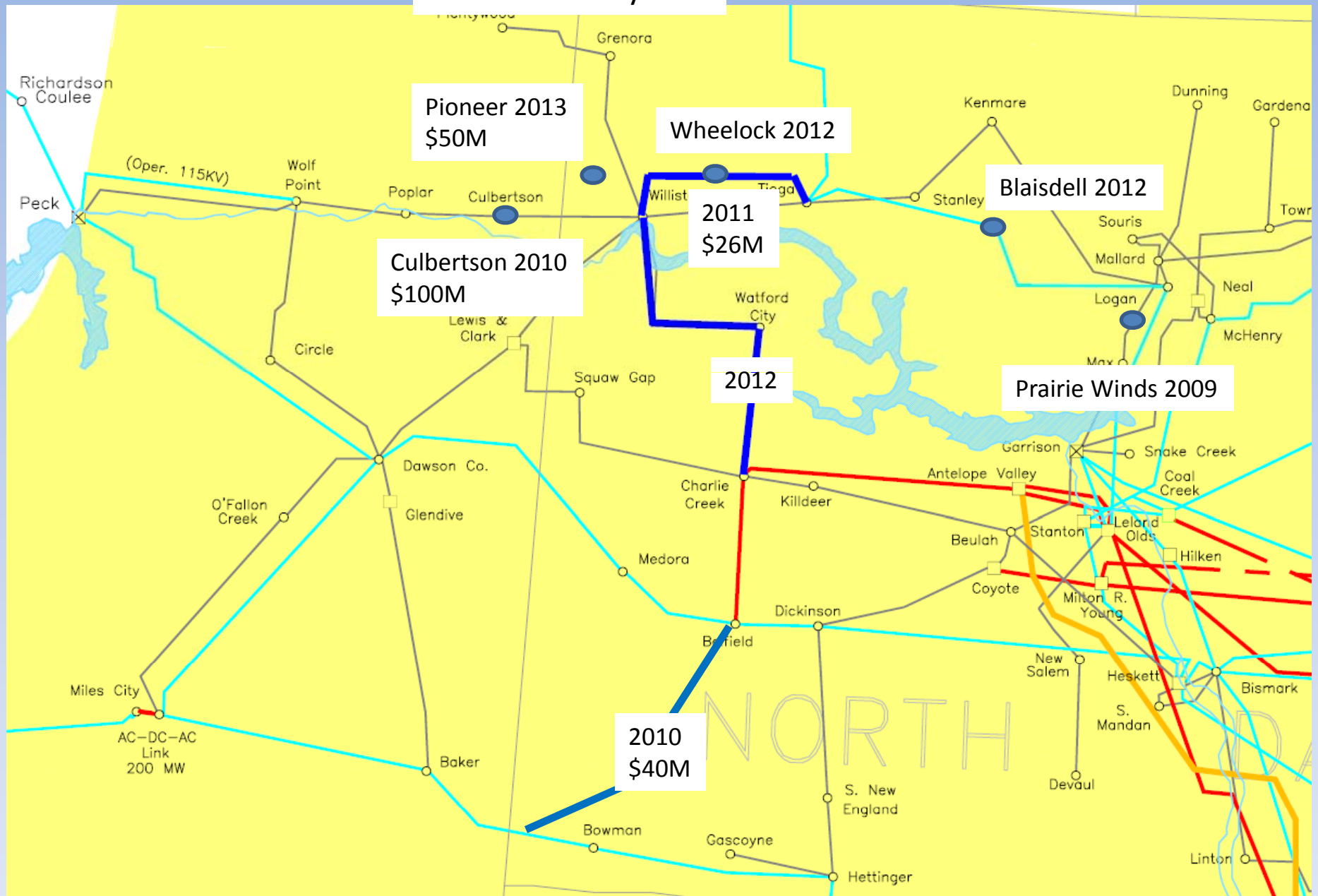


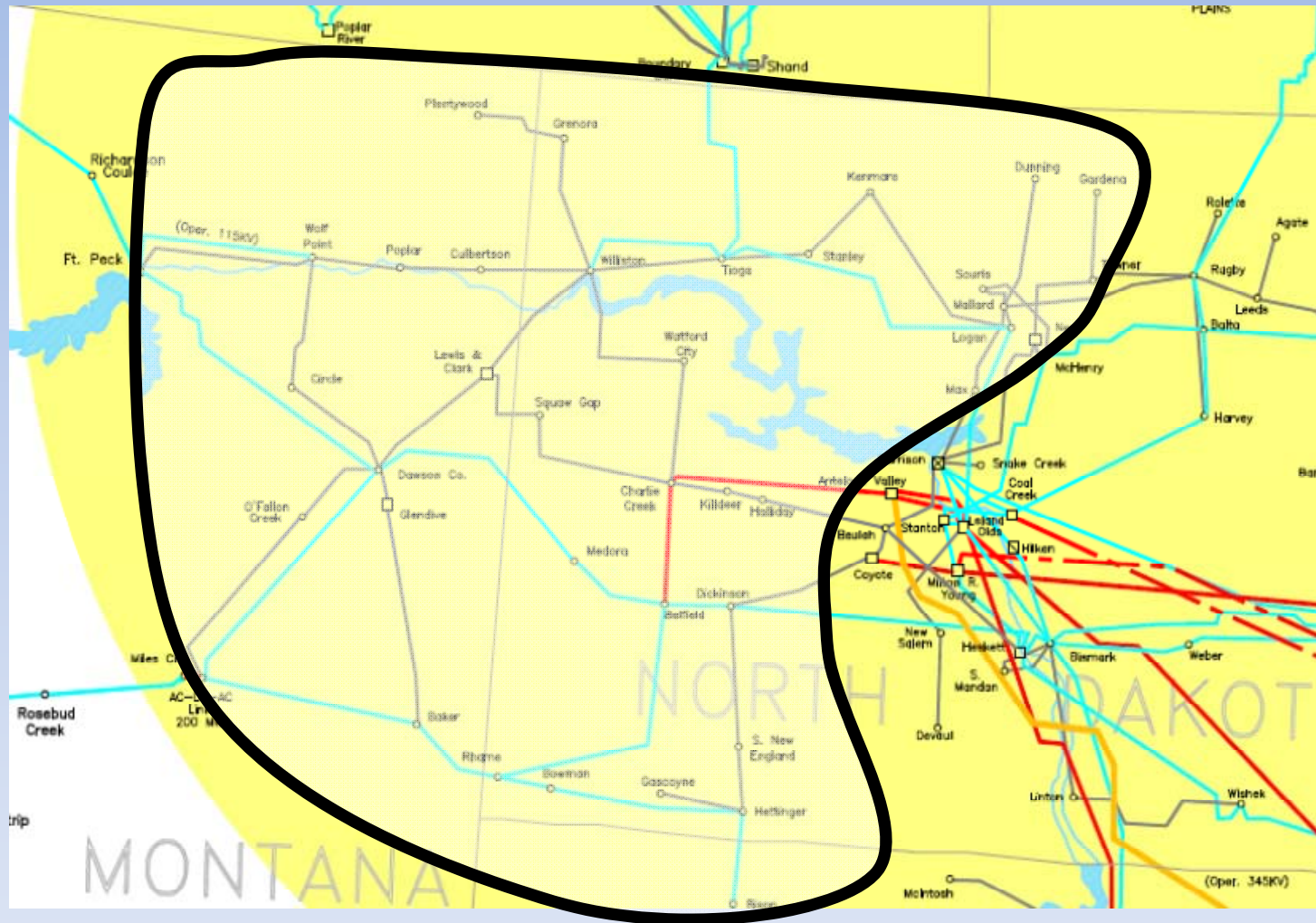
Oil Load Serving Study Update

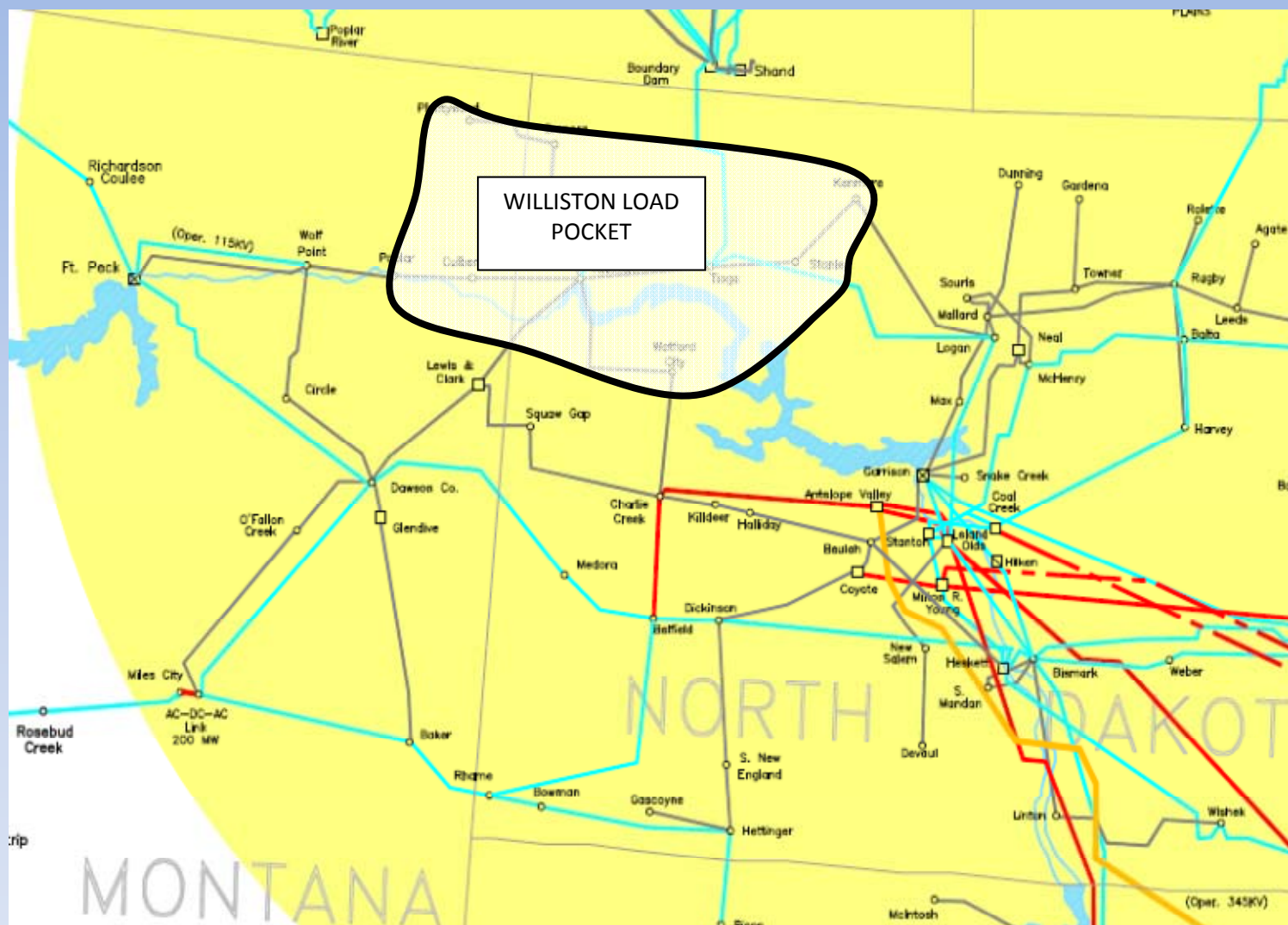
December 12th, 2011

Transmission System



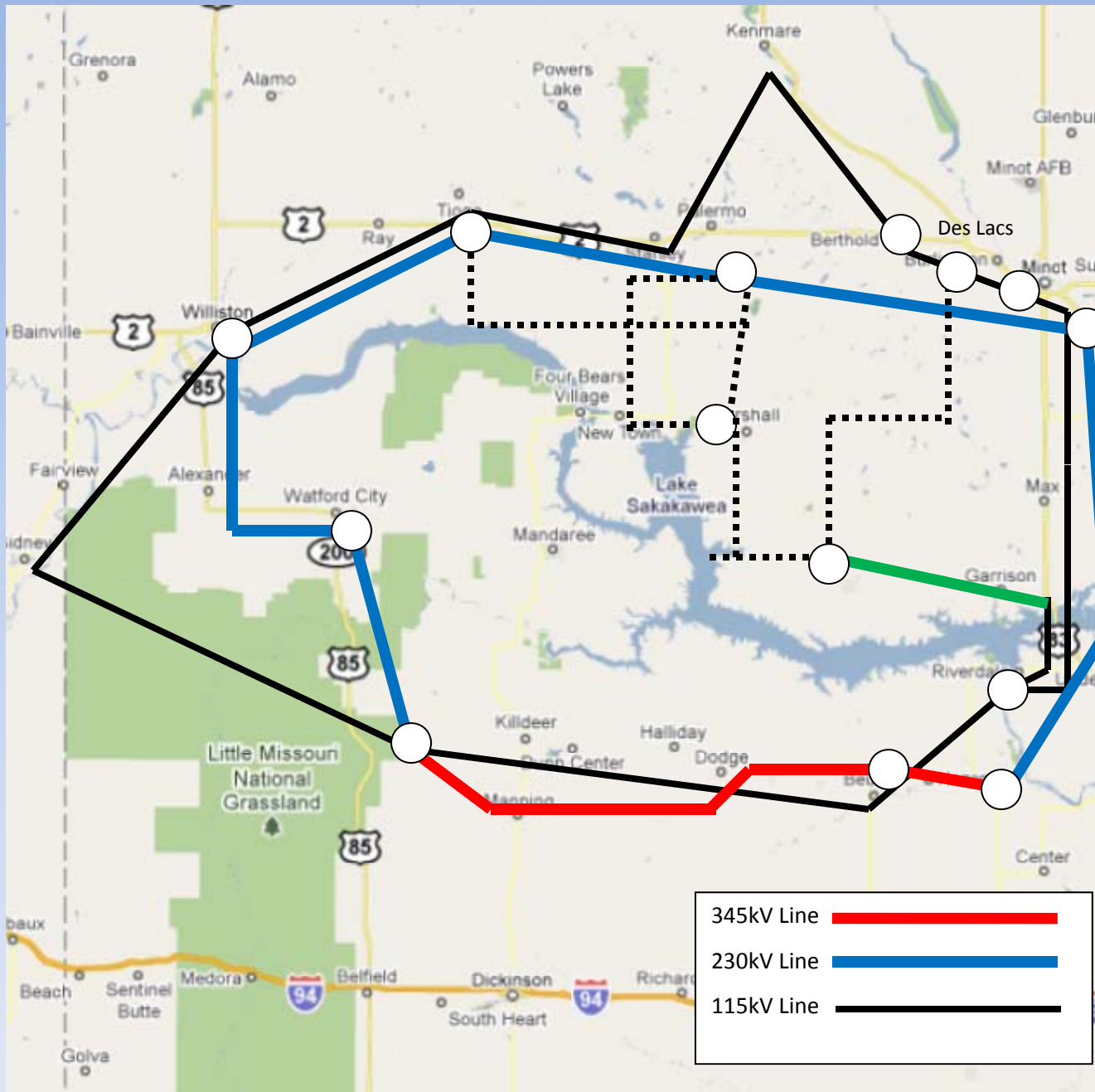
OIL LOAD SERVING STUDY AREA



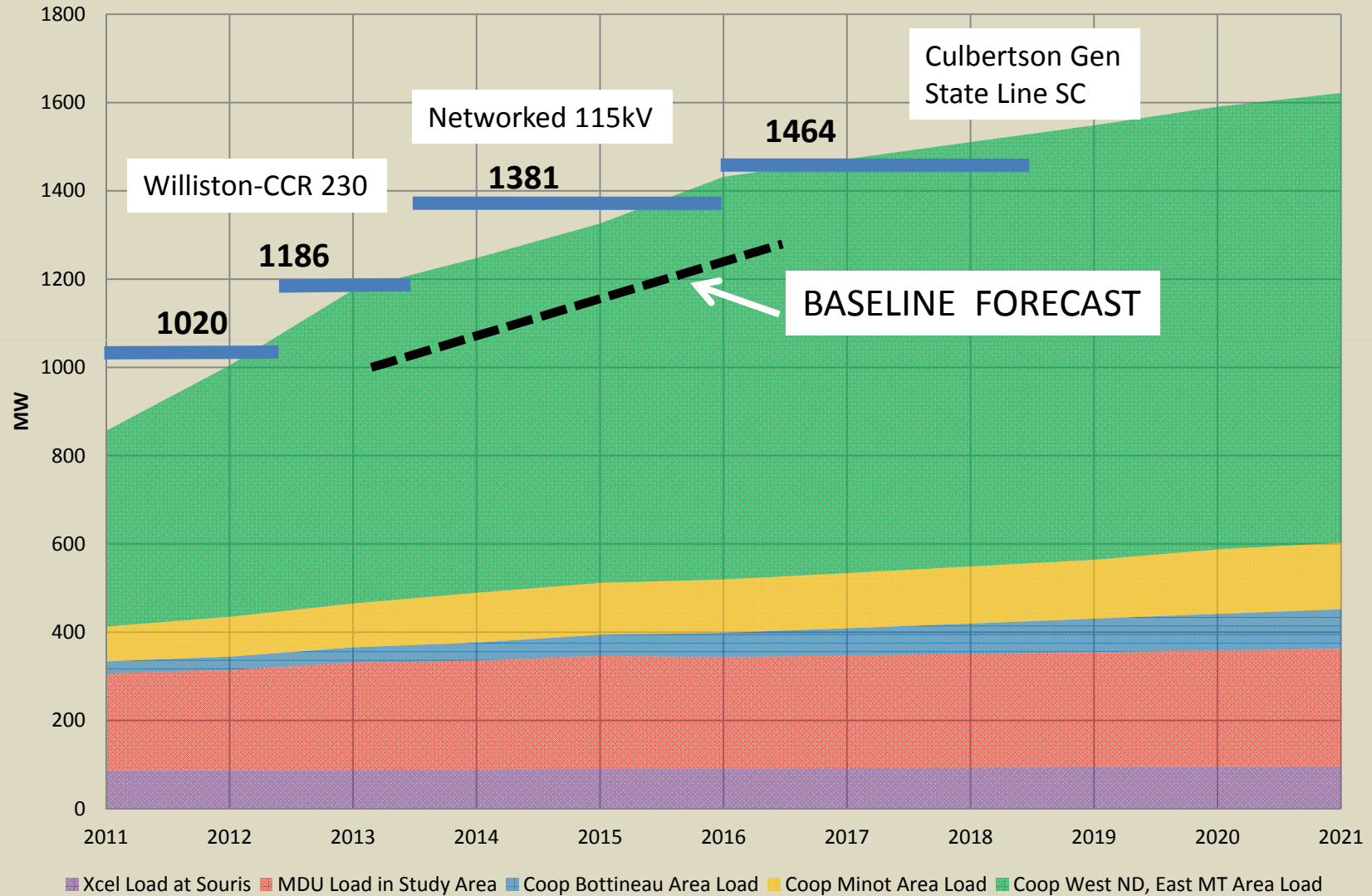


CHALLENGES

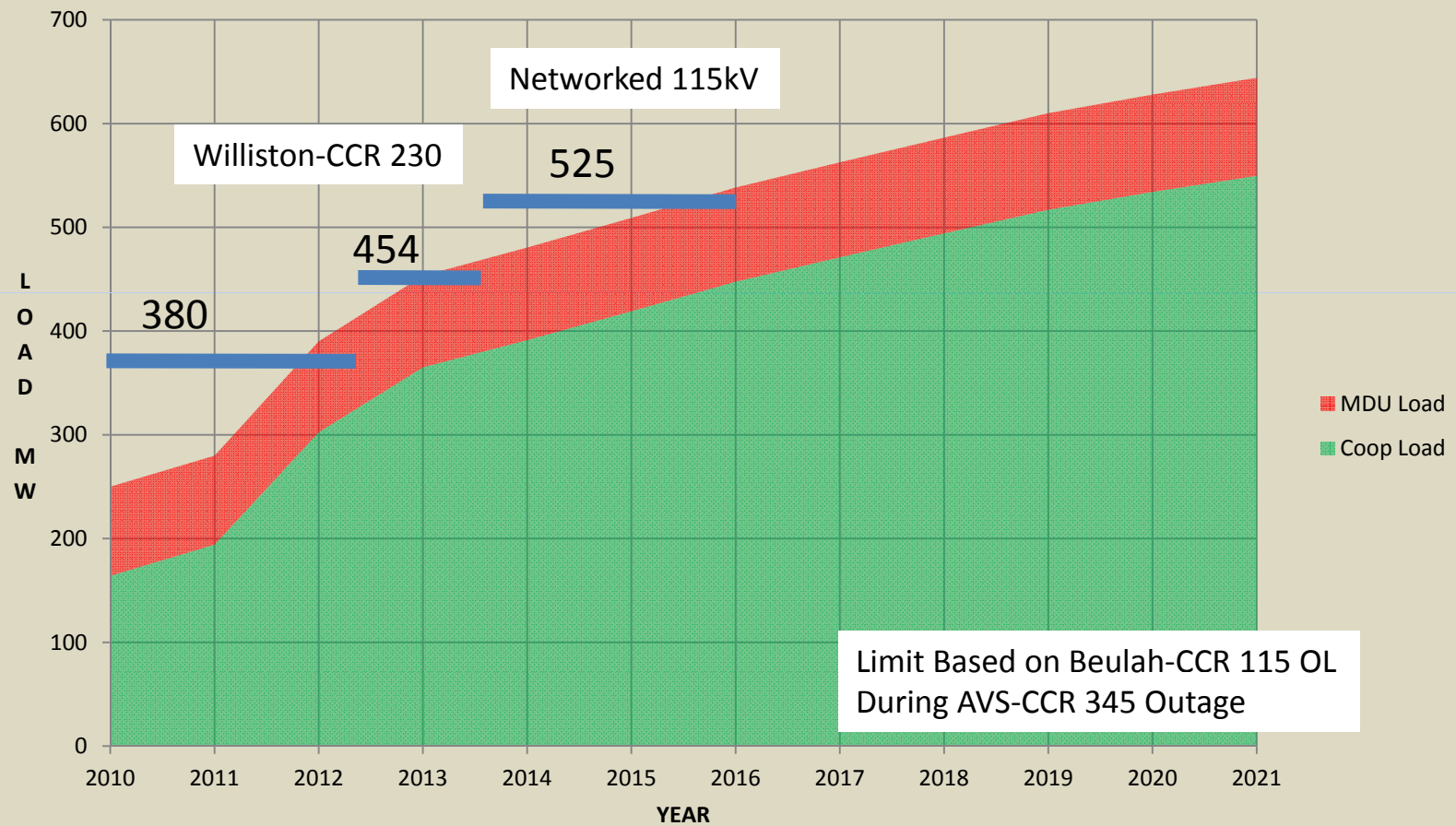
- VOLTAGE STABILITY
 - LOW VOLTAGE, POWER QUALITY, POOR “PROFILE”
- LINE AND TRANSFORMER OVERLOADS
- WE MUST RESPECT RELIABILITY CRITERIA



SYSTEM INTACT LOAD SERVING CAPABILITY

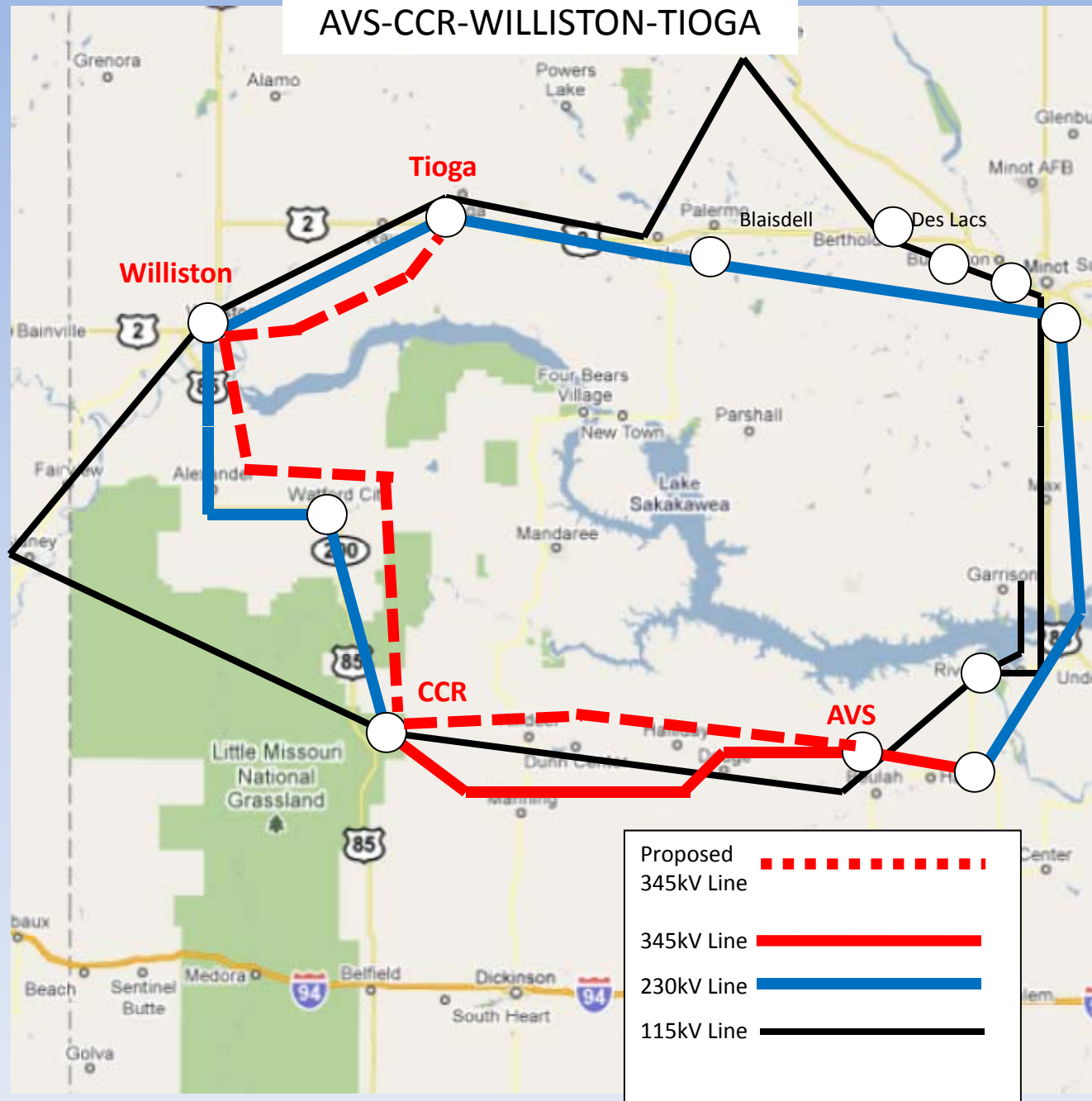


Williston Area Load Serving Limit

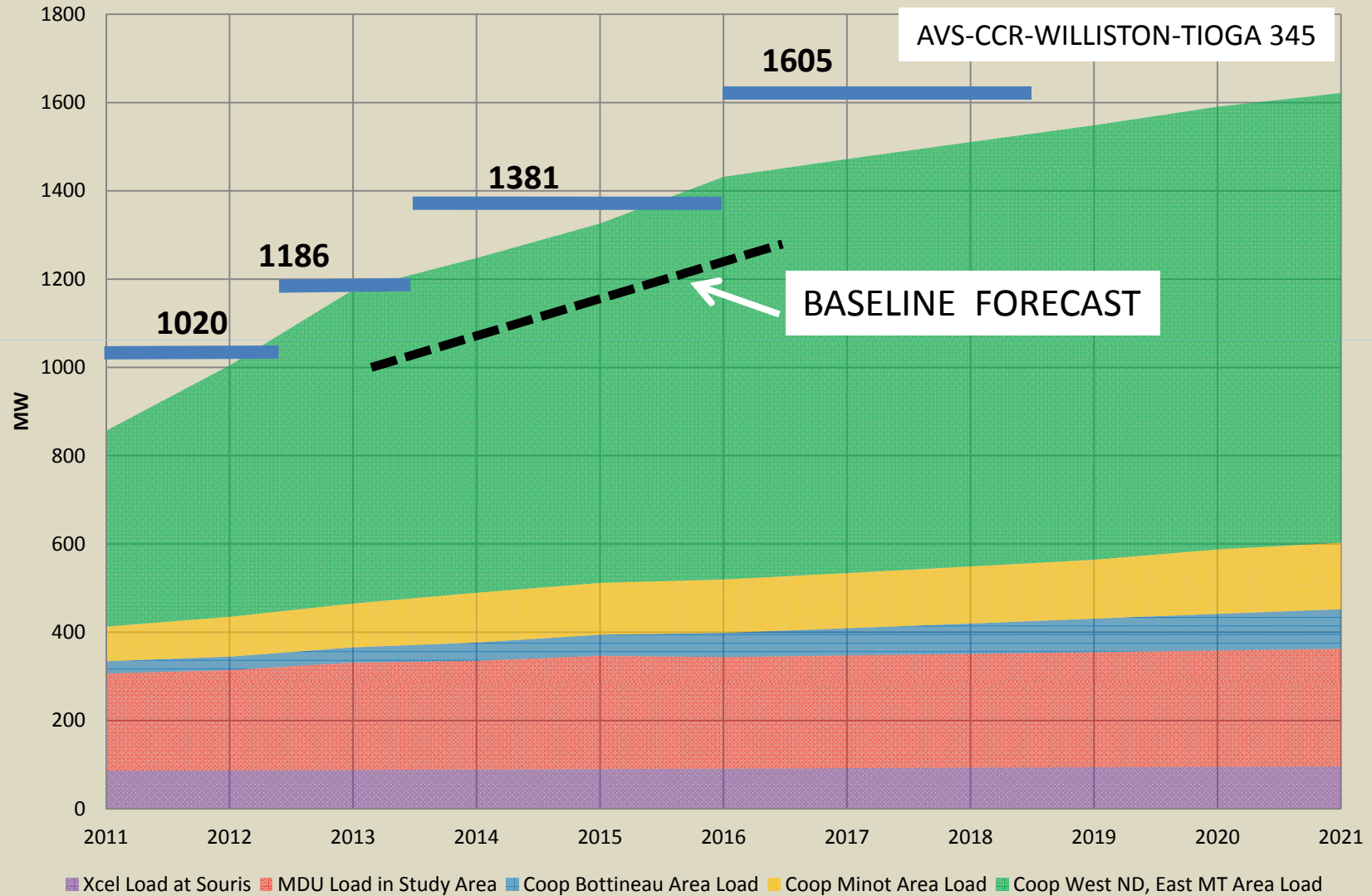


345 KV ADDITIONS

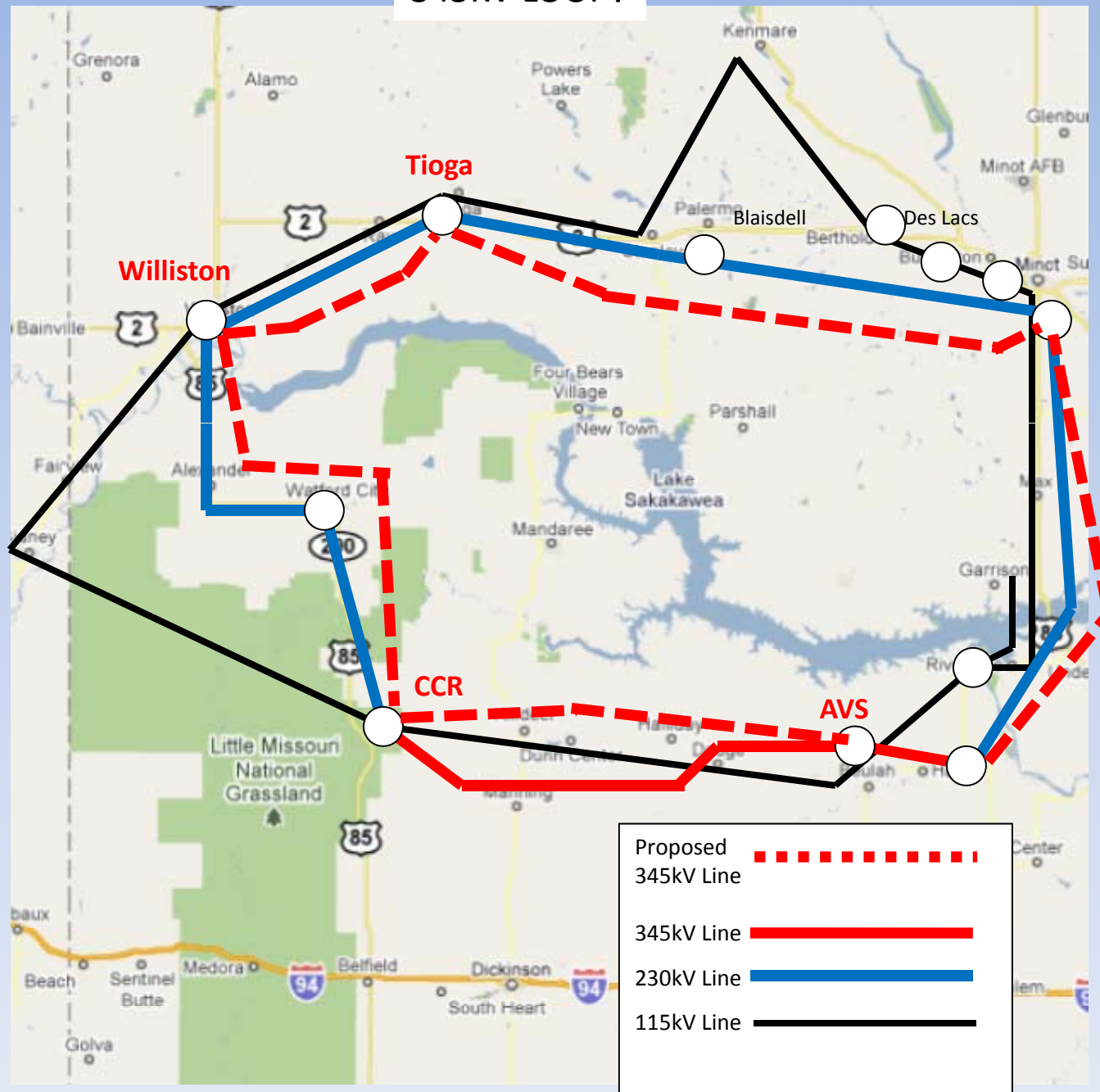
PROPOSED 345KV ADDITIONS AVS-CCR-WILLISTON-TIOGA



SYSTEM INTACT LOAD SERVING CAPABILITY



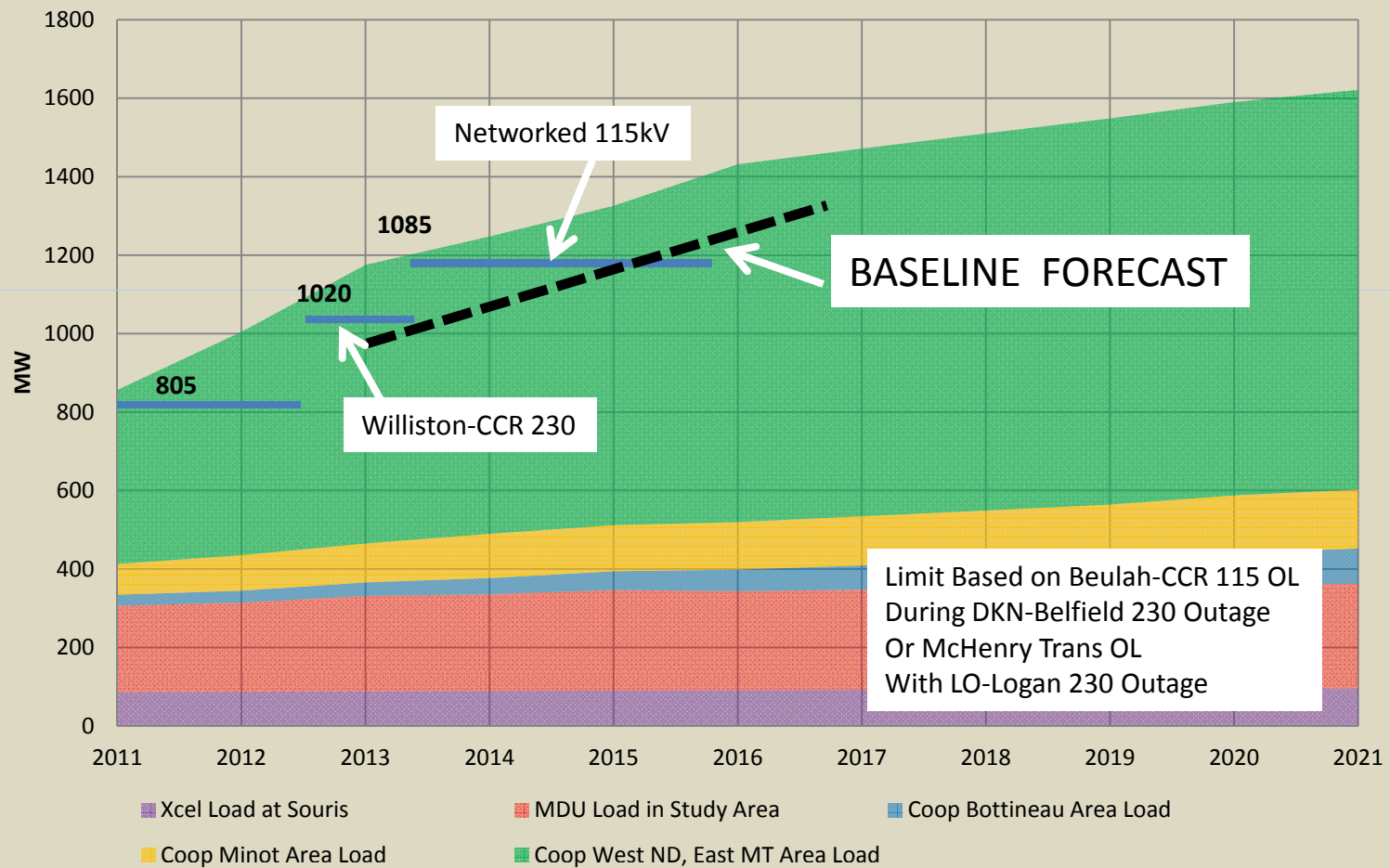
345KV LOOP?



Prior Outages?

- Culbertson placed in service
- MCDC limited to 20MW E-W
- Tioga-Boundary Dam limited to 0MW S-N
- Need To Implement Load Limit Procedure

AVS-CHARLIE CREEK 345KV PRIOR OUTAGE LOAD SERVING CAPABILITY



GAME PLAN

1. PERMANENT SOLUTION

- **PUSH SYSTEM ADDITIONS – RESTORE MARGIN!**

2. TEMPORARY SOLUTIONS

- **OPTIMIZE OPERATING GUIDES**
- **TARGETED POST OUTAGE LOAD CURTAILMENTS**
- **IMPLEMENT UNDER VOLTAGE LOAD SHEDDING**

QUESTIONS?