

**Congestion Severity Index**

The lists on the following tabs are sorted by the Congestion Severity Index of the constraints. The Congestion Severity Index is based on the theoretical potential maximum number of dollars paid into the market by load serving entities due to congestion on the constraint in question. It is the maximum potential amount of money (in millions of dollars) that could have been saved over the course of this time period had the constraint not been bound. Both directions of the constraint are captured (there are a few constraints in ATC that have been bound in different directions at different times).

**Hours**

The "hours" measurements provided on the table is a measure duration of constraint binding. The number given is the total number of "hours" that the constraint occurred. RT data may have partial hours since RT constraints are bound in five minute intervals.

**Day Ahead and Real Time**

Day Ahead (DA) constraints indicate that MISO committed generation out of economic order in the Day Ahead market, meaning that more expensive generation is committed for the next day in order to avoid constraints that would occur if only the cheapest generation was scheduled to run. Real Time (RT) constraints show up when MISO did not anticipate overloads on the system in the Day Ahead market. Adjustments must be made to the generation mix during the operating day in order to mitigate constraints.

**Potential Solution(s)**

Potential solutions have been provided for some constraints listed. These solutions may not have been designed for the sole purpose of alleviating the listed constraints and therefore will not necessarily fully mitigate the constraints, but will reduce the constraint's frequency and severity under normal operating conditions.

**Please note that information in this report is deemed accurate as of January 2014.**

Severity Index	Hours	Day Ahead Constraint	Potential Solution(s)
<b>66.90</b>	<b>8,536</b>	<b>Total for all ATC Day Ahead constraints 1-1-2013 thru 12-31-2013</b>	<b>Additional solutions may be found in ATC TYA</b>
14.01	713	Minnesota to Wisconsin Exports Interface (MWEX)	Monroe County - Council Creek 161 kV line (Planned 2015) Badger - Coulee 345 kV line (Proposed 2018)
5.81	418	Albers - Kenosha 138 kV flo Bain - Kenosha 138 kV	Albers - Kenosha 138 kV rebuild (Planned 2014)
4.69	158	Columbia - Portage 138 kV (X-20) flo Columbia - Portage 138 kV (X-13)	ATC is currently investigating solutions Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020) Columbia - Portage 138 kV rebuilds (Provisional 2025)
3.46	152	North Appleton 345/138 kV Xfmr T3 flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
2.65	104	Forest Junction - Lake Park 138 kV flo Fox River - North Appleton 345 kV	
2.58	159	Forest Junction - Kaukauna Central 138 kV flo Fox River - North Appleton 345 kV	
1.93	178	Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
1.80	233	Arcadian - Zion 345 kV flo Pleasant Prairie - Zion 345 kV & SE WI SPS	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
1.69	44	Arcadian - Waukesha 138 kV (9962) flo Arcadian - Waukesha 138 kV (9942)	Arcadian - Waukesha 138 kV lines 9942 and 9962 rebuild (Proposed 2019)
1.52	151	Paddock - Town Line Rd 138 kV flo Blackhawk - Paddock 138 kV	Paddock - Town Line Rd 138 kV rebuild (Asset Renewal 2014)
1.44	91	Bluemound 230/138 kV Xfmr T2 flo Bluemound 230/138 kV Xfmr T1	
1.35	461	Pulliam - Stiles 138 kV (64441) flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
1.35	308	Falls - Morgan 138 kV flo Morgan - Plains 345 kV	Bay Lake Project: Morgan - Stiles 138 kV double circuit (Proposed 2017)
1.25	94	Ellington - Hintz 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.86	15	Forest Junction - Point Beach 345 kV flo Kewaunee - Point Beach 345 kV	
0.83	51	Paddock - Town Line Rd 138 kV	Paddock - Town Line Rd 138 kV rebuild (Asset Renewal 2014)
0.83	21	Northwest Beloit - Paddock 138 kV	
0.76	46	Cornell - Range Line (61443) 138 kV flo Cornell - Range Line (61451) 138 kV	
0.71	96	Paddock - Shirland Ave 69 kV flo Blackhawk - Paddock 138 kV	Paddock - Shaw 69 kV rebuild (Planned 2014)
0.69	87	Lost Dauphin - Ryan Street 69 kV flo Forest Junction - Glenview 138 kV	
0.60	47	Granville 345/138 kV Xfmr T3 flo Saukville 345/138 kV Xfmr T1	
0.59	12	Morrison Ave - Sherman St 115 kV flo Sherman St - Weston 115 kV	
0.59	40	Ellington - Hintz 138 kV flo Weston Unit #4	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.57	79	Tecumseh 138/69 kV Xfmr T1 flo Kewaunee - Shoto 138 kV	
0.55	43	Columbia - Portage 69 kV flo Columbia - Portage 138 kV (X-13)	ATC is currently investigating solutions Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020)
0.55	128	Pleasant Prairie 345/24 kV Xfmr T2	Pleasant Prairie Bus Reconfiguration (Planned 2013) Transmission status may have contributed to this constraint (Stability Limit)
0.54	32	North Appleton - Werner West 345 kV flo Weston Unit #4	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.53	51	North Appleton 345/138 kV Xfmr T3 flo Kewaunee - Point Beach 345 kV & SPS	
0.52	107	Pleasant Prairie 345/24 kV Xfmr T2 flo Pleasant Prairie - Racine 345 kV	Pleasant Prairie Bus Reconfiguration (Planned 2013) Transmission status may have contributed to this constraint (Stability Limit)
0.50	30	North Appleton 345/138 kV Xfmr T3 flo Forest Junction - Point Beach 345 kV	

0.48	16	Kewaunee - Point Beach 345 kV flo Fox River - North Appleton 345 kV	
0.42	40	Paddock - Town Line Rd 138 kV flo Cherry Valley - Silver Lake 345 kV (ComEd)	Paddock - Town Line Rd 138 kV rebuild (Asset Renewal 2014)
0.36	32	Albers - Paris 138 kV flo Pleasant Prairie - Racine 345 kV	Albers - Paris 138 kV rebuild (Proposed 2015)
0.34	18	Sherman Street - Sunnyvale 115 kV flo Arpin - Rocky Run 345 kV & POE SPS	
0.34	82	Harbor - Kansas 138 kV flo Kansas - Norwich 138 kV	
0.31	41	Highway V - Preble 138 kV flo Lost Dauphin - Red Maple 138 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.29	28	Kenosha - Lakeview 138 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013) Kenosha - Lakeview 138 kV rebuild (Planned 2015)
0.28	24	East Krok - Kewaunee 138 kV flo Fox River - Point Beach 345 kV & SPS	
0.28	162	Felch Mountain Tap - Nordic 69 kV flo Arnold - Plains 138 kV	Arnold 345/138 kV Transformer (Planned 2015) Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016)
0.27	160	Flow South PTFD	Power Flow Control in UP (Planned 2014) Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016) Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.27	34	Howard - Velp Ave 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.26	51	Highway V - Preble 138 kV flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.25	50	Preble - Tower Drive 138 kV flo Lost Dauphin - Red Maple 138 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.25	34	Albers - Paris 138 kV flo Granville 345/138 kV Xfmr T3	Albers - Paris 138 kV rebuild (Proposed 2015)
0.25	51	Burlington - North Lake Geneva Tap 138 kV flo Cherry Valley - Silver Lake 345 kV	Bain - Spring Valley - North Lake Geneva 138 kV line (Proposed 2019)
0.23	35	Edgewood - St. Martins 138 kV flo Arcadian - Zion 345 & SE WI SPS	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013) Mukwonago - Edgewood - St. Martins 138 kV rebuild (Proposed 2017) Bain - Spring Valley - North Lake Geneva 138 kV line (Proposed 2019)
0.22	59	Pulliam - Stiles 138 kV (64451) flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.21	51	Pulliam - Stiles 138 kV (64441) flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.21	8	96th Street - Bluemound 138 kV flo Bluemound - Butler 138 kV	
0.21	29	Kenosha - Lakeview 138 kV	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013) Kenosha - Lakeview 138 kV rebuild (Planned 2015)
0.18	18	Granville 345/138 kV Xfmr T3 flo Arcadian - Cypress 345 kV	
0.18	229	Indian Lake 138/69 kV Xfmr T2 flo Indian Lake 138/69 kV Xfmr T1	Hiawatha - Indian Lake 138 kV energize (In-service 2013) Power Flow Control in UP (Planned 2014)
0.18	40	Eden - Mineral Point 69 kV flo Dodgeville - Eden 69 kV	Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020)
0.15	9	Paddock - Town Line Rd 138 kV flo Paddock - Rockdale 345 kV	Paddock - Town Line Rd 138 kV rebuild (Asset Renewal 2014)
0.14	15	Ellington - North Appleton 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.13	30	Kilbourn 138/69 kV Xfmr T32 flo Kilbourn 138/69 kV Xfmr T31	Monroe County - Council Creek 161 kV line (Planned 2015) Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020)
0.12	20	Forest Junction - Glenview 138 kV flo Kewaunee - Point Beach 345 kV	
0.12	9	Albers - Kenosha 138 kV flo Albers - Bain 138 kV	Albers - Kenosha 138 kV rebuild (Planned 2014)
0.12	17	Cranberry - Lakota Rd 115 kV flo Amberg - Plains 138 kV (60842 & 60853)	Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016)
0.12	9	Air Liquide Tap - Paris 138 kV	
0.12	16	Tecumseh 138/69 kV Xfmr T1 flo Glenview 138/69 kV Xfmr T1	

0.11	17	Arcadian - Zion 345 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
0.10	53	Sheepskin - Stoughton 69 kV flo Rockdale - Russll 138 kV	
0.10	10	Elkhart Lake - Forest Junction 138 kV flo Arcadian - Cypress 345 kV	ATC is currently investigating solutions
0.09	6	Arcadian 345/138 kV Xfmr T3 flo Arcadian 345/138 kV Xfmr T2	Arcadian Transformers T2 and T3 replacment (Provisional 2020)
0.09	11	Elkhart Lake - Forest Junction 138 kV flo Point Beach - Sheboygan Energy Center 345 kV	ATC is currently investigating solutions
0.09	13	Lakehead - Masonville 69 kV flo Chandler 138/69 kV Xfmr T4	Chandler - Old Mead Road 138 & 69 kV lines (Planned 2014)
0.09	8	Bain - Kenosha 138 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
0.09	58	New Holstein - St. Nazianz 69 kV flo Shoto 138/69 kV Xfmr T1	Shoto - Custer 138 kV line (Provisional 2022)
0.09	25	Little Suamico - Pulliam 138 kV flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.09	9	Mears Corners - Woodenshoe 138 kV flo Butte Des Morts - Neevin 138 kV	Mears Corner - Woodenshoe 138 kV rebuild (Asset Renewal 2020)
0.09	34	Friesland - North Randolph 138 kV flo Columbia - South Fond du Lac 345 kV	
0.08	77	New Holstein - St. Nazianz 69 kV flo Glenview - Shoto 138 kV	Shoto - Custer 138 kV line (Provisional 2022)
0.08	99	Indian Lake - Valley Tap 69 kV flo Hiawatha - Indian Lake 69 kV	Hiawatha - Indian Lake 138 kV energize (In-service 2013) Power Flow Control in UP (Planned 2014)
0.08	28	Bluestone - Finger Rd 69 kV flo Shoto 138/69 kV Xfmr T2	
0.08	19	Chandler 138/69 kV Xfmr T4 flo Chandler - Masonville 69 kV	Chandler - Old Mead Road 138 & 69 kV lines (Planned 2014) Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016)
0.08	24	Felch Mountain Tap - Nordic 69 kV flo Empire - Forsyth 138 kV	Arnold 345/138 kV Transformer (Planned 2015) Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016)
0.08	3	Fitzgerald - Sunset Point 138 kV flo Aviation - North Fond du Lac 138 kV	Sunset Point-Ellinwood 138kv uprate (Proposed 2016)
0.08	12	Lost Dauphin - North Appleton 138 kV flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.08	14	Bluestone - Finger Rd 69 kV flo Kewaunee - Shoto 138 kV	
0.08	72	New Holstein - St. Nazianz 69 kV flo Shoto 138/69 kV Xfmr T2	Shoto - Custer 138 kV line (Provisional 2022)
0.08	4	North Appleton 345/138 kV Xfmr T2 flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.08	6	Bluemound - Butler 138 kV CKT 5051 flo Granville - Tosa 138 kV	
0.07	108	Chandler - Delta 69 kV CKT 1 flo Chandler - Delta 69 kV CKT 2	Chandler - Old Mead Road 138 & 69 kV lines (Planned 2014) Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016)
0.07	24	Glenview - Ryan St 69 kV flo Forest Junction - Glenview 138 kV	
0.07	63	Mirro - Northeast 69 kV flo Manrap - Shoto 69 kV	Shoto - Custer 138 kV line (Provisional 2022)
0.07	7	Bluemound - Butler 138 kV CKT 5061 flo Arcadian - Granville 345 kV	
0.07	10	Neevin - Woodenshoe 138 kV flo Butte Des Morts - Neevin 138 kV	Neevin - Woodenshoe 138 kV rebuild (Asset Renewal 2020)
0.06	4	Oak Creek - Ramsey 138 kV flo Oak Creek - Pennsylvania 138 kV	Oak Creek - Ramsey 138 kV uprate (Planned 2014)
0.06	6	Highway V - Preble 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.06	10	Badger 138/115 kV Xfmr T1 flo Gardner Park - Highway 22 345 kV	
0.06	9	Howard - Velp Ave 138 kV flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.05	2	Arcadian - Waukesha 138 kV (9942) flo Arcadian - Waukesha 138 kV (9962)	Arcadian - Waukesha 138 kV lines 9942 and 9962 rebuild (Proposed 2019)
0.05	9	Elkhart Lake - Saukville 138 kV flo Fitzgerald - South Fond du Lac 345 kV	ATC is currently investigating solutions
0.05	23	Gateway - Sycamore 69 kV flo Blount - Sycamore 138 kV	Blount - Cardinal 138 kV line (Provisional 2020)
0.05	3	Shaw - Shirland Ave 69 kV flo Blackhawk - Colley Road 138 kV	Paddock - Shaw 69 kV rebuild (Planned 2014)
0.05	7	Butte des Morts - Casaloma 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.05	19	East Campus - Walnut 69 kV (6976) flo East Campus - Walnut 69 kV (6975)	Cardinal - Blount 138 kV line (Provisional 2024)

0.05	2	Columbia 345/138 kV Xfmr T21	
0.04	4	Aviation - North Fond du Lac 138 kV flo Fitzgerald - South Fond Du Lac 345 kV	
0.04	13	Edgewood - St. Martins 138 kV flo Pleasant Prairie - Zion 345 kV & SE WI SPS	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013) Mukwonago - Edgewood - St. Martins 138 kV rebuild (Proposed 2017) Bain - Spring Valley - North Lake Geneva 138 kV line (Proposed 2019)
0.04	15	Roosevelt Rd 138/69 kV Xfmr T3	
0.04	3	Hintz - Werner 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.04	82	Twin Lakes - Winona 69 kV flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017) Atlantic - Winona 69 kV rebuild (Provisional 2022)
0.04	4	Green Lake - North Randolph 138 kV flo Columbia - South Fond du Lac 345 kV	
0.04	31	Glenview - Ryan St 69 kV flo Kewaunee - Shoto 138 kV	
0.03	4	Edgewood - St. Martins 138 kV flo Paddock 345/138 kV Xfmr T21	Mukwonago - Edgewood - St. Martins 138 kV rebuild (Proposed 2017) Bain - Spring Valley - North Lake Geneva 138 kV line (Proposed 2019)
0.03	7	Ford Drive - New Holstein 69 kV flo Forest Junction - Glenview 138 kV	
0.03	10	Glenview - Forest Junction 138 kV flo Kewaunee - Shoto 138 kV	
0.03	70	Atlantic - Portage 69 kV flo Atlantic - M38 138 kV	Atlantic - M38 69 kV rebuild (Planned 2013)
0.03	5	East Krok - Kewaunee 138 kV flo Fox River - North Appleton 345 kV	
0.03	3	Howard - Velp Ave 138 kV flo Lost Dauphin - Red Maple 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.03	23	Blackhawk - West Middleton 69 kV flo Femrite - Kegonsa 138 kV	Blount - Cardinal 138 kV line (Provisional 2020)
0.03	48	Atlantic - M38 69 kV flo Atlantic 138/69 kV Xfmr T1	Atlantic - M38 69 kV rebuild (Planned 2013)
0.03	10	Edgewood - Mukwonago 138 kV flo Arcadian 345/138 Xfmr T2	Mukwonago - Edgewood - St. Martins 138 kV rebuild (Proposed 2017)
0.03	8	Lost Dauphin - Red Maple 138 kV flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.03	4	Falls - Morgan 138 kV flo Dead River - Plains 345 kV	Bay Lake Project: Morgan - Stiles 138 kV double circuit (Proposed 2017)
0.02	24	Kilbourn 138/69 kV Xfmr T31	Monroe County - Council Creek 161 kV line (Planned 2015) Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020)
0.02	11	New Holstein - St. Nazianz 69 kV flo Custer - Manrap 69 kV	Shoto - Custer 138 kV line (Provisional 2022)
0.02	43	Chaffee Creek - Coloma Tap 69 kV flo Arpin - Eau Claire 345 kV & Council Creek - Hilltop 69 kV	Chafee Creek - Coloma Tap 69 kV uprate (Planned 2013)
0.02	21	West Marinette 138/69 kV Xfmr T2	
0.02	25	North Lake Geneva Tap - Sugar Creek 138 kV flo University - Whitewater 138 kV	Bain - Spring Valley - North Lake Geneva 138 kV line (Proposed 2019)
0.02	6	Tecumseh 138/69 kV Xfmr T1 flo Forest Junction - Glenview 138 kV	
0.02	6	North Appleton 345/138 kV Xfmr T3 flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.02	2	Cassel - Wien 115 kV flo Gardner Park - Rocky Run 345 kV	
0.02	12	Ashland Ave - Oak Street 69 kV flo Highway V 138/69 kV Xfmr T1	Pulliam - Glory Road 138 kV line conversion K-115 (Proposed 2016)
0.01	1	Aviation - North Fond du Lac 138 kV flo Fitzgerald 345/138 Xfmr T1	Fitzgerald 2nd 345/138 kV Transformer (Planned 2016)
0.01	2	Fitchburg - Wingra 69 kV flo Femrite - Kegonsa 138 kV	
0.01	1	Edgewood - St. Martins 138 kV flo Paddock - Wempletown 345 kV	Mukwonago - Edgewood - St. Martins 138 kV rebuild (Proposed 2017) Bain - Spring Valley - North Lake Geneva 138 kV line (Proposed 2019)
0.01	5	Liberty Street 138/69 kV Xfmr T6 flo Liberty Street - Pulliam 138 kV	Pulliam - Glory Road 138 kV line conversion K-115 (Proposed 2016)
0.01	6	Rocky Run 345/115 kV Xfmr T4 flo Arpin - Rocky Run 345 kV & POE SPS or Rocky Run 345/115 Xfmr T1	Rocky Run 345/115 kV Xfmr T1 replacement (Proposed 2016)
0.01	7	Bluestone - Finger Rd 69 kV flo Shoto 138/69 kV Xfmr T1	Shoto - Custer 138 kV line (Provisional 2022)
0.01	7	Sheepskin - Stoughton 69 kV flo Paddock 345/138 kV Xfmr T21	Rockdale - Cardinal 345 kV (In-service early 2013)

0.01	4	Stagecoach - Timberlane 69 kV flo Quadcities - Rock Creek 345 & E Calm Op Guide	Cardinal - Bluffs 345 kV (Proposed 2020)
0.01	21	Conover - Land O Lakes 69 kV flo M-38 - North Lake 138 kV	
0.01	6	Empire - Presque Isle 138 kV flo Arnold - Plains 138 kV	Arnold 345/138 kV Transformer (Planned 2015) Empire - Presque Isle 138 kV rebuild (Proposed 2015)
0.01	30	Kilbourn 138/69 kV Xfmr T32	Monroe County - Council Creek 161 kV line (Planned 2015) Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020)
0.01	29	Petenwell 138/69 kV Xfmr T31	New Petenwell 138/69 kV Transformer (Planned 2014)
0.01	24	Atlantic - M38 69 kV flo Atlantic - Winona 69 kV	Atlantic - M38 69 kV rebuild (Planned 2013)
0.01	39	Atlantic 138/69 kV Xfmr T1 flo M38 - Winona 138 kV	Atlantic - M38 69 kV rebuild (Planned 2013)
0.01	2	Pleasant Prairie - Zion 345 kV flo Arcadian - Zion 345 kV & SE WI SPS	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
0.01	5	Danz Avenue - Pulliam 69 kV flo Pulliam - Van Buren 69 kV	Pulliam - Glory Road 138 kV line conversion K-115 (Proposed 2016)
0.01	5	Falls - Morgan 138 kV	Bay Lake Project: Morgan - Stiles 138 kV double circuit (Proposed 2017)
0.01	15	Conover - Land O Lakes 69 kV flo M-38 - Perch Lake 138 kV	
0.01	1	Maplewood - Pulliam 138 KV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.01	6	Dyckesville - Rosiere 138 kV flo Canal 138/69 kV Xfmr T2	
0.01	11	Lakehead - Masonville 69 kV flo Chandler - Delta 69kV (CKT 2)	Chandler - Old Mead Road 138 & 69 kV lines (Planned 2014)
0.01	2	Werner - Werner West 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.01	21	Atlantic - M38 69 kV flo Atlantic - M38 138 kV	Atlantic - M38 69 kV rebuild (Planned 2013)
0.01	19	Bruce Crossing - Mass 69 kV flo Atlantic - Winona 69 kV	
0.01	6	Bluestone - Wesmark 69 kV flo Glenview - Shoto 138 kV	
0.00	4	Arnold - Perkins 138 kV (29051) flo Arnold - Perkins 138 kV (29071)	Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016)
0.00	3	Montello - Turtle Lake 69 kV flo Columbia - S. Fond du Lac 345 kV	Montello - Wautoma 69 kV rebuild (Proposed 2015)
0.00	2	Pine River - Trout Lake 69 kV	Power Flow Control in UP (Planned 2014)
0.00	4	Bluff Creek - Sugar Creek 138 kV flo University - Whitewater 138 kV	University - Sugar Creek 138 kV uprate (Provisional 2018)
0.00	3	Chaffee Creek - Coloma Tap 69 kV flo Council Creek 138/69 kV Xfmr T31	Chaffee Creek - Coloma Tap 69 kV uprate (Planned 2013)
0.00	3	Canal - East Krok 138 kV flo Highway V 138/69 kV T1	Highway V Breaker Additions (Provisional 2017)
0.00	4	Atlantic - Portage 69 kV flo Atlantic 138/69 kV Xfmr T1	Atlantic - M38 69 kV rebuild (Planned 2013) Atlantic - Winona 69 kV rebuild (Provisional 2022)
0.00	1	Elkhart Lake - Forest Junction 138 kV flo Edgewater - Saukville 345 kV	ATC is currently investigating solutions
0.00	1	Ellington - Hintz 138 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.00	1	Pioneer - Pioneer Tap 69 kV flo Morgan - Plains 345 kV	Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016)
0.00	7	Hiawatha - Pine River 69 kV flo Hiawatha - Roberts 69 kV	Power Flow Control in UP (Planned 2014)
0.00	12	Lakehead - Masonville 69 kV flo Chandler - Delta 69kV (CKT 1)	Chandler - Old Mead Road 138 & 69 kV lines (Planned 2014)
0.00	2	Kaukauna Combined Locks Tap - Kaukauna Combined Locks 138 kV	No solution - virtual activity causing congestion
0.00	2	De Pere - Glory Road 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.00	2	City Limits - Lake Park 138 kV flo Fox River - North Appleton 345 kV	
0.00	2	M-38 - Perch Lake 138 kV flo M-38 - Northlake 138 kV	
0.00	4	Chandler - Lakehead Rapid River 69 kV flo Chandler - Delta 69 kV CKT 1	Chandler - Old Mead Road 138 & 69 kV lines (Planned 2014)
0.00	1	M-38 - North Lake 138 kV flo M-38 - Perch Lake 138 kV	

0.00	1	Straits 138/69 kV Xfmr T1	Hiawatha - Indian Lake 138 kV energize (In-service 2013) Power Flow Control in UP (Planned 2014)
0.00	1	Cornell - Range Line (61443) 138 kV flo Granville - Range Line 138 kV	
0.00	2	Casaloma - Ellington 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.00	13	51TC - Goetzville Tap 69 kV	No solution - virtual activity causing congestion
0.00	8	51TC - Pickford 69 kV	No solution - virtual activity causing congestion
0.00	9	Castle Rock - Quincy Tap 69 kV flo Castle Rock - Hilltop 69 kV	No solution - virtual activity causing congestion
0.00	1	Dafter - Nine Mile 69 kV	No solution - virtual activity causing congestion
0.00	4	Detour Xfmr T1	No solution - virtual activity causing congestion
0.00	1	Detour Xfmr T2	No solution - virtual activity causing congestion
0.00	1,001	Manistique Xfmr T1	No solution - virtual activity causing congestion
0.00	194	Turtle Xfmr T42	No solution - virtual activity causing congestion

Severity Index	Hours	Real Time Constraint	Potential Solution(s)
<b>53.31</b>	<b>1,115.6</b>	<b>Total for all ATC Real Time constraints 1-1-2013 thru 12-31-2013</b>	<b>Additional solutions may be found in ATC TYA</b>
5.39	43.4	Columbia - Portage 138 kV (X-20) flo Columbia - Portage 138 kV (X-13)	ATC is currently investigating solutions Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020) Columbia - Portage 138 kV rebuilds (Provisional 2025)
3.70	4.7	Forest Junction - Point Beach 345 kV flo Fox River - Point Beach 345 kV	
3.56	104.3	Albers - Kenosha 138 kV flo Albers - Bain 138 kV	Albers - Kenosha 138 kV rebuild (Planned 2014)
2.55	63.3	Arcadian - Zion 345 kV flo Pleasant Prairie - Zion 345 kV & SE WI SPS	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
2.47	30.6	North Appleton 345/138 kV Xfmr T3 flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
1.94	35.5	Falls - Morgan 138 kV flo Morgan - Plains 345 kV	Bay Lake Project: Morgan - Stiles 138 kV double circuit (Proposed 2017)
1.84	25.5	Ellington - Hintz 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
1.69	26.6	Pulliam - Stiles 138 kV (64441) flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
1.66	9.8	Paddock - Town Line Rd 138 kV flo Blackhawk - Paddock 138 kV	Paddock - Town Line Rd 138 kV rebuild (Asset Renewal 2014)
1.54	41.2	Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
1.40	34.2	Paddock - Shirland Ave 69 kV flo Blackhawk - Paddock 138 kV	Paddock - Shaw 69 kV rebuild (Planned 2014)
1.31	12.3	Forest Junction - Kaukauna Central 138 kV flo Fox River - North Appleton 345 kV	
1.10	6.1	Paddock - Town Line Rd 138 kV flo Cherry Valley - Silver Lake 345 kV (ComEd)	Paddock - Town Line Rd 138 kV rebuild (Asset Renewal 2014)
1.08	54.4	Tecumseh 138/69 kV Xfmr T1 flo Kewaunee - Shoto 138 kV	
1.07	2.5	Flow South PTFD	Power Flow Control in UP (Planned 2014) Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016) Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
1.06	8.4	Forest Junction - Lake Park 138 kV flo Fox River - North Appleton 345 kV	
1.03	8.2	Bluemound 230/138 kV Xfmr T2 flo Bluemound 230/138 kV Xfmr T1	
1.03	8.8	Ellington - North Appleton 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.94	17.4	Granville 345/138 kV Xfmr T3 flo Arcadian - Cypress 345 kV	
0.91	13.6	Burlington - North Lake Geneva Tap 138 kV flo Cherry Valley - Silver Lake 345 kV	Bain - Spring Valley - North Lake Geneva 138 kV line (Proposed 2019)
0.86	7.6	Lost Dauphin - North Appleton 138 kV flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.73	7.5	Ellington - Hintz 138 kV flo Weston Unit #4	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.68	21.3	Cornell - Range Line (61443) 138 kV flo Cornell - Range Line (61451) 138 kV	
0.66	27.3	Tecumseh 138/69 kV Xfmr T1 flo Glenview 138/69 kV Xfmr T1	
0.65	3.9	North Appleton 345/138 kV Xfmr T1 flo Werner West 345/138 kV Xfmr T1	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.54	5.9	McMillan - Wildwood 115 kV flo Sherman Street - Sunnyvale 115 kV	
0.50	8.2	Highway V - Preble 138 kV flo Lost Dauphin - Red Maple 138 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.50	3.4	Lost Dauphin - Red Maple 138 kV flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.50	23.2	Bluestone - Finger Rd 69 kV flo Shoto 138/69 kV Xfmr T2	
0.47	6.9	Paddock - Town Line Rd 138 kV	Paddock - Town Line Rd 138 kV rebuild (Asset Renewal 2014)
0.46	8.1	Sherman Street - Sunnyvale 115 kV flo Arpin - Rocky Run 345 kV	
0.42	21.2	Tecumseh 138/69 kV Xfmr T1 flo Forest Junction - Glenview 138 kV	



0.42	6.1	Columbia - Portage 69 kV flo Columbia - Portage 138 kV (X-13)	ATC is currently investigating solutions Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020)
0.42	64.2	Pleasant Prairie 345/24 kV Xfmr T2	Pleasant Prairie Bus Reconfiguration (Planned 2013) Transmission status may have contributed to this constraint (Stability Limit)
0.40	1.9	North Appleton 345/138 kV Xfmr T3 flo Forest Junction - Point Beach 345 kV	
0.39	2.2	Fitzgerald - Sunset Point 138 kV flo South Fond du Lac 345/138 Xfmr T21 & T22	Sunset Point-Ellinwood 138kv uprate (Proposed 2016)
0.33	3.1	Albers - Paris 138 kV flo Pleasant Prairie - Racine 345 kV	Albers - Paris 138 kV rebuild (Proposed 2015)
0.33	11.8	Edgewood - St. Martins 138 kV flo Arcadian - Zion 345 & SE WI SPS	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013) Mukwonago - Edgewood - St. Martins 138 kV rebuild (Proposed 2017) Bain - Spring Valley - North Lake Geneva 138 kV line (Proposed 2019)
0.32	2.3	Morrison Ave - Sherman St 115 kV flo Sherman St - Weston 115 kV	
0.31	4.8	Kenosha - Lakeview 138 kV	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013) Kenosha - Lakeview 138 kV rebuild (Planned 2015)
0.30	16.3	East Krok - Kewaunee 138 kV flo Fox River - Point Beach 345 kV & SPS	
0.26	5.9	North Appleton 345/138 kV Xfmr T3 flo Kewaunee - Point Beach 345 kV & SPS	
0.26	39.4	Presque Isle Area Import Interface	ATC is currently investigating solutions
0.26	4.5	Highway V - Preble 138 kV flo De Pere - Glory Road 138 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.26	6.2	Shaw - Shirland Ave 69 kV flo Blackhawk - Colley Road 138 kV	Paddock - Shaw 69 kV rebuild (Planned 2014)
0.25	4.3	Atlantic - M38 138 kV flo M38 138/69 kV Xfmr T1	
0.25	16.5	Lost Dauphin - Ryan Street 69 kV flo Forest Junction - Glenview 138 kV	
0.24	1.4	North Appleton 345/138 kV Xfmr T1 flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.23	17.0	Pleasant Prairie 345/24 kV Xfmr T2 flo Pleasant Prairie - Racine 345 kV	Pleasant Prairie Bus Reconfiguration (Planned 2013) Transmission status may have contributed to this constraint (Stability Limit)
0.21	3.5	Indian Lake 138/69 kV Xfmr T2 flo Indian Lake 138/69 kV Xfmr T1	Hiawatha - Indian Lake 138 kV energize (In-service 2013) Power Flow Control in UP (Planned 2014)
0.21	3.5	Pleasant Prairie - Zion 345 kV flo Arcadian - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
0.18	4.7	Highway V - Preble 138 kV flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.17	3.3	Felch Mountain Tap - Nordic 69 kV flo Empire - Forsyth 138 kV	Arnold 345/138 kV Transformer (Planned 2015) Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016)
0.16	0.3	Rock River - Town Line Road 138 kV (X-73)	
0.16	4.0	Kewaunee - Point Beach 345 kV flo Fox River - North Appleton 345 kV	
0.16	4.3	Pleasant Prairie - Zion 345 kV flo Arcadian - Zion 345 kV & SE WI SPS	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
0.14	4.7	Kilbourn 138/69 kV Xfmr T32	Monroe County - Council Creek 161 kV line (Planned 2015) Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020)
0.13	11.6	East Campus - Walnut 69 kV (6976) flo East Campus - Walnut 69 kV (6975)	Cardinal - Blount 138 kV line (Provisional 2024)
0.13	1.0	Howard - Velp Ave 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.12	6.3	Eden - Mineral Point 69 kV flo Dodgeville - Eden 69 kV	Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020)
0.12	5.0	Eagle DPC - Richland 69 kV flo Boscobel - Gran Grae 69 kV	Cardinal - Bluffs 345 kV (Proposed 2020)
0.11	1.1	Pulliam - Stiles 138 kV (64441) flo Morgan - Plains 345 kV	
0.11	23.2	New Holstein - St. Nazianz 69 kV flo Shoto 138/69 kV Xfmr T2	Shoto - Custer 138 kV line (Provisional 2022)

0.11	2.4	Bain - Kenosha 138 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
0.11	1.7	Albers - Kenosha 138 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013) Albers - Kenosha 138 kV rebuild (Planned 2014)
0.09	2.1	Green Lake - North Randolph 138 kV flo Edgewater - S. Fond du Lac 345 kV	
0.09	1.5	Blackhawk - West Middleton 69 kV flo Femrite - Kegonsa 138 kV	Blount - Cardinal 138 kV line (Provisional 2020)
0.08	16.8	Mears Corners - Woodenshoe 138 kV flo Butte Des Morts - Neevin 138 kV	Mears Corner - Woodenshoe 138 kV rebuild (Asset Renewal 2020)
0.07	10.1	Granville 345/138 kV Xfmr T3 flo Saukville 345/138 kV Xfmr T1	
0.07	3.6	North Appleton 345/138 kV Xfmr T3 flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.07	22.4	Bluestone - Finger Rd 69 kV flo Glenview 138/69 kV Xfmr T2	
0.07	4.3	Bain 345/138 kV Xfmr T4 flo Bain - Pleasant Prairie 345 kV (PLPL91)	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013)
0.06	3.9	Badger 138/115 kV Xfmr T1 flo Gardner Park - Highway 22 345 kV	
0.05	1.4	Granville 345/138 kV Xfmr T3 flo Arcadian 345/138 kV Xfmr T1	
0.05	3.0	Edgewood - Mukwonago 138 kV flo Pleasant Prairie - Zion 345 kV & SE WI SPS	Pleasant Prairie - Zion Energy Center 345 kV line (In-service 2013) Mukwonago - Edgewood - St. Martins 138 kV rebuild (Proposed 2017)
0.05	0.7	Butler - Granville 138 kV	Butler - Granville 138 kV reconductor (Proposed 2015)
0.05	0.2	Butte Des Morts - North Appleton 138 kV flo North Appleton - Werner West 345 kV	
0.05	0.3	Sherman Street - Sunnyvale 115 kV flo King - Eau Claire - Arpin 345 kV	
0.05	1.2	Lakehead - Sunrise 138 kV flo Sugar Creek - University 138 kV	
0.05	0.2	Harbor - Kansas 138 kV	
0.04	21.0	New Holstein - St. Nazianz 69 kV flo Glenview - Shoto 138 kV	Shoto - Custer 138 kV line (Provisional 2022)
0.04	2.3	Elkhart Lake - Saukville 138 kV flo Fitzgerald - South Fond du Lac 345 kV	ATC is currently investigating solutions
0.04	3.7	Pulliam - Stiles 138 kV (64441) flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.04	1.1	Kilbourn 138/69 kV Xfmr T32 flo Kilbourn 138/69 kV Xfmr T31	Monroe County - Council Creek 161 kV line (Planned 2015) Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020)
0.04	1.8	North Appleton - Werner West 345 kV flo Weston Unit #4	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.03	3.2	Atlantic - Portage 69 kV flo Atlantic - M38 138 kV	Atlantic - M38 69 kV rebuild (Planned 2013)
0.03	0.9	Montello - Turtle Lake 69 kV flo Edgewater - S. Fond du Lac 345 kV	Montello - Wautoma 69 kV rebuild (Proposed 2015)
0.03	0.3	Paddock - Town Line Rd 138 kV flo Paddock - Rockdale 345 kV	Paddock - Town Line Rd 138 kV rebuild (Asset Renewal 2014)
0.03	0.2	Sherman Street - Sunnyvale 115 kV flo Gardner Park - Rocky Run 345 kV	
0.03	6.3	Sheepskin - Stoughton 69 kV flo Rockdale - Russll 138 kV	
0.02	0.2	Columbia - Portage 138 kV (X-13)	ATC is currently investigating solutions Badger - Coulee 345 kV line (Proposed 2018) Cardinal - Bluffs 345 kV (Proposed 2020) Columbia - Portage 138 kV rebuilds (Provisional 2025)
0.02	2.8	Lakehead - Masonville 69 kV flo Chandler - Delta 69kV (CKT 2)	Chandler - Old Mead Road 138 & 69 kV lines (Planned 2014)
0.02	0.6	Chandler 138/69 kV Xfmr T4	Chandler - Old Mead Road 138 & 69 kV lines (Planned 2014) Bay Lake Project: Holmes - Old Mead Road 138 kV line (Proposed 2016)
0.02	0.6	North Appleton - Werner West 345 kV flo Coon Creek - Dickinson 345 kV & Coal Creek - Dickinson DC (GRE	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.02	0.9	Mirro - Northeast 69 kV flo Lakefront Unit #9	Shoto - Custer 138 kV line (Provisional 2022)
0.02	2.8	Lakehead - Masonville 69 kV flo Chandler 138/69 kV Xfmr T4	Chandler - Old Mead Road 138 & 69 kV lines (Planned 2014)
0.01	1.3	New Holstein - St. Nazianz 69 kV flo Shoto 138/69 kV Xfmr T1	Shoto - Custer 138 kV line (Provisional 2022)

0.01	0.1	Butler - Granville 138 kV flo Granville - Tosa 138 kV	Butler - Granville 138 kV reconductor (Proposed 2015)
0.01	0.8	New Holstein - St. Nazianz 69 kV	Shoto - Custer 138 kV line (Provisional 2022)
0.01	0.8	Friesland - North Randolph 138 kV flo Columbia - South Fond du Lac 345 kV	
0.01	3.7	Northwest Beloit - Paddock 138 kV	
0.01	0.4	Bluestone - Finger Rd 69 kV	
0.01	0.3	Sherman Street - Sunnyvale 115 kV flo Arpin - Rocky Run 345 kV & POE SPS	
0.01	0.9	Juneau - South Beaver Dam 69 kV flo Crawfish - Jefferson 138 kV	
0.01	0.3	Montello - Turtle Lake 69 kV flo Columbia - S. Fond du Lac 345 kV	Montello - Wautoma 69 kV rebuild (Proposed 2015)
0.01	0.8	Arcadian - Waukesha 138 kV (9962) flo Arcadian - Waukesha 138 kV (9942)	Arcadian - Waukesha 138 kV lines 9942 and 9962 rebuild (Proposed 2019)
0.00	1.0	Forest Junction - Glenview 138 kV flo Kewaunee - Point Beach 345 kV	
0.00	0.7	Harbor - Kansas 138 kV flo Kansas - Norwich 138 kV	
0.00	0.2	Hiawatha - Rextop Tap 69 kV flo Hiawatha - Robers 69 kV	Power Flow Control in UP (Planned 2014)
0.00	0.3	De Pere - Glory Road 138 kV flo Highway V 138/69 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.00	0.1	Casaloma - Ellington 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.00	0.2	Butte des Morts - Casaloma 138 kV flo North Appleton - Werner West 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)
0.00	0.2	McMillan - Wildwood 115 kV flo Arpin - Rocky Run 345 kV & POE SPS	
0.00	0.1	Cornell - Range Line (61443) 138 kV flo Granville - Range Line 138 kV	
0.00	0.1	Little Suamico - Pulliam 138 kV flo Highway 22 - Morgan 345 kV	Bay Lake Project: North Appleton - Morgan 345 & 138 kV lines (Proposed 2017)

Severity Index	Hours	Day Ahead Element
<b>50.11</b>	<b>3,815</b>	<b>Most limiting ATC Day Ahead constrained elements 1-1-2013 thru 12-31-2013</b>
14.01	713	Minnesota to Wisconsin Exports Interface (MWEX)
5.93	427	Albers - Kenosha 138 kV
4.69	158	Columbia - Portage 138 kV (X-20)
4.52	239	North Appleton 345/138 kV Xfmr T3
2.92	251	Paddock - Town Line Rd 138 kV
2.65	104	Forest Junction - Lake Park 138 kV
2.58	159	Forest Junction - Kaukauna Central 138 kV
1.94	180	Pleasant Prairie - Zion 345 kV
1.92	250	Arcadian - Zion 345 kV
1.84	135	Ellington - Hintz 138 kV
1.69	44	Arcadian - Waukesha 138 kV (9962)
1.56	512	Pulliam - Stiles 138 kV (64441)
1.44	91	Bluemound 230/138 kV Xfmr T2
1.38	317	Falls - Morgan 138 kV
1.07	235	Pleasant Prairie 345/24 kV Xfmr T2

Severity Index	Hours	Real Time Element
<b>37.01</b>	<b>612.1</b>	<b>Most limiting ATC Real Time constrained elements 1-1-2013 thru 12-31-2013</b>
5.39	43.4	Columbia - Portage 138 kV (X-20)
3.70	4.7	Forest Junction - Point Beach 345 kV
3.67	106.0	Albers - Kenosha 138 kV
3.26	23.1	Paddock - Town Line Rd 138 kV
3.20	42.0	North Appleton 345/138 kV Xfmr T3
2.56	33.0	Ellington - Hintz 138 kV
2.55	63.3	Arcadian - Zion 345 kV
2.16	102.9	Tecumseh 138/69 kV Xfmr T1
1.94	35.5	Falls - Morgan 138 kV
1.91	49.0	Pleasant Prairie - Zion 345 kV
1.85	31.3	Pulliam - Stiles 138 kV (64441)
1.40	34.2	Paddock - Shirland Ave 69 kV
1.31	12.3	Forest Junction - Kaukauna Central 138 kV
1.07	2.5	Flow South PTFD
1.06	28.9	Granville 345/138 kV Xfmr T3