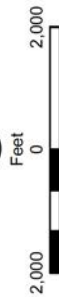
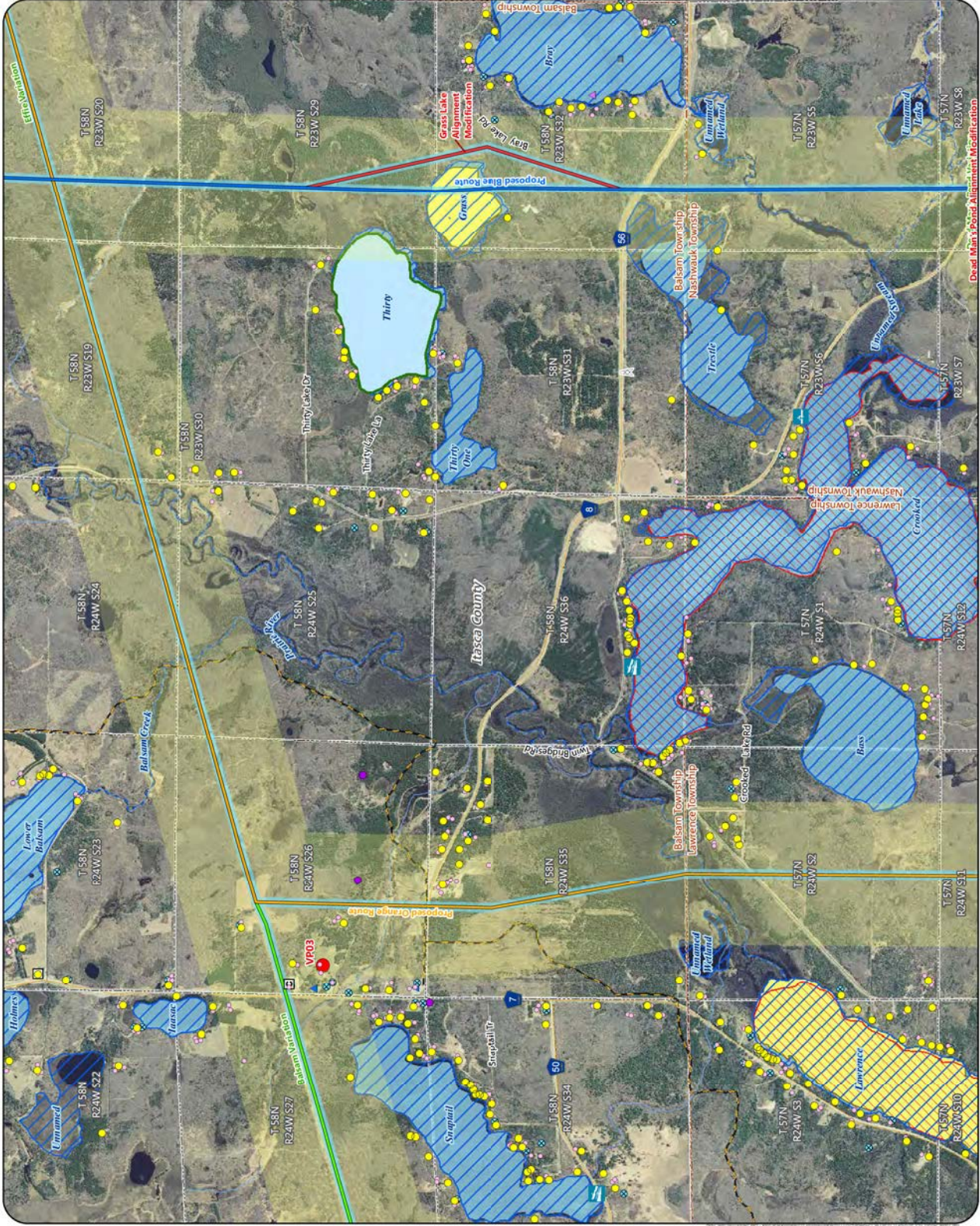


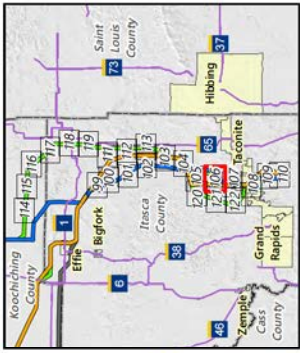
- Proposed Routes**
- Blue Route
 - Orange Route
- Alternatives**
- Route Variation
 - Alignment Modification
 - Anticipated Route Width
 - Anticipated Right-of-Way
- Visual Simulation Viewpoint**
- Residences
 - Commercial or Non-Residential Structure
 - Church
 - Aggregate Source Location
 - Communication Tower
 - County Well Index
 - Carry-in Water Access
 - Trailer Launch Water Access
 - NHD Watercourse
 - PMI Watercourse
 - NHD Waterbody
 - PMI Waterbody
 - MPCA Impaired Waterbody
 - Wild Rice Lake
 - Shallow Lake
 - Snowmobile Trail
 - Civil Township
 - Public Land Survey Section
- MPCA Database**
- Tanks and Leaks
 - Multiple Activities



Appendix S - Map 105

MAP BOOK - EAST SECTION
Great Northern Transmission Line
Final Environmental Impact Statement





Proposed Routes

- Blue Route
- Orange Route
- Blue/Orange Route

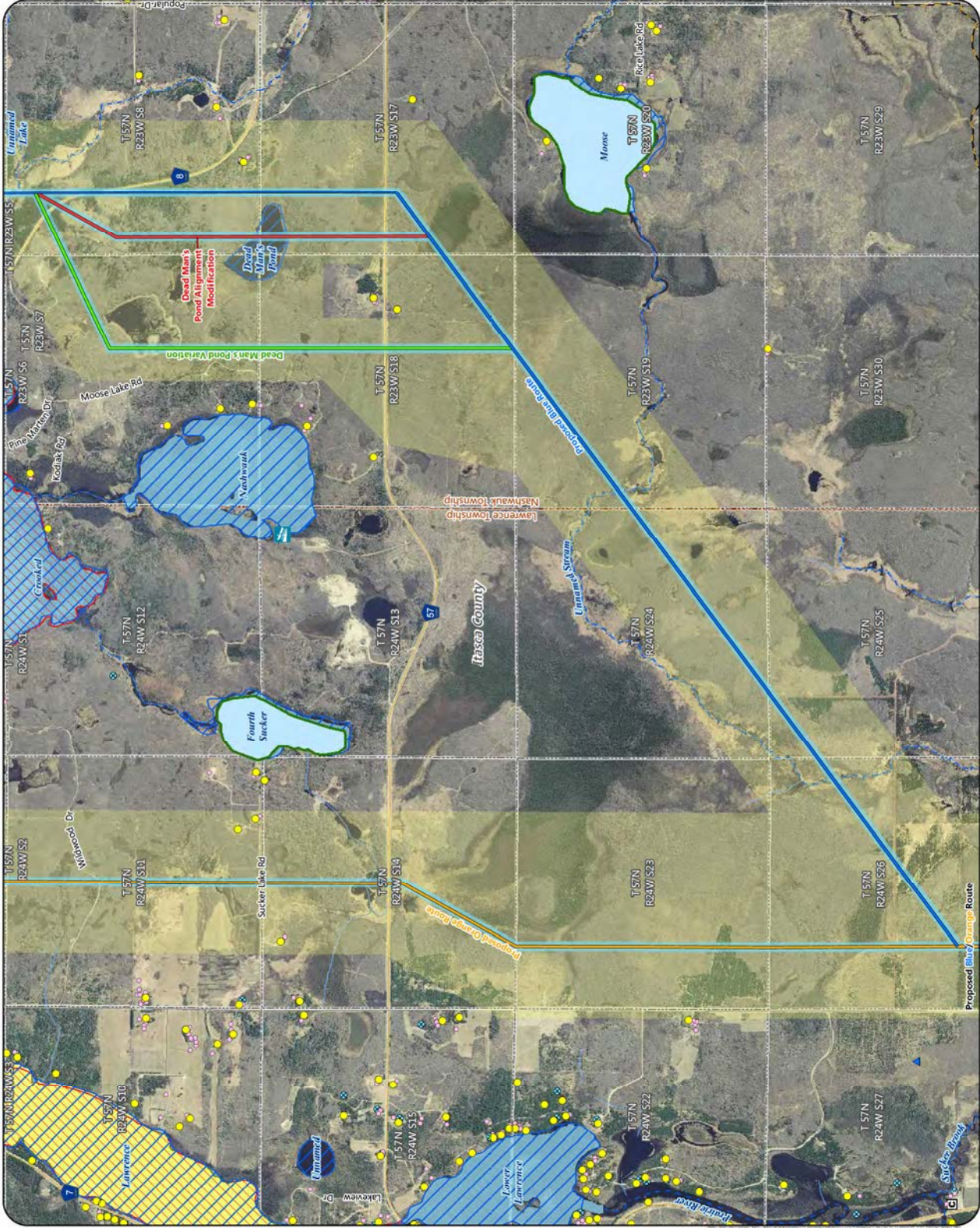
Alternatives

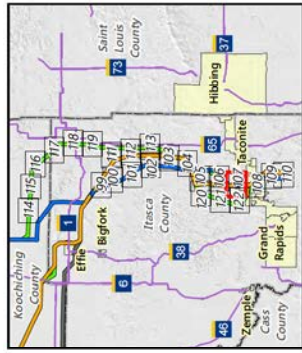
- Route Variation
- Alignment Modification
- Anticipated Route Width
- Anticipated Right-of-Way
- Residences
- Commercial or Non-Residential Structure
- Church
- County Well Index
- Trailer Launch Water Access
- NHD Watercourse
- PMI Watercourse
- NHD Waterbody
- PMI Waterbody
- MPCA Impaired Waterbody
- Wild Rice Lake
- Shallow Lake
- Snowmobile Trail
- Civil Township
- Public Land Survey Section
- MPCA Database
- ▲ Tanks and Leaks



Appendix S - Map 106

MAP BOOK - EAST SECTION
Great Northern Transmission Line
Final Environmental Impact Statement



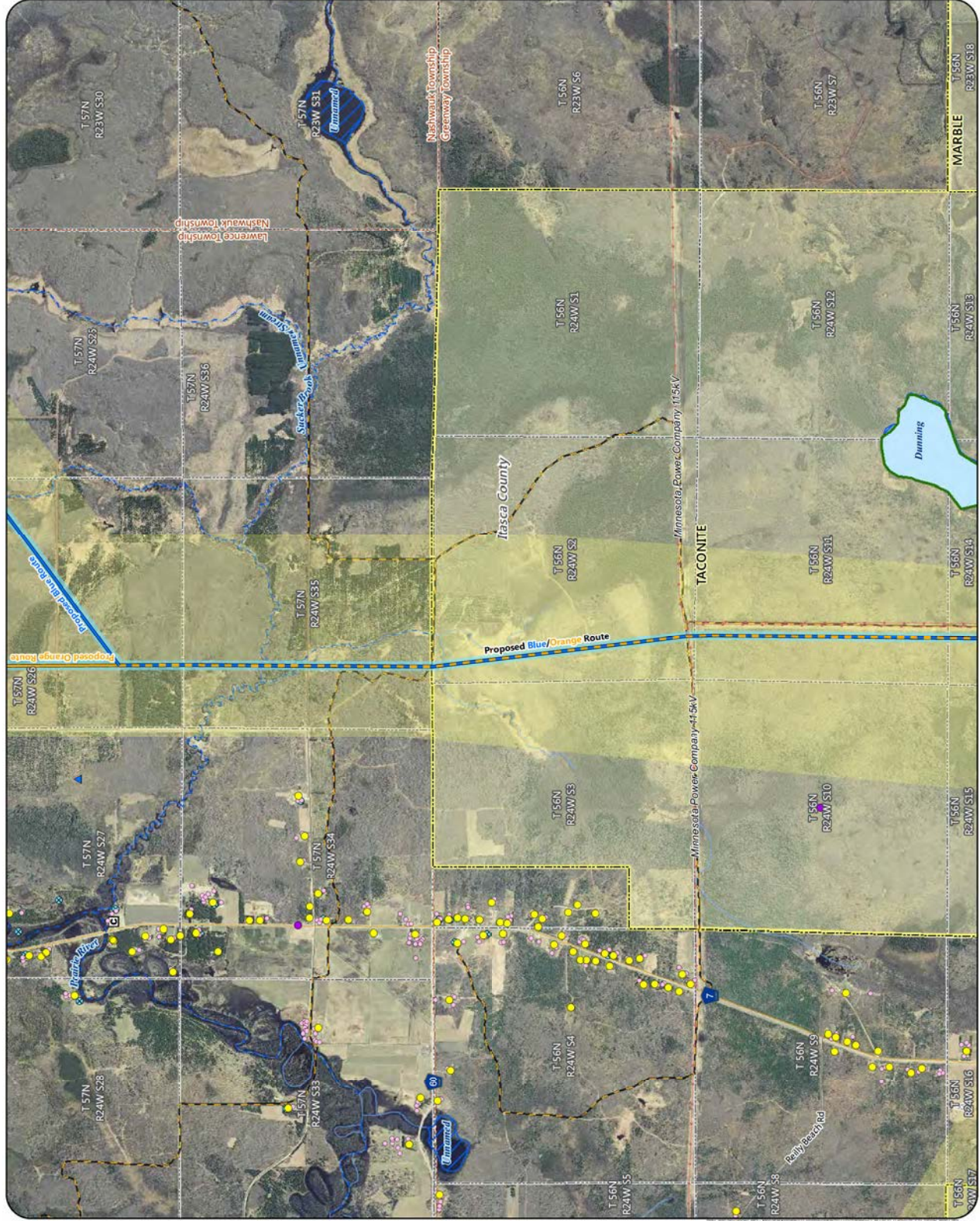


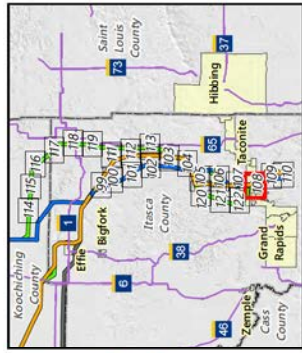
- Proposed Routes**
- Blue Route
 - Orange Route
 - Blue/Orange Route
 - Anticipated Route Width
 - Anticipated Right-of-Way
 - Residences
 - Commercial or Non-Residential Structure
 - Church
 - Communication Tower
 - County Well Index
 - NHD Watercourse
 - PMI Watercourse
 - NHD Waterbody
 - PMI Waterbody
 - Shallow Lake
 - Snowmobile Trail
 - Municipal Boundary
 - Civil Township
 - Public Land Survey Section
 - MPCA Database
 - Tanks and Leaks
 - Multiple Activities
 - Existing Transmission Lines
 - 69 or 115 kv



Appendix S - Map 107

MAP BOOK - EAST SECTION
Great Northern Transmission Line
Final Environmental Impact Statement





Proposed Routes

- Blue Route
- Orange Route
- Blue/Orange Route

Alternatives

- Route Variation
- Anticipated Route Width
- Anticipated Right-of-Way

- Residences
- Commercial or Non-Residential Structure
- Aggregate Source Location
- Communication Tower
- County Well Index
- Mineral Exploration or Engineering Drillhole
- Trailer Launch Water Access

- NHD Watercourse
- PM Watercourse
- MPCA Impaired Stream
- NHD Waterbody
- PM Waterbody
- Shallow Lake
- Snowmobile Trail

- Municipal Boundary
- Civil Township
- Public Land Survey Section

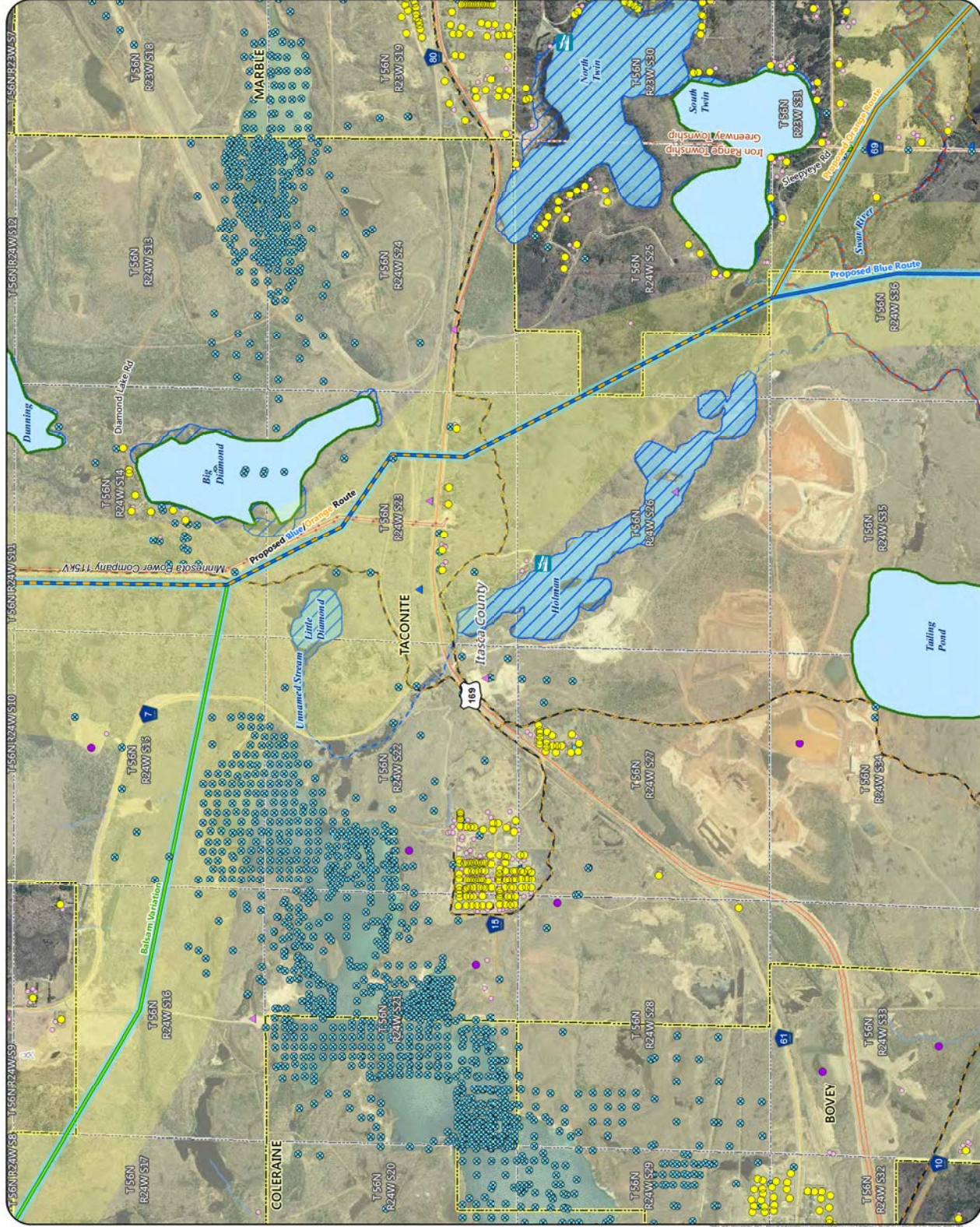
- MPCA Database
- Hazardous Waste
- Investigation and Cleanup
- Tanks and Leaks
- Multiple Activities

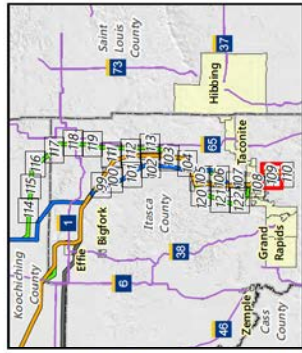
- Existing Transmission Line
- 69 or 115 KV



Appendix S - Map 108

MAP BOOK - EAST SECTION
Great Northern Transmission Line
Final Environmental Impact Statement



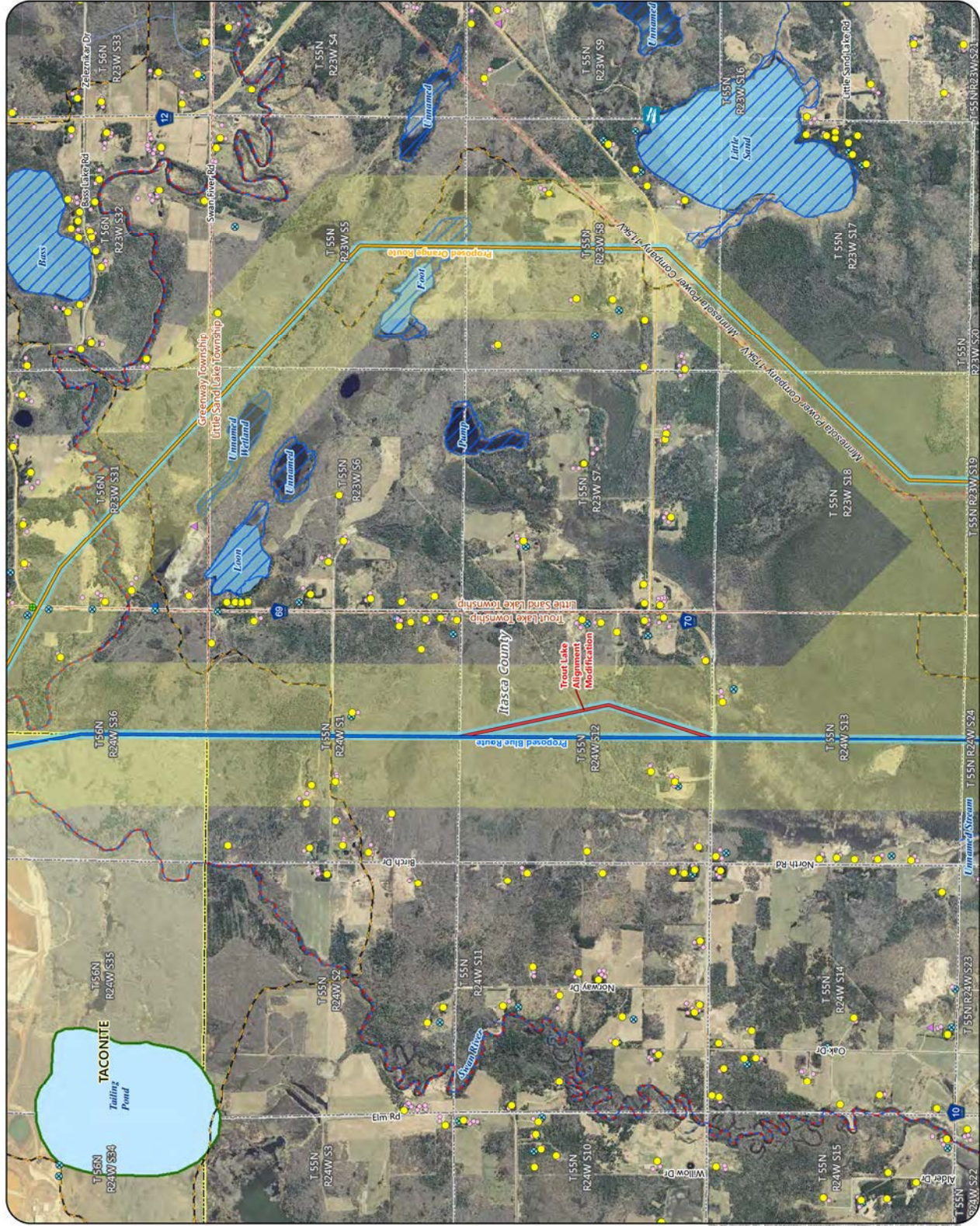


- Proposed Routes**
- Blue Route
 - Orange Route
- Alternatives**
- Alignment Modification
 - Anticipated Route Width
 - Anticipated Right-of-Way
- Residences**
- Commercial or Non-Residential Structure
 - Aggregate Source Location
 - County Well Index
 - Mineral Exploration or Engineering Drillhole
 - Trailer Launch Water Access
- NHD Watercourse**
- NHD Watercourse
 - PMT Watercourse
 - MPCA Impaired Stream
 - NHD Waterbody
 - PMT Waterbody
 - Shallow Lake
 - Snowmobile Trail
- Municipal Boundary**
- Civil Township
 - Public Land Survey Section
- MPCA Database**
- Tanks and Leaks
 - Multiple Activities
 - Existing Transmission Lines
 - 69 or 115 kv



Appendix S - Map 109

MAP BOOK - EAST SECTION
Great Northern Transmission Line
Final Environmental Impact Statement





Proposed Iron Range 500 kV Substation

Proposed Routes
 Blue Route
 Orange Route

Alternatives
 Alignment Modification
 Anticipated Route Width
 Anticipated Right-of-Way

Residences
 Church
 Cemetery
 Commercial or Non-Residential Structure

Aggregate Source Location
 Communication Tower
 County Well Index
 Trailer Launch Water Access

NHD Watercourse
 PMU Watercourse
 MPCA Impaired Stream
 Trout Stream

NHD Waterbody
 PMU Waterbody
 Shallow Lake
 Aquatic Management Area

Snowmobile Trail
 Civil Township
 Public Land Survey Section

Existing Transmission Lines
 69 or 115 kV
 230 kV

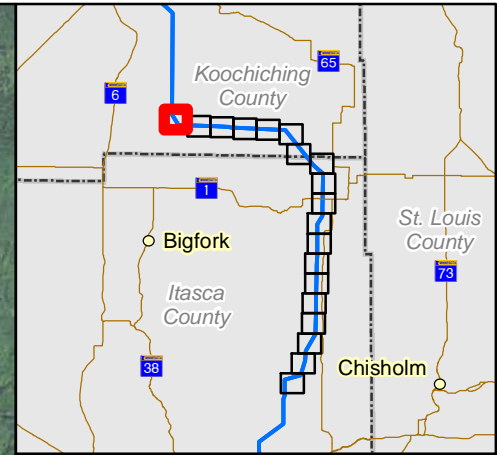


Appendix S - Map 11C

MAP BOOK - EAST SECTION
 Great Northern Transmission Line
 Final Environmental Impact Statement



EXHIBIT B



Proposed Routes

- Blue/Effie Rev A Centerline
- Blue/Effie EIS Corridor

Constraints

- Residence

Existing Transmission

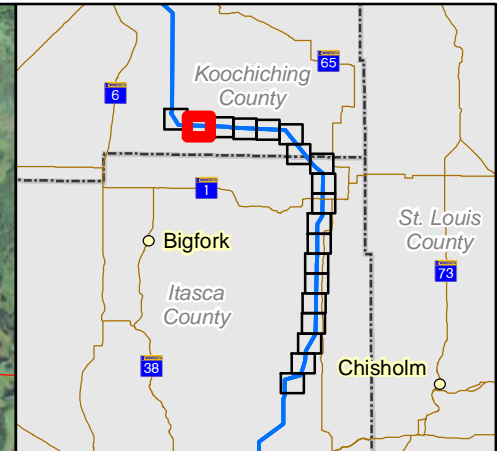
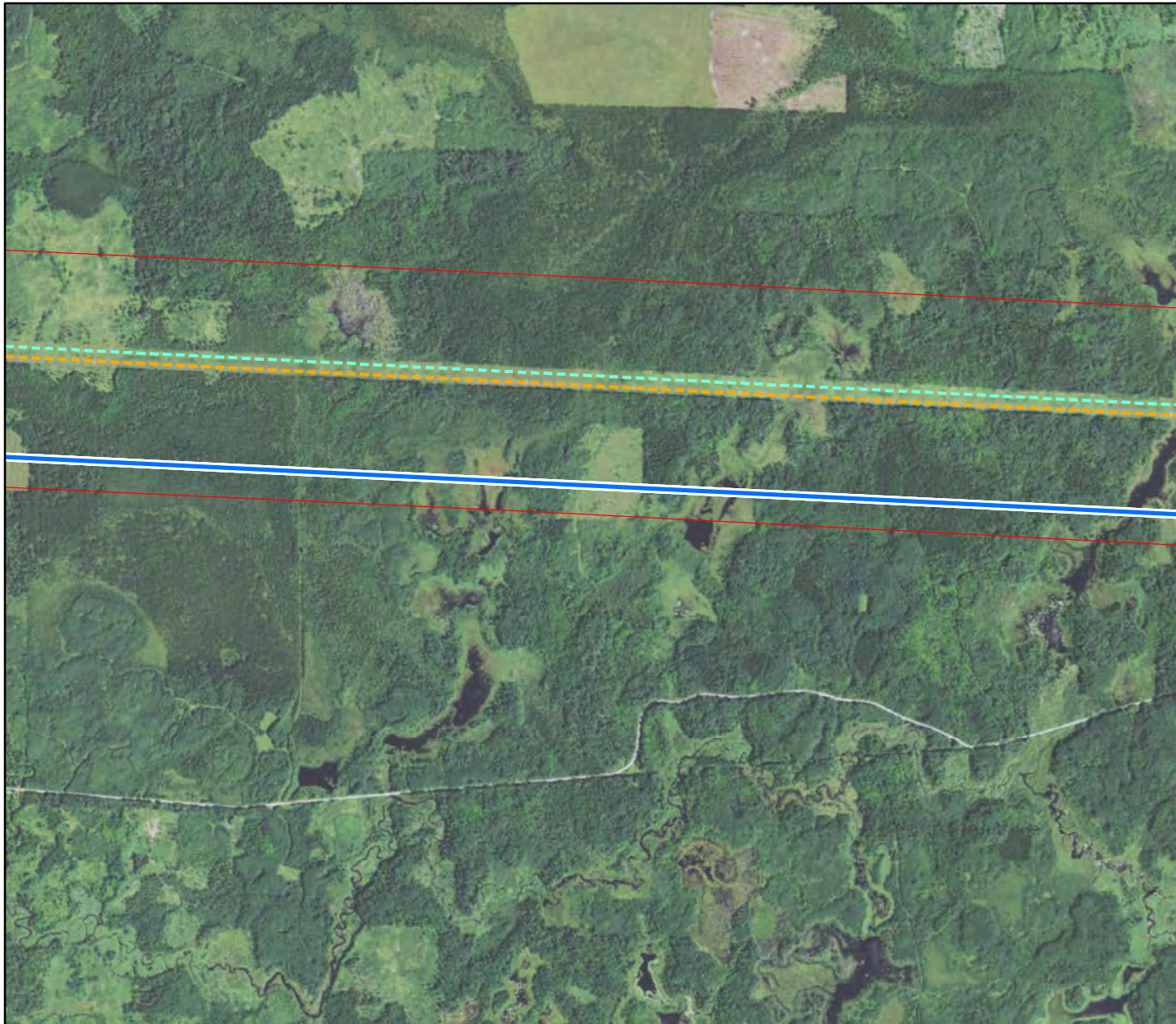
- Minnesota Power 230 kV
- Xcel Energy 500 kV





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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD		FOR 8.5 x 11 ONLY			



GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	





Proposed Routes

-  Blue/Effie Rev A Centerline
-  Blue/Effie EIS Corridor

Constraints

-  Residence

Existing Transmission

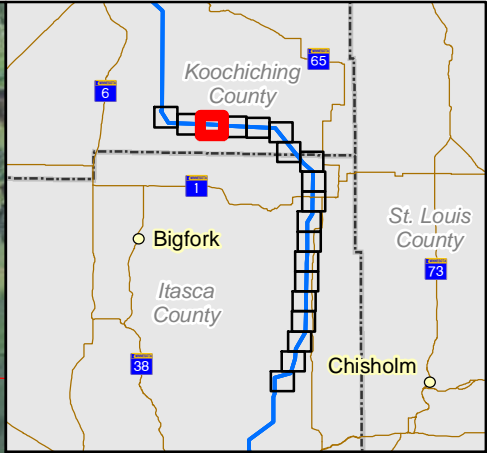
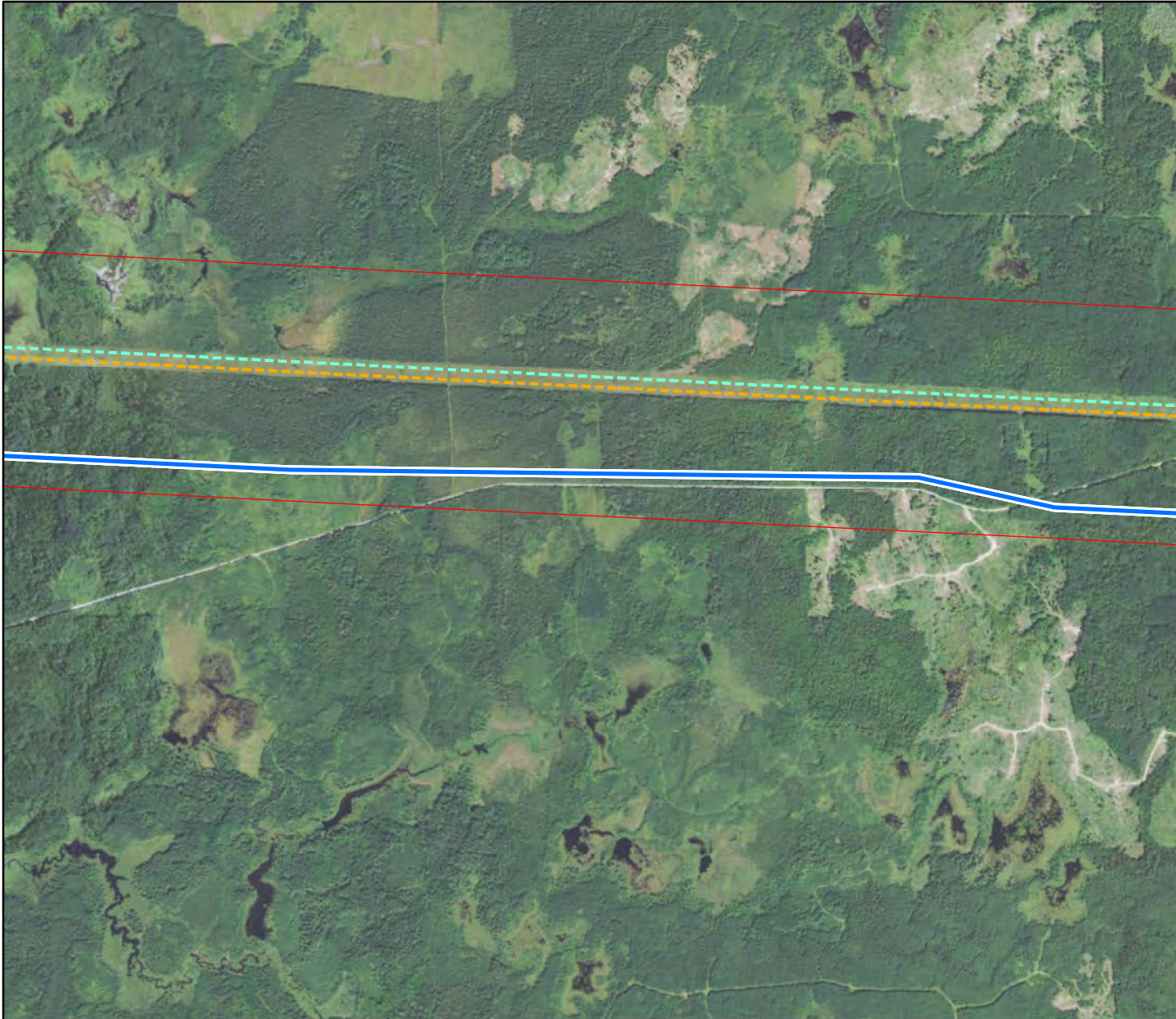
-  Minnesota Power 230 kV
-  Xcel Energy 500 kV



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GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



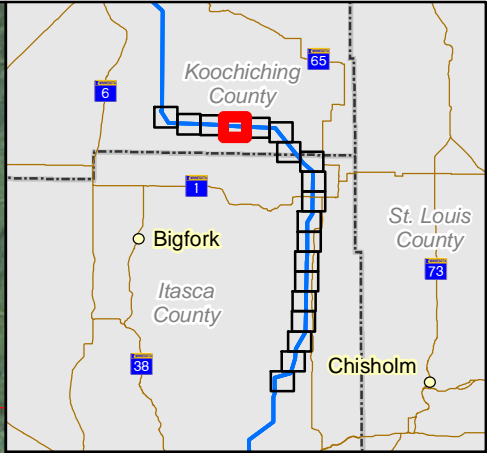
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 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- Minnesota Power 230 kV
 - Xcel Energy 500 kV



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							CKD		
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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD	FOR 8.5 x 11 ONLY		



GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



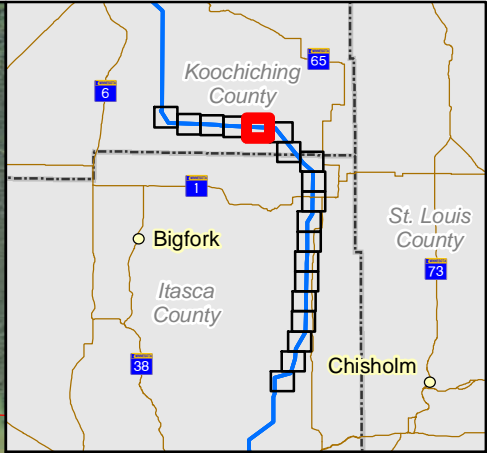
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- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- Minnesota Power 230 kV
 - Xcel Energy 500 kV



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GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



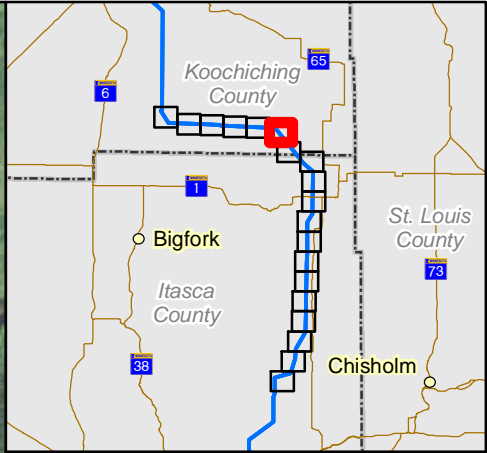
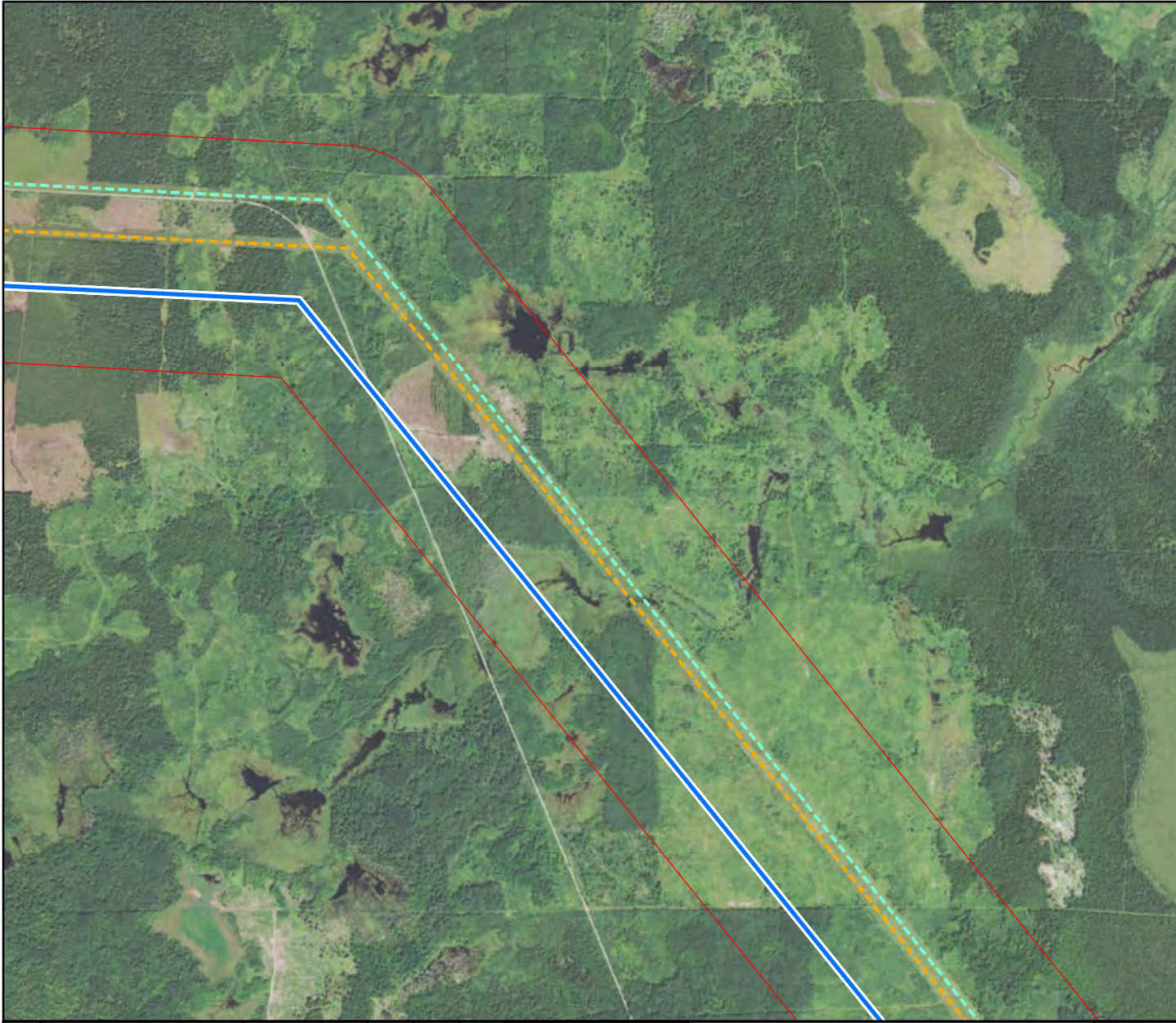
- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- - - Minnesota Power 230 kV
 - - - Xcel Energy 500 kV



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GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



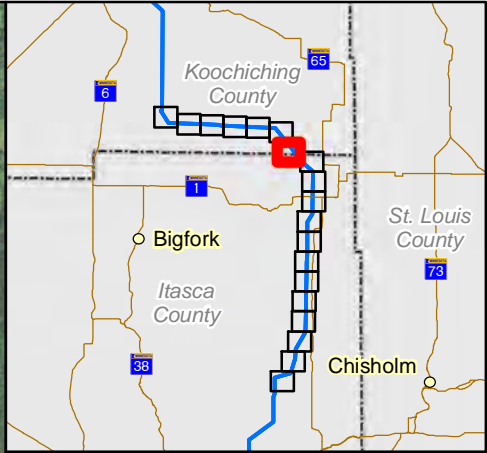
- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- - - Minnesota Power 230 kV
 - - - Xcel Energy 500 kV



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GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



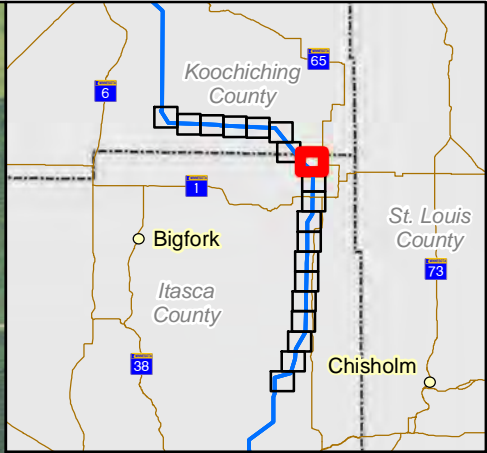
- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- - - Minnesota Power 230 kV
 - - - Xcel Energy 500 kV



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GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



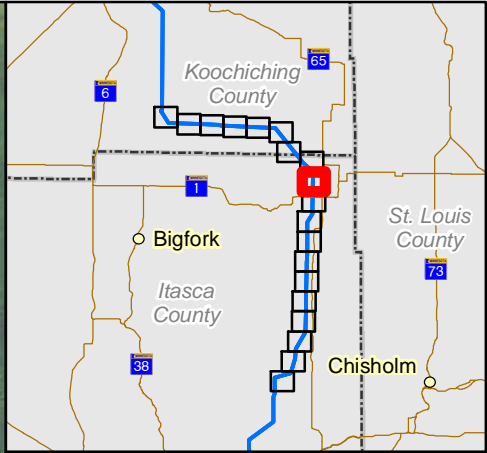
- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- - - Minnesota Power 230 kV
 - - - Xcel Energy 500 kV



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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD		FOR 8.5 x 11 ONLY			



GREAT NORTHERN TRANSMISSION	JOB NUMBER	REV
MINNESOTA POWER	137979	
BLUE -EFFIE REV A ROUTE	DRAWING NUMBER	
	EXHIBIT B	



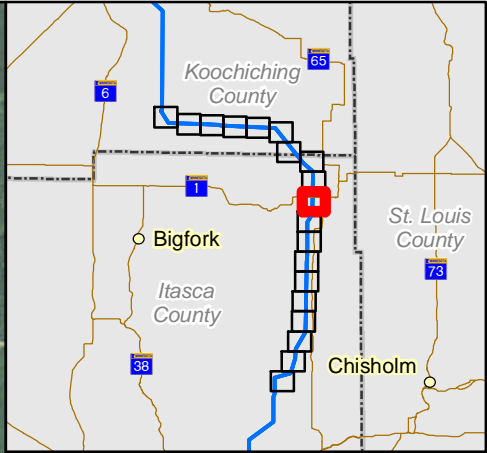
- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- - - Minnesota Power 230 kV
 - - - Xcel Energy 500 kV



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GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



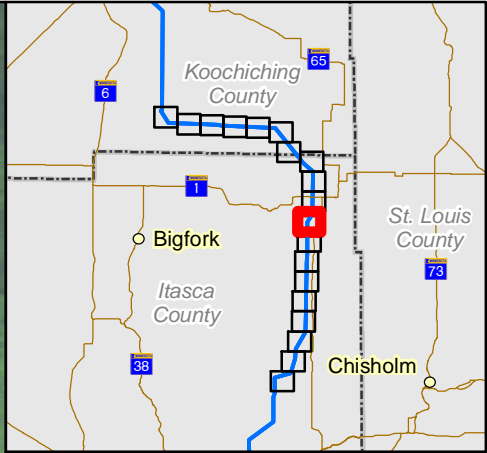
- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- Minnesota Power 230 kV
 - Xcel Energy 500 kV



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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD		FOR 8.5 x 11 ONLY			



GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



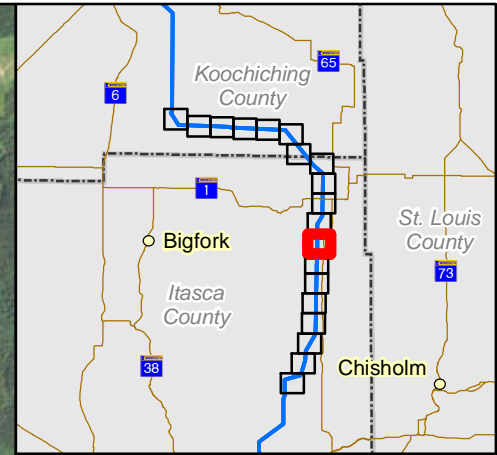
- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- Minnesota Power 230 kV
 - Xcel Energy 500 kV



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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD	FOR 8.5 x 11 ONLY		



GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



Proposed Routes

- Blue/Effie Rev A Centerline
- Blue/Effie EIS Corridor

Constraints

- Residence

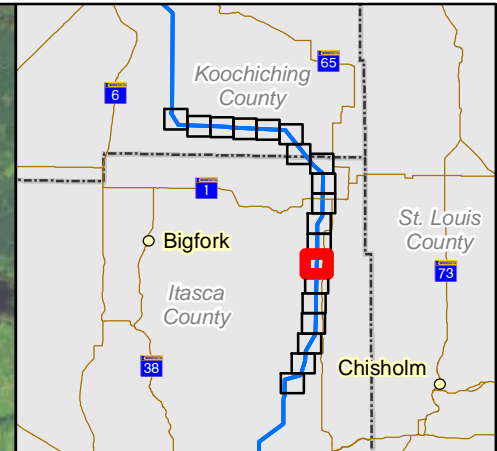
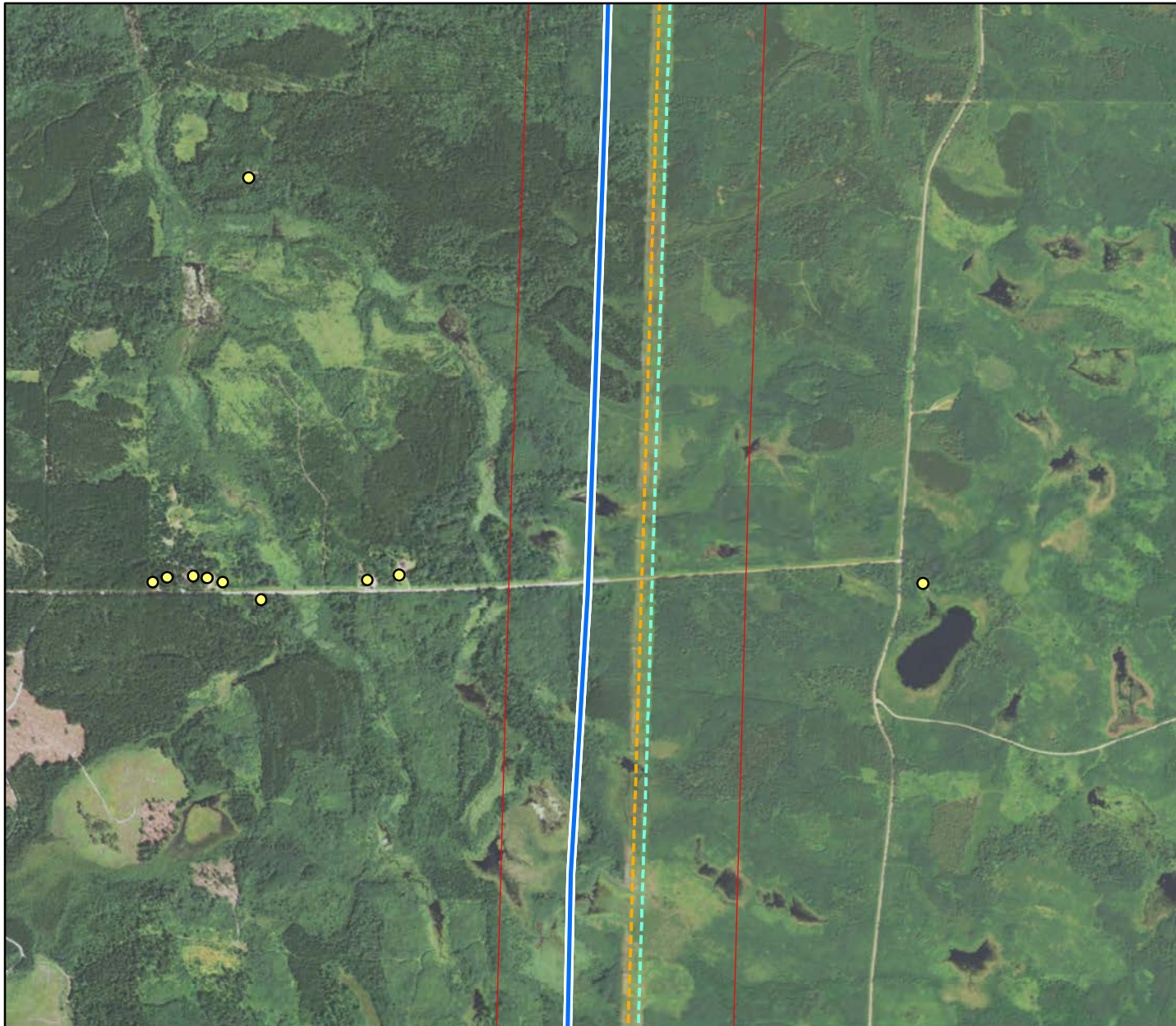
Existing Transmission

- Minnesota Power 230 kV
- Xcel Energy 500 kV



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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD	FOR 8.5 x 11 ONLY		

GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



Proposed Routes

- Blue/Effie Rev A Centerline
- Blue/Effie EIS Corridor

Constraints

- Residence

Existing Transmission

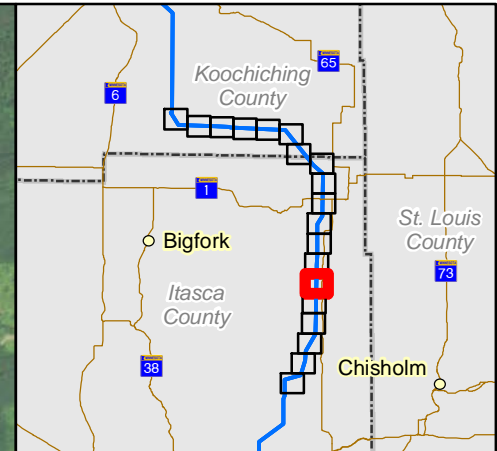
- Minnesota Power 230 kV
- Xcel Energy 500 kV





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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD	FOR 8.5 x 11 ONLY		



GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	





Proposed Routes

-  Blue/Effie Rev A Centerline
-  Blue/Effie EIS Corridor

Constraints

-  Residence

Existing Transmission

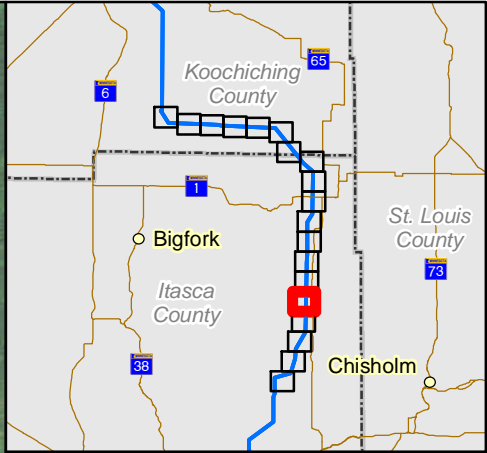
-  Minnesota Power 230 kV
-  Xcel Energy 500 kV



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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD	FOR 8.5 x 11 ONLY		



GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



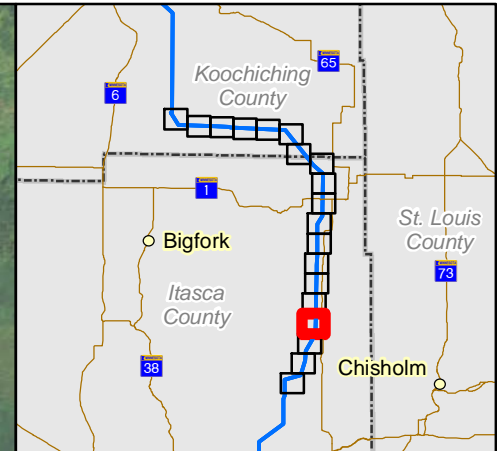
- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- Minnesota Power 230 kV
 - Xcel Energy 500 kV





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							SCALE: 1 IN = 2000 FT		
REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD	FOR 8.5 x 11 ONLY		



GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	





Proposed Routes

-  Blue/Effie Rev A Centerline
-  Blue/Effie EIS Corridor

Constraints

-  Residence

Existing Transmission

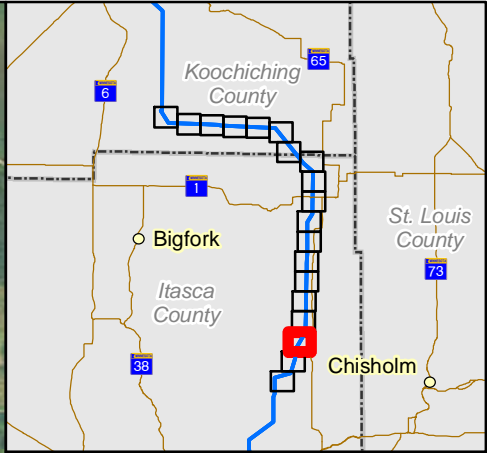
-  Minnesota Power 230 kV
-  Xcel Energy 500 kV



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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD	FOR 8.5 x 11 ONLY		



GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



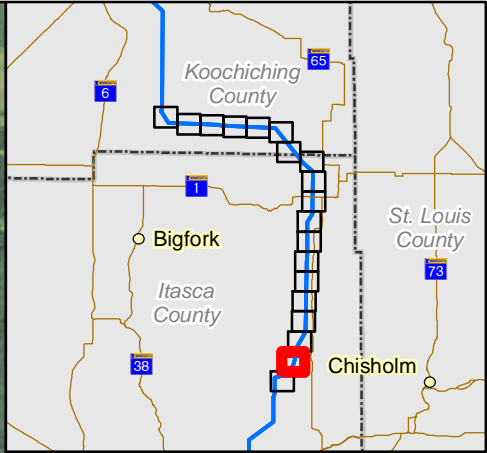
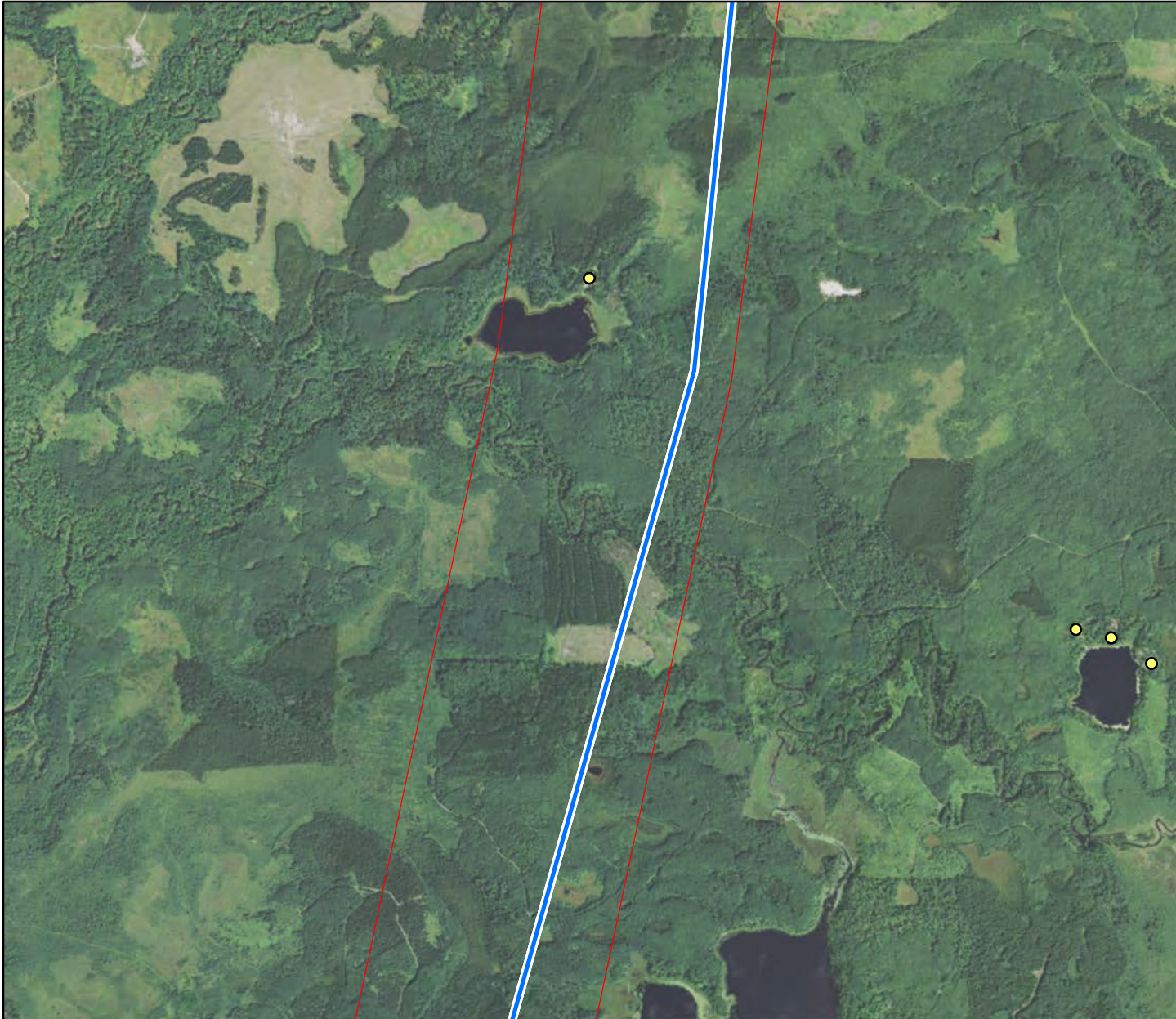
- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- Minnesota Power 230 kV
 - Xcel Energy 500 kV



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REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD		FOR 8.5 x 11 ONLY			



GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



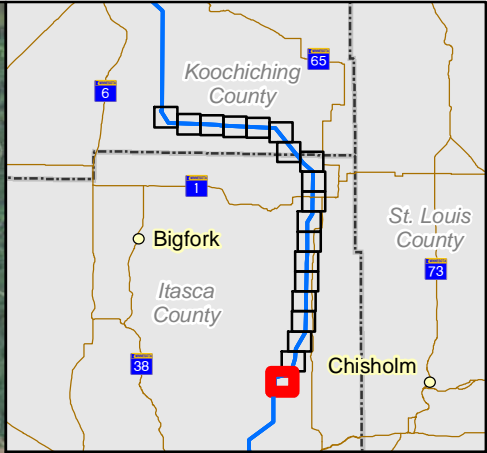
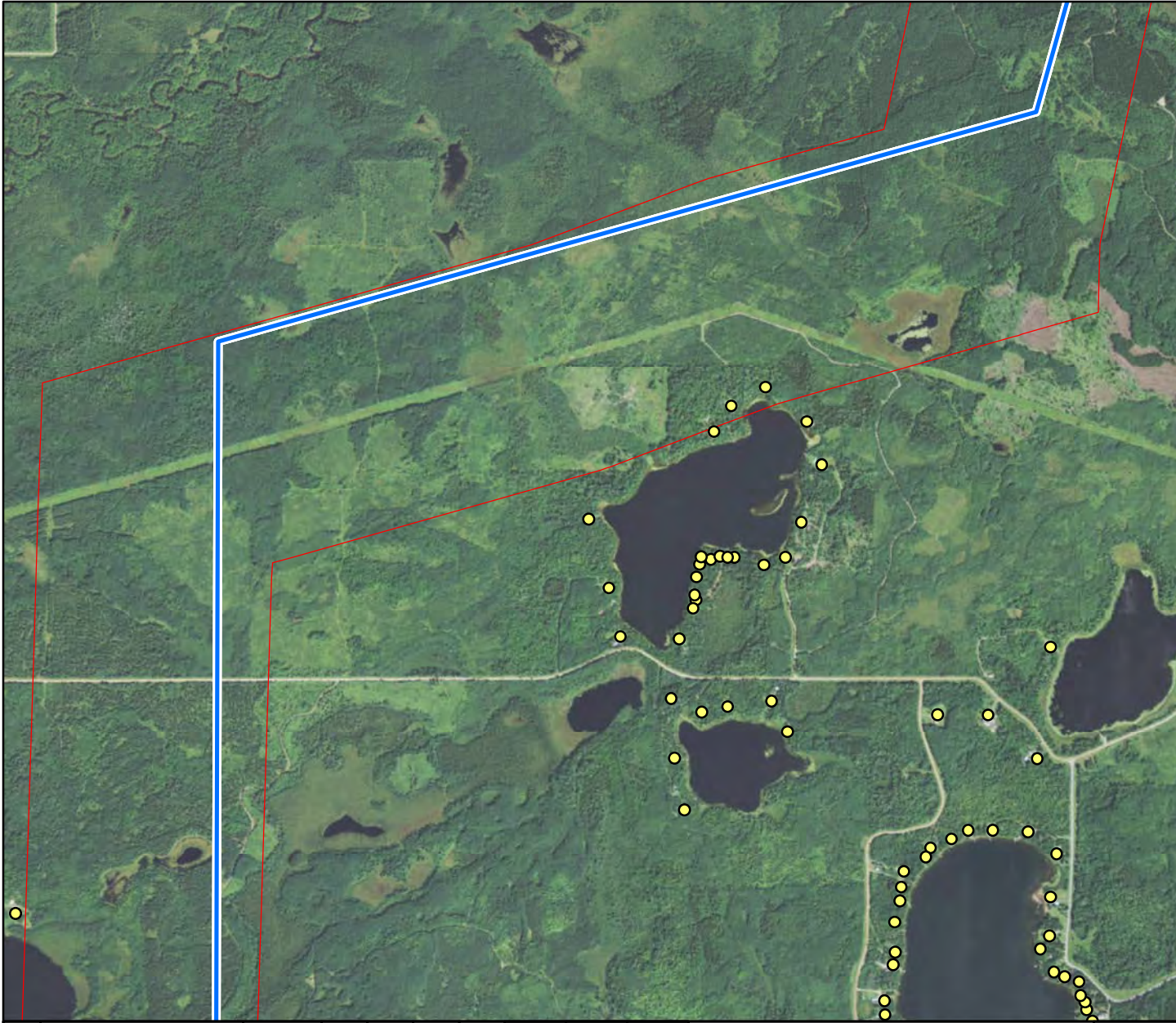
- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- Minnesota Power 230 kV
 - Xcel Energy 500 kV



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GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	



- Proposed Routes**
- Blue/Effie Rev A Centerline
 - Blue/Effie EIS Corridor
- Constraints**
- Residence
- Existing Transmission**
- Minnesota Power 230 kV
 - Xcel Energy 500 kV



								DSGN	RR	01/15/16	
								DRN	ZM	01/15/16	
								CKD			
								SCALE: 1 IN = 2000 FT			
REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD		FOR 8.5 x 11 ONLY			



GREAT NORTHERN TRANSMISSION		JOB NUMBER	REV
MINNESOTA POWER		137979	
BLUE -EFFIE REV A ROUTE		DRAWING NUMBER	
		EXHIBIT B	

**Route Permit for the Great Northern Transmission Line
Minnesota Public Utilities Commission E-015/TL-14-21**

Attachment A

County	Township (N)	Range (W)	Section(s)
Roseau	161	35	7-18
	161	36	13-21
	161	37	3, 4, 9-11, 13-15, 23, 24
	162	37	4, 5, 8, 9, 16, 17, 20, 21, 28, 29, 32, 33
	163	37	19, 20, 29, 30, 32, 33
	163	38	16-27
	163	39	7-10, 13-17, 23, 24
	163	40	1-12
	163	41	1, 2, 11, 12
164	41	26, 27, 35	
Lake of the Woods	160	30	24-30
	160	31	25-30
	160	32	25-33
	160	33	18-20, 25-30, 32-36
	160	34	2, 3, 11-13
	161	34	7, 17, 18, 20, 21, 27-29, 33-35
Koochiching	63	23	15-18, 21, 22, 26, 27, 34-36
	63	24	7-18
	63	25	6-18
	63	26	1,12
	64	25	6, 7, 18, 19, 30, 31
	64	26	1, 12, 13, 24, 25, 36
	65	25	5-8, 17-20, 29-32
	66	25	30-32
	66	26	5-9, 15-17, 21-23, 25-27, 36
	66	27	1
	67	26	31
	67	27	23, 25, 26, 35, 36
	155	25	1, 12
	156	25	6-9, 15-17, 21-23, 25-27, 35,36
	157	26	1, 2, 6-8, 16-18, 20-23, 26-28, 34-36
	157	27	1, 2, 12
	158	27	3, 10, 14, 15, 22, 23, 26, 27, 34, 35
	159	27	5, 6, 8-10, 15, 16, 21, 22, 27, 28, 33, 34
	160	28	1-4, 19, 29-33
160	29	19-30	
Itasca	55	23	18-20, 29, 30
	56	24	1-3, 10-15, 22-26, 36
	57	23	5-8, 17-20
	57	24	23-27, 34, 35
	58	23	3, 10, 15-17, 19-22, 29-32
	59	23	1, 11-14, 23-27, 34, 35
	60	23	1, 12, 13, 24, 25, 36
	61	22	5-8, 17-19, 30, 31
	61	23	13, 24, 25, 36

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Minnesota Public Utilities Commission E-015/TL-14-21**

Attachment A

	62	22	6-8, 17-20, 29-32
	62	23	1, 2, 12