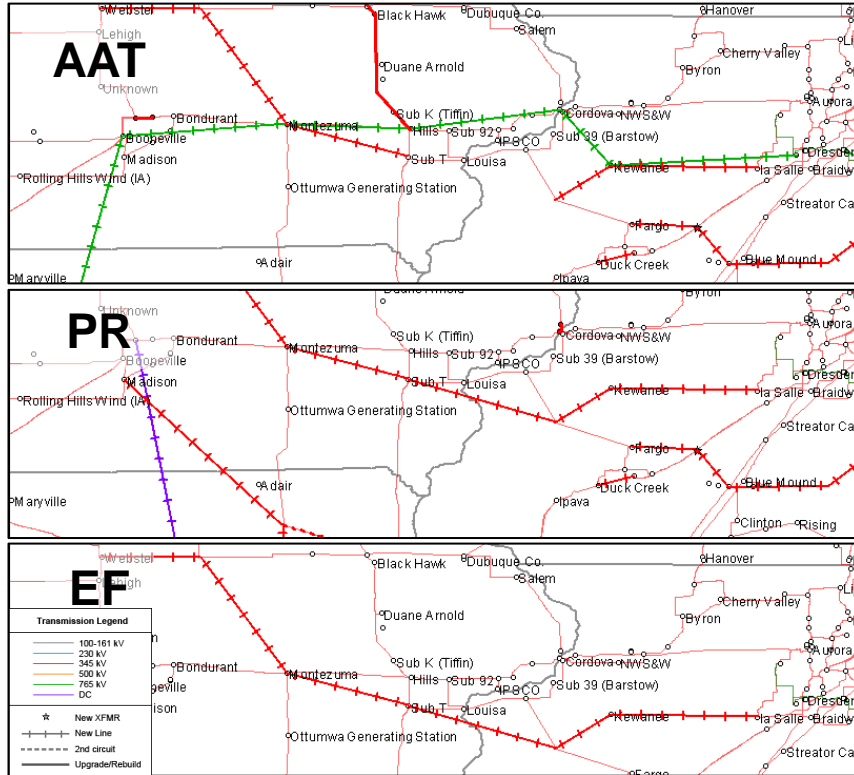




Connections Between the Regions

West to Central Connections



AAT Booneville – Montezuma – Hills – Quad Cities – Kewanee – Collins 765 kV

- *Alternative 1:* Booneville...Kewanee – Brokaw – Reynolds 765 kV (mitigates issues already addressed by C57, would overload nearby lower voltage system)

PR Webster – Franklin – Montezuma – Sub T – Sandburg – Kewanee – La Salle 345 kV

- *Alternative 1:* Madison Co – Ottumwa – Sub T 345 kV, Louisa – Sandburg – Kewanee – La Salle 345 kV (relieves fewer branch overloads, causes more overloading on other branches, relieves less economic congestion)
- *Alternative 2:* Webster – Franklin – Montezuma – Sub T 345 kV, IPSCO – Oak Grove – La Salle 345 kV (relieves fewer branch overloads, causes more overloading on other branches, relieves less economic congestion)

EF Webster – Franklin T – Montezuma – Sub T – Sandburg – Kewanee – La Salle 345 kV

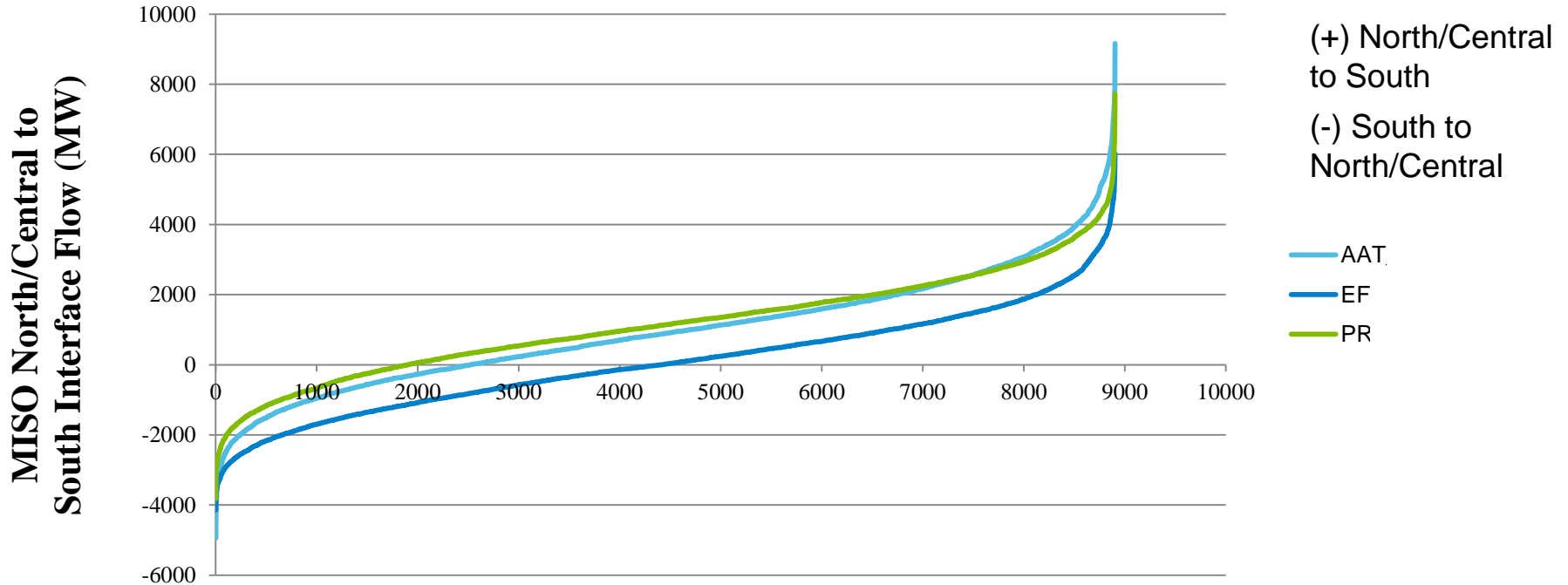
- *Alternative(s):* same as PR

North to South Flows – Reliability

	AAT (MW)	PR (MW)	EF (MW)
S → N, N → S	5400, 5300	5800, 7500	4900, 2900
Contract Path	1000	1000	1000
Max Incremental Capacity Needed	4400	6500	3900
Increase to Contract Path Due to Overlay	8200	2400	4100

- Transfers between the North and South in the reliability cases does not change based on the transmission overlay because the transfer is based entirely on the dispatch
- Increases to the contract path are based on the normal rating of the new lines connecting MISO North and South

North to South Flows – Economic Unconstrained (1/2)

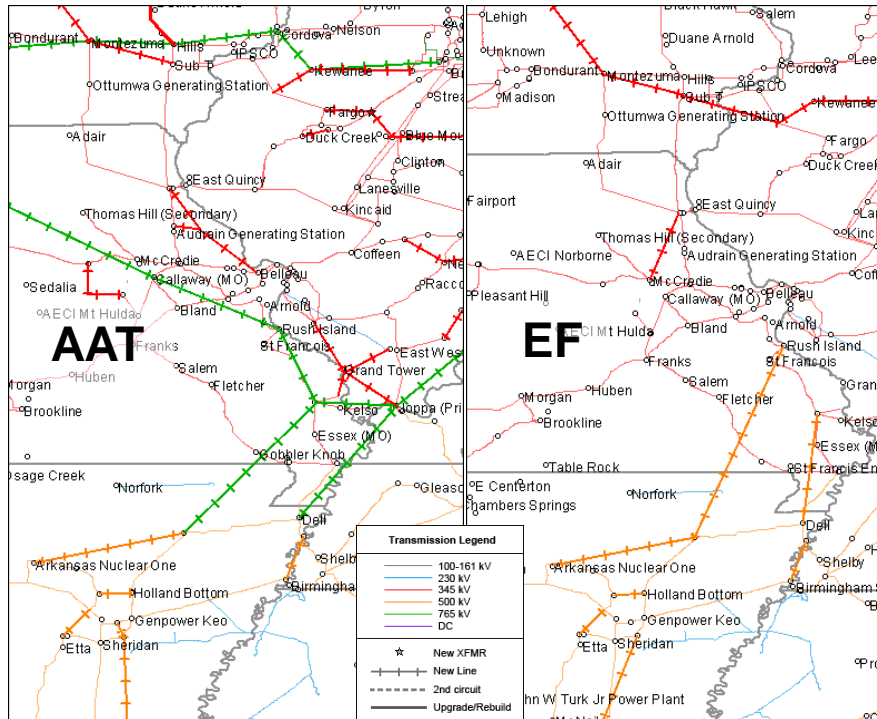


North to South Flows – Economic Unconstrained (2/2)

Direction	AAT (MW)	PR (MW)	EF (MW)
Max S→N	4900	3800	4100
90% S→N	1000	800	1800
80% S→N	400	70	1200
Max N→S	9200	7700	6000
90% N→S	3100	3000	1900
80% N→S	2300	2300	1200

- Generally the design goal for new transmission to address an economic transfer is to accommodate the amount of flow that occurs 80% of the time
- The maximum in either direction is sometimes lower than in the reliability cases (i.e. its not economic to have such high transfers)

North to South Connections (1/2)

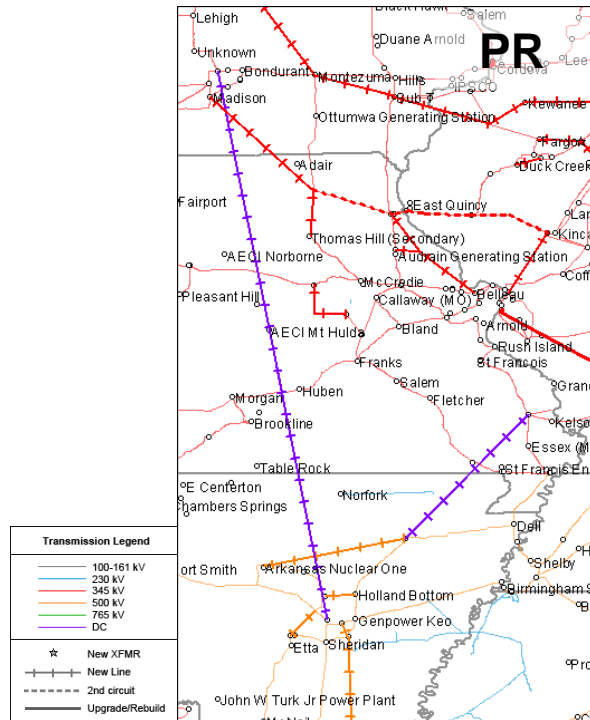


AAT Callaway – Rush Island – Lutesville – Independence
765 kV

- *Alternative 1:* Montgomery – St Francois – Lutesville – Independence 765 kV (Caused significant congestion on Enon – Montgomery 345 kV, St Francois has less outlet than Rush Island)
- *Alternative 2:* Connecting at Labadie instead of Callaway and Rush Island (Caused significant congestion on Enon – Montgomery 345 kV)
- *Alternative 3:* Connecting at Mayflower instead of Independence (Relieved less reliability issues near Little Rock area and caused additional reliability issues)

EF Rush Island – Independence 500 kV, Lutesville – Dell
500 kV

North to South Connections (2/2)



PR Grimes – Mabelvale HVDC, Lutesville – Independence HVDC

- Out of the 3 futures, PR had the highest flows between North and South, leading to the decision of studying HVDC connections
- *Alternative 1:* Connecting at Dell instead of Independence (causes East to West Issues on nearby 500 kV line)
- *Alternative 2:* Connecting at ANO instead of Mabelvale (ANO has space constraints)
- *Alternative 3:* Connecting at Booneville instead of Grimes (causes issues near Booneville, Grimes is more interconnected)