

Strategic Planning for the Future in SPP

2024 Energize Forum

Mark Hoffman – Chief Operations Officer

John Knofczynski – Transmission Policy Administrator

What is SPP?



SPP IS A REGIONAL TRANSMISSION ORGANIZATION

SPP Snapshot

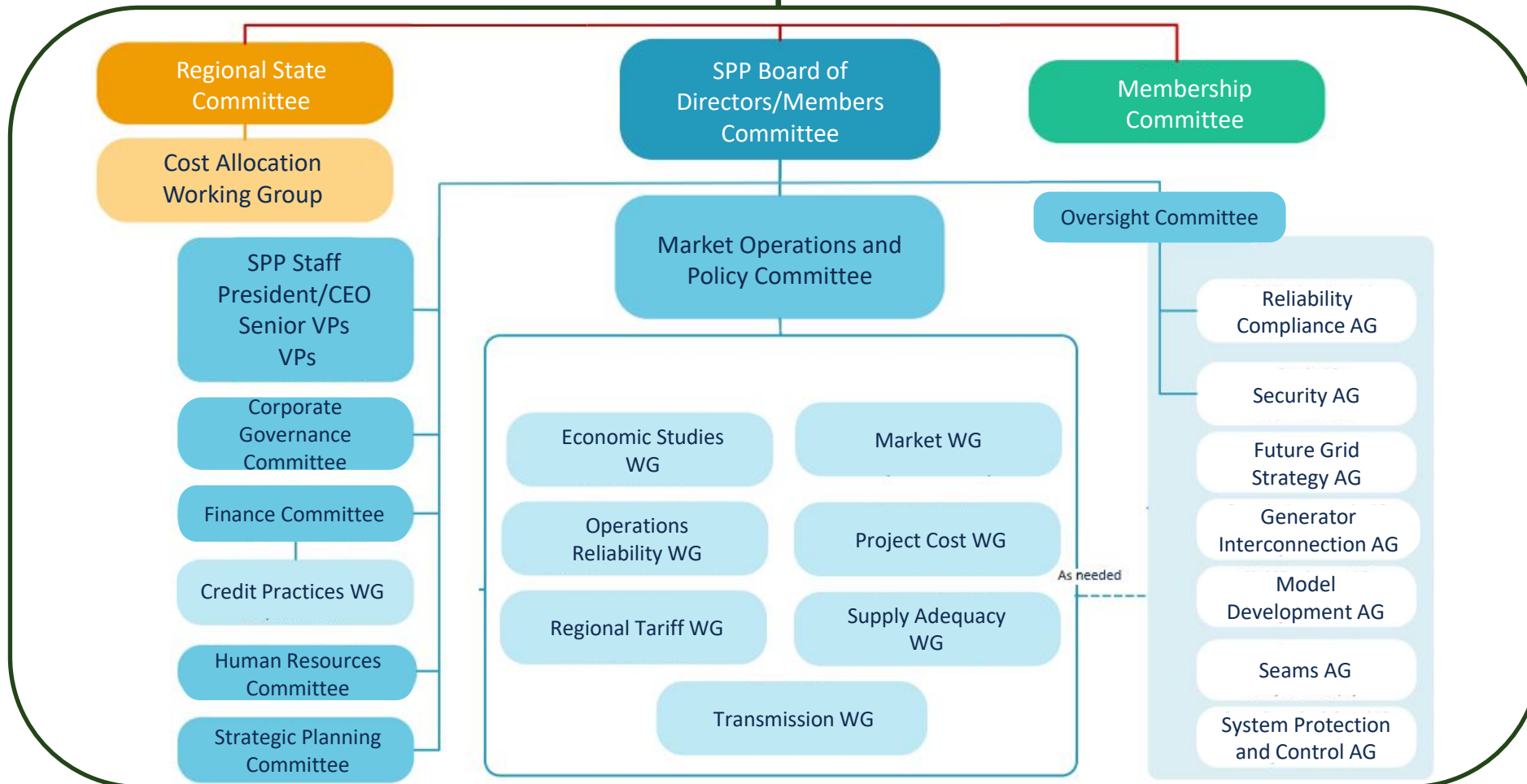
- Located in Little Rock
- 700 employees
- 14 states
- 552,885 square miles of service territory
- 19 million end users
- 112 members
- 349 market Participants
- \$120+ billion market
- 267 market participants
- 53,243 MW peak load
- 105,464 MW generating capacity
- 949 generating plants
- 5,180 Substations
- 72,004 miles of transmission



SPP GOVERNANCE



FERC



SPP MEMBERSHIP PROFILE

Category	Number
G&T Cooperatives	22
Independent Power Producers	20
Investor-Owned Utilities	17
Municipal Systems	13
Independent Transmission Companies	13
Power Marketers	10
State Agencies	6
Large Retail Customers	4
Alternate Power/Public Interest	5
Contract Participants	1
Federal Agencies	1

As of January 2024

TOTAL 112

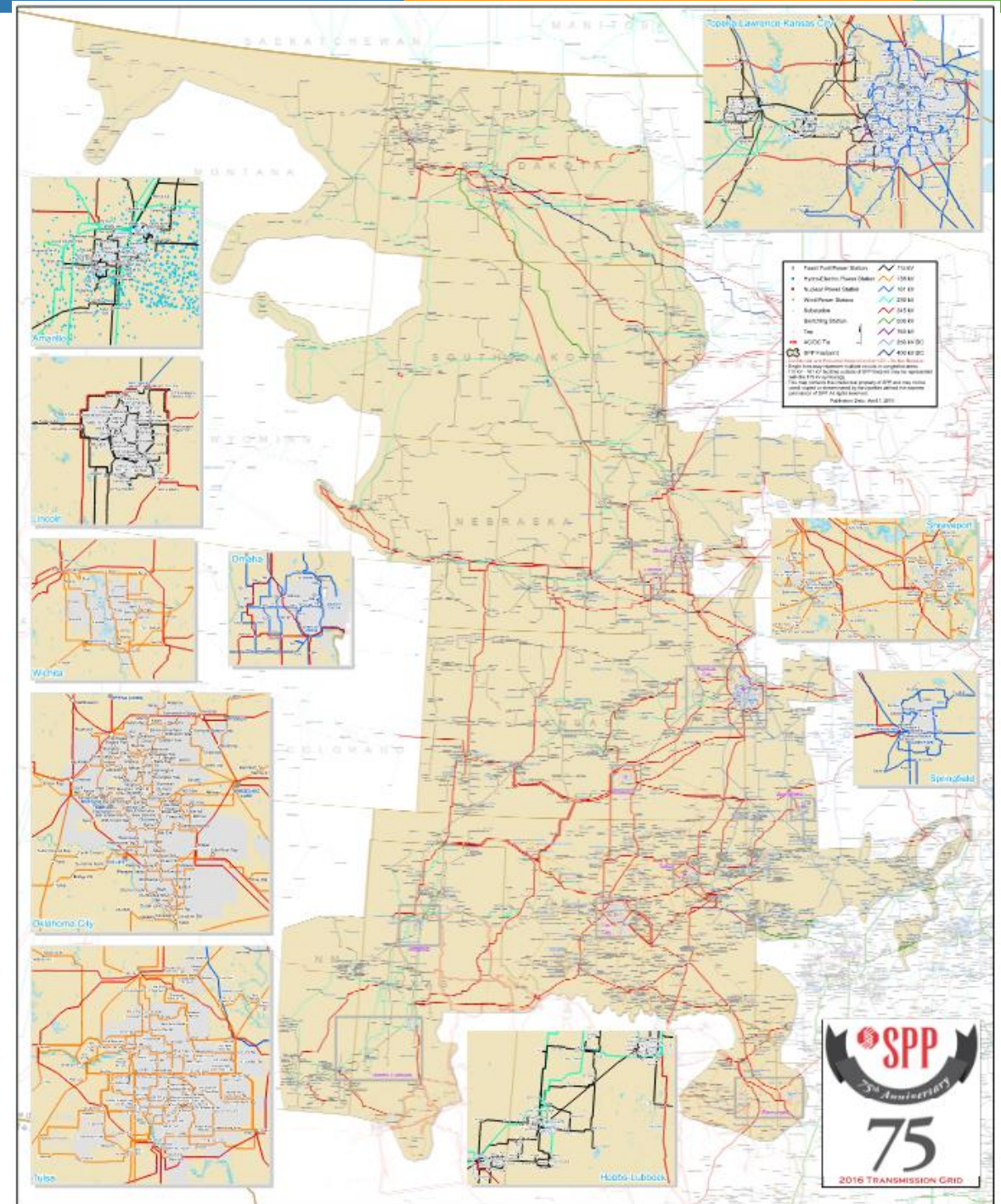


WHAT ARE SPP MAJOR SERVICES?

- **Reliability coordination:** Monitors and controls power flow throughout their footprint.
- **Balancing authority:** Balances electric supply and demand.
- **Transmission Service/Tariff Administration:** Provides for use of the region's transmission lines.
- **Market operations:** Facilitates the sale and purchase of electricity.
- **Transmission planning:** Manages transmission expansion processes.
- **Training:** Offers education for operations personnel and members.
- **Energy Imbalance:** Administers the energy imbalance service in the western interconnect

SPP's Transmission System

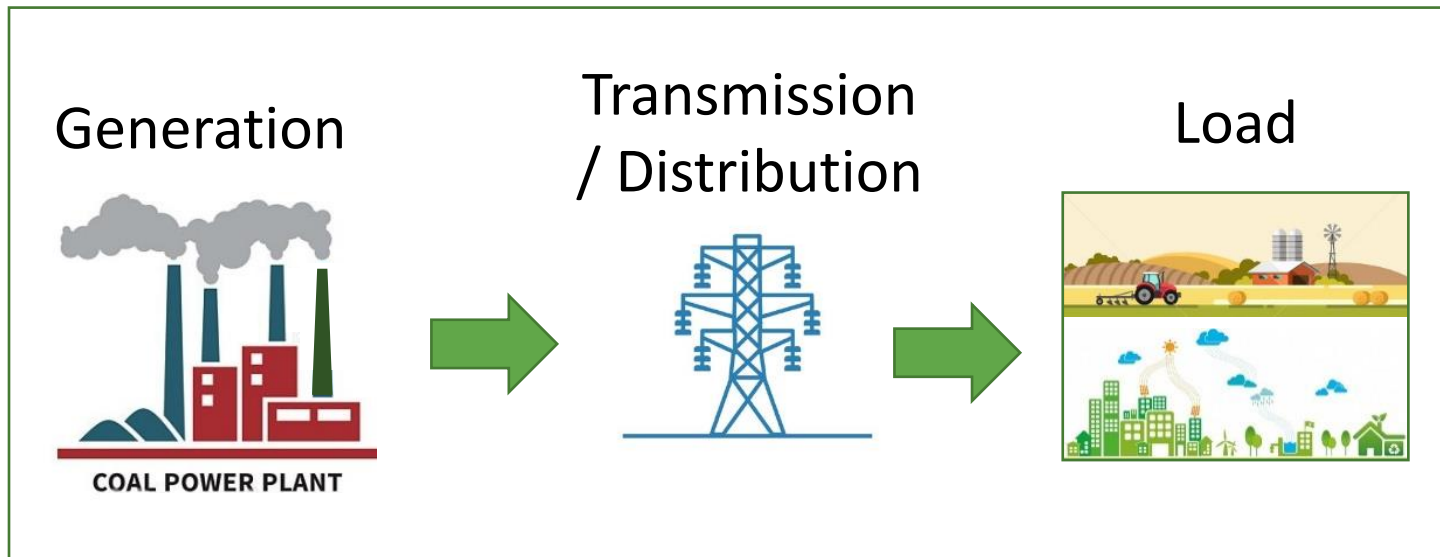
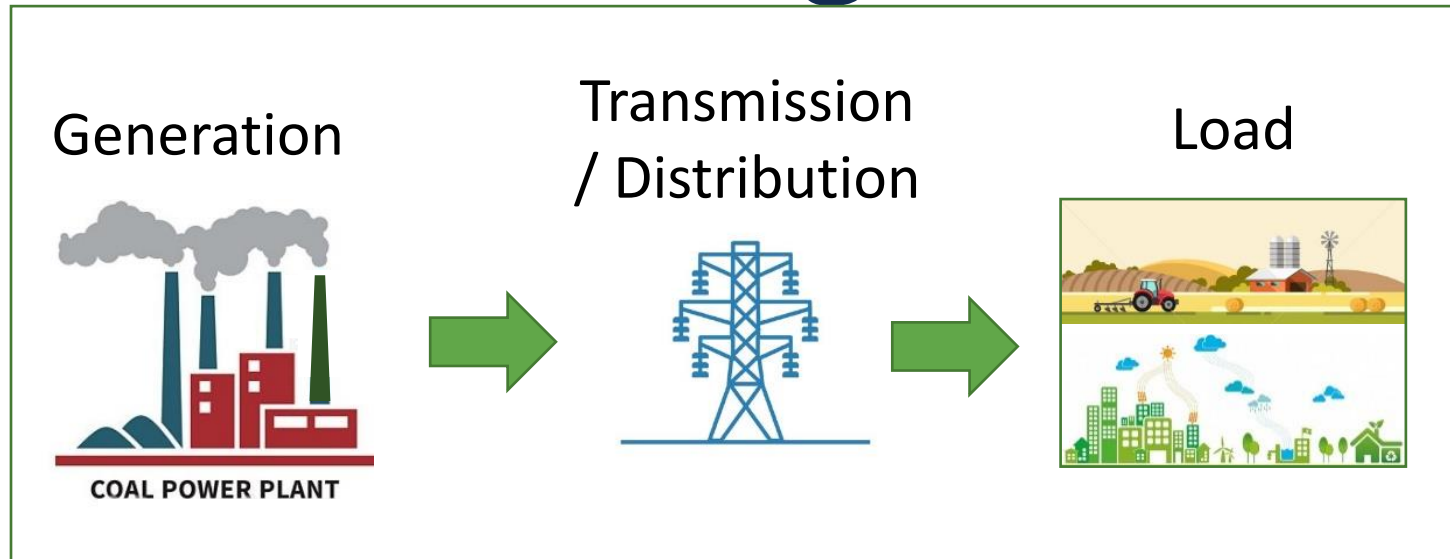
- Over 72,000 miles of transmission line and about 5,200 substations under the SPP Tariff
- Backbone system is primarily 345-kV and 230-kV (mostly in the Upper Missouri Zone (UMZ))



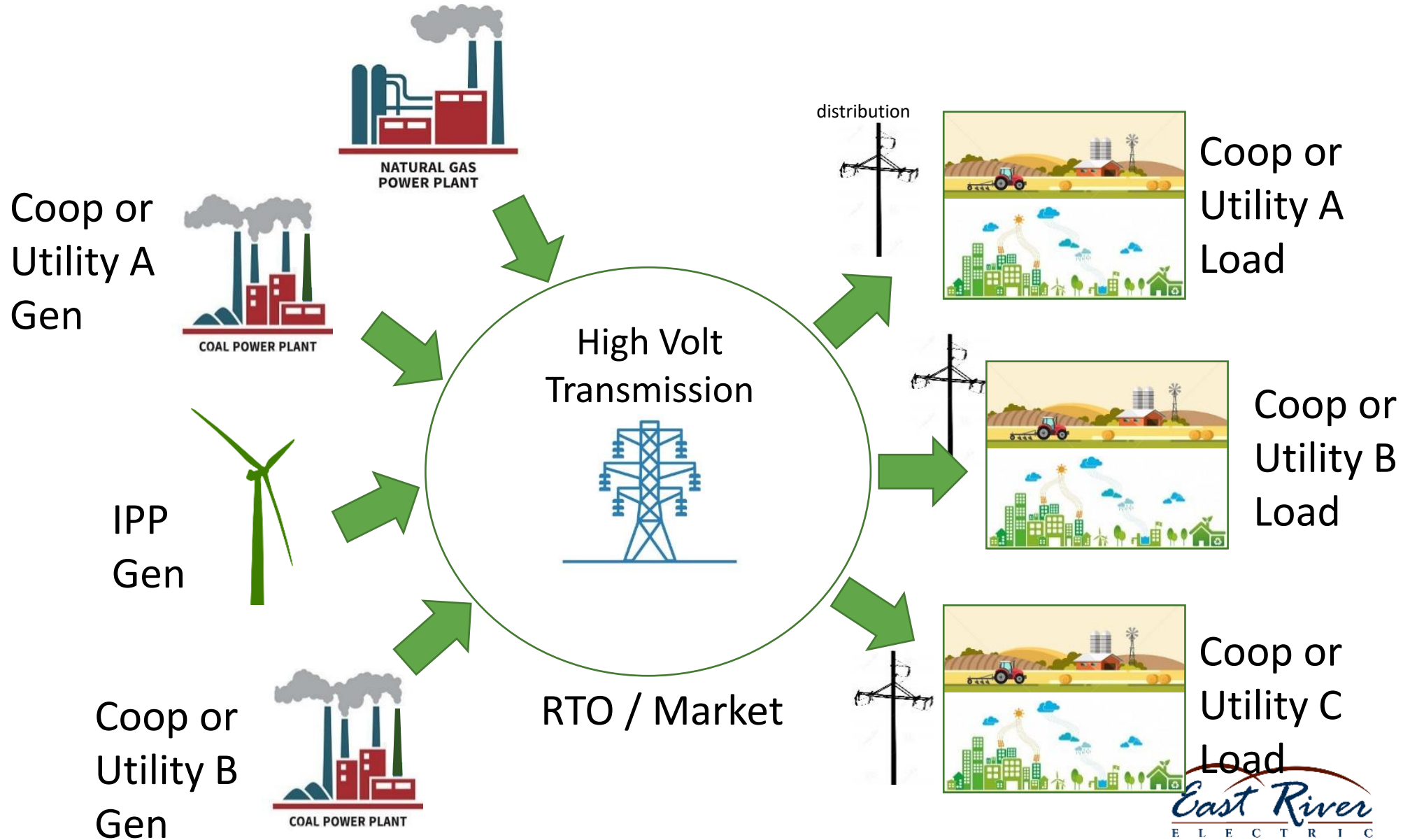
SPP's INTEGRATED MARKETPLACE

- **Energy and Operating Reserve Markets:** Participants buy and sell wholesale electricity in day-ahead and real-time
 - **Day Ahead Market** commits the most cost-effective and reliable mix of generation for the region
 - **Real-Time Balancing Market** economically dispatches generation to balance real-time generation and load, while ensuring system reliability.
- **Transmission Congestion Rights Market:** Participants hedge against day-ahead transmission congestion between two settlement locations
- **Western Energy Imbalance Service (WEIS) Market:** Contract-based, real time balancing market in the western interconnection (as of Feb 1, 2021)

Old Load Serving Model

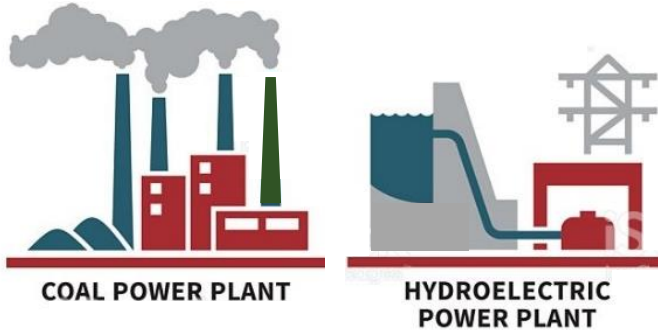


New Model

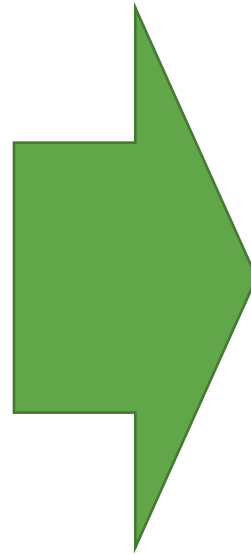


Evolution of Dispatch

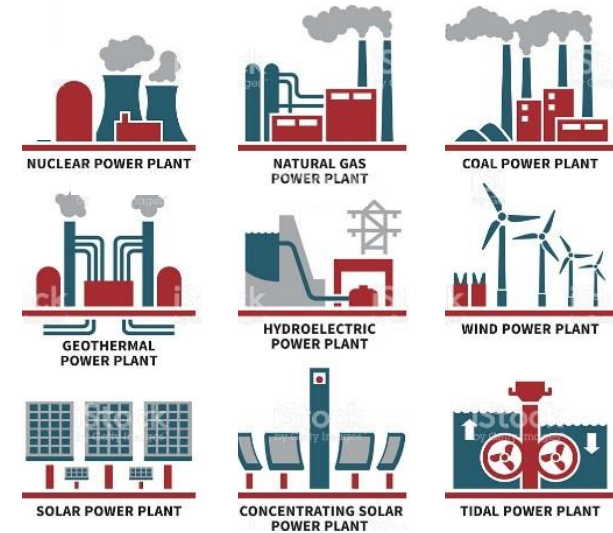
OLD DISPATCH



- Baseload
- Regulation Load Following
- Reliability



CURRENT DISPATCH



- Emphasis on Lowest Price Dispatch
- Tax Subsidy Influence
- Diverse Generation Mix
- Reliability

WHAT SPP DOES NOT DO?

Own transmission or generation

Site transmission

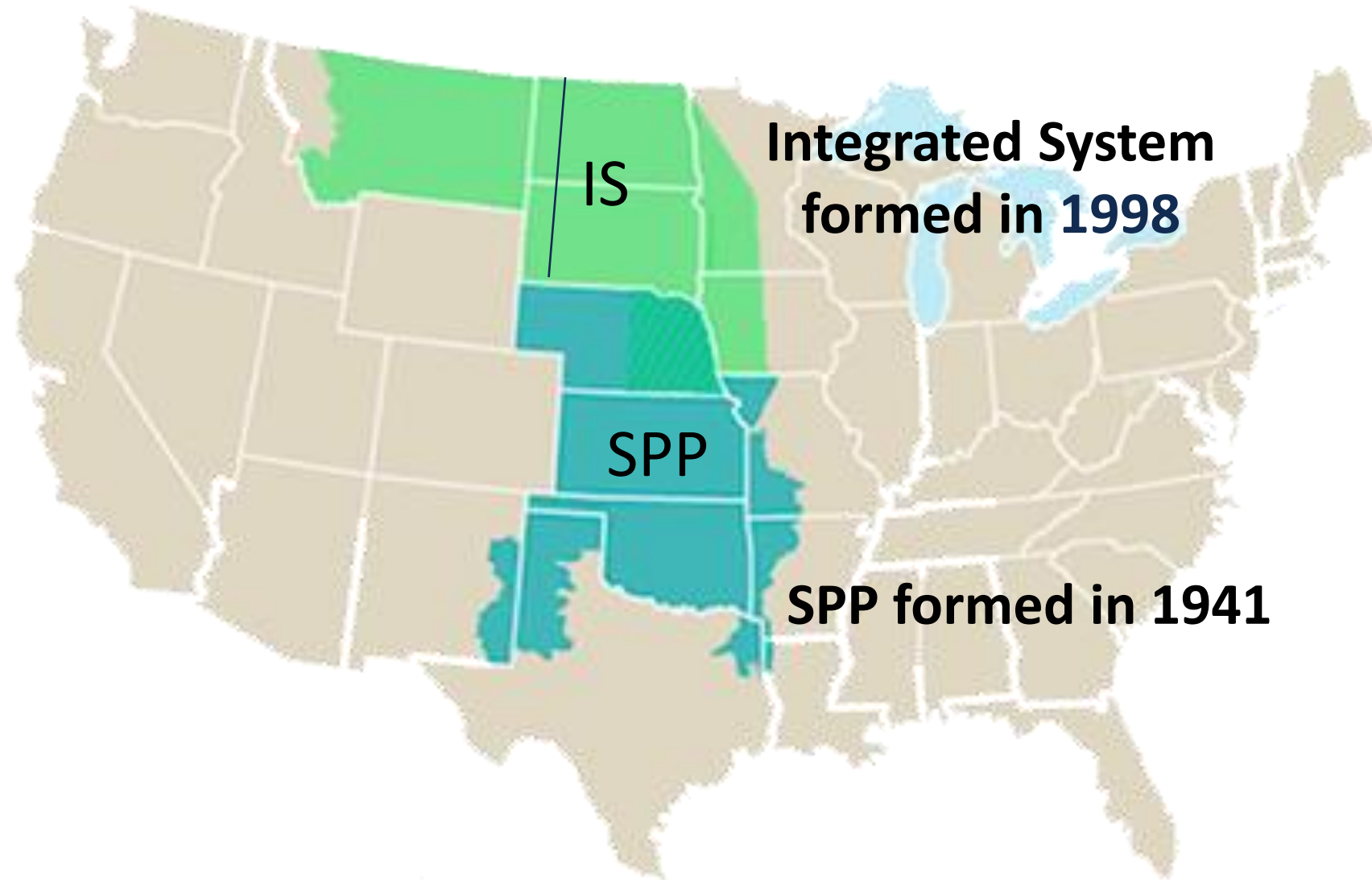
Site or plan generation

Construct transmission or generation

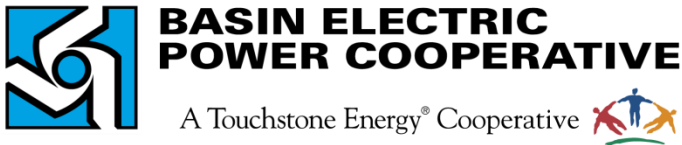
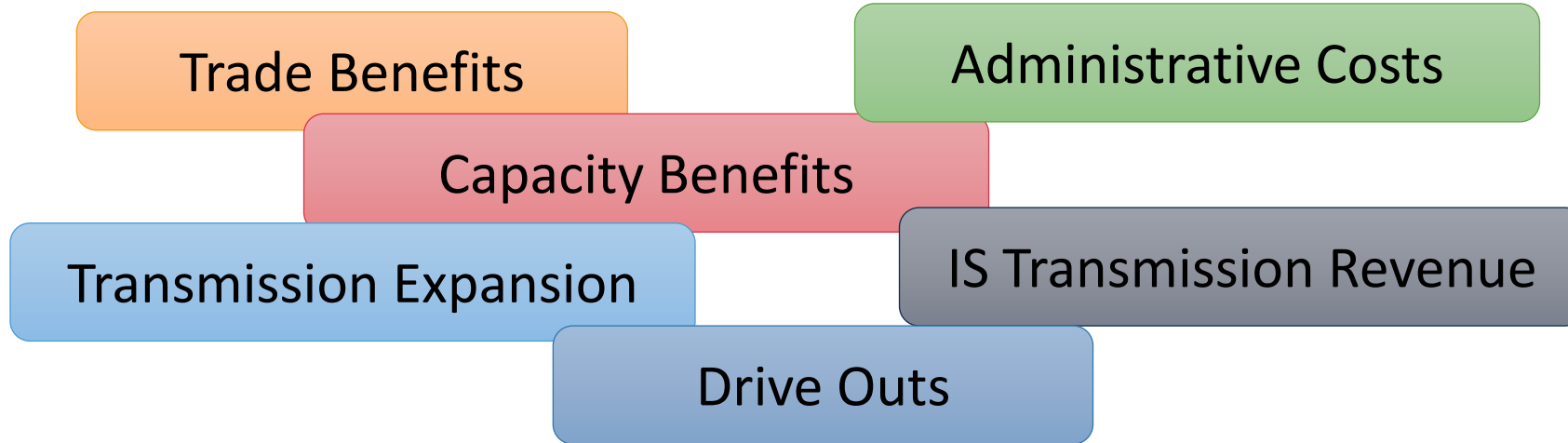
Permit transmission or generation

How did we get here?

Basin/Western and SPP



SPP Economic Impact to Integrated System



SPP Membership

Membership

- Vote on MOPC (Markets and Operations Policy Committee)
 - Transmission Owner (TO) – More than 500 miles of networked transmission lines in SPP
 - Transmission User (TU) – Less than 500 miles of networked transmission lines in SPP
- Votes are averaged between TOs and TUs
- \$6,000/year membership fee
- Withdrawal penalty: $1/\text{total members}$ multiplied by 25% of SPP's capital debt

Changes in Operations

- SPP direct operations – functional control turned over facilities
- Sells transmission service on a non-discriminatory basis
- SPP becomes the planner
- Construction of new facilities

East River Decision/Options

1 Keep current status (some qualifying facilities leased to Basin) – estimated benefit of \$630,000

2 Join SPP as Transmission Owner (TO) – estimated benefit of \$12,000,000

3 Lease all qualifying facilities to Basin – estimated benefit of \$3,400,000

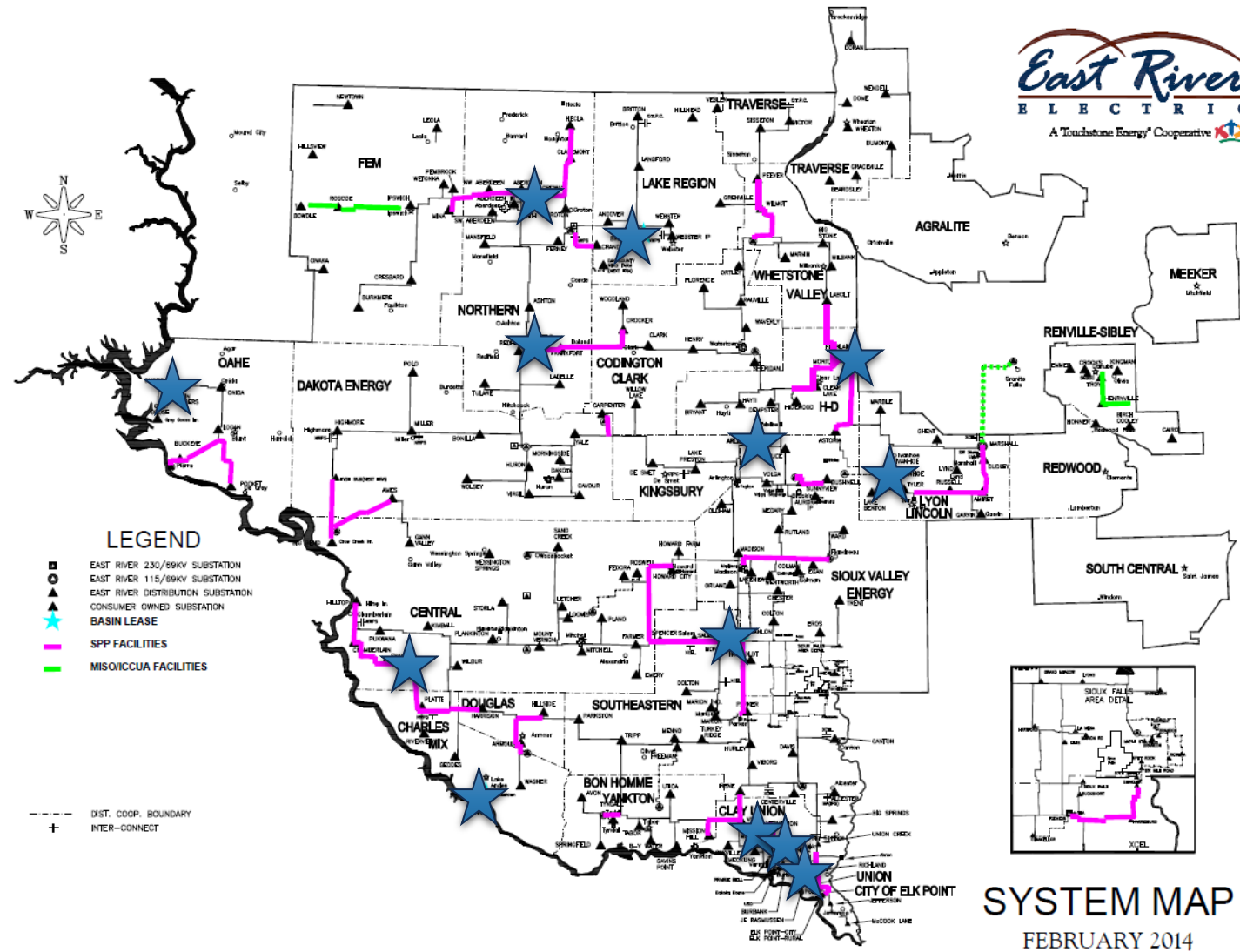
Plant Initially Proposed For Inclusion (2014 Values)

Line: 744 Miles	\$37,622,000
Distribution Substations: 1	\$420,000
High Voltage Substations: 14	\$23,445,000
Microwave	\$20,632,000
SCADA	<u>\$1,890,000</u>
TOTAL	\$84,009,000

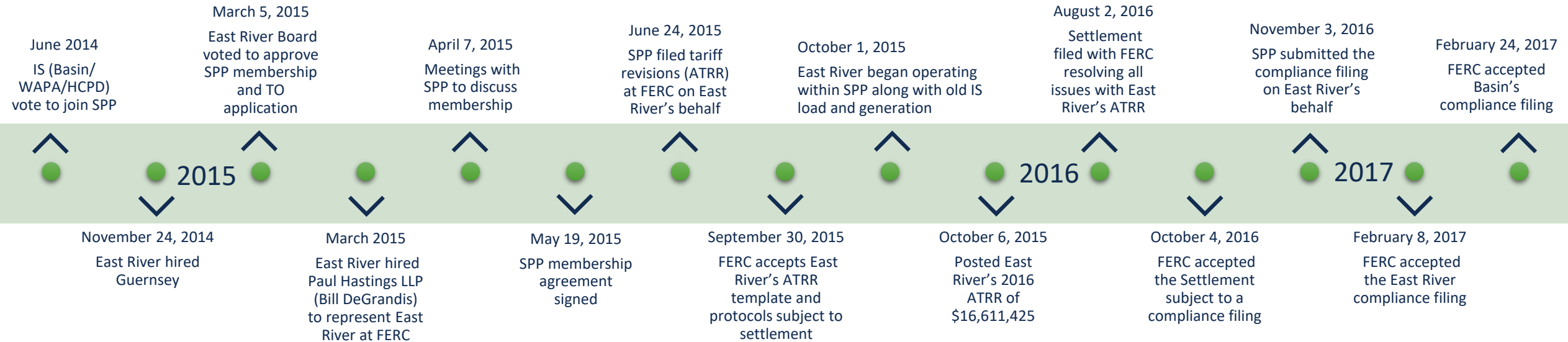
East River Total Utility Plant \$297,953,016

Facilities Proposed at Integration

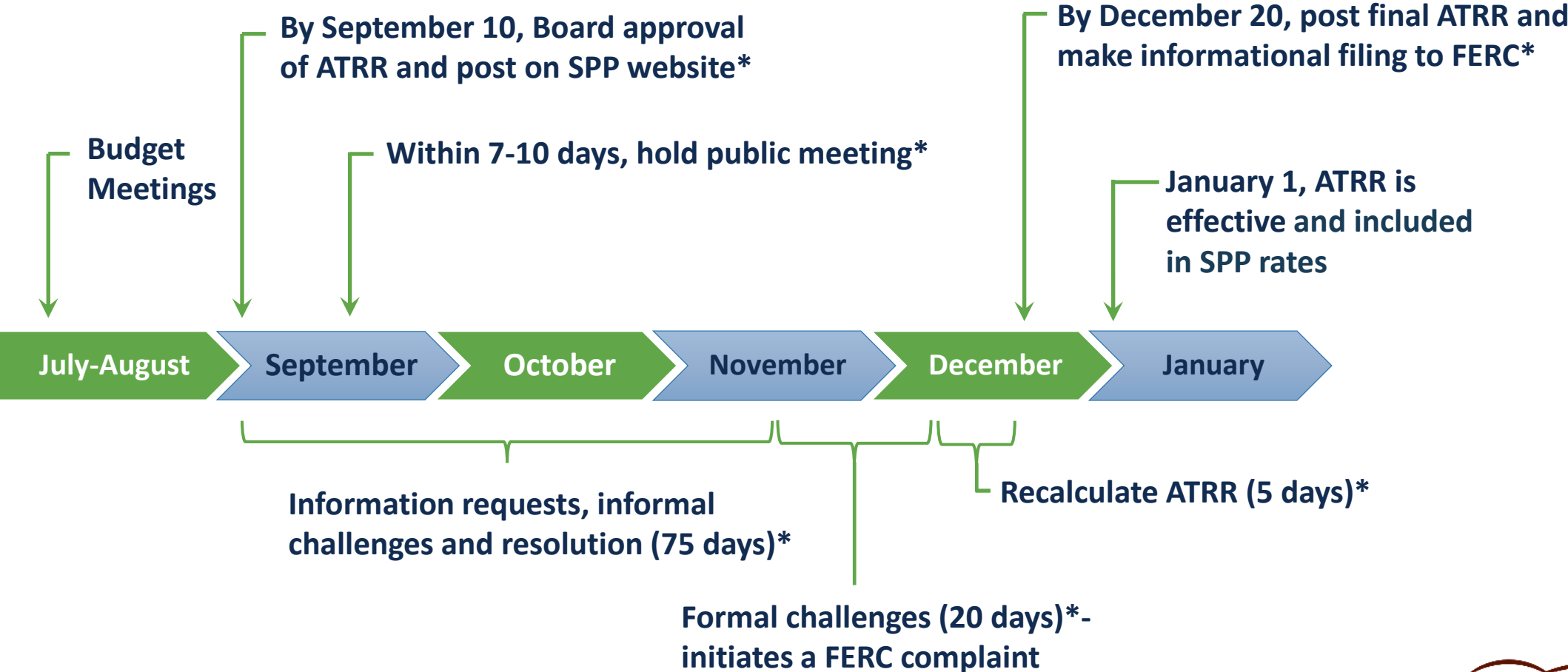
- 23% of 69-kV and 115-kV transmission lines
- 85% of Delivery (transmission) Substations
- Most of the SCADA and Communication Systems
- Annual Transmission Revenue Requirement of \$15.7 million



SPP Integration Timeline



East River's Annual ATRR Timeline

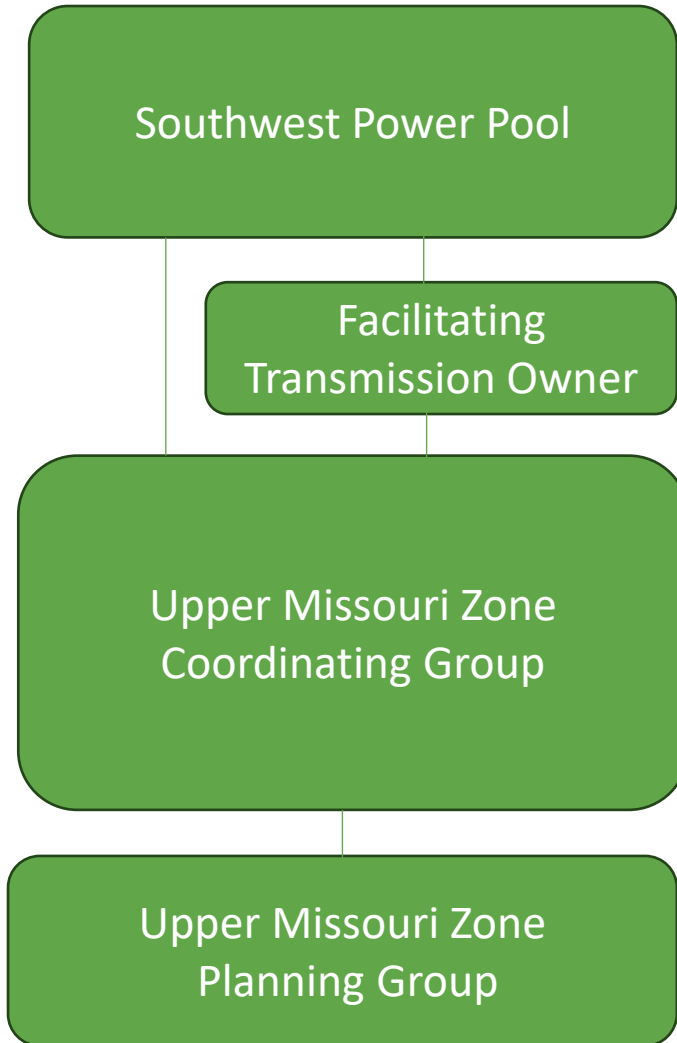


*Established in East River's Implementation Protocols in Docket ER15-1976



Activities Since Integration

Coordination Activities



- Responsible for Transmission Planning functions
 - Administration of SPP Tariff and planning studies
- Basin Electric Power Cooperative
 - Role assigned through the SPP Tariff
 - Responsible for ZPC administration and coordination
- Includes all TOs and TUs within the UMZ
 - Zonal inclusion criteria updates and approvals
 - ZPC approvals
 - Forum for discussion of zonal and regional issue
 - Single voice at SPP
- Includes all TOs within the UMZ
 - Develops and evaluates ZPC revisions
 - Coordinates local planning issues and studies

Facilities Eligible for Inclusion in SPP

- Specified in Attachment A1 of the SPP Tariff
- Upper Missouri Zone TOs developed Attachment A1 guidance document

Non-Radial 60 kV and higher facilities

Radial 60 kV and higher serving more than one non-affiliated customer

Lines that interconnect zones and other entities

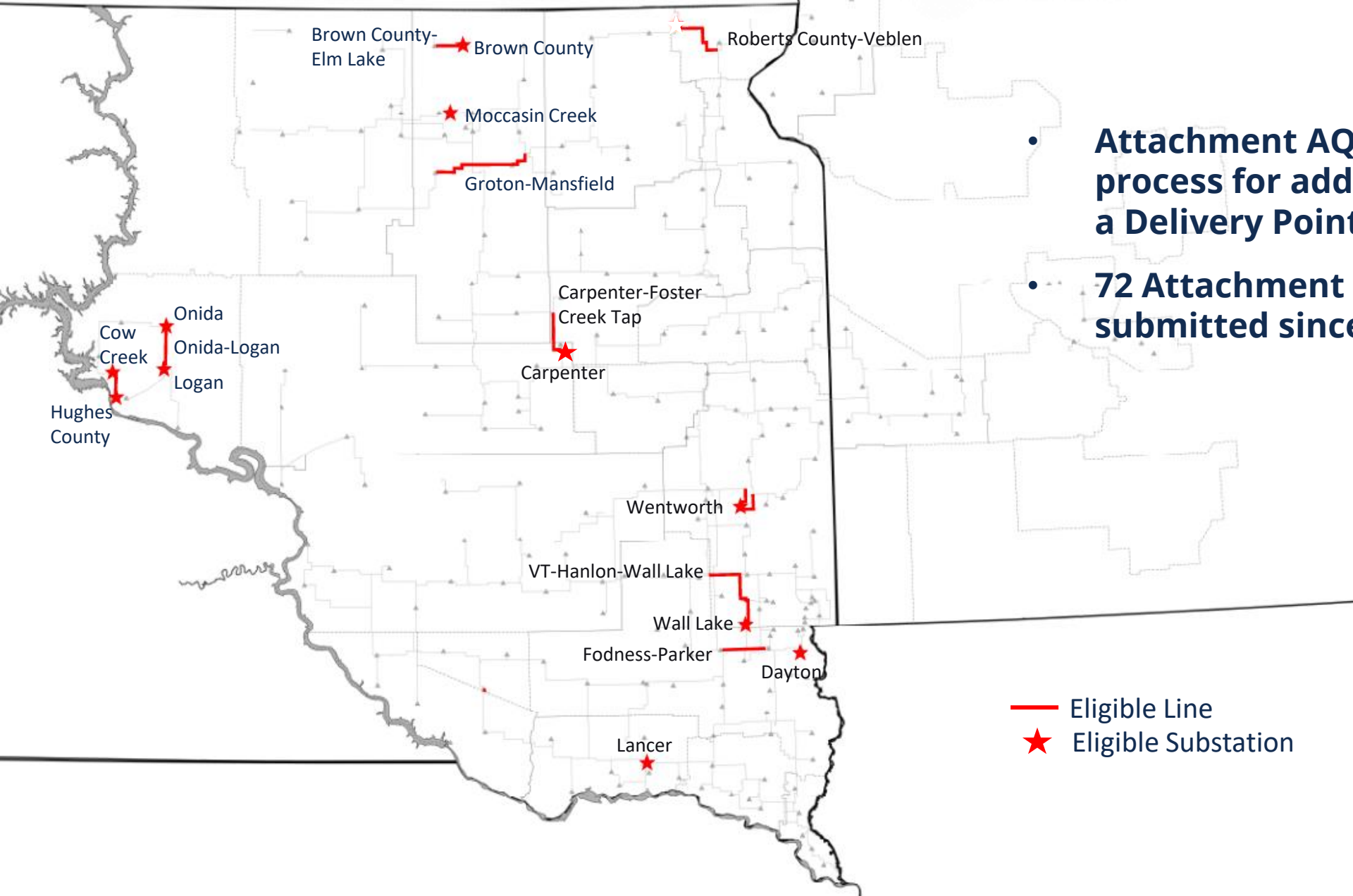
Control equipment and facilities necessary to control and protect a qualifying facility

Facilities on the high side of transformer in substations transforming voltages above 60 kV to below 60 kV

DC interties

Facilities operated below 60 kV that are determined transmission pursuant to the FERC seven factor test

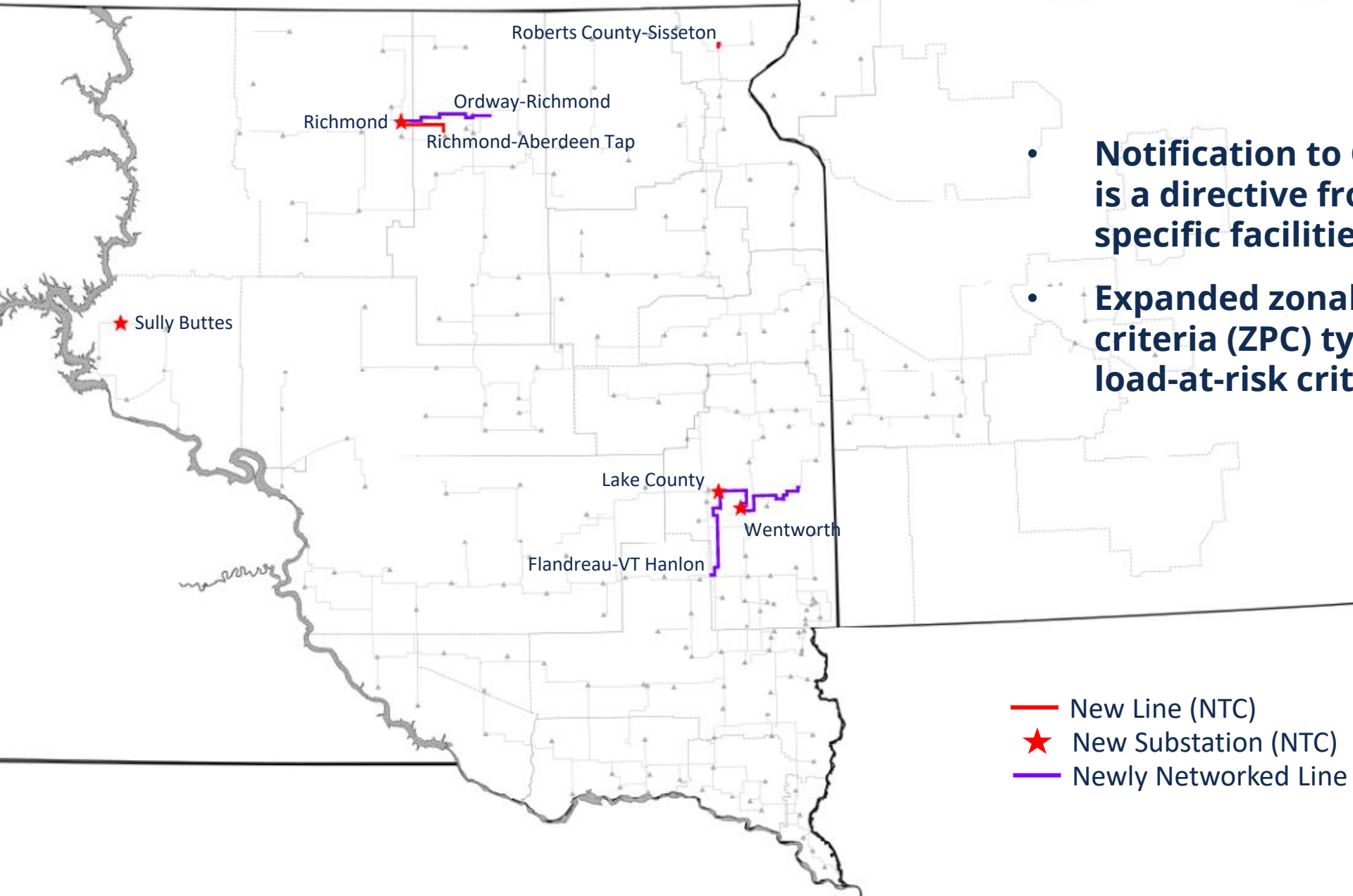
Attachment AQ Projects



- Attachment AQ is the SPP Tariff process for adding or modifying a Delivery Point
- 72 Attachment AQ request submitted since joining SPP

— Eligible Line
★ Eligible Substation

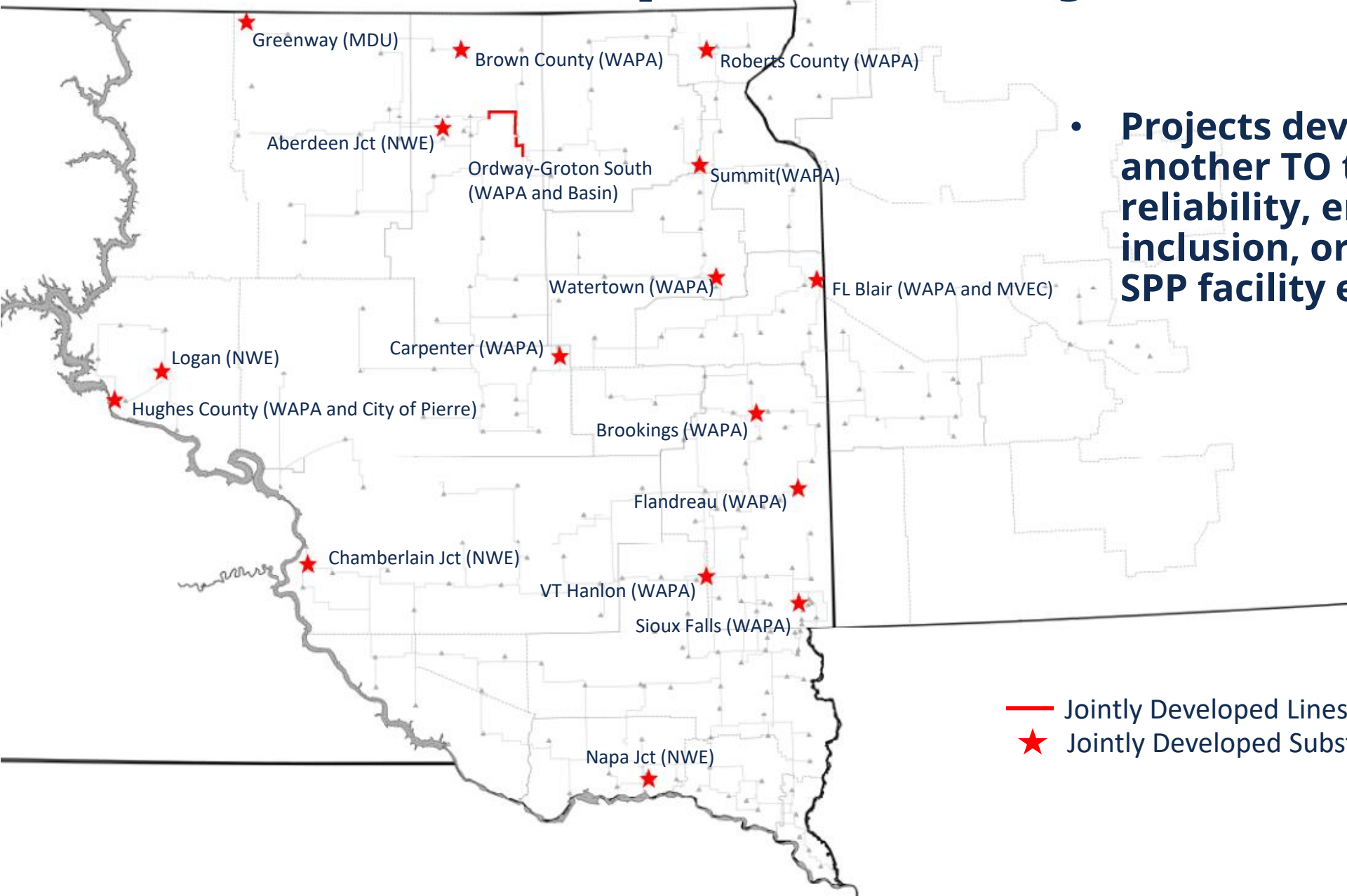
NTC and Criteria Change Projects



- **Notification to Construct (NTC) is a directive from SPP to build specific facilities**
- **Expanded zonal planning criteria (ZPC) typically include load-at-risk criteria**

- New Line (NTC)
- ★ New Substation (NTC)
- Newly Networked Line (ZPC)

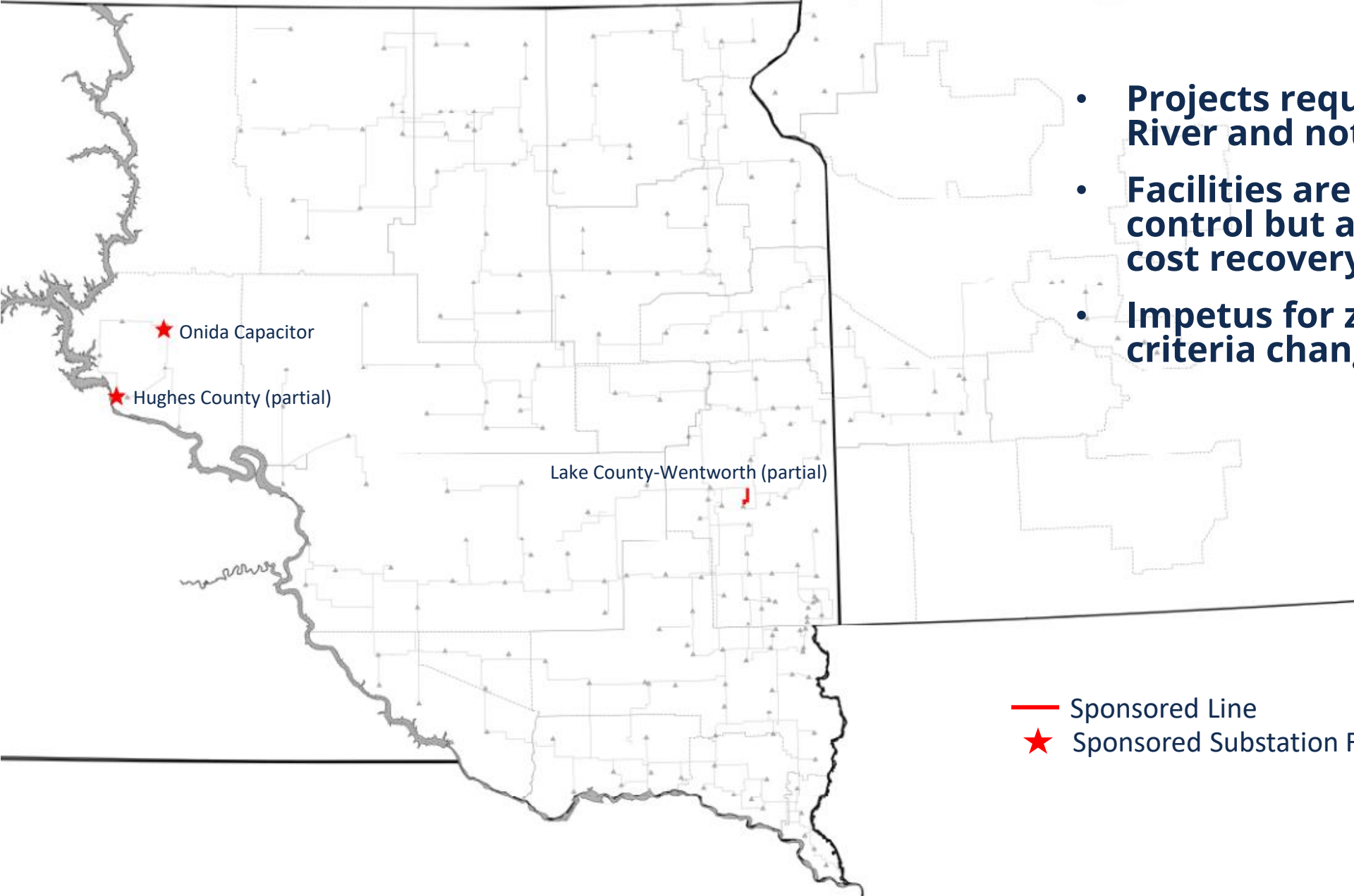
Joint Development Projects



- **Projects developed with another TO to improve reliability, enable SPP facility inclusion, or plan for future SPP facility eligibility**

— Jointly Developed Lines
★ Jointly Developed Substations

Sponsored Upgrade Projects



- Projects requested by East River and not required by SPP
- Facilities are under SPP's control but are not eligible for cost recovery
- Impetus for zonal planning criteria changes

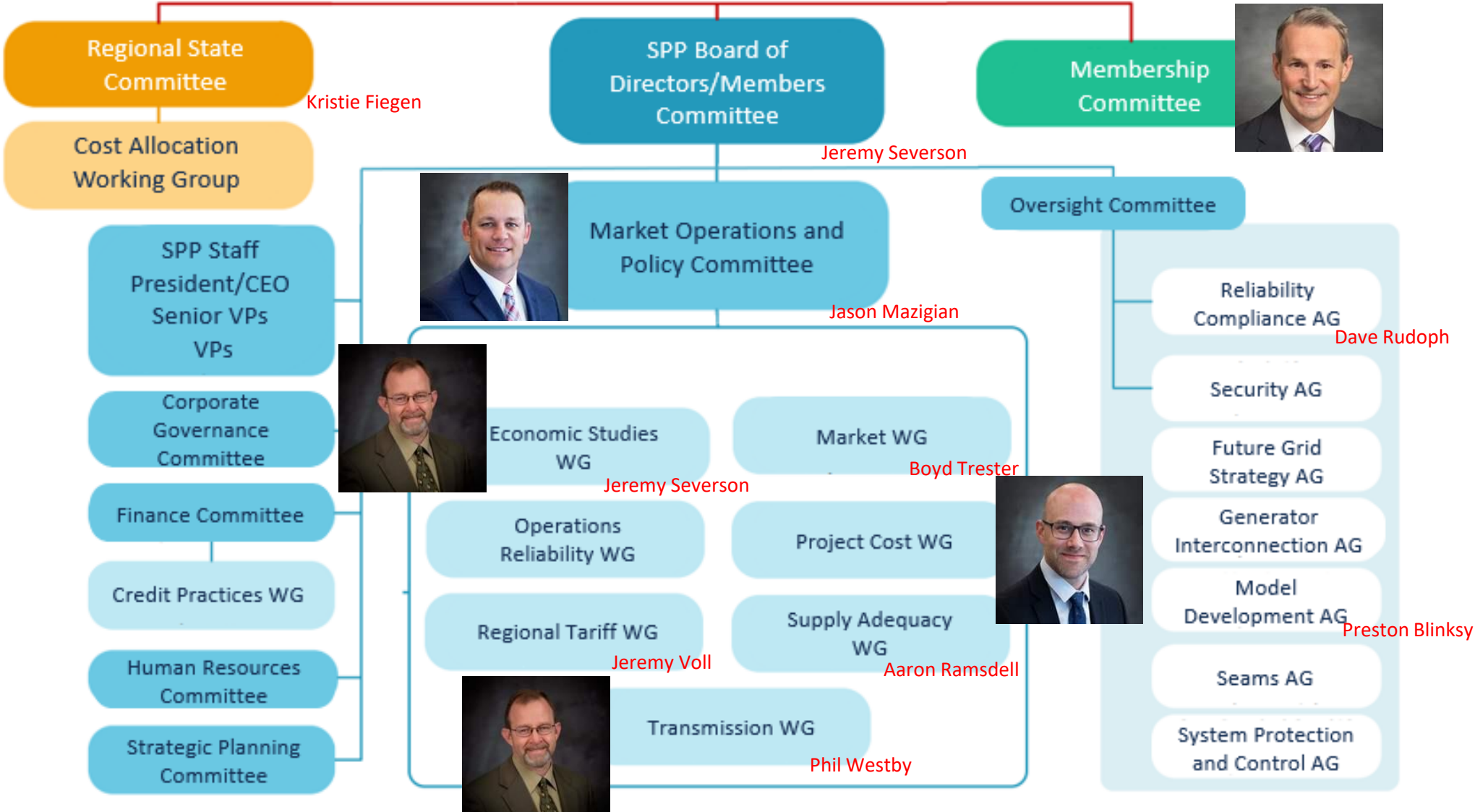
— Sponsored Line
★ Sponsored Substation Facilities

Now what?

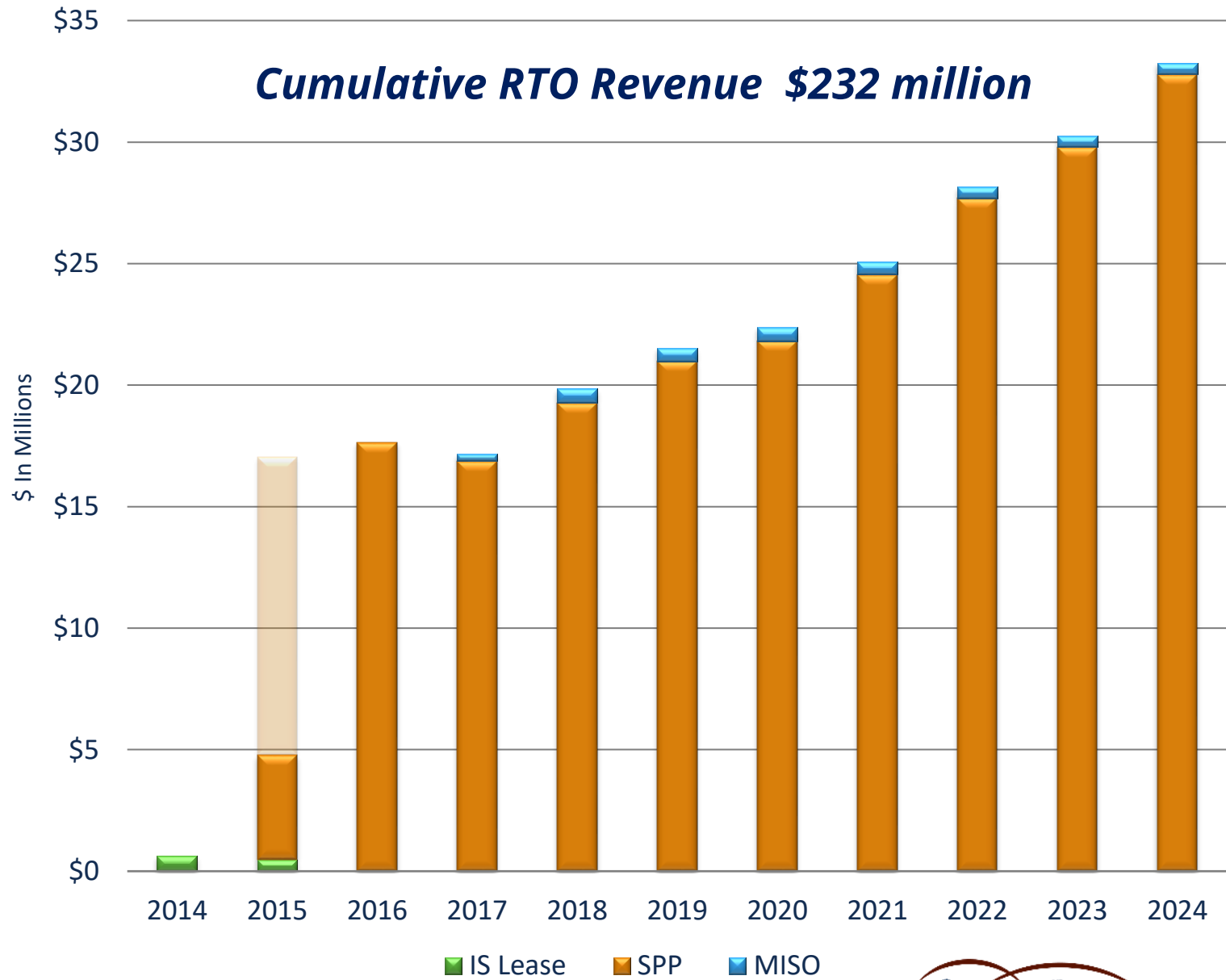
SPP MEMBER ENGAGEMENT



Group Organizational Chart



RTO Revenue

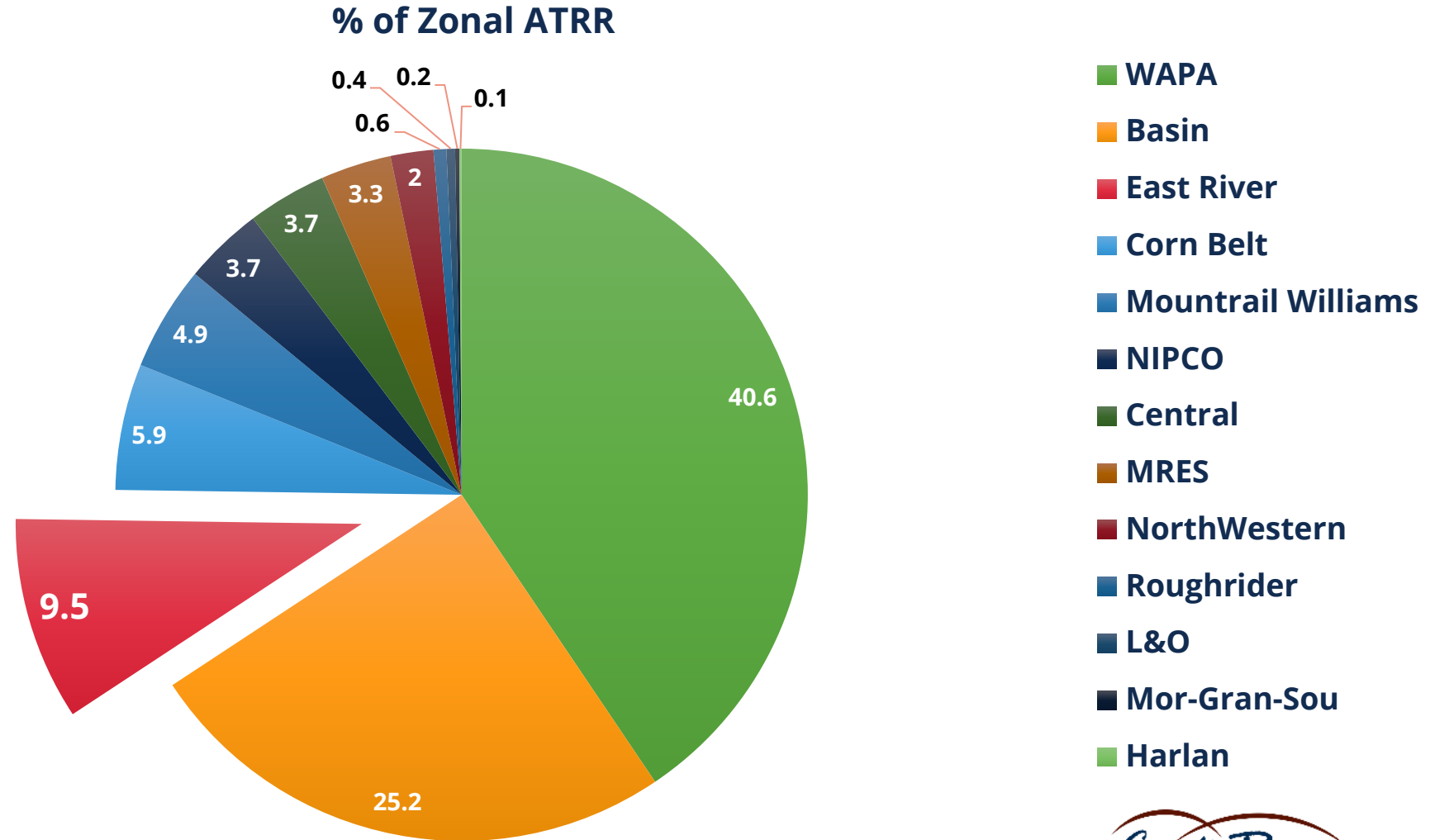


■ IS Lease ■ SPP ■ MISO

UMZ ATRR COMPARISON

2024 ATRR

- UMZ Total - \$332M
 - 20 Utilities
- WAPA Total - \$135M
- Basin - \$84M
- East River - \$32M



Spend

- Total increase in plant in service from 2016-2023: \$417.1M
- Total increase in SPP facilities from 2016-2023: \$146.1M

2015 ATRR: \$15,743,101

- Based on 2015 Settlement Agreement template
- 23% line, 85% supply subs and 0% delivery subs included

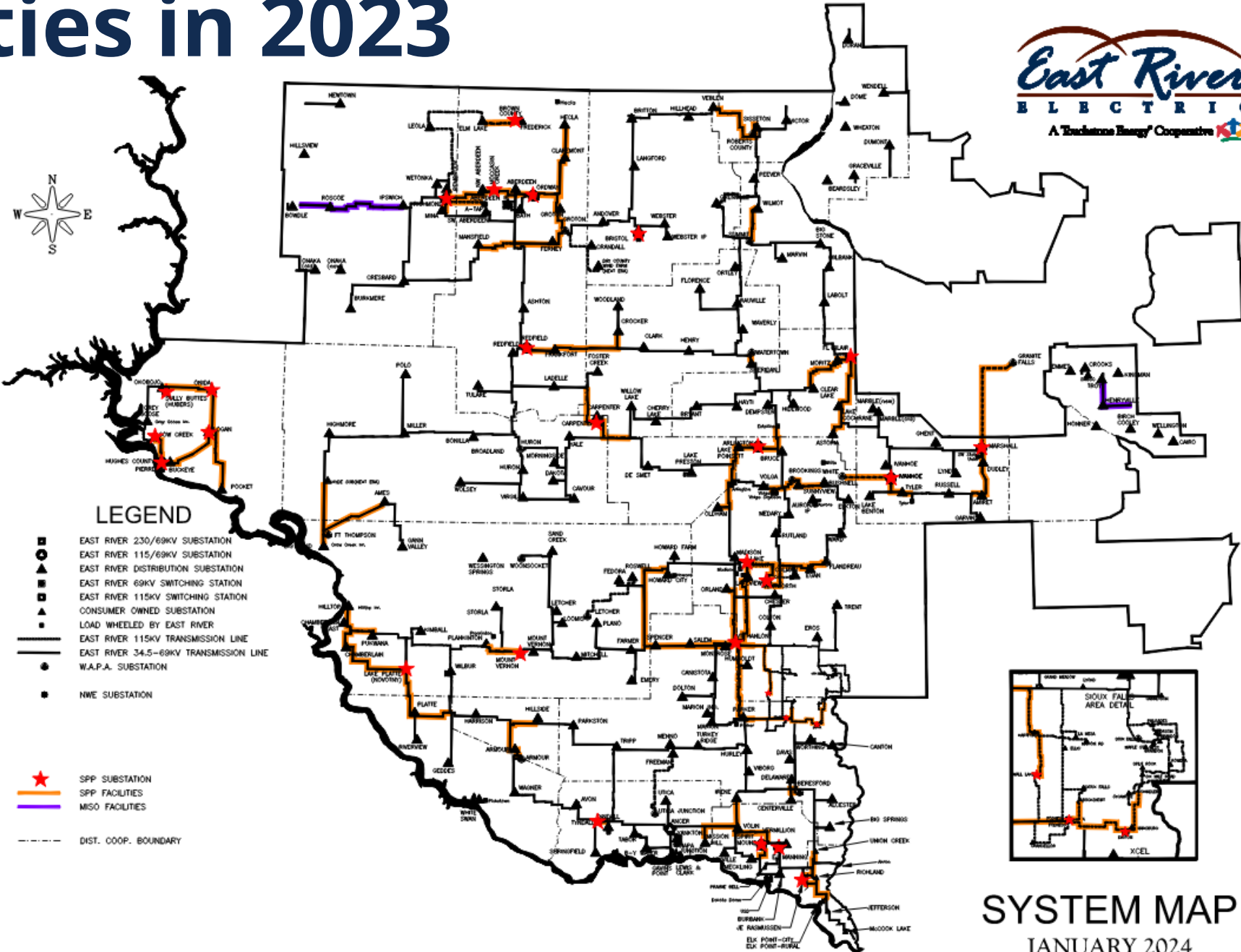
2024 ATRR: \$32,889,341

- 28% line, 86% supply subs, and 7% delivery subs included

RTO Facilities in 2023



- 27% of 69-kV and 115-kV transmission lines
- 85% of the Delivery Substations
- 6% of Supply (distribution) substations
- Most of the SCADA and Communication Systems
- Annual Transmission Revenue Requirement of \$29.8 million



SYSTEM MAP
JANUARY 2024

Potential for Adding Facilities Under the SPP Tariff

Strategic Plan

OBJECTIVES

EAST RIVER ELECTRIC POWER COOPERATIVE, INC.

MISSION: *East River Electric Power Cooperative exists to enhance the value of its members.*

Strategic Themes	Leadership on Public Policy		Common Voice, Common Service		Organizational Excellence		Reliability, Affordability, and Sustainability			
Members	M1 – Influence Public Policy	M2 – Provide reliable and secure wholesale power	M3 – Assist Members in Electrifying the Economy	M4 – Increase & Expand Federated Services	M5 – Support members responding to energy trends	M6 – Consistently communicate with members	M7 – Provide Business Development Support	That provides a satisfying member relationship ↑		
Financial	F1 – Manage wholesale rate objectives to control net costs		F2 – Maintain financial strength		F3 – Explore rate options to support membership adoption of new technologies			Ensuring stewardship of financial strength ↑		
Business Operations	B1 – Align Transmission System Upgrade Plan with member needs	B2 – Maintain long term viability & reliability of system assets	B3 – Utilize appropriate technology to maximize operational efficiency	B4 – Optimize RTO membership benefits		B5 – Explore Federal Funding Opportunities for Member Benefit		To successfully deliver the Strategic processes ↑		
	B6 – Assist member systems with FERC matters		B7 – Promote marketing, energy efficiency & electrification		B8 – Positively impact communities					
People & Culture	P1 – Attract, develop, and retain a high-quality workforce		P2 – Embed a culture of safety and health		P3 – Continuously improve internal communications		P4 – Enable workforce to leverage technology for cooperative efficiency We will enable our employees ↑			
Values	Safe and Healthy Environment		Integrity		Accountability		Innovation		Commitment to Community Utilizing the values important to us	

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Strategic Plan – B4

Optimize RTO Membership benefits



Continue to be aggressive in development of projects to optimize RTO benefit.



Propose projects through the RTO planning assessments or other tariff processes to increase facilities under the RTO tariffs.



Continue to work with WAPA on development of new projects that will benefit system reliability and RTO benefit.



Provide member outreach on RTOs to explain planning process, facility eligibility, financial impacts, interconnections and reliability benefits.



Evaluate the financial and operational impacts of relocating East River's market settlement locations and implement as appropriate.



Sustain and enhance relationships with other utility organizations.

Our Priorities

Transmission System Upgrade Plan Goals



Provide for new load growth



Strengthen system backbone



Replace aging infrastructure



Expand planning and design criteria



Increase deployment of technology



Meeting higher reliability expectations

Opportunities for Adding SPP Facilities

- ✓ Continue TSUP Projects
- ✓ Increases in SCADA and communication equipment for all projects
- ✓ Networking/looping facilities
- ✓ New facilities through SPP's ITP process
- ✓ New facilities through East River planning
- ✓ Revise planning criteria to increase facility eligibility
- ✓ Expanding delivery points
- ✓ Changes in facility ownership
- ✓ Move SPP market settlement points from legacy IS to East River delivery substations
- ✓ Move open points within East River's system
- ✓ Obtain Facility Credits for current and future MISO facilities

Future in SPP

What is our Focus?

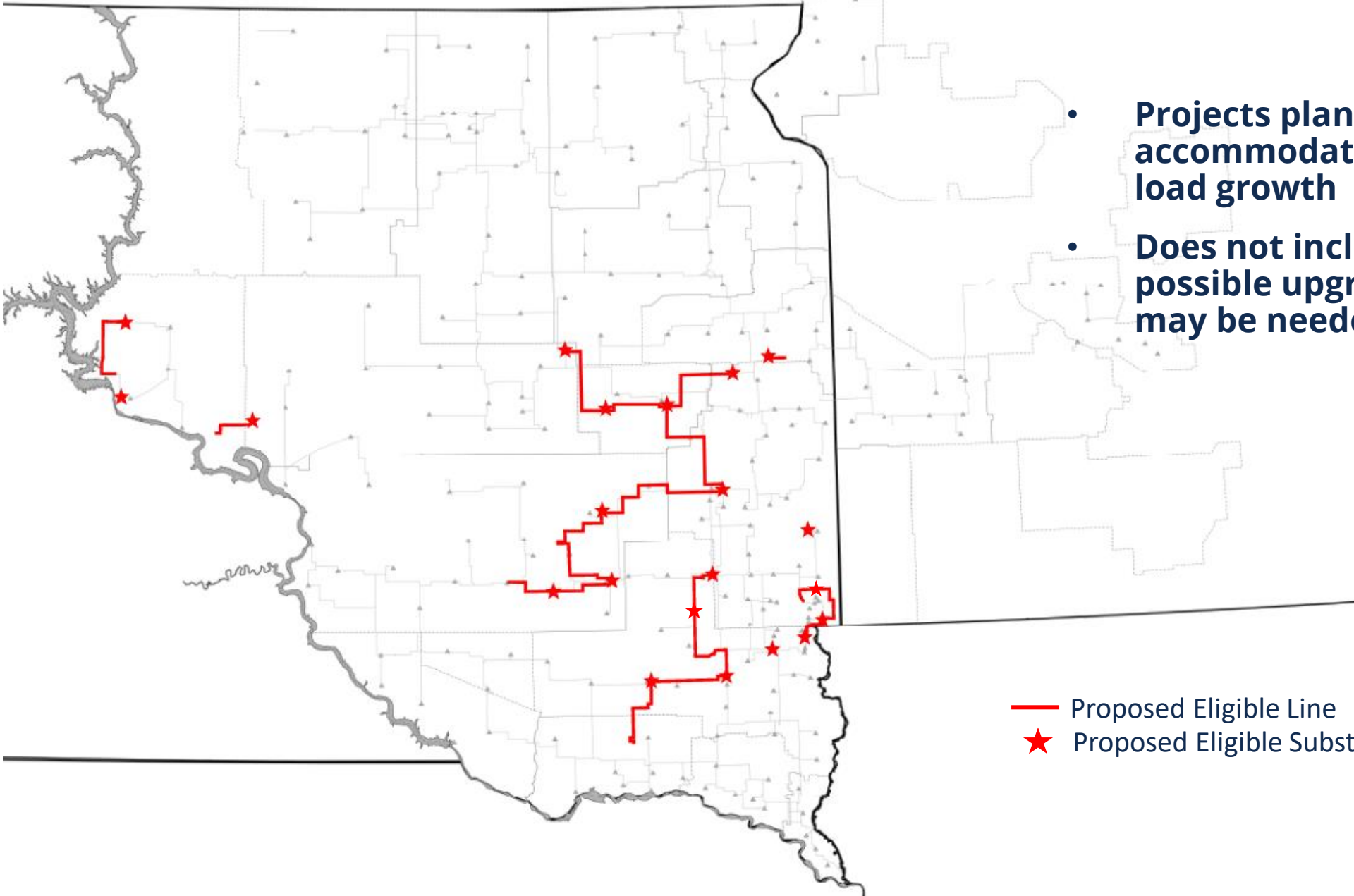
Projects

- Growth projects -> reliability projects
- Plan for future eligibility
- Build to maximize inclusion
- Push for additional criteria
- Add reliability
- Add capacity

SPP spend/Overall Spend

- \$183M of \$357M planned spend over next 3 years
- 51% of spend

Planned SPP Upgrades 2024-2027



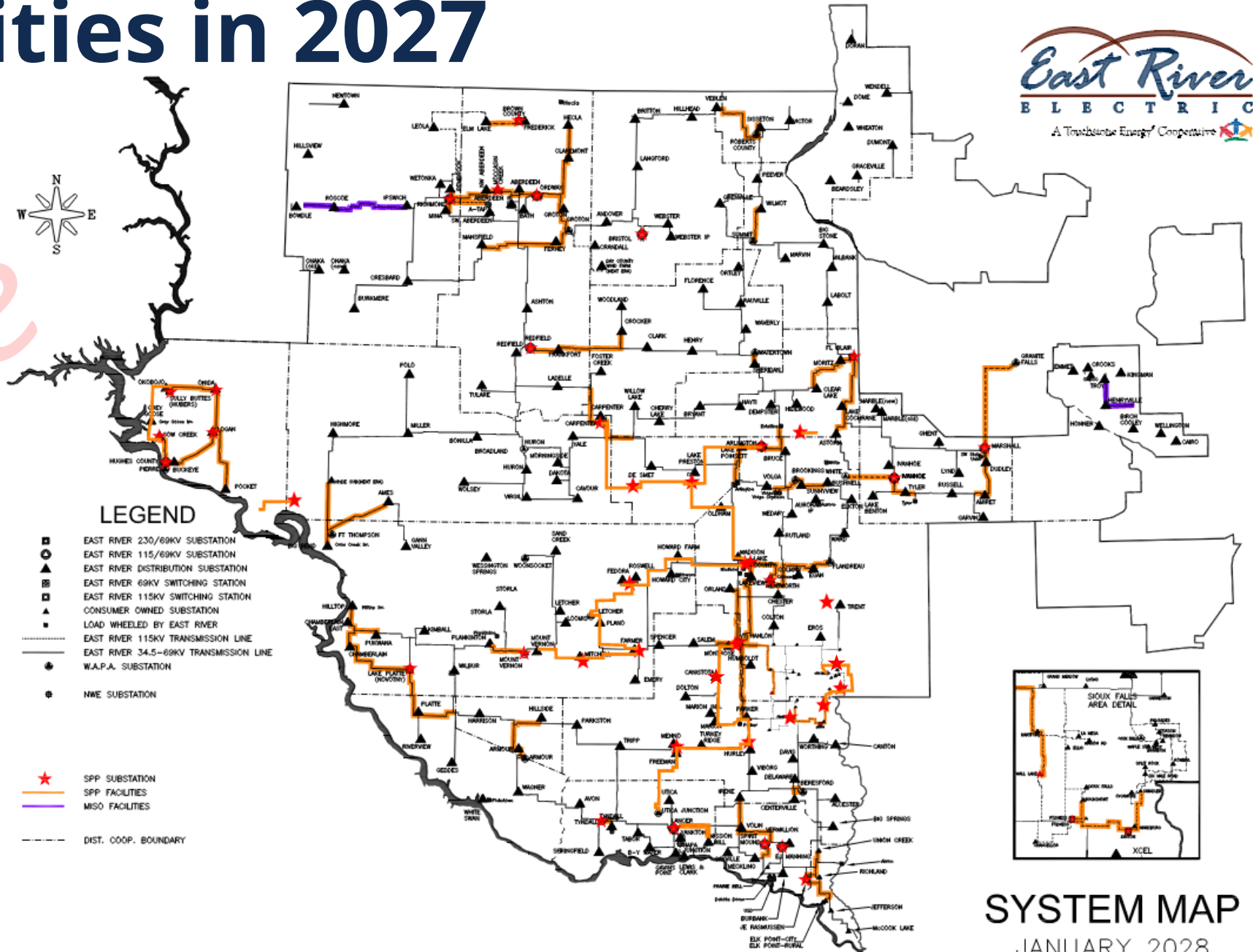
- **Projects planned to accommodate known load growth**
- **Does not include all possible upgrades that may be needed**

— Proposed Eligible Line
★ Proposed Eligible Substation

RTO Facilities in 2027



- 33% of 69-kV and 115-kV transmission lines
- 90% of Delivery Substations
- 10% of Supply Substations
- Most of the SCADA and Communication Systems
- Annual Transmission Revenue Requirement of \$48 million



SYSTEM MAP
JANUARY 2028