



CapX 2020

***A Vision for Transmission Infrastructure
Investments***



Key Points



- ▀ **Load Growth Continues**
- ▀ **New generation required**
- ▀ **Plans vs. Execution**
- ▀ **CapX 2020**
 - Very high level
 - 15-year horizon
 - Focused on execution

Project Sponsors



GREAT RIVER
ENERGY[®]

A TrancheStone Energy[®] Cooperative 



[®] **minnesota power**

AN ALLETE COMPANY 



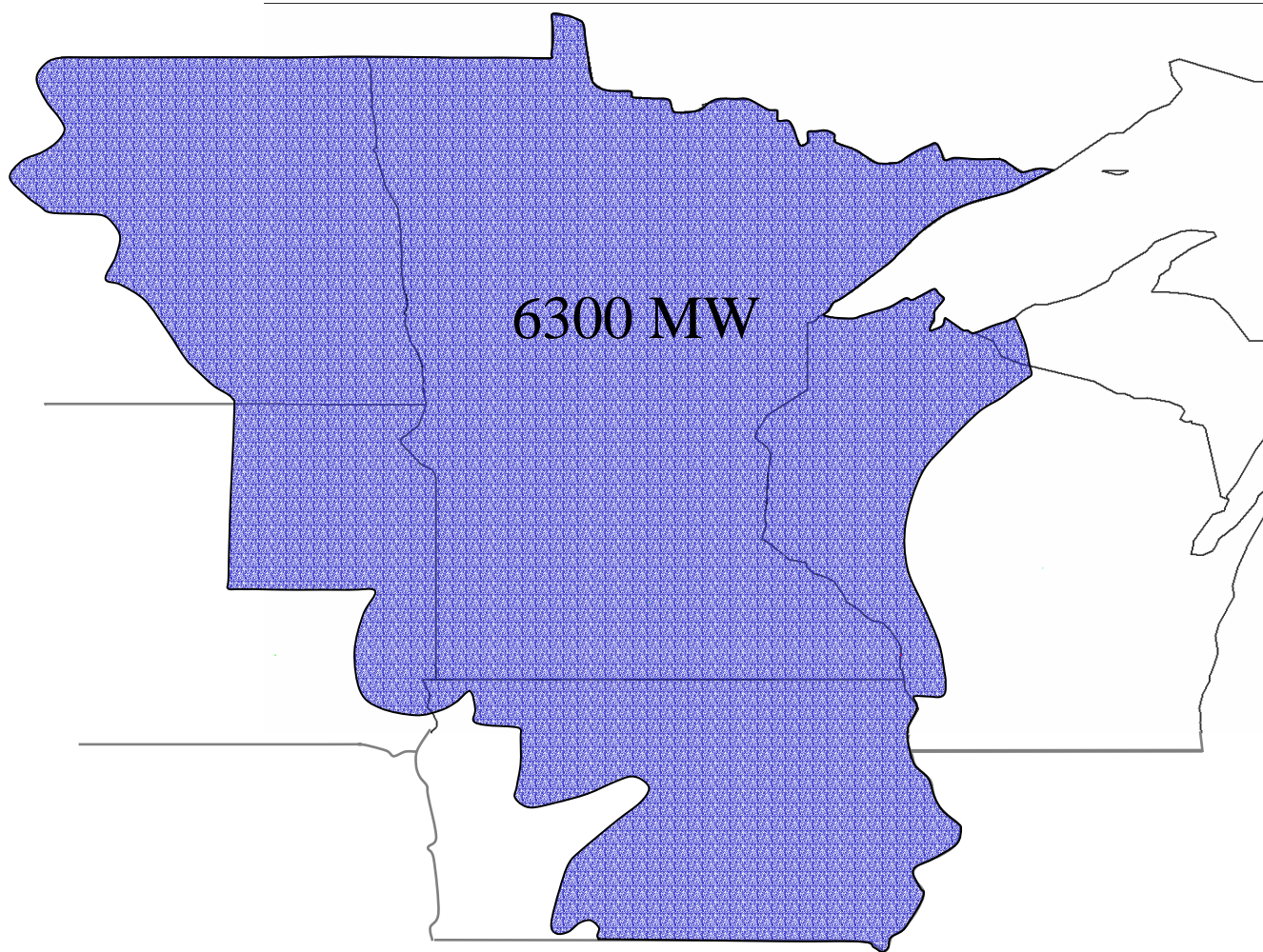
CapX 2020 Mission

- **Create a joint vision of required transmission infrastructure investments needed to meet growth in demand for electricity in Minnesota and the region, and**
- **Work to create an environment that allows these projects to be developed in a timely, efficient manner, consistent with the public interest.**

CapX 2020 Technical Scope

- **Preparation of detail study for approval**
 - Reliability concerns in the Red River Valley
 - Verifying transmission solution from previous study
- **Transmission needs anticipated for:**
 - Load Serving
 - Minnesota Renewable Energy Objective
 - Identification of common transmission needs of several generation scenarios

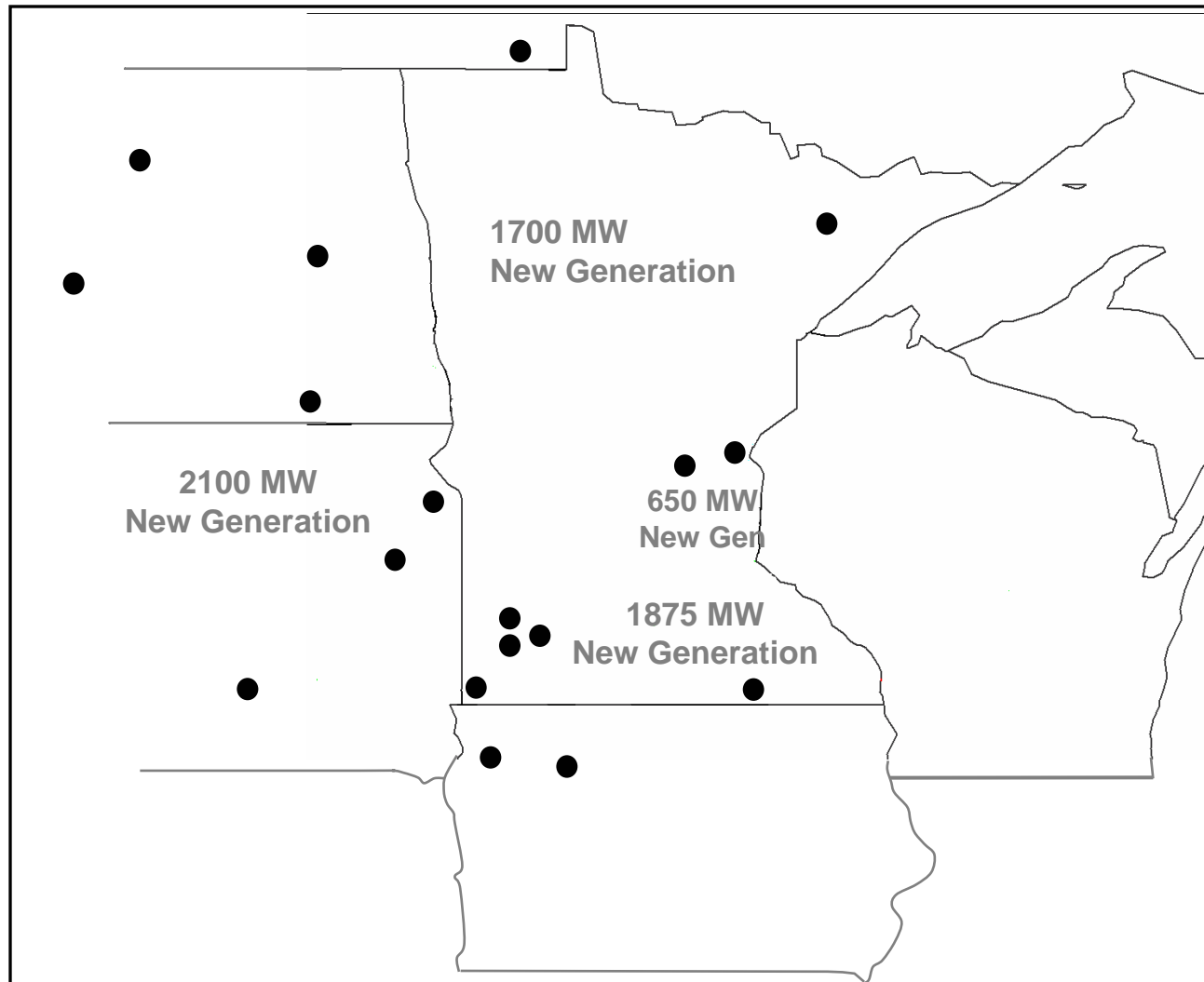
Study Load Area



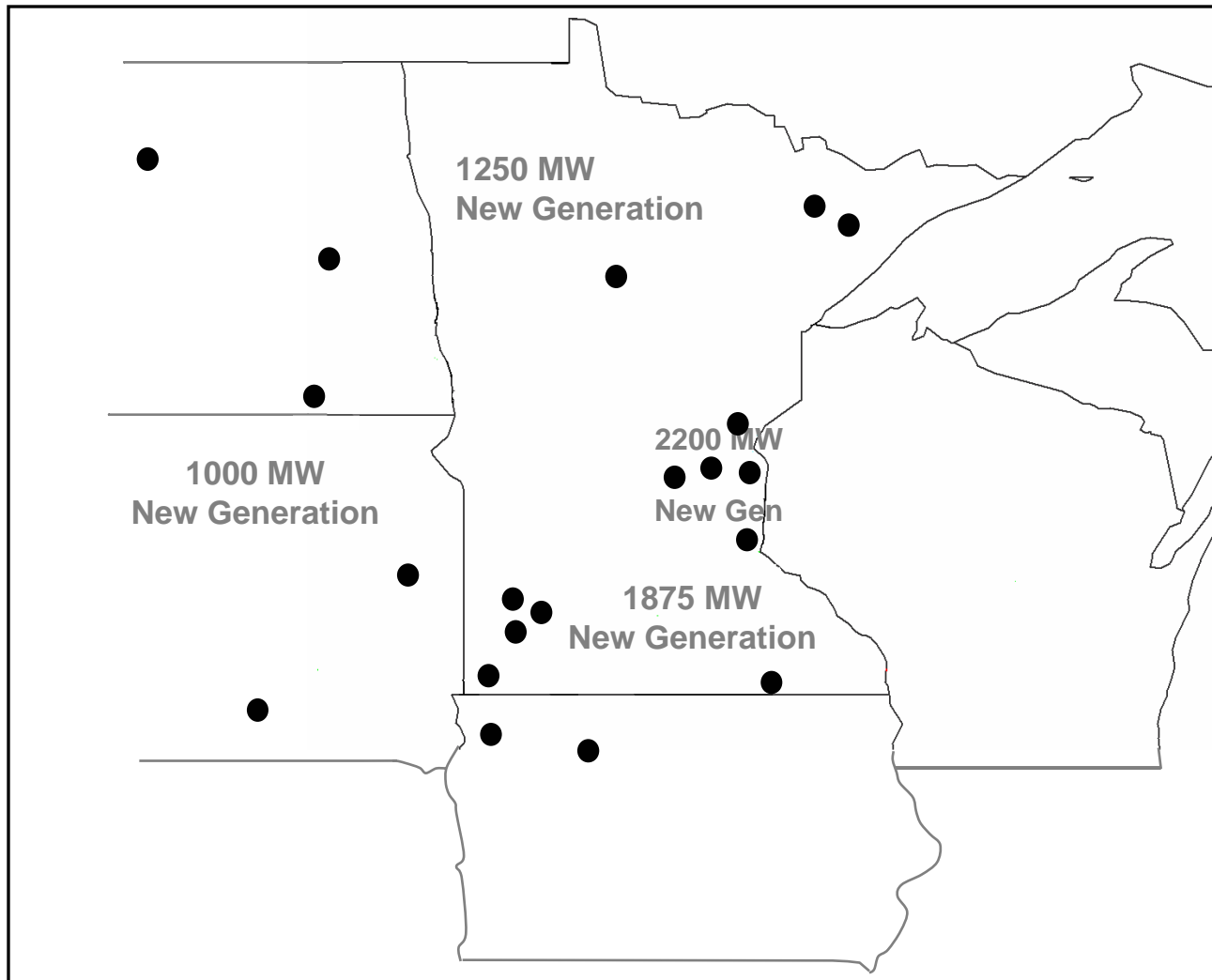
Generation Zones



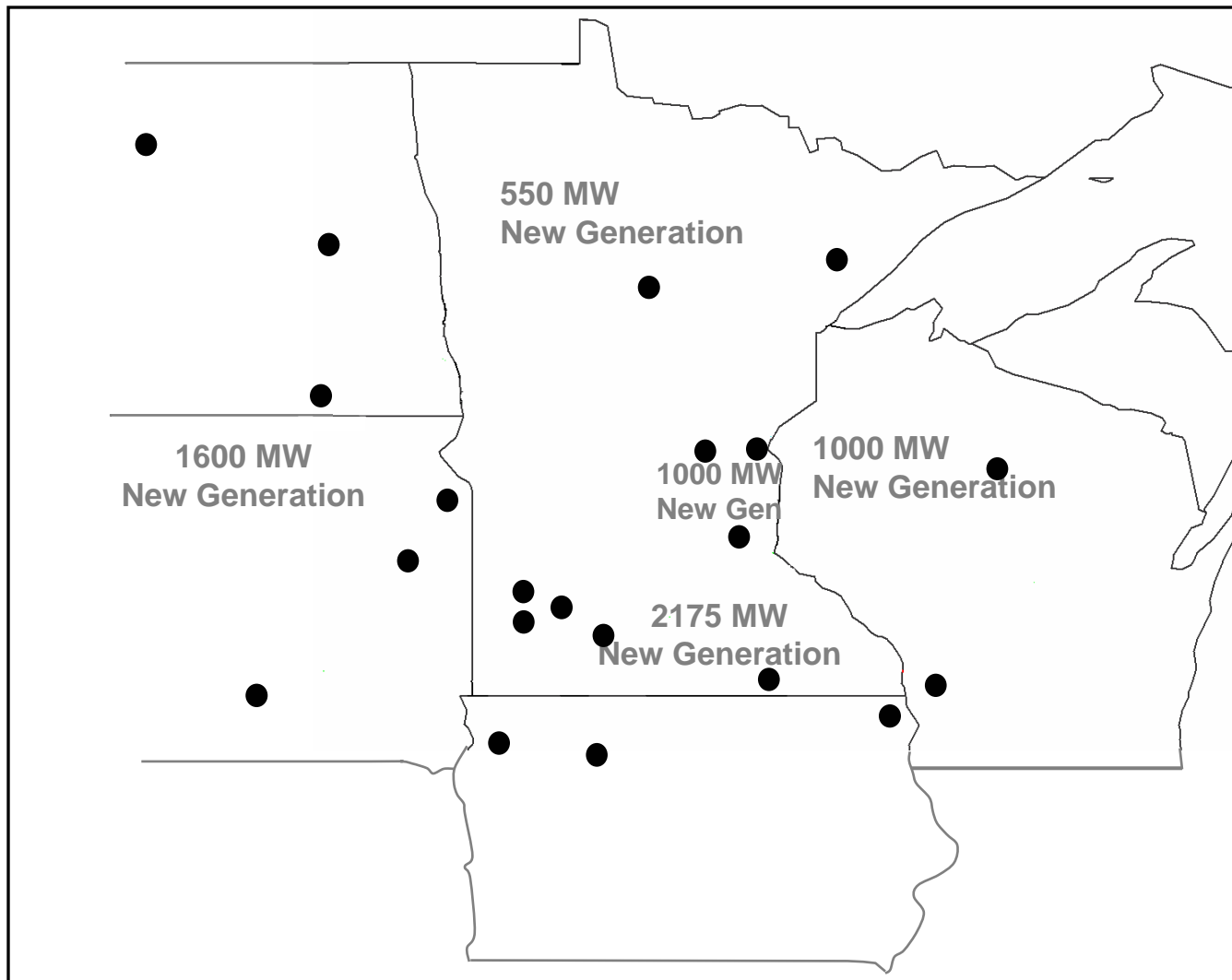
North/West Bias



Minnesota Bias



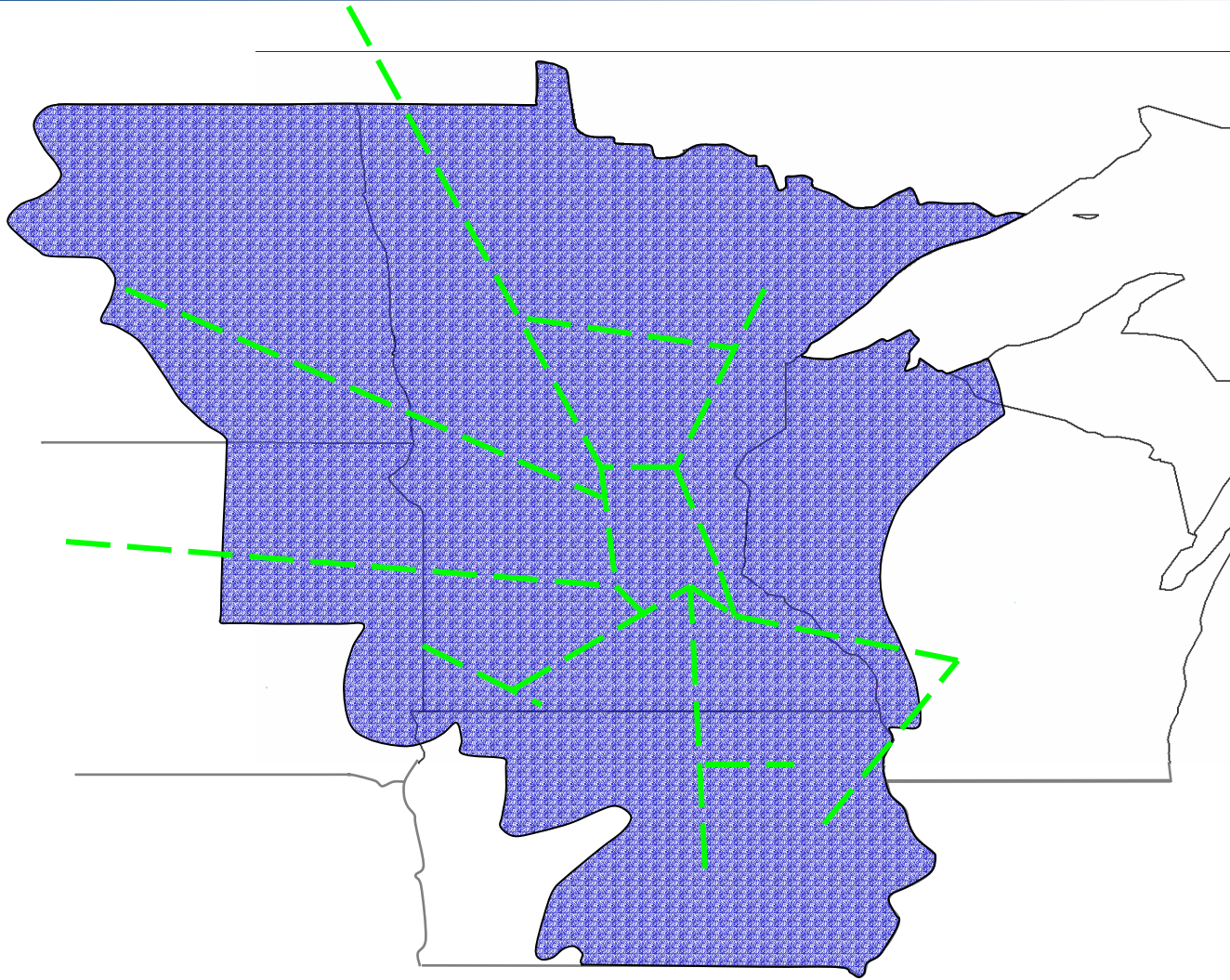
East Bias



Base 2020 Model Overloads

Scenario	System Intact Overloads	Prior Outage Overloads	Voltage Violations
North/West	42	142	45
Minnesota	42	187	14
East	42	197	33

Conceptual Transmission



CapX 2020 – Critical Issues

- ▶ **Certainty of investment recovery**
- ▶ **Recognition of reliability and regional benefits in need evaluation**
- ▶ **Efficiency of regulatory review process**
- ▶ **Siting, permitting, and rights-of-way**

And

- ▶ **Adjacent state coordination**
- ▶ **Federal agency processes**



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