



# Reliability Imperative: Long Range Transmission Planning

System Planning Committee  
of the Board of Directors

December 6, 2022

# Executive Summary



- The SPP-MISO Joint Targeted Interconnection Queue (JTIQ) portfolio is progressing towards Board approval
- The Competitive Transmission process to select developers for applicable Tranche 1 facilities is underway along with activities to ensure regulatory approval and construction of the portfolio
- Tranche 2 work has begun with updates to Future 2 nearing completion and the development of conceptual transmission lines to start key conversations

# Progress continues to move the SPP-MISO Joint Targeted Interconnection Queue (JTIQ) portfolio towards Board approval

1

Continue progress towards agreement on cost allocation

2

Seek FERC approval of Tariff revisions

3

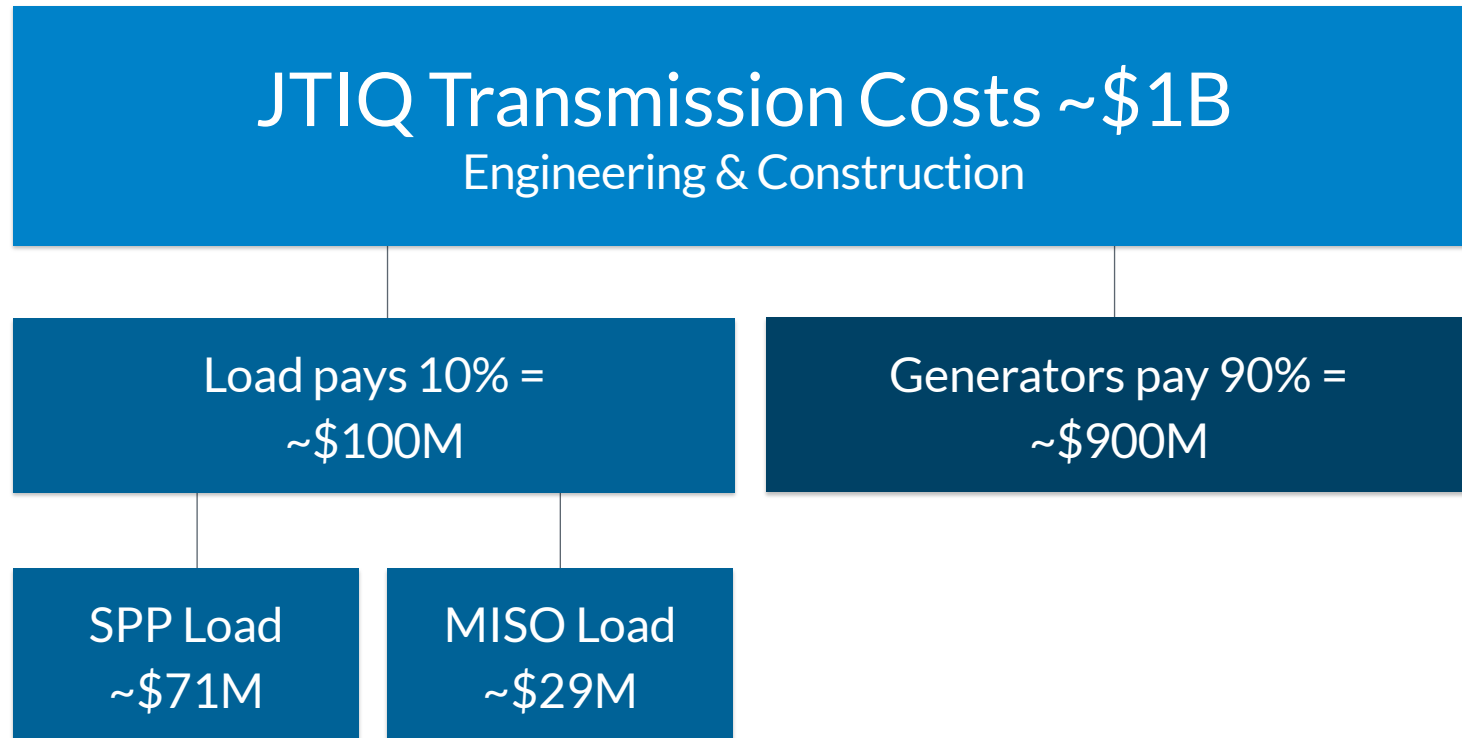
Update the JTIQ whitepaper

4

Request Board approval



The costs of the JTIQ projects may be allocated to Generator  
Interconnection projects connecting within a pre-defined JTIQ  
Affected System Zone and to MISO load and SPP load



# Replacing the current Affected System Study process with the JTIQ Study process will provide several benefits to customers and each RTO



Provides cost and timing certainty for SPP and MISO Generator Interconnection requests



Eliminates Affected System Study's unknown network upgrades, study costs and timing delays on study coordination



Identifies more optimized network upgrades compared to individual Affected System Study processes for SPP and MISO



Builds on notion of interconnection zones contemplated by FERC's transmission planning NOPR

FERC filing  
targeted for  
Q1/Q2 2023

# Long Range Transmission Planning

# Work has commenced on future tranches while MISO implements the Competitive Transmission process for Tranche 1 projects

Tranche	Key Milestones	Status
Tranche 1	Identify transmission solutions based on Future 1	✓
	Select developers through Competitive Transmission process	➡
	Provide post-approval transparency and support as required	➡
Tranche 2	Identify transmission solutions based on Future 2A	➡
	Select developers through Competitive Transmission process	TBD
	Provide post-approval transparency and support as required	TBD
Tranches 3-4	Identify transmission solutions based on Future 1A	TBD
	Identify cost allocation approach	➡
	Select developers through Competitive Transmission process	TBD
	Provide post-approval transparency and support as required	TBD

# Two Competitive Transmission RFPs have been released for Tranche 1

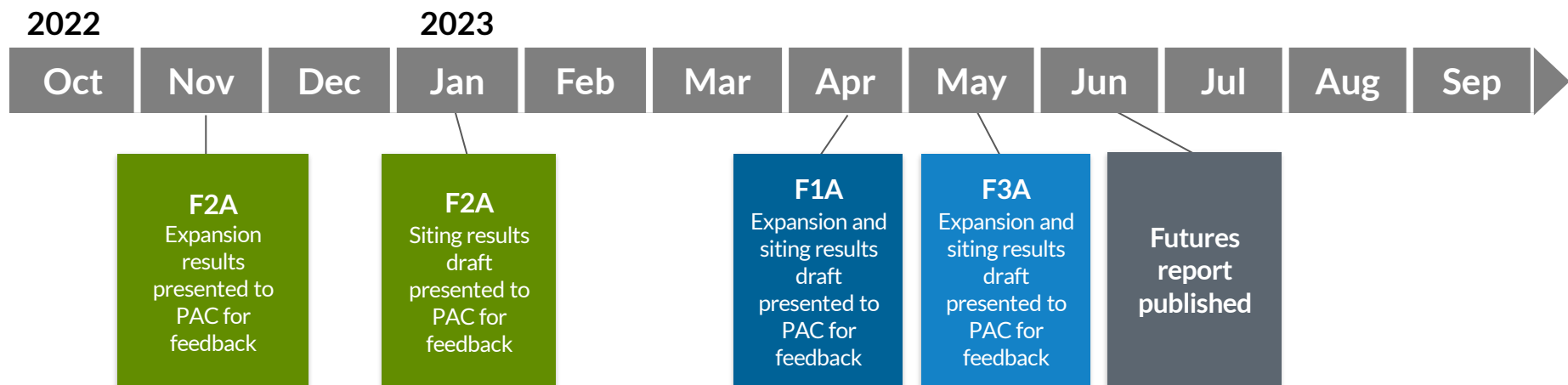
Developer Selection			
Select developer with the greatest overall value for the project			
Facilities	RFP Release	Proposal Due	Evaluation Due
Hiple – IN/ MI State Border	✓ 9/13/22	1/11/23	5/11/23
IA/MO State Border - Denny - Fairport	✓ 12/5/22	5/19/23	10/31/23
Denny - Zachary - Thomas Hill - Maywood	3/6/23	8/18/23	1/30/24



# The first phase of the Futures data refresh is nearing completion and captured data from more than 95% of MISO Load Serving Entities

The Futures  
refresh will  
result in Futures  
1A, 2A, 3A

- State and Member plans and goals, Integrated Resource Plans
- Inflation Reduction Act and other legislation
- Capital, operating and fuel costs
- Planning reserve margins and local clearing requirements
- Additions and retirements from MISO Queue



# In parallel with the Futures refresh, MISO is formulating key questions and conceptual transmission ideas to help frame Tranche 2 hypotheses and further discussions

## CURRENT WORK

Determine Futures resource forecast / siting; Create models

Identify key questions and draft hypothesis for portfolio

Test system performance against Futures; Identify transmission issues

Update draft hypothesis

Consider long range plan when choosing solutions

Integrate subregional issues and solutions

- Forecast future resource possibilities
- Determine siting
- Apply to reliability and economic models

- Revisit solutions considered but not chosen in Tranche 1
- Use previous and ongoing studies to gain insight on potential issues
- Consolidate ideas and input into key questions and a starting hypothesis to spur discussion

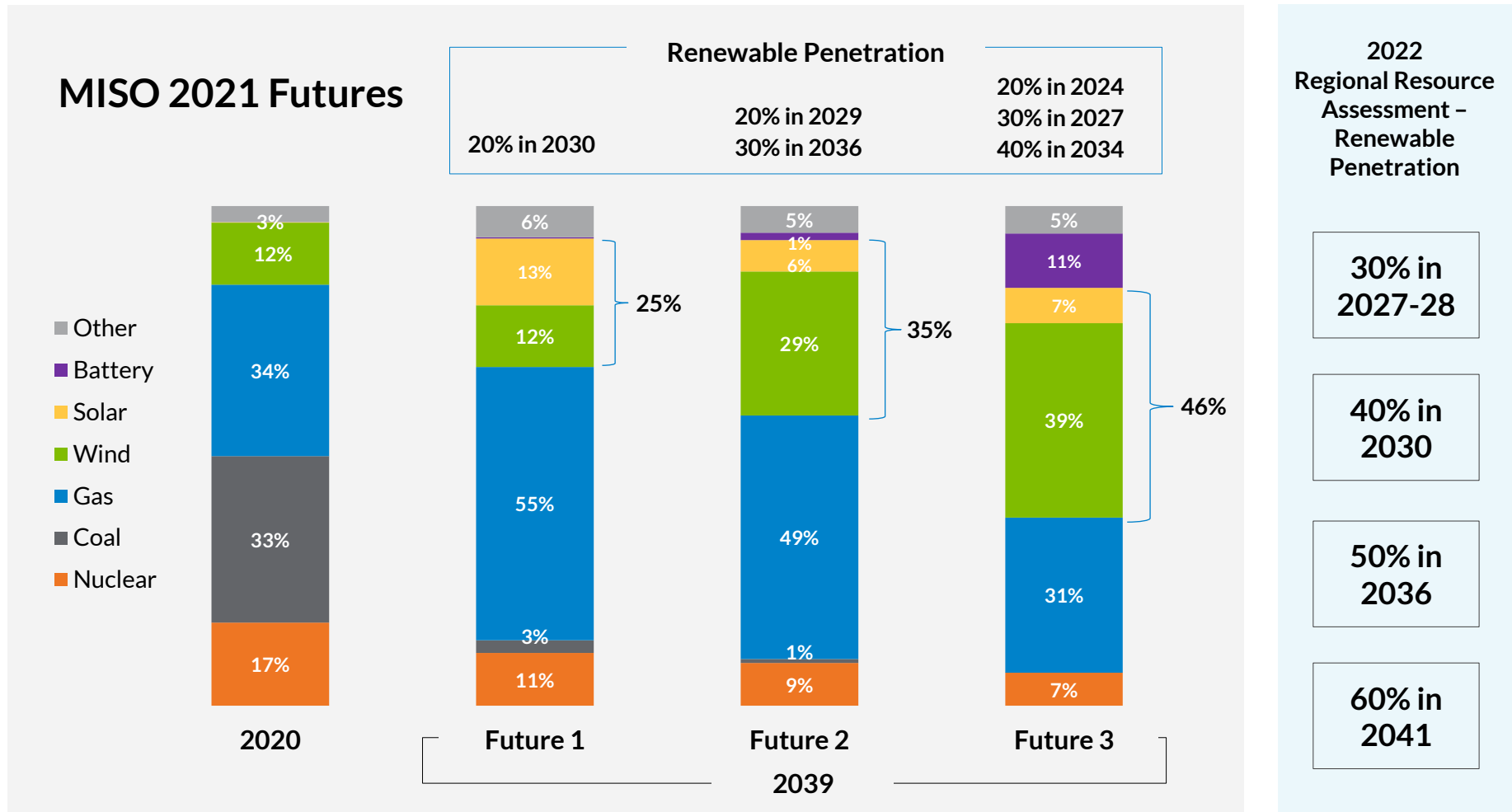
- Perform analysis
- Determine initial focus area based on the most significant issues, voltage stability needs and congestion

- Update draft hypothesis through analysis
- Discuss with stakeholders; identify and test alternatives

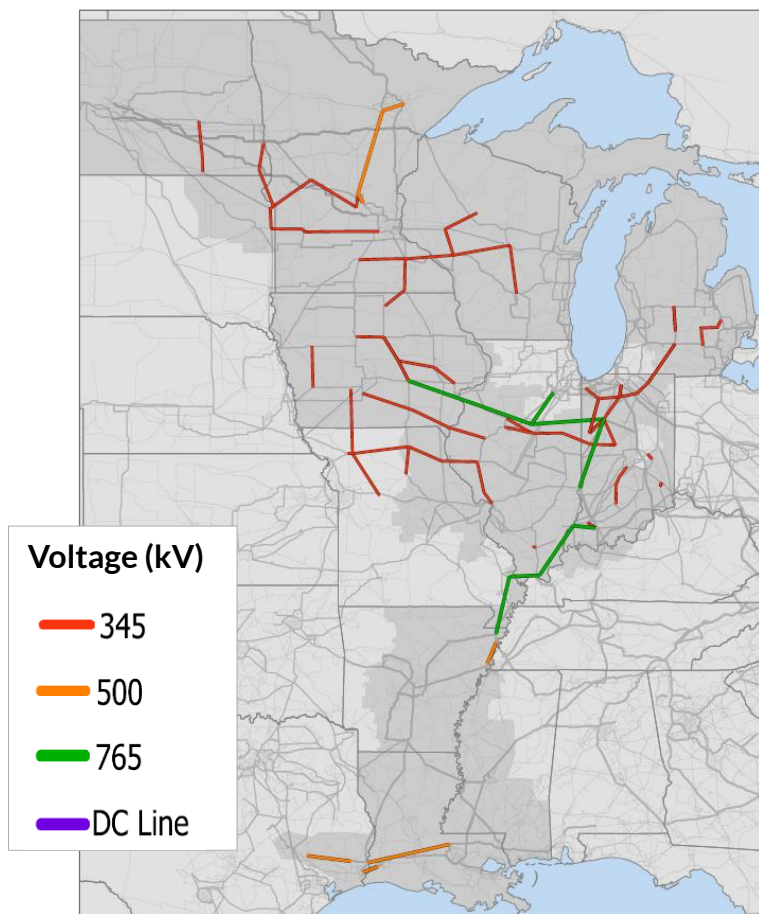
- Consider:
  - Renewable Integration Impact Assessment (RIIA) conclusions
  - New and changing policies
  - Anticipated long term plans

- Work with Stakeholders to identify issues and potential solutions
- Weigh potential LRTP solutions with needs from other MISO processes (i. e., Baseline Reliability, Generator Interconnection processes)

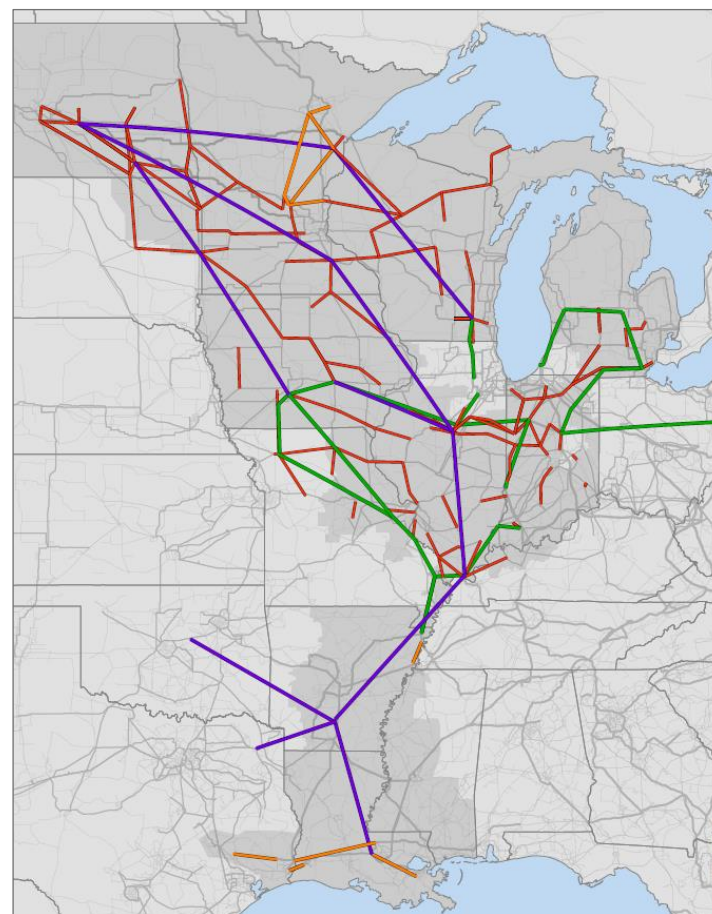
These discussions are required as MISO's resource fleet continues to evolve, creating a new imperative for transmission to maintain the reliable and efficient energy delivery across the near and long term



MISO initially introduced the potential transmission needed to support our Futures in a 2021 conceptual roadmap, envisioning the significant investment required to achieve Future 3 goals

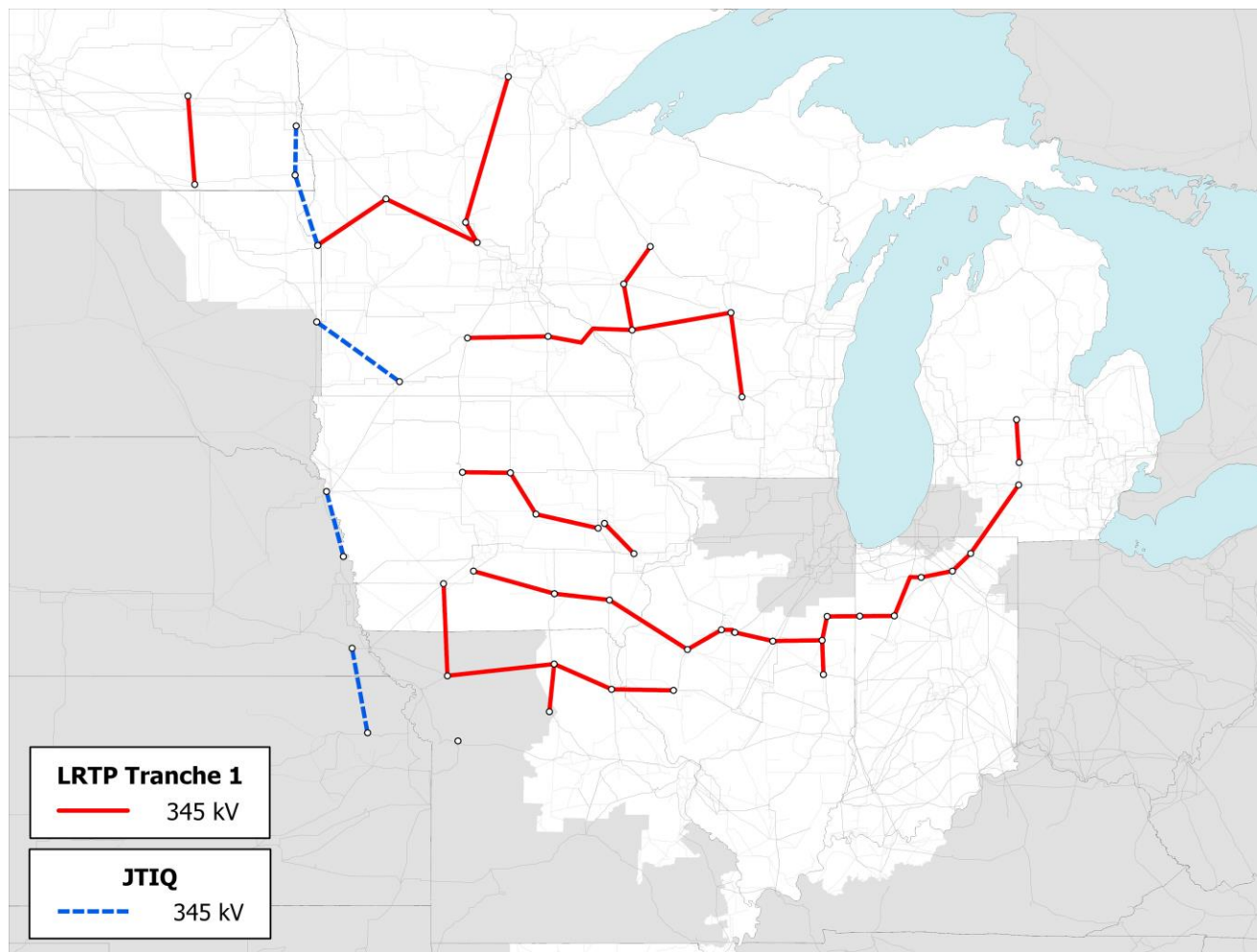


Future 1



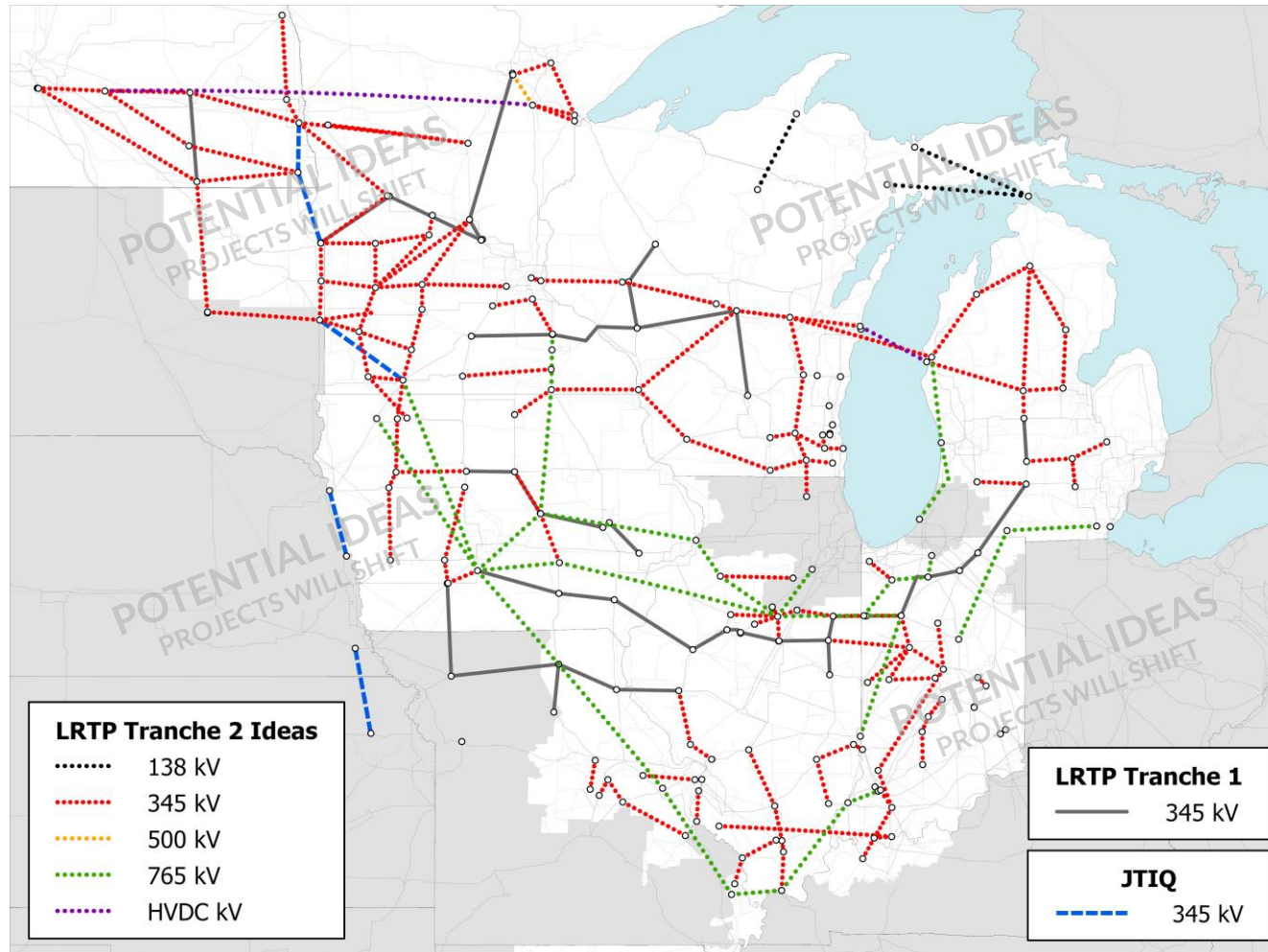
Futures 1, 2, 3

Tranche 1 refined these concepts, creating a foundation that must be expanded to meet the policy goals contained in Future 2A

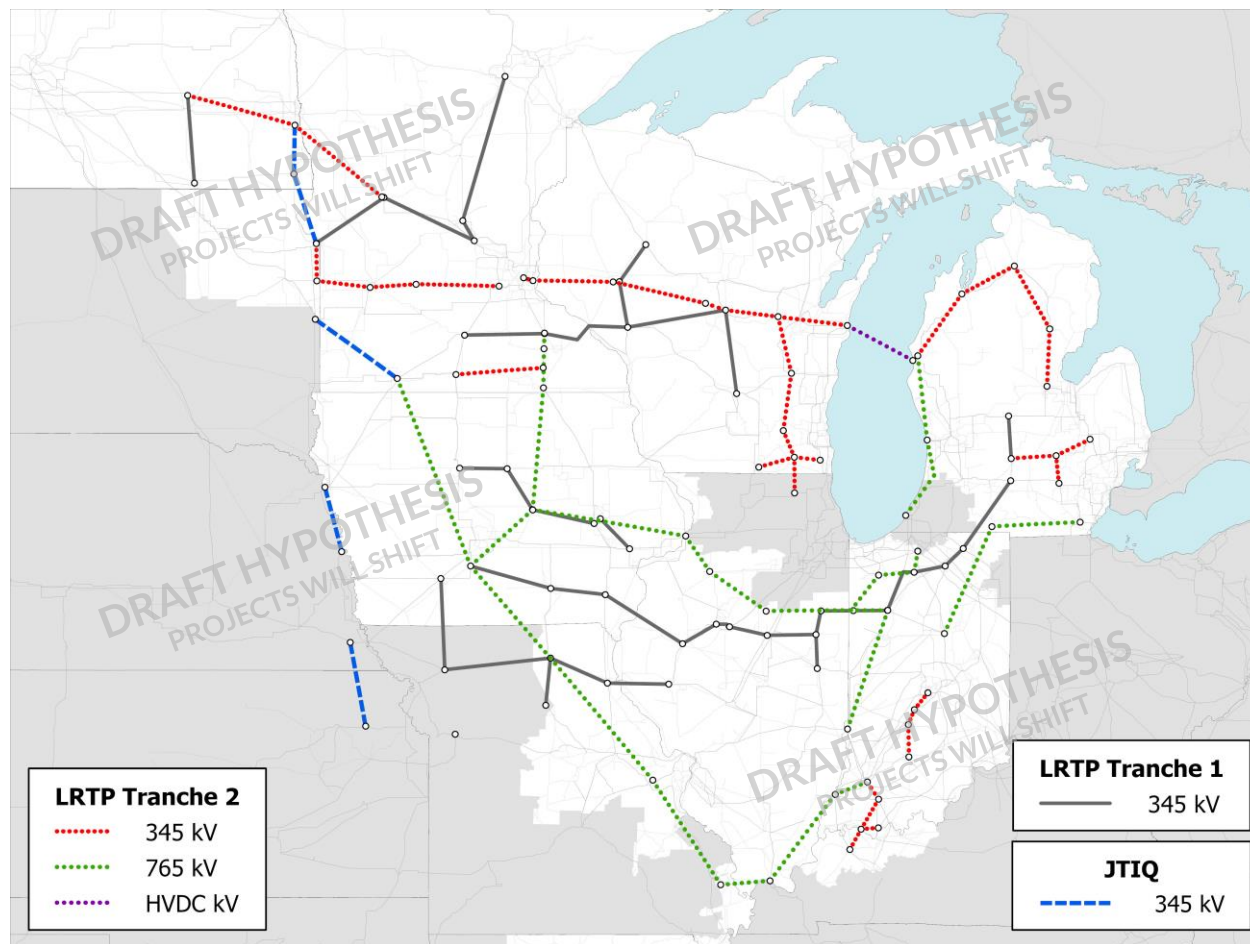




Tranche 2 conceptual ideas were identified based on previous stakeholder input and study work (including Tranche 1 analysis), and engineering judgement



MISO staff narrowed these ideas down to an initial and hypothetical set of transmission lines so key conversations could begin as models are built for analysis



## Conversations / Questions

- Should 765 kV be considered for Tranche 2 and beyond?
- What about dispatchable HVDC?
- How should this extend to neighboring RTOs (e.g., PJM)?