

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

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.

Severity Index	Hours	Constraint	Potential Solution
5.51	731	Total for all ATC Day Ahead constraints - September 2011	Solutions listed in ATC TYA unless otherwise noted
2.41	223	Kenosha - Lakeview 138 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (Proposed 2014)
0.73	105	Lakeview - Zion 138 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (Proposed 2014)
0.61	184	Flow South PTDF	Flow Control Device (Proposed, 2014)
0.52	58	Stiles - Pulliam 138 kV (64451) flo Highway 22 - Morgan 345 kV	Area transmission outages may have contributed to this constraint
0.42	23	Rocky Run 345/115 kV Transformer T4 flo Rocky Run 345/115 kV Transformer T1	Monroe County - Coucil Creek 161 kV line (Proposed, 2013)
0.32	7	Pleasant Prairie - Zion 345 kV flo Zion - Arcadian 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (Proposed 2014)
0.19	12	Granville - Butler 138 kV flo Granville - Arcadian 345 kV	Terminal Equipment Replacement at Butler Substation (Proposed 2011)
0.12	12	Minnesota to Wisconsin Exports Interface (MWEX)	Monroe County - Council Creek 161 kV line (Proposed, 2013) North La Crosse - Madison 345 kV line (Proposed 2018)
0.05	12	Dam Heights - Okee Tap 69 kV flo Kegonsa - Femrite 138 kV	Rockdale - West Middleton 345 kV (Planned 2013)
0.05	29	Glenview 138/69 kV Transformer T1 flo Shoto 138/69 kV Line	Area transmission outages may have contributed to this constraint Shoto - Custer 138 kV line (Provisional 2022)
0.02	2	North Appleton - Werner West 345 kV flo Weston Unit4	Area transmission outages may have contributed to this constraint
0.02	3	Depere - Glory Road 138 kV flo Highway V - Tower Drive 138 kV	Area transmission outages may have contributed to this constraint
0.01	7	Nordic - Felch Tap 69 kV flo Plains - Arnold 138 kV ¹	Arnold 345/138 kV Transformer (Provisional, 2015) Flow Control Device (Proposed, 2014) Second Chandler 138/69 kV Transformer (Proposed, 2012)
0.01	5	Bluemound 230/138 kV Transformer T2 flo Oak Creek 345/230 kV Transformer T895	Area transmission outages may have contributed to this constraint
0.01	18	Straits - Evergreen 69 kV flo Straits - Pine River 69 kV	Flow Control Device (Proposed, 2014)
0.00	20	Rudyard Tap - Pine River 69 kV flo Pine River - Nine Mile 69 kV	Uprate Pine River - Nine Mile 69 kV line (Proposed 2016)
0.00	2	Nordic - Felch Tap 69 kV flo Chandler 138/69 kV Transformer T1	Arnold 345/138 kV Transformer (Provisional, 2015) Flow Control Device (Proposed, 2014) Second Chandler 138/69 kV Transformer (Proposed, 2012)
0.00	1	Nine Mile - Kincheloe Main Tap 69 kV flo Hiawatha - Roberts 69 kV	Uprate Pine River - Nine Mile 69 kV line (Proposed 2016)
0.00	1	Rock River 138/69 kV Transformer T42	
0.00	1	Glenview 138/69 kV Transformer T1 flo Kewaunee - Shoto 138 kV Line	Area transmission outages may have contributed to this constraint Shoto - Custer 138 kV line (Provisional 2022)
0.00	6	Manistique Transformer T1	No solution - virtual activity causing congestion

* This project not part of the ATC 10-Year Assessment

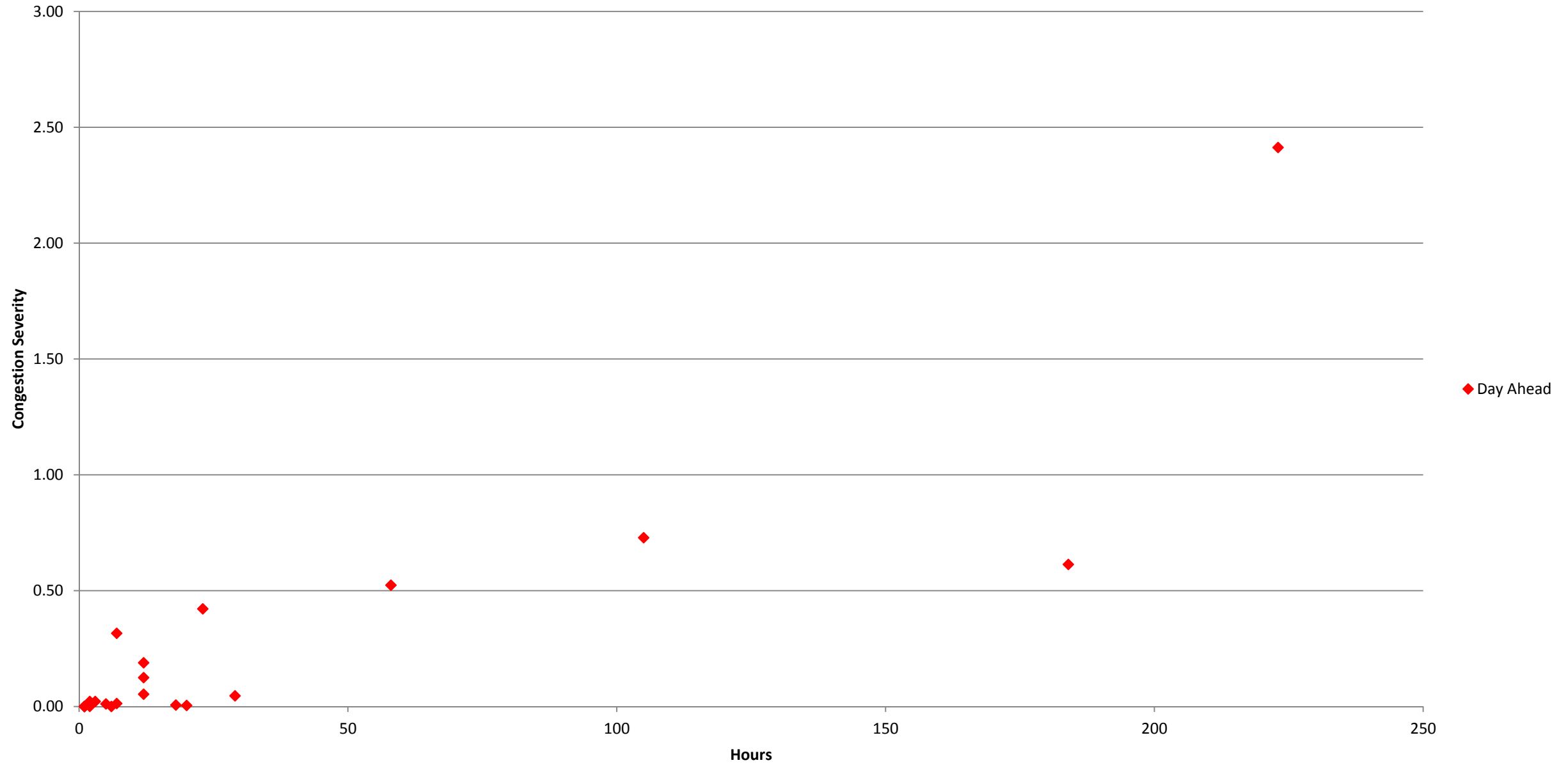
1. This constraint may have been bound for other contingencies as well.

Severity Index	Hours	Constraint	Potential Solution
4.71	75	Total for all ATC Real Time constraints - September 2011	Solutions listed in ATC TYA unless otherwise noted
1.91	29	Kenosha - Lakeview 138 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (Proposed 2014)
1.26	8	Rocky Run 345/115 kV Transformer T4 flo Rocky Run 345/115 kV Transformer T1	Monroe County - Coucil Creek 161 kV line (Proposed, 2013)
0.70	11	Lakeview - Zion 138 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line (Proposed 2014)
0.42	5	North Appleton - Werner West 345 kV flo Weston Unit4	Area transmission outages may have contributed to this constraint
0.15	2	Bluemound 230/138 kV Transformer T2 flo Bluemound 230/138 kV Transformer T1	Area transmission outages may have contributed to this constraint
0.11	1	North Appleton - Werner West 345 kV flo Sherbourne County Unit #3 (NSP)	Area transmission outages may have contributed to this constraint
0.08	5	Nordic - Felch Tap 69 kV flo Plains - Arnold 138 kV ¹	Arnold 345/138 kV Transformer (Provisional, 2015) Flow Control Device (Proposed, 2014) Second Chandler 138/69 kV Transformer (Proposed, 2012)
0.05	11	Nordic - Felch Tap 69 kV flo Chandler 138/69 kV Transformer T1	Arnold 345/138 kV Transformer (Provisional, 2015) Flow Control Device (Proposed, 2014) Second Chandler 138/69 kV Transformer (Proposed, 2012)
0.02	2	Glenview 138/69 kV Transformer T1 flo Kewaunee - Shoto 138 kV Line	Area transmission outages may have contributed to this constraint Shoto - Custer 138 kV line (Provisional 2022)
0.00	1	Shoto - Mirro 69 kV	Area transmission outages may have contributed to this constraint Shoto - Custer 138 kV line (Provisional 2022)
0.00	0	Nordic - Felch Tap 69 kV flo Empire - Forsyth 138 kV	Arnold 345/138 kV Transformer (Provisional, 2015) Flow Control Device (Proposed, 2014) Second Chandler 138/69 kV Transformer (Proposed, 2012)
0.00	0	Glenview 138/69 kV Transformer T1 flo Tecumseh Road 138/69 kV Transformer	Area transmission outages may have contributed to this constraint Shoto - Custer 138 kV line (Provisional 2022)

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1. This constraint may have been bound for other contingencies as well.

Day Ahead Hours Vs. Congestion Severity



Real Time Hours Vs. Congestion Severity

