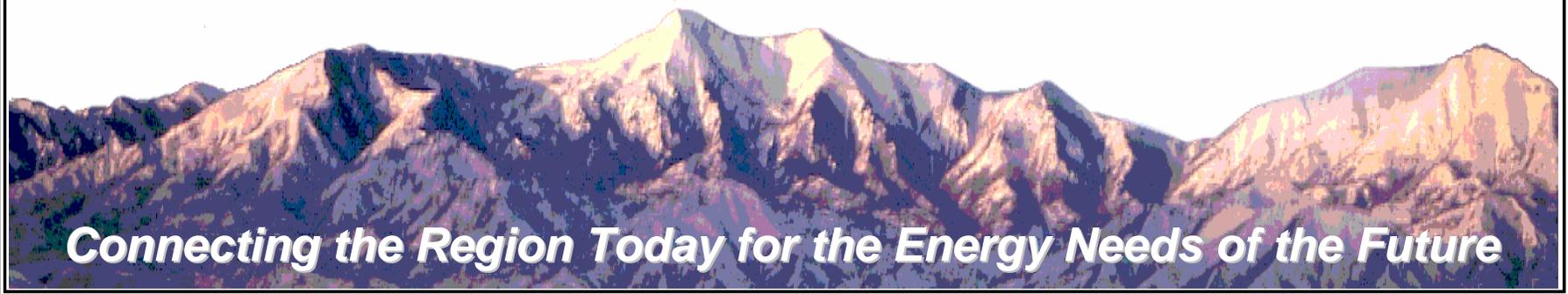


# **Rocky Mountain Area Transmission Study**

**FERC Technical Conference  
Promoting Regional Transmission Planning and Expansion  
Charleston, WV, May 13, 2005**



***Connecting the Region Today for the Energy Needs of the Future***

# Benefits of Transmission Expansion

- **Improved reliability**
- **Market power mitigation**

- **Reduced production costs**
- **Reduced and more stable market clearing prices**

- **Fuel diversity benefits**
- **Economic development benefit to states with new investment**

**Subset of benefits analyzed in RMATS Phase I**

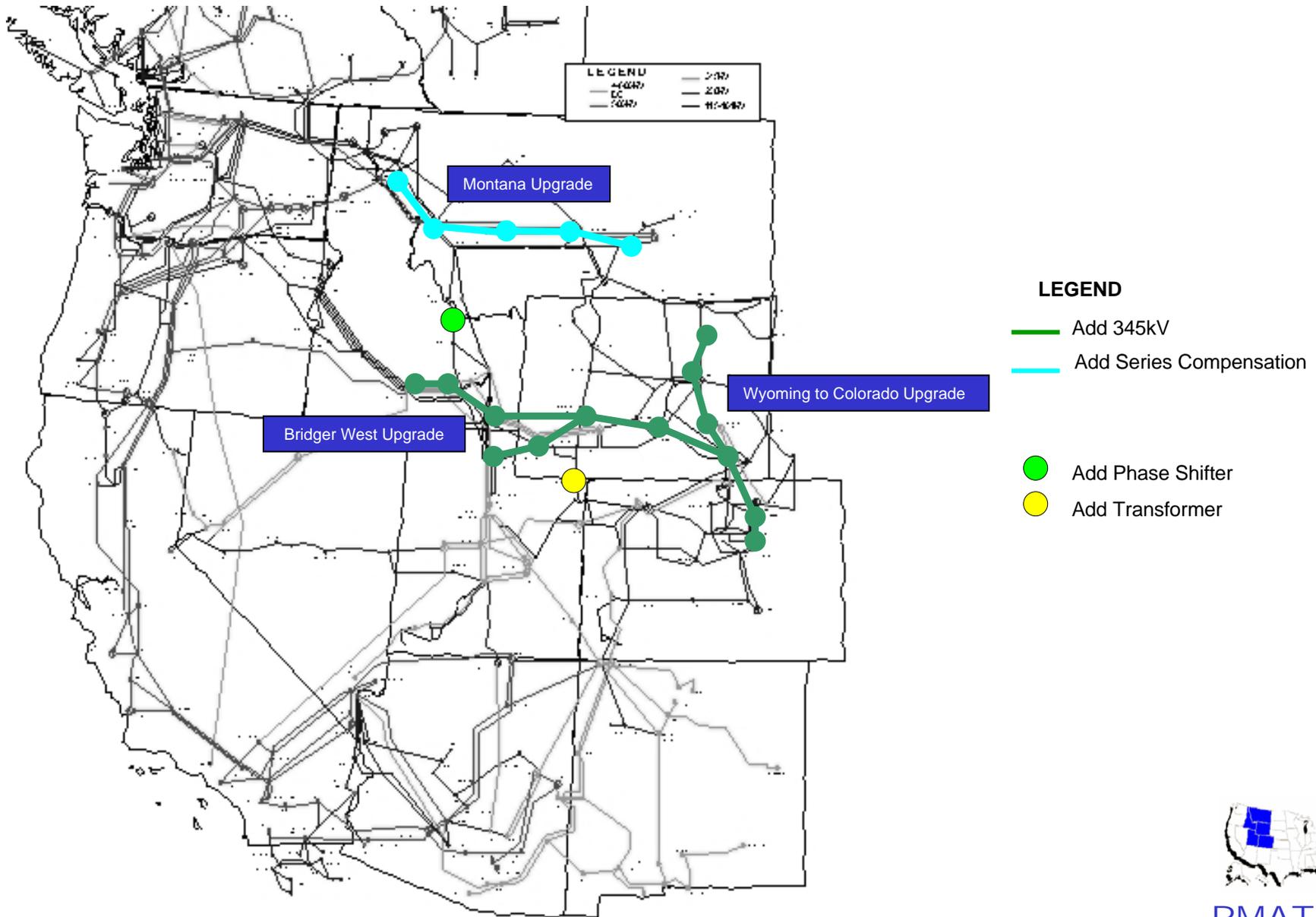


# Recommendations

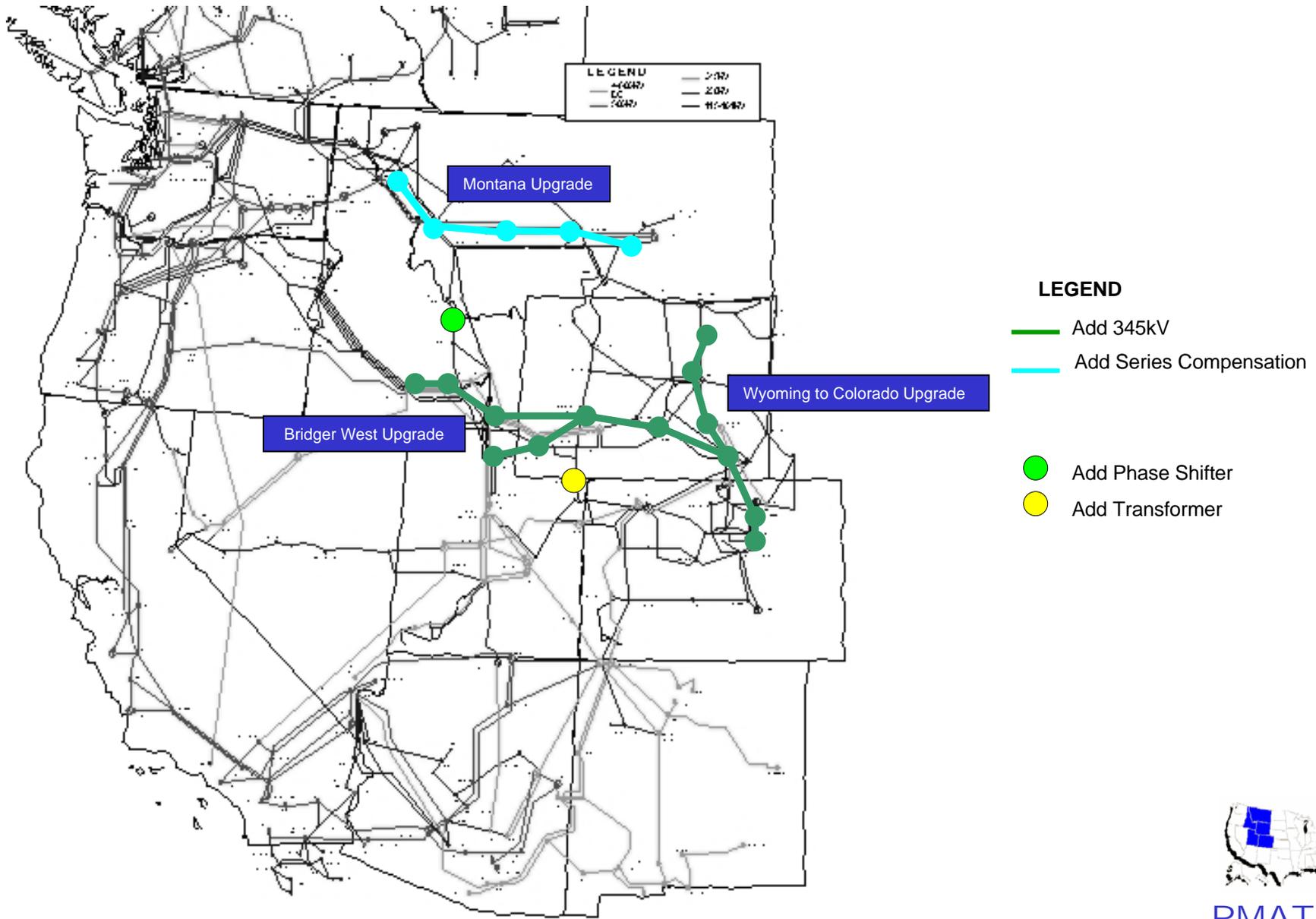
- **Pursue transmission expansion in Recommendations 1 and 2**
  - Governors convene meetings of their PSCs and beneficiaries of each recommended expansion
  - Potential sponsors conduct detailed studies of priority expansions
  - Project sponsors work with regulators on financing and regulatory issues
  - As project develops, siting work would begin, including triggering of WGA Transmission Permitting Protocol
- **Implement institutional improvements**



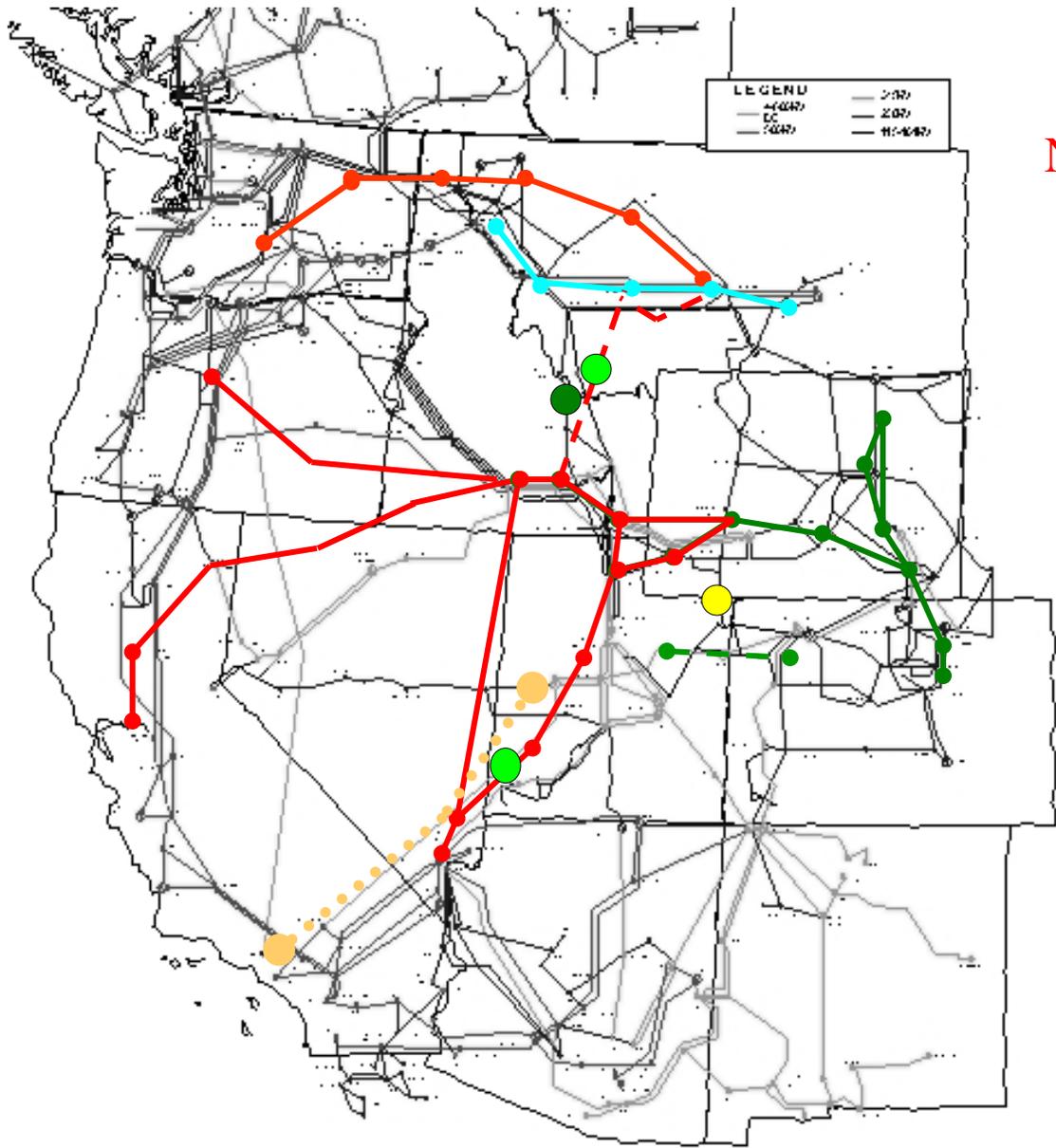
# Recommendation 1



# Recommendation 2



# Recommendation 2



Need two of five 500 kV export paths shown

- LEGEND**
- Add 345kV
  - Add 500kV
  - Add Series Compensation
  - ⋯ IPP DC Upgrade
  - Add Phase Shifter
  - Add Transformer
  - - Depends on 500kV option chosen



RMATS

# Economic Screening Analysis

	<u>Recommendation 1</u>	<u>Recommendation 2</u>
Capital Investment		
Transmission	\$16 million <u>+ \$970 million</u> \$986 million	\$16 million <u>+ \$970 million</u> <u>+3,295 million*</u> \$4,281 million
Resources	\$6,600 million	\$6,600 million <u>+ \$5,700 million</u> \$12,300 million
Annual Net Savings (compared to reference cases)	<b>\$61-\$531 million</b>	<b>\$516-\$986 million</b>

*\* Average Capital Cost of 4 Options Studied*

# Critical Factors Examined

- Future natural gas prices
- Hydro conditions
- Aggressive demand side management
- Potential carbon emission constraints



# Institutional Improvements

- PSCs develop multi-state transmission expansion pricing principles
- Engage the Wyoming Infrastructure Authority in financing discussions
- Better link load-serving entity resource plans to regional transmission plans
- Integrate RMATS export recommendation with planning in other parts of the Western Interconnection
- Governors and regulators consider the formulation of an RTO with features appropriate to the region
- Transmission owners develop conditional firm or priority non-firm transmission products that quantify curtailment risks and allow greater use of existing wires
- Maintain RMATS planning capacity



# Elements of Success

- Success of Phase I is due to the leadership of Western Governors and the significant contributions from the participants
- Phase II will depend on interested parties stepping forward with commitments to sponsor projects and forming partnerships which may include public and private entities, regulators and policy makers

