley Area Study

34 kV Plan - Substation Port

LOCATION	EQPT	RATING	2005			2006		
				4.0	3.3%		4.0	3.4%
TSS 79	2-40,1-60	121	sw Hoffer & others frm L7969 to L57739	-8.0	577-34			
Spaulding		MVA						
	3-40,1-60	173						
		MVA						
34 kV		pf=.995		116.4			120.4	
				4.5	6.2%		4.5	5.3%
TDC 577	1-40,1-60	68	rlv DCW39-1	-1.0	569-34			
South Elgin		MVA	sw Hoffer & others frm L7969 to L57739	8.0	577-34			
	2-60	102						
		MVA						
34 kV		pf=.986		84.4			88.9	
				6.2	3.4%		5.5	3.1%
TSS 131	4-40	181	sc xfr frm W565- sub5-tr1 to W568 sub8-B2	-9.0	56-34			
West Chicago		MVA	sc xfr frm W513- sub3-tr1 to W568 sub8-B1	-4.0	56-34			
34 kV		pf=.986		174.7			180.2	
				2.6	3.1%		2.6	3.1%
			Intl 2nd tr @DCW22 to rlv 56-12	-3.0	56-34	install DC3 to rlv 56-12	-6.0	56-34
TSS 56	4-20	87						
North Aurora		MVA						
12 kV		pf=.986		84.6			81.2	
				6.8	3.9%		6.1	3.5%
TSS 56			sc xfr frm W565- sub5-tr1 to W568 sub8-B2	9.0	131-34	rlv DCW50-1 to DC3	1.0	569-34
North Aurora			sc xfr frm W513- sub3-tr1 to W568 sub8-B1	4.0	131-34	install DC3 to rlv 56-12	6.0	56-12
			Install L56901 and cut DCW50 & 51 to new L56901 to rlv 56-34	-23.4	569-34	install L56904, pick up W568-b1 & tap to Prairie2	-16.3	569-34
	4-40	179	Intl 2nd tr @DCW22 to rlv 56-12	3.0	56-12	and cut W484 to L5639 to rlv OL on L5635		
		MVA						
34 kV		pf=.981	Extend L5633 to W520 for new point of service to Batavia to rlv L563	173.1			169.9	
			Bat xfr from W510-2 (L5637) to new point of service					
				4.8	3.6%		4.7	3.4%
TSS 111	2-60	143						
Electric Junction		MVA						
	3-60	210						
		MVA						
34 kV		pf=.999		138.6			143.3	
				1.3	3.8%		1.1	3.8%
TDC 569	1-40,1-20	34	install DC1 to rlv 569-12	-6.0	569-34			
Sugar Grove		MVA						
12 kV		pf=.988		29.2			30.3	
				2.0	6.7%		3.8	5.7%
TDC 569	1-60	30	install DC1 to rlv 569-12	6.0	569-12	rlv DCW50-1 to DC3	-1.0	56-34
Sugar Grove		MVA	Install L56901 and cut DCW50 & 51 to new L56901 to rlv 56-34	23.4	56-34	install L56904, pick up W526	15.5	56-34
			install DC5 to rlv DCW19	5.0	83-34	and cut W484 to L5639 to rlv OL on L5635		
	2-60	102	rlv DCW39-1	1.0	577-34			
		MVA						
34 kV			Install 2nd 60 MVA	67.2	2nd 60		85.5	
TDC 584	1-40	30						
Orchard Road		MVA						
	2-40	68						
12 kV		MVA		0.0			0.0	
TSS	1-40	50						
Elburn		MVA						
34 kV				0.0			0.0	

TOTAL AREA LOAD	868.2	899.7
ANNUAL AREA GROWTH	32.2	32.3
sum of 12kv load	113.8	111.5
sum of 12kv allowables	121.0	121.0
sum of 34kv load	754.4	788.2
sum of 34kv allowable	828.0	828.0
AVERAGE 12KV AREA LOADING	94%	92%
AVERAGE 34KV AREA LOADING	91%	95%

Fox Valley Area Study

34 kV Plan - Substation Port

LOCATION	EQPT	RATING	2007			2008			
			4.0	3.3%		3.9	3.1%		
TSS 79	2-40,1-60	121							Install new L79XX to rlv L57736
Spaulding		MVA							(cut DCW33 to L79XX, cut DCW39 to L7962)
	3-40,1-60	173							
		MVA							
34 kV		pf=.995	install 4th 40 MVA to rlv 79-34	124.4	4th 40		128.3		
			4.5	5.1%		4.4	4.7%		
TDC 577	1-40,1-60	68							Install new L79XX to rlv L57736
South Elgin		MVA							(cut DCW33 to L79XX, cut DCW39 to L7962)
	2-60	102							
		MVA							
34 kV		pf=.986		93.4			97.8		
			5.4	3.0%		5.3	3.0%		
TSS 131	4-40	181	sc xfr frm prairie (sub6) tr2 to new sub9-b2	2.5	569-34	Install L111YY to W509 to rlv 131-34	-21.0	111-34	
West Chicago		MVA	network shift because of new TR at 111-34	-10.0	111-34				
34 kV		pf=.986		178.1			162.4		
			2.5	3.1%		2.5	3.0%		
									new 584 fdr to rlv 56-12
TSS 56	4-20	87							
North Aurora		MVA							
12 kV		pf=.986		83.7			86.2		
			6.1	3.6%		6.0	3.4%		
TSS 56			BAT transfer from W519 (L11162) to new point of service (L5637)	14.0	111-34				rlv 56-34 via new 584 fdr (DC7)
North Aurora			extend L56904 and pick up W484 to rlv 56-34	-16.0	569-34	install L111XX pick up DCW22-1&2 to rlv 56-34	-13.9	111-34	
			BAT transfer from W510-1 (L11163) to new point of service (L5637)			rlv DCW50-2 to DC7	3.0	569-34	
	4-40	179	install DC7 to rlv W50-1	3.0	569-34				
		MVA							
34 kV		pf=.981		177.0			172.1		
			4.7	3.3%		4.6	3.1%		
TSS 111	2-60	143	BAT transfer from W519 (L11162) to new point of service (L5637)	-7.0	56-34	install L111XX pick up DCW22-1&2 to rlv 56-34	13.9	56-34	
Electric Junction		MVA	BAT transfer from W510-1 (L11163) to new point of service (L5637	-7.0	56-34	Install L111YY to W509 to rlv 131-34	21.0	111-34	
			rlv DCW148	-1.0	581				
			network shift because of new TR at 111-34	3.0	103-34				
	3-60	210	network shift because of new TR at 111-34	3.0	120-34				
		MVA	network shift because of new TR at 111-34	10.0	131-34				
34 kV		pf=.999	install 3rd 60 MVA to reliev 111-34	149.0	3rd 60		188.5		
			1.1	3.6%		1.2	3.8%		
TDC 569	1-40,1-20	34							
Sugar Grove		MVA							
12 kV		pf=.988		31.4			32.6		
			3.8	4.4%		3.0	3.0%		
TDC 569	1-60	30	install DC7 to rlv W50-1	-3.0	56-34	rlv DCW50-2 to DC7	-3.0	56-34	rlv 569-34 via new 584 fdr (DCW50-1)
Sugar Grove		MVA	extend L56904 and pick up W484 to rlv 56-34	16.0	56-34				
			sc xfr frm prairie (sub6) tr2 to new sub9-b2	-2.5	131-34				
	2-60	102							
		MVA							
34 kV				99.8			99.8		
TDC 584	1-40	30							new 584 fdr to rlv 56-12
Orchard Road		MVA							rlv 56-34 via new 584 fdr (DC7)
	2-40	68							rlv 569-34 via new 584 fdr (DCW50-1)
12 kV		MVA		0.0			0.0		install new TDC with 1-40 MVA
TSS	1-40	50							
Elburn		MVA							
34 kV				0.0			0.0		

TOTAL AREA LOAD	936.8	967.7
ANNUAL AREA GROWTH	32.1	30.9
sum of 12kv load	115.1	118.8
sum of 12kv allowables	121.0	121.0
sum of 34kv load	821.7	848.9
sum of 34kv allowable	947.0	947.0
AVERAGE 12KV AREA LOADING	95%	98%
AVERAGE 34KV AREA LOADING	87%	90%

Fox Valley Area Study

34 kV Plan - Substation Port

LOCATION	EQPT	RATING	2009	2010	2011	2012
			3.8 3.0%	3.6 2.4%	3.5 2.3%	3.3 2.1%
TSS 79	2-40,1-60	121	16.0 577-34			sc xfr frm W513 Sub3 tr3 to sub9 B2 -0.8 131-34
Spaulding		MVA				sc xfr frm W513 Sub3 tr3 to sub9 B1 -0.8 131-34
	3-40,1-60	173 MVA				
34 kV		pf=.995	148.1	151.7	155.2	156.9
			4.2 4.3%	4.0 4.7%	3.8 4.2%	3.6 3.8%
TDC 577	1-40,1-60	68	-16.0 79-34			
South Elgin		MVA				
	2-60	102 MVA				
34 kV		pf=.986	86	90	93.8	97.4
			5.1 3.1%	4.9 2.9%	4.7 2.7%	4.5 2.5%
TSS 131	4-40	181				sc xfr frm W513 Sub3 tr3 to sub9 B2 0.8 79-34
West Chicago		MVA				sc xfr frm W513 Sub3 tr3 to sub9 B1 0.8 79-34
						cut W461 to L5639 to rlv OL on L1315: -14.9 56-34
34 kV		pf=.986	167.5	172.4	177.1	168.3
			2.5 2.9%	2.3 2.8%	2.2 2.6%	2.0 2.5%
			-6.0 584		new 584 fdr to rlv 56-12 -6.0 584	
TSS 56	4-20	87				
North Aurora		MVA				
12 kV		pf=.986	82.7	85.0	81.2	83.2
			5.6 3.3%	5.4 3.2%	5.0 2.8%	5.0 2.8%
TSS 56			-6.5 584		install new 584 fdr to rlv 56-34 via DC: -6.0 584	cut W461 to L5639 to rlv OL on L1315: 14.9 131-34
North Aurora						new Elburn TSS line to rlv 56-34 -24.0 TSS
	4-40	179 MVA				
34 kV		pf=.981	171.2	176.6	175.6	171.5
			4.4 2.3%	4.4 2.3%	4.0 2.0%	3.8 1.9%
TSS 111	2-60	143				
Electric Junction		MVA				
	3-60	210 MVA				
34 kV		pf=.999	192.9	197.3	201.3	205.1
			1.1 3.4%	1.1 3.3%	1.0 3.5%	1.0 3.4%
TDC 569	1-40,1-20	34		new 584 fdr to rlv 569-12 -6.0 584		
Sugar Grove		MVA				
12 kV		pf=.988	33.7	28.8	29.8	30.8
			2.8 2.8%	2.6 2.7%	2.4 2.4%	2.3 2.3%
TDC 569	1-60	30	-6.0 584		rlv 569-34 via existing 584 fdr -2.0 584	new Elburn TSS line to rlv 569-34 -16.0 TSS
Sugar Grove		MVA				
	2-60	102 MVA				
34 kV			96.6	99.2	99.6	85.9
				0.4 2.2%	0.5 2.0%	0.7 1.8%
TDC 584	1-40	30	6.0 56-12	new 584 fdr to rlv 569-12 6.0 569-12	new 584 fdr to rlv 56-12 6.0 56-12	
Orchard Road		MVA	6.5 56-34		rlv 569-34 via existing 584 fdr 2.0 569-34	
	2-40	68	6.0 569-34		install new 584 fdr to rlv 56-34 via DC: 6.0 56-34	
12 kV		MVA	18.5 instl TDC	24.9	install 2nd 40 MVA 39.4 2nd 40	40.1
TSS	1-40	50				new Elburn TSS line to rlv 56-34 24.0 56-34
Elburn		MVA				new Elburn TSS line to rlv 569-34 16.0 569-34
34 kV			0.0	0.0	0.0	install new TSS with 1-40 MVA 40.0 new TSS

(Load is shown in MVA)

TOTAL AREA LOAD	997.2	1025.9	1053.0	1079.2
ANNUAL AREA GROWTH	29.5	28.7	27.1	26.2
sum of 12kv load	134.9	138.7	150.4	154.1
sum of 12kv allowables	151.0	151.0	189.0	189.0
sum of 34kv load	862.3	887.2	902.6	925.1
sum of 34kv allowable	947.0	947.0	947.0	997.0
AVERAGE 12KV AREA LOADING	89%	92%	80%	82%
AVERAGE 34KV AREA LOADING	91%	94%	95%	93%

Fox Valley Area Study

34 kV Plan - Substation Port

LOCATION	EQPT	RATING		2013	
				3.1	2.0%
TSS 79 Spaulding	2-40,1-60	121 MVA			
	3-40,1-60	173 MVA			
34 kV		pf=.995		160	
				3.4	3.5%
TDC 577 South Elgin	1-40,1-60	68 MVA			
	2-60	102 MVA			
34 kV		pf=.986		100.8	
				4.2	2.5%
TSS 131 West Chicago	4-40	181 MVA	Extend L13159 into W509 for new point of svce to Batavi	7.0	111-34
34 kV		pf=.986		179.5	
				1.8	2.2%
TSS 56 North Aurora	4-20	87 MVA			
12 kV		pf=.986		85.0	
				4.3	2.5%
TSS 56 North Aurora					
	4-40	179 MVA			
34 kV		pf=.981		175.8	
				3.6	1.8%
TSS 111 Electric Junction	2-60	143 MVA	Extend L13159 into W509 for new point of svce to Batavi	-7.00	131-34
	3-60	210 MVA			
34 kV		pf=.999		201.7	
				1.0	3.2%
TDC 569 Sugar Grove	1-40,1-20	34 MVA			
12 kV		pf=.988		31.8	
				2.2	2.6%
TDC 569 Sugar Grove	1-60	30 MVA			
	2-60	102 MVA			
34 kV				88.1	
				0.7	1.7%
TDC 584 Orchard Road	1-40	30 MVA			
	2-40	68 MVA			
12 kV				40.8	
				1.0	2.5%
TSS Elburn	1-40	50 MVA			
34 kV				41.0	

TOTAL AREA LOAD	1104.5
ANNUAL AREA GROWTH	25.3
sum of 12kv load	157.6
sum of 12kv allowables	189.0
sum of 34kv load	946.9
sum of 34kv allowable	997.0
AVERAGE 12KV AREA LOADING	83%
AVERAGE 34KV AREA LOADING	95%

Fox Valley Area Study

34 kV Plan - 34 kV Line Portion

LINE	COND	RATING	2001	2002	2003	2004	2005
L7962	266 ACSR	35/45	27.2	26.8	1.0 27.8	1.0 28.8	1.0 29.8
L57736	477 AL	46/55	18.0	17.8	2.2 5P030472 (DCW39) 14.4 L57737 5P030003 (sc work to feed prairie-2 frm W568) -10.6 L5639 sc switching sub2 tr1 from 13154 to 57736 10.7 L13154 34.5	3.0 37.5	2.6 rlv DCW39-1 -1.0 L56902 39.1
L13155	477 AL	38/55 Planning Limit	25.8	21.6	1.3 22.9	1.3 24.2	1.3 sc xfr frm W565- sub5-tr1 to W568 sub8-B2 -9.0 L5639 16.5
L13156	477 AL	38/55 Planning Limit	48.50	53.9	1.5 5P030003 (W485) -14.3 L5639 41.1	1.0 cut W485 and W553 to new L56902 to rlv 56-34 and L13156 -15.4 131-34 26.7	1.0 sc xfr frm W565 sub5-tr3 to sub9 b1 0.0 extend L13156 to new point of svce for sc (sub9) 27.7
L13159	477 AL	46/55	10.9	16.4	0.5 16.9	0.5 extend L13159 to pick up W509 to rlv 111-34 12.0 L11167A extend L13159 to pick up W509 to rlv 111-34 12.0 L11167B 41.4	0.5 41.9
L13150	477 AL	46/55	27.2	25.9	2.3 5P030003 (sc xfr frm prairie-1 to W568) -2.4 L5639 25.8	2.7 28.5	2.5 sc xfr frm W513- sub3-tr1 to W568 sub8-B1 -4.0 L5639 27.0
L13153	477 AL	39/55	21.7	22.6	0.4 23.0	0.8 23.8	0.8 24.6
L13154	477 AL	46/55	41.8	44.8	1.3 sc switching sub2 tr1 from 13154 to 57736 -10.7 L57736 35.4	0.7 36.1	0.7 36.8
L5633	4/0 CU	35/45	32.1	34.3	2.2 5P030003 (W102, W484) -13.8 L5635 5P030003 (W555) -1.6 L5639 5P030468 0.4 569-12 21.5	2.2 rlv DCW50 -1.0 L10641 22.7	0.7 Install L56901 and cut DCW50 & 51 to new L56901 to rlv 56-34 -23.4 L56901 Extend L5633 to W520 for new point of service to Batavia to rlv L5637 20.0 L5637 Bat xfr from W510-2 (L5637) to New Line 20.0
L5635	4/0 CU	35/45	26.7	22.6	2.0 5P030003 cap at W484 being switched to L5635 -1.0 5P030003 (W102, W484) 13.8 L5633 37.4	1.0 install 3.6MVAR cap bank at W511 to rlv L5635 -2.3 switch DCW102 to L5639 to rlv L5635 -2.1 L5639 34.0	1.0 35.0
L5637	3/0 + ATO	30/39	22.0	27.1	1.1 28.2	1.0 29.2	1.0 Extend L5633 to W520 for new point of service to Batavia to rlv L5637 -20.0 L5633 bat xfr from W510-2 (L5637) to new line 10.2
L5639	477 AL	46/55	0.0	0.0	0.0 5P030003 (sc xfr frm prairie-1 to W568) 2.4 L13150 5P030003 (sc work to feed prairie-2 frm W568) 10.6 L57736 5P030003 (W485) 14.3 L13156 5P030003 (W555) 1.6 L5633 26.0	2.0 cut W485 and W553 to new L56902 to rlv 56-34 and L13156 -14.4 569-34 instl DC2 6.0 56-12 switch DCW102 to L5639 to rlv L5635 2.1 L5635 21.7	1.0 sc xfr frm W513- sub3-tr1 to W568 sub8-B1 4.0 L13150 sc xfr frm W565- sub5-tr1 to W568 sub8-B2 9.0 L13155 35.7
L56XX	477 AL	46/55	0.0	0.0	0.0	0.0	0.0
L11162	477 AL	35/45	22.7	23.7	1.0 24.7	1.0 25.7	1.0 bat xfr from W519 (L5637) to W510-1 (L11163) -10.0 L11163 16.7
L11163	477 AL	35/45	25.1	23.9	0.8 5P030473 -1.1 L11167 5P030490 0.6 56-12 24.2	0.5 24.7	0.5 bat xfr from W519 (L5637) to W510-1 (L11163) 10.0 L11162 35.2
L11167A	477 AL	35/45	18.2	27.5	2.0 29.5	2.0 extend L13159 to pick up W509 to rlv 111-34 -12.0 L13159 19.5	2.0 21.5
L111XX	477 AL	46/55			0.0	0.0	0.0
L111YY	477 AL	46/55			0.0	0.0	0.0
L56901	477 AL	35/45			0.0	0.0	install DC1 to rlv 569-12 6.0 569-12 Install L56901 and cut DCW50 & 51 to new L56901 to rlv 56-34 23.4 L5633 29.4
L56902	477 AL	44/55			0.0	install L56902 to rlv 56-34 and L13156 14.4 56-34 install L56902 to rlv 56-34 and L13156 15.4 131-34 Install 1.8 MVAR 34 kV line cap at W553 on L56902 0 29.8	0.5 install DC5 to rlv DCW19 5.0 L8331 rlv DCW39-1 1.0 L57736 36.3
L56904	477 AL	44/55				0.0	0.0
Line #1	477 AL	44/55					
Line #2	477 AL	44/55					

Fox Valley Area Study

34 kV Plan - 34 kV Line

LINE	COND	RATING	2006	2007	2008	
L7962	266 ACSR	35/45	1.0 30.8	1.0 31.8	1.0 32.8	0.9 Install new L79XX to rlv L57736 -16.4 (cut DCW33 to L79XX, cut DCW39 to L7962) 16.0 Install 3.6 MVAR 34 kV line cap on L7962 0 33.3
L57736	477 AL	46/55	2.6 rlv DCW39-2 -1.0 L57737 40.7	2.6 43.3	2.5 45.8	2.4 Install new L79XX to rlv L57736 -16.0 (cut DCW33 to L79XX, cut DCW39 to L7962) 32.2
L13155	477 AL	38/55 Planning Limit	1.0 17.5	1.0 sc xfr to new sub9-b2 -0.9 L13153 17.6	0.5 18.1	0.5 sc xfr frm W565 Sub5 tr1 to sub9 B2 -0.9 17.7
L13156	477 AL	38/55 Planning Limit	0.4 28.1	0.4 sc xfr frm sub9-b1 to new sub9-b2 -3.2 L13153 25.3	0.2 25.5	0.2 25.7
L13159	477 AL	46/55	0.5 42.4	0.5 42.9	0.5 install L111YY pick up W509 to rlv 131-34 -21.0 L111YY 22.4	0.5 22.9
L13150	477 AL	46/55	2.5 29.5	2.5 sc xfr to new sub9-b2 -0.9 L13153 31.1	2.3 33.4	2.3 35.7
L13153	477 AL	39/55	0.8 25.4	0.8 sc xfr to new sub9-b2 8.4 various new point of svce to sc (sub9 b2) 34.6	0.9 35.5	0.9 sc xfr frm W565 Sub5 tr1 to sub9 B2 0.9 37.3
L13154	477 AL	46/55	0.6 37.4	0.6 sc xfr to new sub9-b2 -0.9 L13153 37.1	0.6 37.7	0.6 38.3
L5633	4/0 CU	35/45	0.0 rlv DCW50-1 to DC3 1.0 L56901 install DC3 to rlv 56-12 6.0 56-12 27.0	0.7 install DC7 to rlv W50-1 3.0 L56901 30.7	0.7 rlv DCW50-2 to DC7 3.0 L56901 34.4	0.6 rlv 56-34 via new 584 fdr (DC7) -6.0 29.0
L5635	4/0 CU	35/45	1.0 install L56904, pick up W568 & tap to Prairie2 -15.8 L5639 cut W484 to L5639 to rlv OL on L5635 20.2	1.0 21.2	0.9 22.1	0.9 23.0
L5637	3/0 + ATO	30/39	0.5 10.7	0.5 BAT transfer from W519 (L11162) to new point of service (L5637) 7.0 L11162 BAT transfer from W510-1 (L11163) to new point of service (L5637) 7.0 L11163 new point of svce to bat 25.2	1.0 26.2	1.0 27.2
L5639	477 AL	46/55	0.9 install L56904, pick up W568 & tap to Prairie2 -16.3 L56904 and cut W484 to L5639 to rlv OL on L5635 15.8 L5635 36.1	0.9 extend L56904 and pick up W484 to rlv 56-34 -16.0 L56904 21.0	0.5 21.5	0.5 22.0
L56XX	477 AL	46/55	0.0	0.0	0.0	0.0
L11162	477 AL	35/45	1.0 17.7	1.0 BAT transfer from W519 (L11162) to new point of service (L5637) -7.0 L5637 11.7	0.6 12.3	0.6 12.9
L11163	477 AL	35/45	0.5 35.7	0.5 BAT transfer from W510-1 (L11163) to new point of service (L5637) -7.0 L5637 install DCW29 tr3 to rlv DCW29-1 and DCW115-2 -1.0 L11167A 28.2	0.5 28.7	0.5 29.2
L11167A	477 AL	35/45	2.0 23.5	2.0 network shift 5.0 L11167B for DCW115 rlf to W290 1.0 L11163 install DCW29 tr3 to rlv DCW29-1 and DCW115-2 -2.5 L11164 29.0	1.9 30.9	1.9 32.8
L111XX	477 AL	46/55	0.0	0.0	install L111XX pick up DCW22-1&2 to rlv 56-34 13.9 L5640 13.9	0.0 13.9
L111YY	477 AL	46/55	0.0	0.0	install L111YY pick up W509 to rlv 131-34 21.0 L13159 Install 3.6 MVAR 34 kV line cap at W509 on L111YY 0.0 21.0	0.0 21.0
L56901	477 AL	35/45	1.5 rlv DCW50-1 to DC3 -1.0 L5633 29.9	1.5 install DC7 to rlv W50-1 -3.0 L5633 28.4	1.0 rlv DCW50-2 to DC7 -3.0 L5633 26.4	1.0 27.4
L56902	477 AL	44/55	0.5 36.8	0.5 37.3	0.5 37.8	0.5 38.3
L56904	477 AL	44/55	install L56904, pick up W568 & tap to Prairie2 16.3 L5639 and cut W484 to L5639 to rlv OL on L5635 Install 3.6 MVAR 34 kV line cap on L56904 0.0 16.3	1.0 extend L56904 and pick up W484 to rlv 56-34 16.0 L5639 sc xfr frm prairie (sub6) tr2 to new sub9-b2 -2.5 L13153 Install 3.6 MVAR 34 kV line cap on L56904 0.0 30.8	1.0 31.8	1.0 32.8
Line #1	477 AL	44/55				
Line #2	477 AL	44/55				

Fox Valley Area Study

34 kV Plan - 34 kV Line

LINE	COND	RATING	2009	2010	2011	2012	2013
L7962	266 ACSR	35/45	L79XX L57736	0.9 34.2	0.9 35.1	0.9 sc xfr frm W513 Sub3 tr3 to sub9 B2 -0.8 L13153 -0.8 L13156 34.4	0.9 35.3
L57736	477 AL	46/55	L7962	2.3 34.5	2.2 36.7	2.1 38.8	2.0 40.8
L13155	477 AL	38/55 Planning Limit	L13153	0.5 18.2	0.5 18.7	0.5 19.2	0.5 19.7
L13156	477 AL	38/55 Planning Limit		0.2 25.9	0.2 26.1	0.2 sc xfr frm W513 Sub3 tr3 to sub9 B1 0.8 L7962 27.1	0.2 27.3
L13159	477 AL	46/55		0.5 23.4	0.5 23.9	0.5 24.4	0.5 Extend L13159 into W509 for new point of svce to Batavia 7.0 L111YY 31.9
L13150	477 AL	46/55		2.3 38.0	2.1 40.1	2.1 42.2	2.0 44.2
L13153	477 AL	39/55	L13155	0.9 38.2	0.9 39.1	0.9 sc xfr frm W513 Sub3 tr3 to sub9 B2 0.8 L7962 cut W461 to L5639 to rlv OL on L13153 -14.9 L5639 25.9	0.9 26.8
L13154	477 AL	46/55		0.6 38.9	0.6 39.5	0.6 40.1	0.6 40.7
L5633	4/0 CU	35/45	584	0.5 29.5	0.4 install new 584 fdr to rlv 56-34 via DC3 -6.0 584 23.9	0.4 24.3	0.4 24.7
L5635	4/0 CU	35/45		0.9 23.9	0.9 24.8	0.9 25.7	0.9 26.6
L5637	3/0 + ATO	30/39		0.5 27.7	0.5 28.2	0.5 28.7	0.5 29.2
L5639	477 AL	46/55		0.5 22.5	0.5 23.0	0.5 cut W461 to L5639 to rlv OL on L13153 14.9 L13153 new Elburn TSS line to rlv 56-34 -24.0 Line #1 Install 3.6 MVAR 34 kV line cap on L5639 0.0 13.9	0.5 23.5
L56XX	477 AL	46/55		 0.0	 0.0	 0.0	 0.0
L11162	477 AL	35/45		0.6 13.5	0.6 14.1	0.6 14.7	0.6 15.3
L11163	477 AL	35/45		0.5 29.7	0.5 30.2	0.5 30.7	0.5 31.2
L11167A	477 AL	35/45		1.9 cut DCW29-1 to L111YY to rlv L11167A -7.0 L111YY 27.7	1.5 29.2	1.5 30.7	1.5 32.2
L111XX	477 AL	46/55		1.0 14.9	1.0 15.9	1.0 16.9	1.0 17.9
L111YY	477 AL	46/55		1.0 cut DCW29-1 to L111YY to rlv L11167A 7.0 L11167A Install 3.6 MVAR 34 kV line cap on L111YY 0.0 29.0	1.0 30.0	1.0 31.0	1.0 Extend L13159 into W509 for new point of svce to Batavia -7.0 L13159 25.0
L56901	477 AL	35/45		1.0 28.4	1.0 rlv 569-34 via existing 584 fdr -2.0 584 27.4	1.0 28.4	1.0 29.4
L56902	477 AL	44/55		0.5 38.8	0.5 39.3	1.0 new Elburn TSS line to rlv 569-34 -8.0 Line #2 32.3	1.0 33.3
L56904	477 AL	44/55		1.0 33.8	1.0 34.8	1.0 new Elburn TSS line to rlv 569-34 -8.0 Line #2 27.8	1.0 28.8
Line #1	477 AL	44/55			 0.0	new Elburn TSS line to rlv 56-34 24.0 Line #1 Install 3.6 MVAR 34 kV line cap on Elburn TSS Line#1 0.00 24.0	0.6 24.6
Line #2	477 AL	44/55			 0.0	new Elburn TSS line to rlv 569-34 8.0 L56902 new Elburn TSS line to rlv 569-34 8.0 L56904 16.0	0.4 Install 3.6 MVAR 34 kV line cap on Elburn TSS Line #2 0.0 16.4

Fox Valley Area Study

34 kV Plan - DC Portion

LOCATION	EQPT	RATING	2000	2001	2002	2003	2004	2005	2006	2007	2008
W19 #1 12 kV W195 L8331	6.25	7.4	8.4	6.80	6.7	0.2 6.9	0.2 7.1	0.2 instl DC5 to rlv DCW19 -2.5 DC 5 4.8	0.2 5.0	0.2 5.2	0.2 5.4
W19 #2 12 kV W196 L8331	9.375	8.2	6.9	8.50	6.8	0.5 7.3	0.5 7.8	0.5 instl DC5 to rlv DCW19 -2.5 DC 5 5.8	0.4 6.2	0.4 6.6	0.4 7.0
W39 #1 12 kV W390 L57736	9.375	8.2	7.2	7.30	7.6	0.2 5P030470 0.2 577-12 8.0	0.2 8.2	0.2 rlv DCW39-1 -1.0 DC 5 7.4	0.2 7.6	0.2 7.8	0.2 8.0
W39 #2 12 kV W391 L57736	9.375	8.7	6.9	8.50	8.9	0.2 5P030466 -0.9 577-12 8.2	0.2 8.4	0.2 8.6	0.2 rlv DCW39-2 -1.0 W20 7.8	0.2 8.0	0.2 8.2
W50 #1 12 kV W500 L5633/L56901	6.25	7.4	6.70	7.10	5.4	0.7 5P030468 0.4 569-12 6.5	0.7 7.2	0.7 cut DCW50 & 51 to rlv 56-34 0.0 L56901 7.9	0.6 rlv DCW50-1 -1.0 DC 3 7.5	0.6 rlv DCW50-1 -3.0 DC7 rlv DCW50-2 1.0 DCW50-2 6.1	0.6 6.7
W50 #2 12 kV W501 L5633/L56901	9.375	8.4	6.90	9.20	7.1	0.8 7.9	0.8 rlv DCW50 -1.0 W182 7.7	0.8 rlv DCW50-2 -1.0 DC#1 cut DCW50 & 51 to rlv 56-34 0.0 L56901 7.5	0.7 8.2	0.7 rlv DCW50-2 -1.0 DCW50-1 7.9	0.7 rlv DCW50 -3.0 DC7 5.6
W51 12 kV W511 L5633/L56901	6.25	7.4	3.90	3.40	5.9	0.2 6.1	0.2 6.3	0.2 cut DCW50 & 51 to rlv 56-34 0.0 L56901 6.5	0.2 6.7	0.2 6.9	0.2 7.1
W102 12 kV W192 L5635/ L5639	6.25	7.4	1.9	1.80	1.7	0.2 1.9	0.2 2.1	0.2 2.3	0.2 2.5	0.2 2.7	0.2 2.9
W16 #1 12 kV W160 L5631	9.375	8.2	5.9	6.70	7.1	0.2 7.3	0.2 7.5	0.2 7.7	0.2 7.9	0.2 8.1	0.2 rlv DCW16 -1.0 DC7 7.3
W16 #2 12 kV W161 L5631	6.25	7.4	6.4	6.70	5.1	0.2 5P030490 1.4 56-12 6.7	0.2 6.9	0.2 7.1	0.2 7.3	0.20 7.5	0.2 rlv DCW16 -1.0 DC7 6.7
W114 4 kV W146,147 L5631	3.125	3.7	3.6	3.20	3.2	0.0 3.2	0.0 3.2	0.0 3.2	0.0 3.2	0.0 3.2	0.0 3.2
W152 4 kV W5240,5241, 5242,5243 L5631	9.375	8.2	6.3	6.00	6.1	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.1	0.0 6.1
SS513 #54 12 kV W1310 L10642	9.375	8.2	8.5	7.70	7.6	0.2 7.8	0.2 8.0	0.2 8.2	0.2 rlv W1310 -0.6 W1312 7.8	0.2 8.0	0.2 8.2
SS513 #55 12 kV W1311 L10641	6.25	7.4	7.1	6.60	5.6	0.1 5.7	0.1 5.8	0.1 5.9	0.1 6.0	0.1 6.1	0.1 6.2
SS513 #56 12 kV W1312 L10642	6.25	7.4	7.3	6.80	7.3	0.1 7.4	0.1 Rlv W1312 -0.5 W1313 7.0	0.1 7.1	0.1 rlv W1310 0.6 W1310 rlv W1310 -0.6 W1313 7.2	0.1 7.3	0.1 7.4
SS513 #57 12 kV W1313 L10641	9.375	8.2	6.7	5.70	5.7	0.2 5.9	0.2 Rlv W1312 0.5 W1312 6.6	0.2 6.8	0.2 rlv W1310 0.6 W1312 7.6	0.2 7.8	0.2 8.0
SS513 #4 4 kV W102,105,108 L10642	6.25	7.4	5.4	5.30	5.3	0.0 5.3	0.0 5.3	0.0 5.3	0.0 5.3	0.0 5.3	0.0 5.3
SS513 #5 4 kV W107,109,110 L10642	6.25	7.4	5.9	5.90	5.9	0.0 5.9	0.0 5.9	0.0 5.9	0.0 5.9	0.0 5.9	0.0 5.9
W148 12 kV W140 L11158	6.25	7.4	5.3	6.50	6.6	0.4 5P031403 -1.0 581 6.0	0.4 6.4	0.4 6.8	0.4 7.2	0.4 rlv DCW148 -1.0 581 6.6	0.4 7.0
W115 #1 12 kV W175 L11163	9.375	8.2	4.7	5.60	4.7	0.1 5P030490 0.6 56-12 5.4	0.1 5.5	0.1 5.6	0.1 5.7	0.1 5.8	0.1 5.9
W115 #2 12 kV W152 L11163	9.375	8.2	7.3	7.80	8.5	0.2 5P030473 -1.1 W290 7.6	0.2 7.8	0.2 8.0	0.2 8.2	0.2 for DCW115 rlf -1.0 W290 7.4	0.2 7.6
W29 #1 12 kV W290 L11167	6.25	7.4	6.6	4.10	5.5	0.2 5P030473 1.1 W152 6.8	0.2 0.0 7.0	0.2 7.2	0.2 7.4	0.2 for DCW29 rlf -2.5 W29#3 for DCW115 rlf 1.0 W152 6.1	0.2 6.3
W29 #2 12 kV W291 L11164	6.25	7.4	7.8	6.50	6.2	0.2 6.4	0.2 6.6	0.2 6.8	0.2 7.0	0.2 7.2	0.2 7.4
W29 #3 12 kV W292 L11164	9.375	8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	for DCW29 rlf 2.5 W29#1 2.5	0.1 2.6
DCW22 #1 12 kV L5640/L111XX	9.375	8.2	0.0	0	0.0	5P030004 9.0 56-12 9.0	0.1 9.1	0.1 instl tr2 @DCW22 -3.0 W22#2 6.2	0.1 6.3	0.1 6.4	0.1 6.5
DCW22 #2 12 kV	9.375	8.2						0.1 instl tr2 @DCW22 3.0 W22#1 instl tr2 @DCW22 3.0 56-12	0.1	0.1	0.1