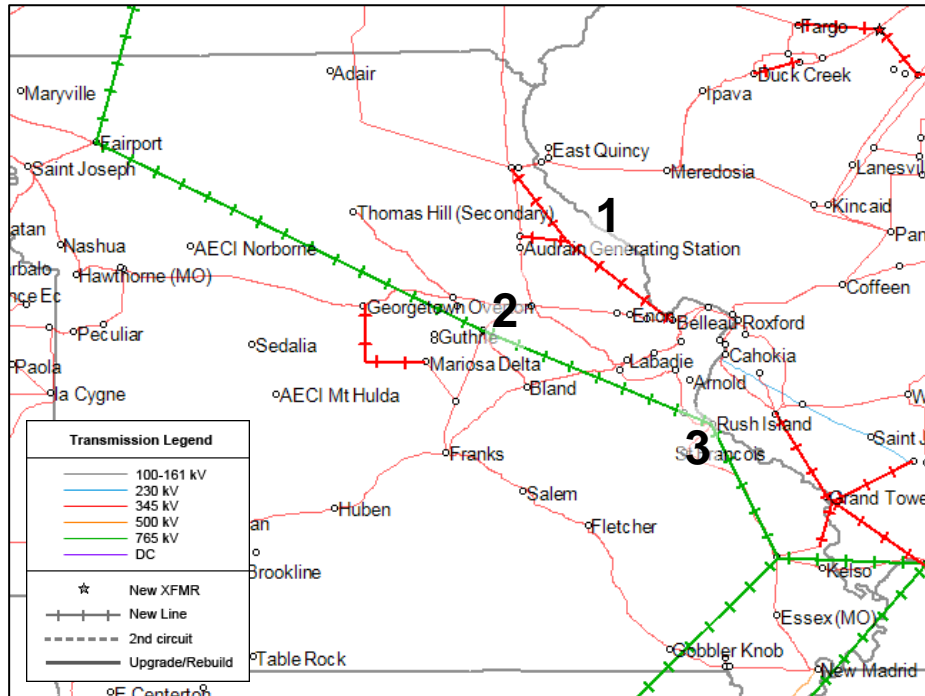




# Central and East Region

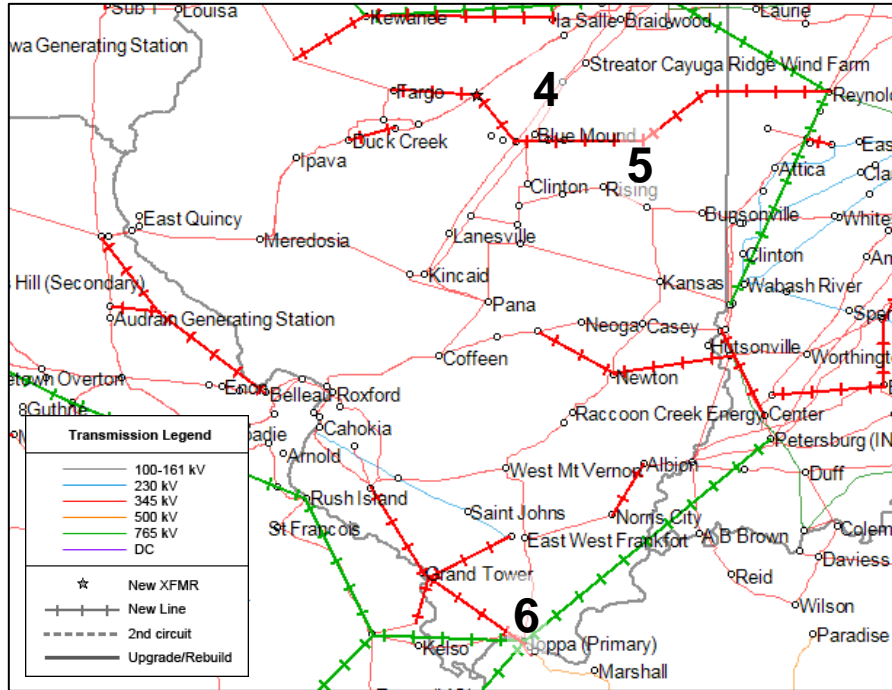
# AAT Overlay Updates Central/East Region (1/4)



**1** Modified to be Maywood – Pike – Belleau 345 kV and Spencer Creek – Pike 345 kV address R51: Maywood – Spencer Creek 345 kV, E15: Palmyra 345/161 kV XFMR, and Hannibal – Palmyra 161 kV without causing additional issues, and helps strengthen system for the loss of new nearby 765kV lines

**2/3** Moved 765 kV terminal points from Montgomery and St Francois to Callaway and Rush Island, as these substations tend to have more outlet capability and/or cause less harm to the underlying 345 kV system if the new nearby 765 kV lines are outaged

# AAT Overlay Updates Central/East Region(2/4)

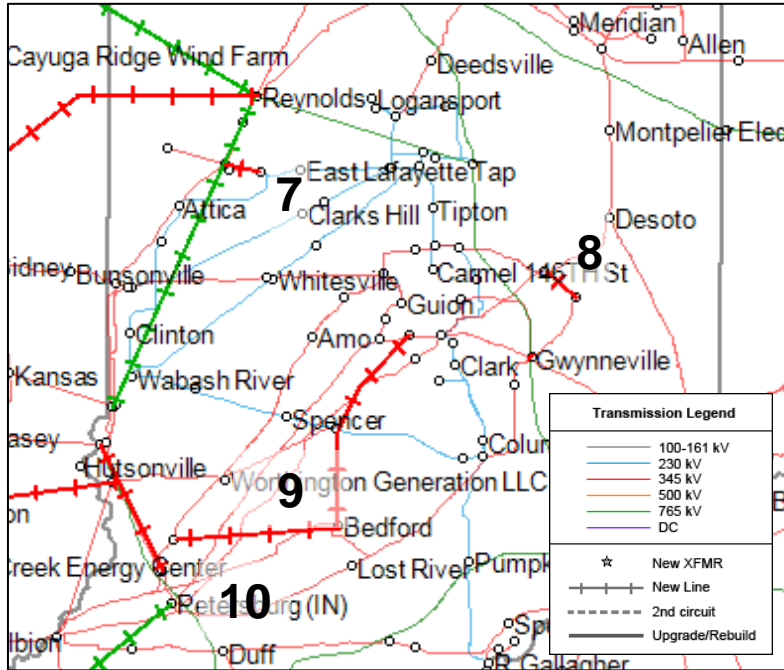


**4** Removed Fargo – Eureka – Brokaw 345 kV to lessen pressure at Brokaw, leading to less congestion on Brokaw – North Leroy 138 kV

**5** Tapped Paxton in between Brokaw – Sheldon South 345 kV, continues to fully relieve E24: Goodland – Reynolds 138 kV and provide a high-voltage path from IL to IN

**6** Added 345/161 kV XFMR at Joppa as C18, C75, and R35 all add additional high-voltage connections at Joppa. Also, tapped E W Frankfort – Shawnee 345 kV at Joppa to help address R52 and R332: Joppa – related reliability issues

# AAT Overlay Updates Central/East Region(3/4)



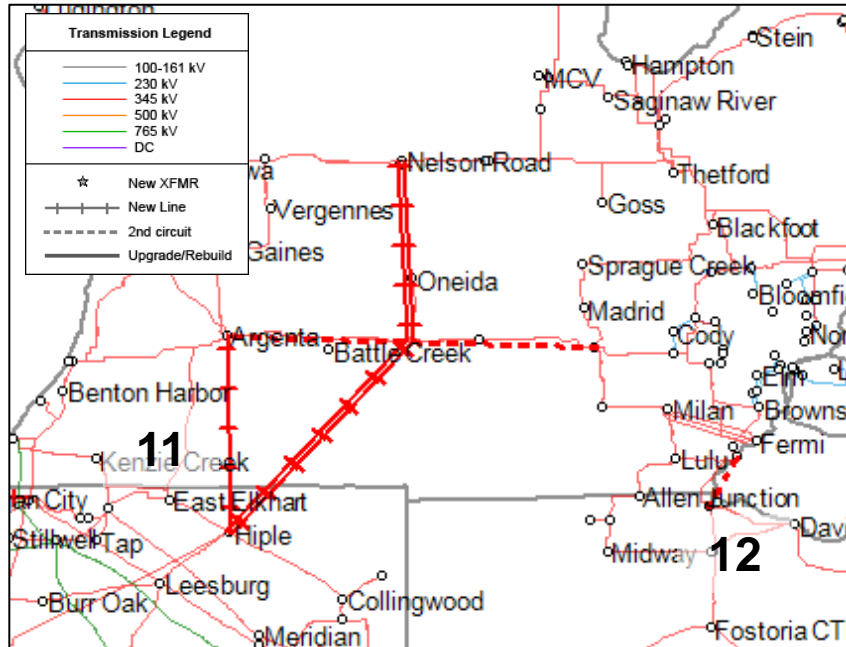
**7** Added Dequine – Lafayette 345 kV to mitigate E26: Northwest Tap – Purdue 138 kV, a top economic issue in the Central/East region

**8** Added Fall Creek – Greensboro 345 kV to mitigate various economic issues near Fall Creek (E27, E28, E29)

**9** Added Bedford – Bloomington – Pritchard – Stout 345 kV to better leverage new 765 kV into Petersburg and relieve some reliability issues near Edwardsport, while also strengthening the transmission corridor into the Indianapolis area

**10** Moved 765 kV terminal point from Rockport to Petersburg and tapped Rockport – Sullivan 765 kV at Petersburg, allowing for greater outlet at the Petersburg hub while still supporting the 765 kV loop

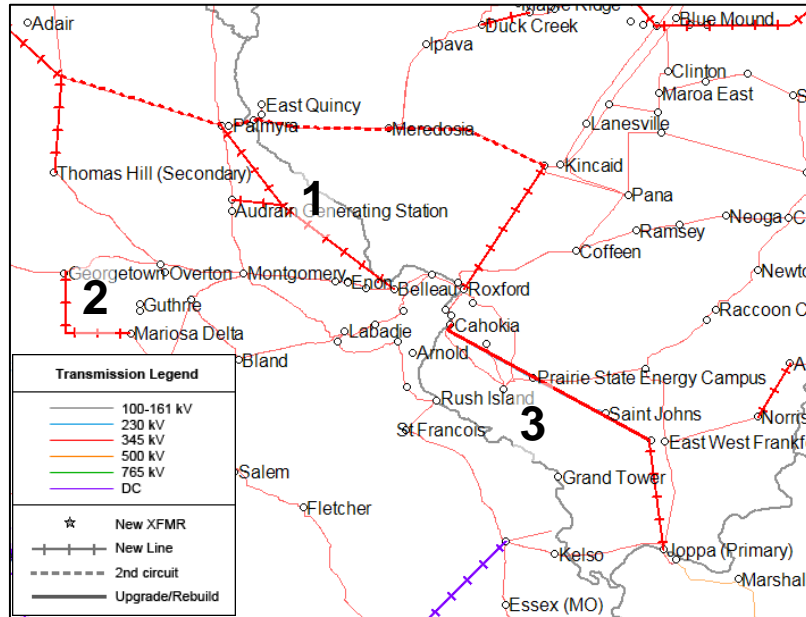
# AAT Overlay Updates Central/East Region (4/4)



**11** Added Hiple – Argenta 345 kV to better leverage 2<sup>nd</sup> Argenta – Tompkins – Majestic 345 kV, as well as provide additional import capability into MI

**12** Refined idea in this area to be a 2<sup>nd</sup> Monroe – Lallendorf 345 kV in order to more directly address congestion on the existing Monroe – Lallendorf 345 kV

# PR Overlay Updates Central/East Region (1/3)

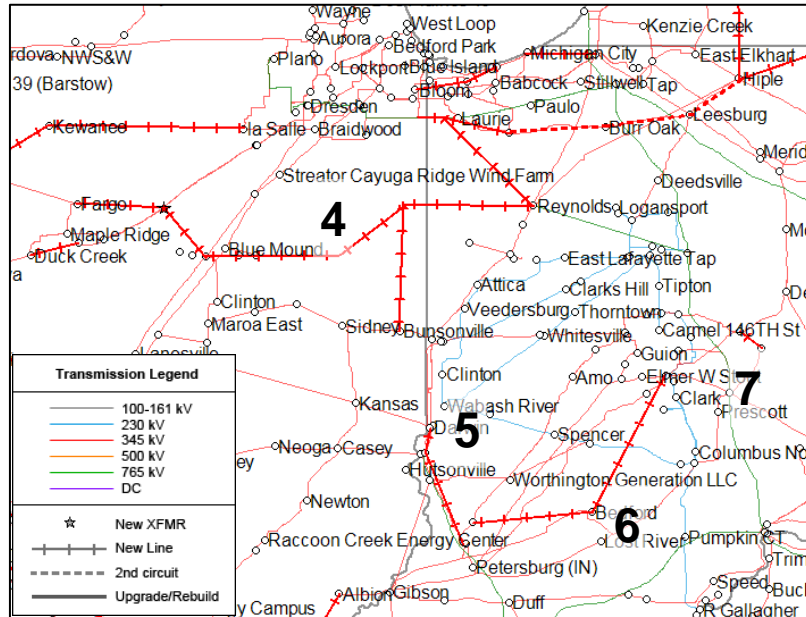


**1** Modified to be Maywood – Pike – Belleau 345 kV and Spencer Creek – Pike 345 kV address R51: Maywood – Spencer Creek 345 kV, E15: Palmyra 345/161 kV XFMR, and Hannibal – Palmyra 161 kV without causing additional issues, and helps strengthen system for the loss of new nearby 765kV lines

**2** Added Overton – Eldon Mariosa 345 kV to provide full relief to significant issue at E16: Overton 345/161 kV XFMR

**3** Added the rebuild of Cahokia – West Frankfort to 345 kV as well as an extension to Joppa to better leverage new 345 kV corridor going into St. Louis and provide increased flow on the Lutesville – Independence DC line, while also relieving reliability issues at Joppa

# PR Overlay Updates Central/East Region (2/3)



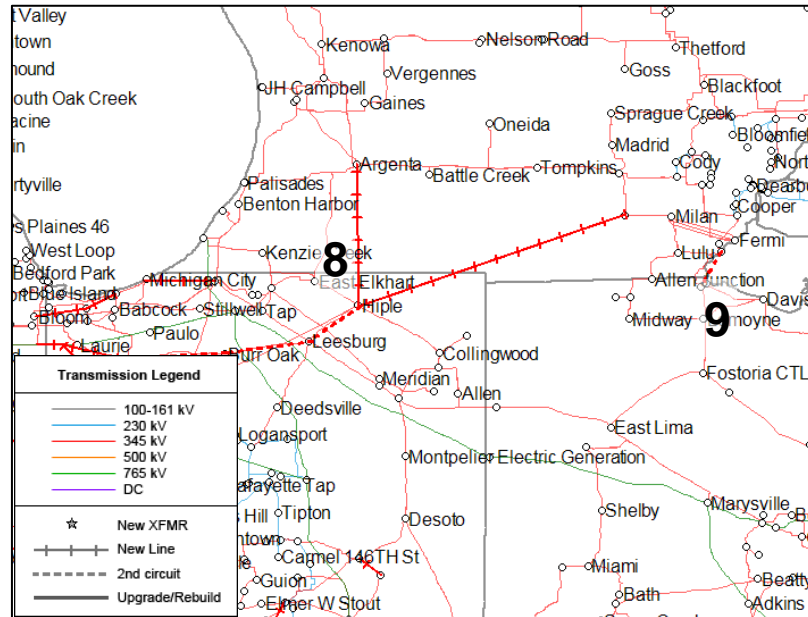
**4** Tapped Paxton in between Brokaw – Sheldon South 345 kV, continues to fully relieve E24: Goodland – Reynolds 138 kV and provide a high-voltage path from IL to IN

**5** Added Breed – Wheatland 345 kV as it resolves Wabash River-reliability issues

**6** Added Edwardsport – Bedford – Bloomington to resolve R200: Edwardsport – Amo 345 kV, while also strengthening the transmission corridor into the Indianapolis area

**7** Added Fall Creek – Greensboro 345 kV to mitigate various economic issues near Fall Creek (E28, E29)

# PR Overlay Updates Central/East Region (3/3)

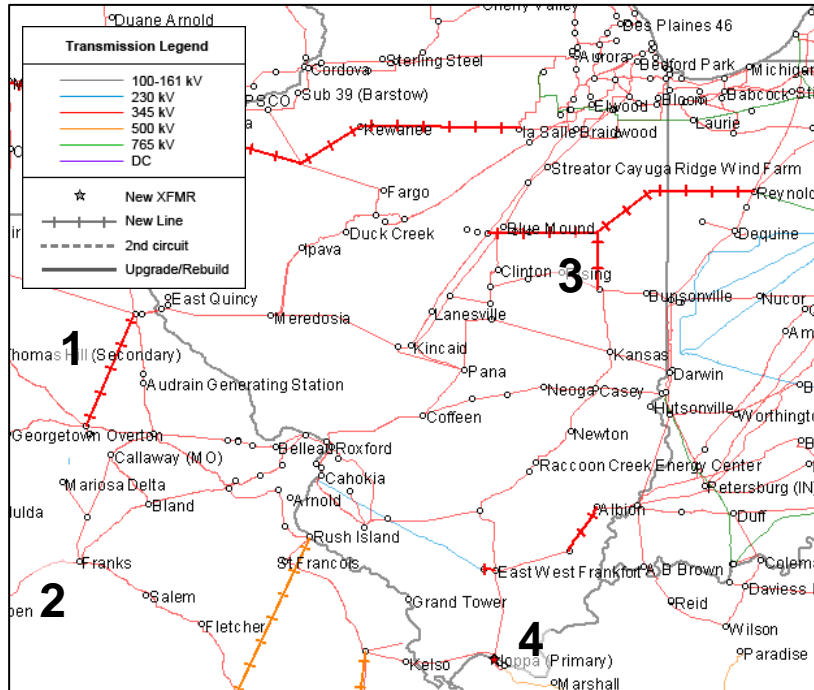


**8** Added Hiple – Argenta 345 kV to better to provide additional import capability into MI

**9** Refined idea in this area to be a 2<sup>nd</sup> Monroe – Lallendorf 345 kV in order to more directly address congestion on the existing Monroe – Lallendorf 345 kV

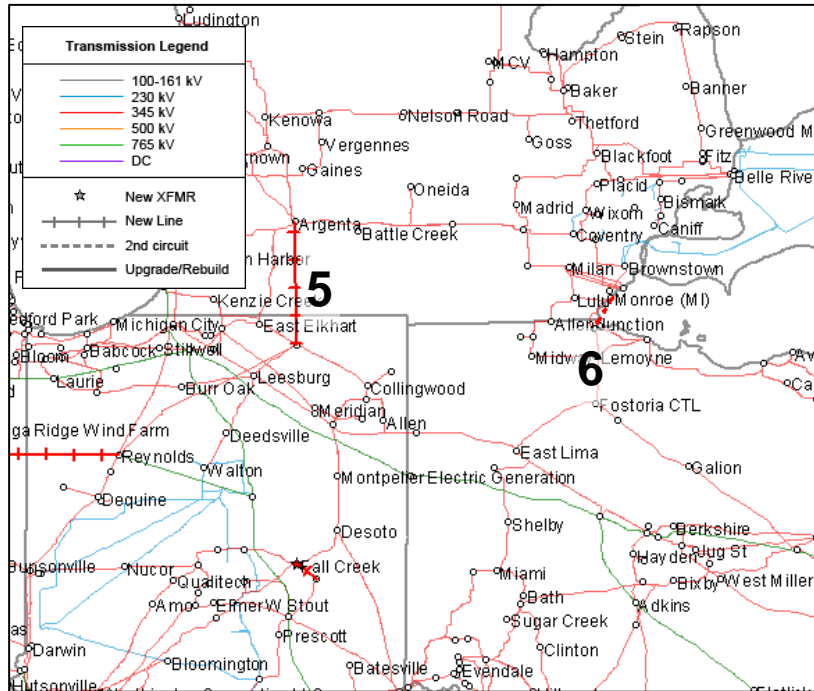


# EF Overlay Updates Central/East Region (1/2)



- 1** Removed Zachary – Thomas Hill kV as it was redundant to Maywood - McCredie
- 2** Removed Overton – Eldon – Mariosa 345 kV as it did not resolve any issues in EF and only had 5% line utilization
- 3** Added Sidney – Paxton 345 kV as a shorter alternative to Sidney – Reynolds 345 kV
- 4** Tapped E W Frankfort – Shawnee 345 kV at Joppa to help address R52: Joppa – Marion 161 kV

# EF Overlay Updates Central/East Region (2/2)



**5** Added Hiple – Argenta 345 kV to better provide additional import capability into MI

**6** Modified to be a 2<sup>nd</sup> Monroe – Lallendorf 345 kV, however, may not be needed anymore as there is fairly low congestion on Monroe – Lallendorf 345 kV in EF

# Central/East refined overlays more fully mitigate issues, provide comparable or greater congestion relief even with additional contingency analysis

Economic Congestion Statistics for MISO Central/East					
Overlay	Congestion Relieved (%)	# of Mitigated Issues	# of Helped Issues	# of Worsened Issues	# of New Issues
AAT Overlay May 25th EPUG	61%	30	5	4	5
AAT Overlay March 17th EPUG	49%	22	13	8	2
EF Overlay May 25th EPUG	55%	9	-	-	1
EF Overlay March 17th EPUG	46%	7	1	2	1
PR Overlay May 25th EPUG	53%	20	-	2	2
PR Overlay March 17th EPUG	62%	16	3	-	1