



TransWest Express Project

**STEP Meeting
May 5, 2006**

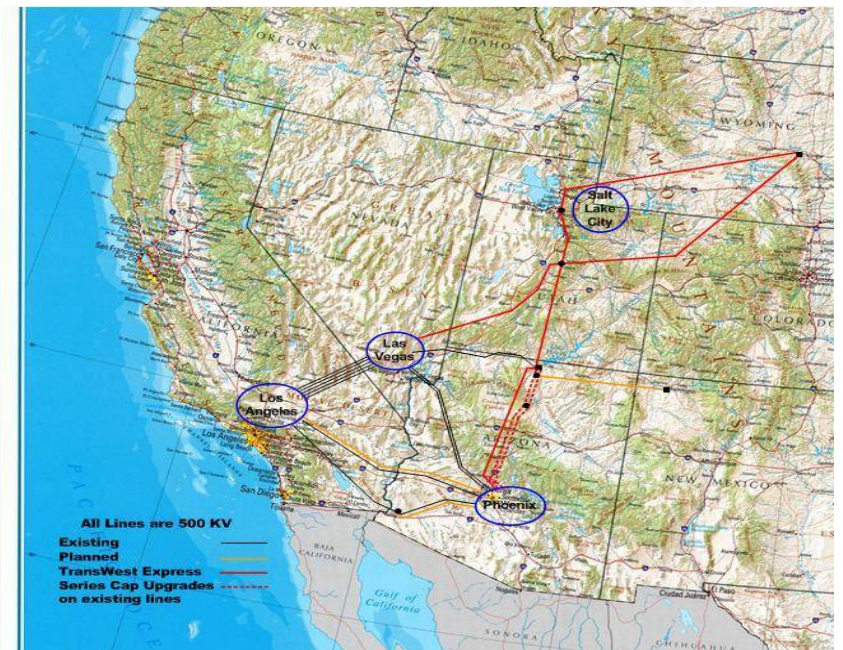
**Bob Smith
Manager, Transmission Planning
Arizona Public Service**

APS TRANSWEST EXPRESS

TransWest Express Project Summary

Two new AC or one new DC transmission line(s) from Wyoming to Utah, Northern Arizona and Southern Nevada

- Project complements other planned projects
 - Navajo Transmission Project 500kV line
 - Palo Verde-Devers #2 500kV line
 - East Of River 9,000+ MW
 - Palo Verde-North Gila #2 500kV line
- Provides access to coal and wind resources in Wyoming



TransWest Express Project Benefits

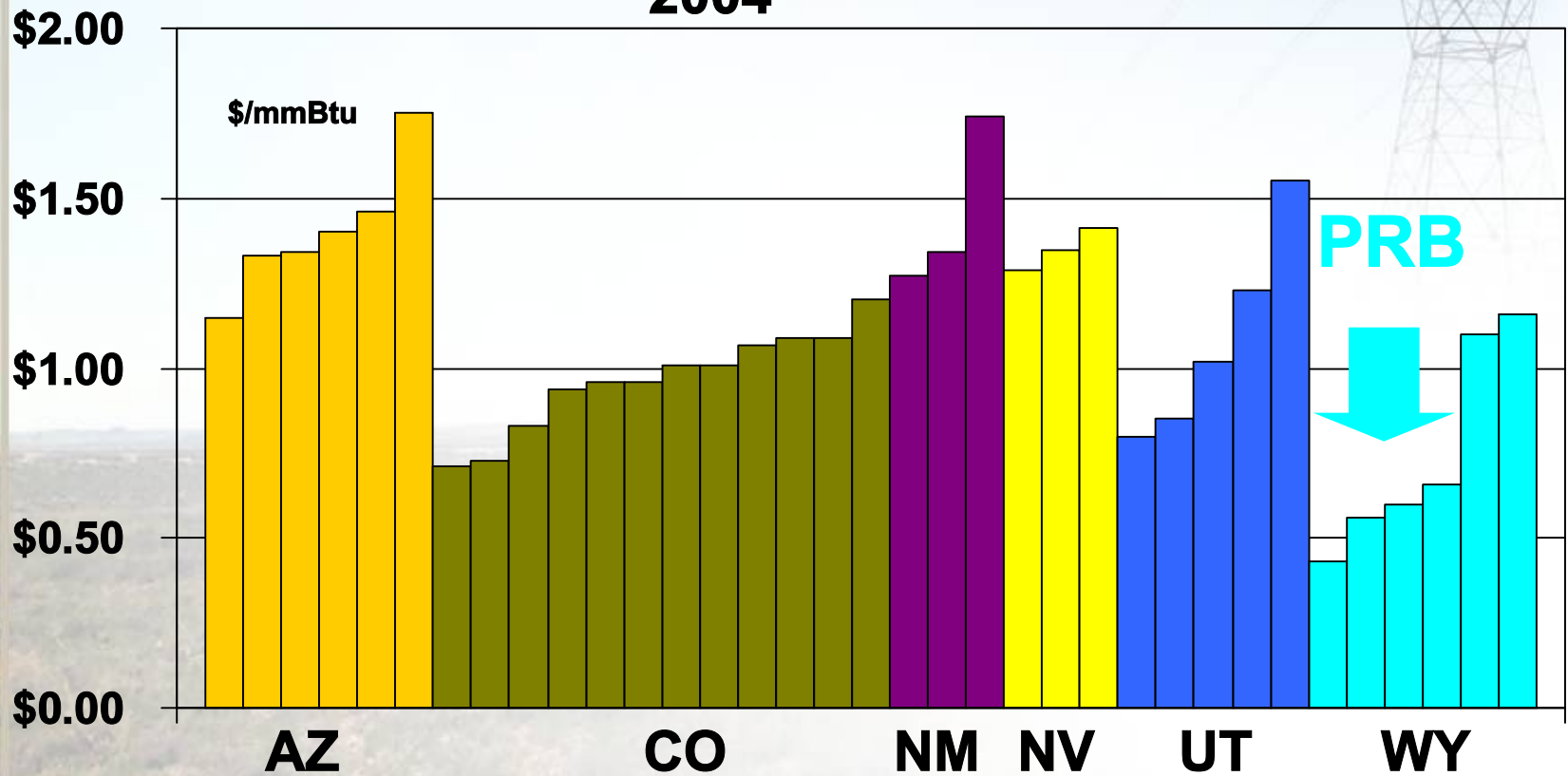
- Provides APS and other utilities in AZ, NM, NV, CA, CO and UT access to additional resources to meet rapid load growth
 - Arizona resource requirement expected to increase over 50% by 2020 (an additional 9000MW)
- Improves reliability of western transmission grid
- Improves resource portfolio, reliability and economics
 - Access to renewables (primarily wind)
 - Access to advanced clean coal technologies
 - Improved fuel diversity
 - Additional system import capability and improved reliability
 - Enhance wholesale market vitality
- Consistent with 2001 Western Governors' Association Report and 2004 Rocky Mountain Area Transmission Study (RMATS) recommendations for transmission expansion

Why Wyoming?

- Coal
 - Price
 - Sulfur content
 - Transportation
 - Cost
 - Reliability
- Wind
 - Capacity factor
 - Capacity coincident with SW/SoCA peak load

Why Wyoming?

Existing Coal Plants By Average Delivered Coal Price 2004

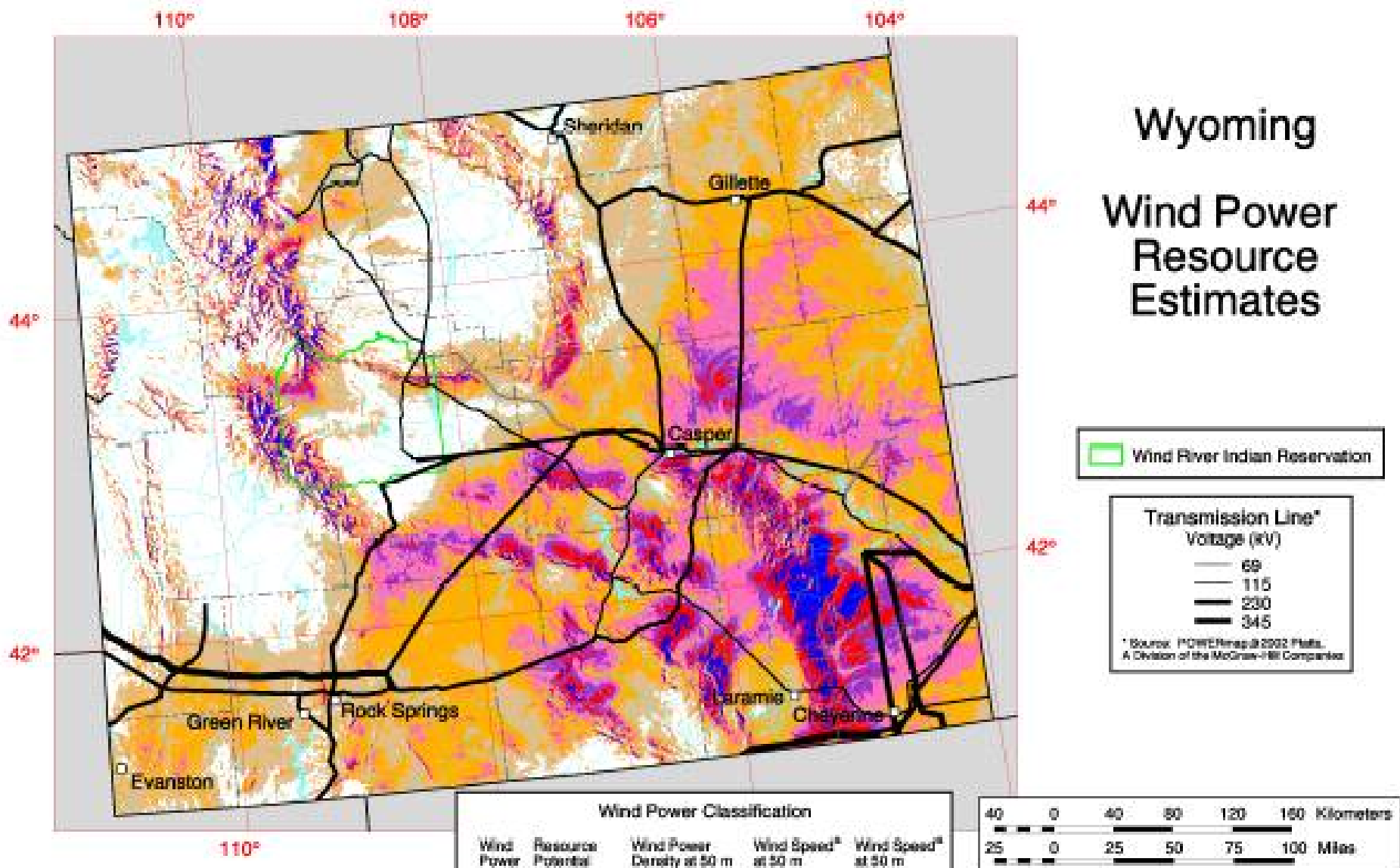


Weighted Average of all Shipments (Base and Incremental Coal) as Reported to FERC

APS TRANSWEST EXPRESS

Wyoming

Wind Power Resource Estimates



Wind River Indian Reservation

Transmission Line*
Voltage (kV)

- 69
- 115
- 230
- 345

* Source: POWERmap 2002 Profile, A Division of the McGraw-Hill Companies

Wind Power Classification				
Wind Power Class	Resource Potential	Wind Power Density at 50 m W/m ²	Wind Speed ^a at 50 m m/s	Wind Speed ^a at 50 m mph
	2 Marginal	200 - 300	5.6 - 6.4	12.5 - 14.3
	3 Fair	300 - 400	6.4 - 7.0	14.3 - 15.7
	4 Good	400 - 500	7.0 - 7.5	15.7 - 16.8
	5 Excellent	500 - 600	7.5 - 8.0	16.8 - 17.9
	6 Outstanding	600 - 800	8.0 - 8.8	17.9 - 19.7
	7 Superb	> 800	> 8.8	> 19.7

^aWind speeds are based on a Weibull k value of 2.0

The wind power resource data for this map was produced by TrueWind Solutions using the Mesomap system and historical weather data. It has been validated with available surface data by the National Renewable Energy Laboratory and wind energy meteorological consultants.

U.S. Department of Energy
National Renewable Energy Laboratory



06-JUN-2002 2.1.2

TransWest Express Project Timeline

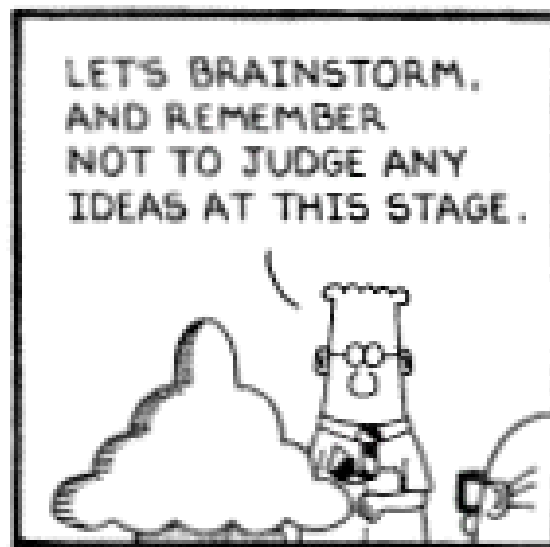
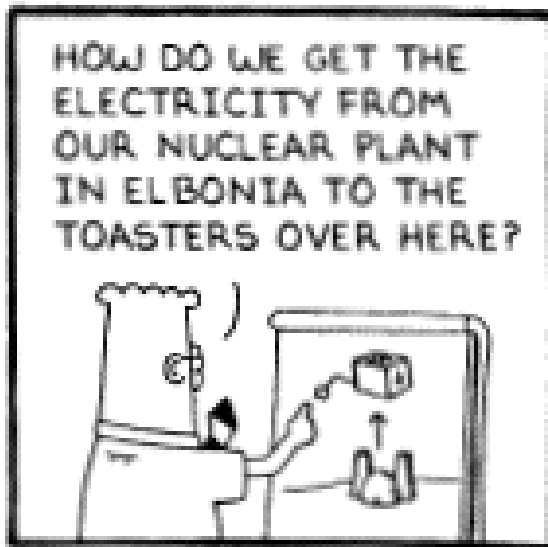
- Project Introduction at Regional Planning Group meetings: Oct. 24 – Dec. 31, 2005
- Phase 1: Jan. 1, 2006 – Dec. 31, 2006
- Phase 2: Jan. 1, 2007 – Dec. 31, 2009
- Phase 3: Jan. 1, 2010 – Dec. 31, 2012
- TransWest Express in service: Jan. 1, 2013
- Celebratory Golf Event: Jan. 2, 2013

Work Groups For Feasibility Analysis

- Transmission feasibility study group
Peter.Krzykos@aps.com
- Permitting review group
Paul.Herndon@aps.com
- Economic analysis group
Matt.Hines@aps.com
- Legal and negotiating group
Linda.Henrickson@aps.com

Transmission Feasibility Study

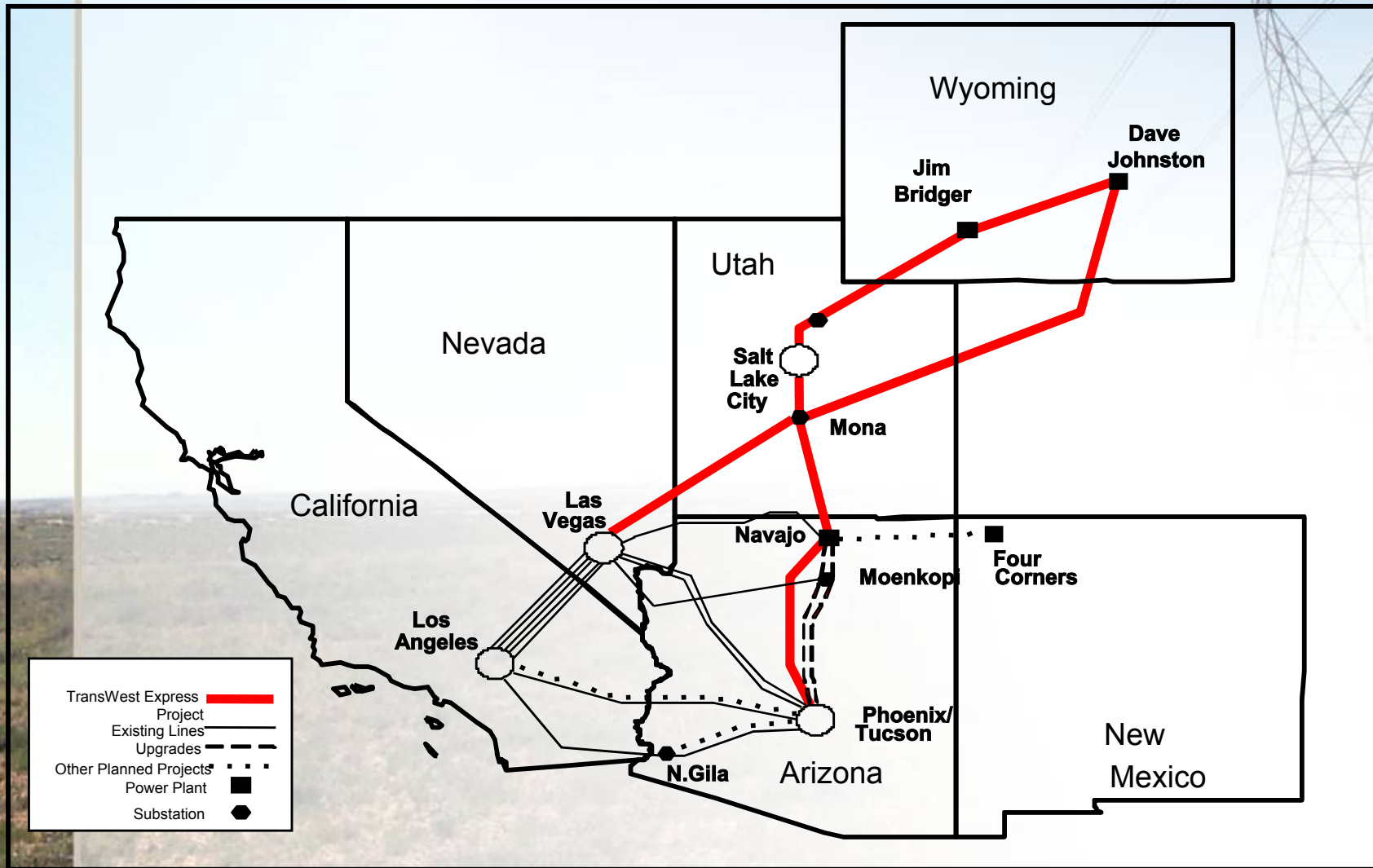
Exploring All Options



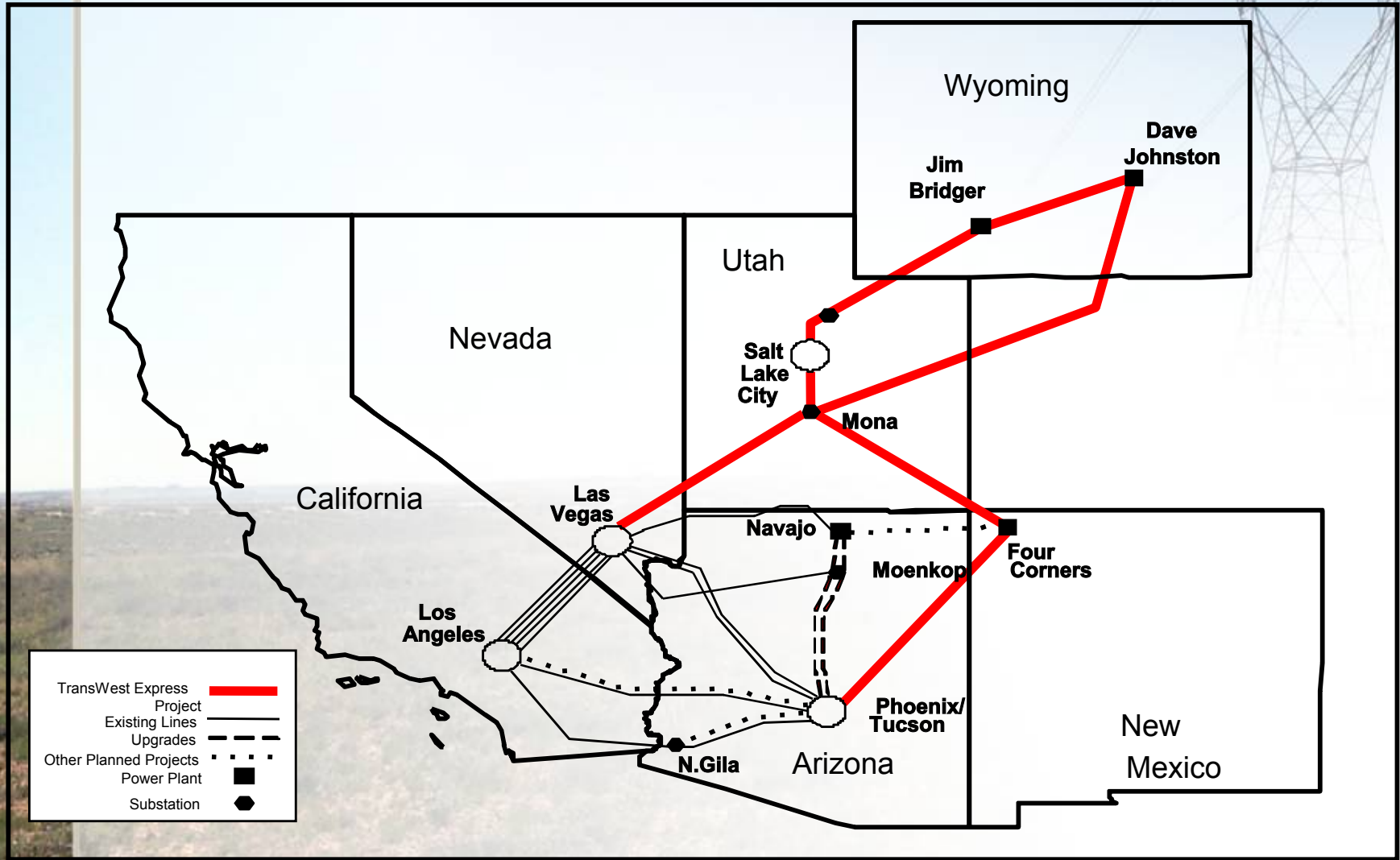
Transmission Feasibility Study

- Three 500kV (or 765kV) AC alternatives
- One DC alternative
- Termination alternatives:
 - Southern Nevada
 - Navajo
 - Four Corners
- Cost range \$2B - \$5B
- Losses range 4-8%

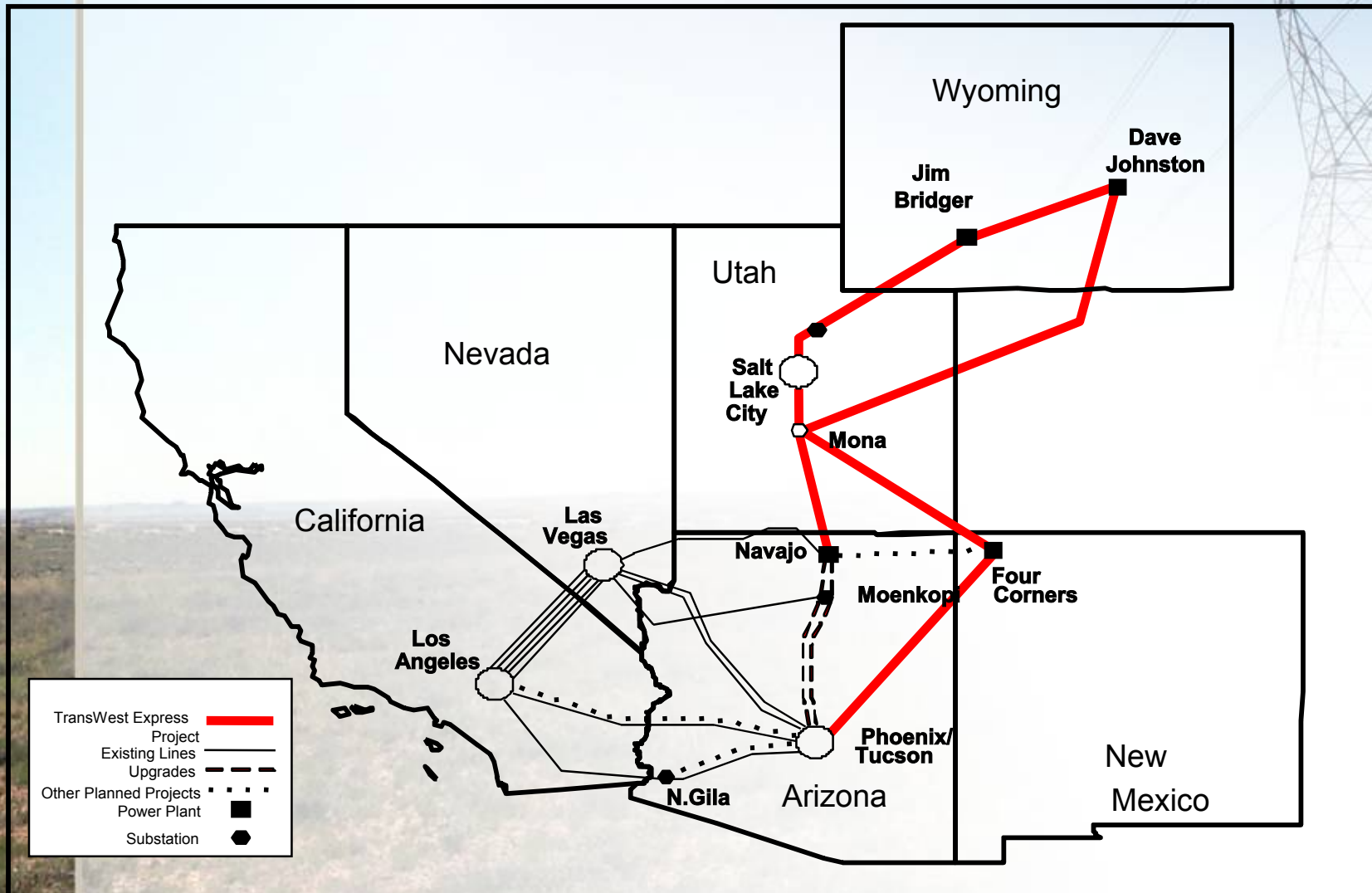
Transmission Alternative A



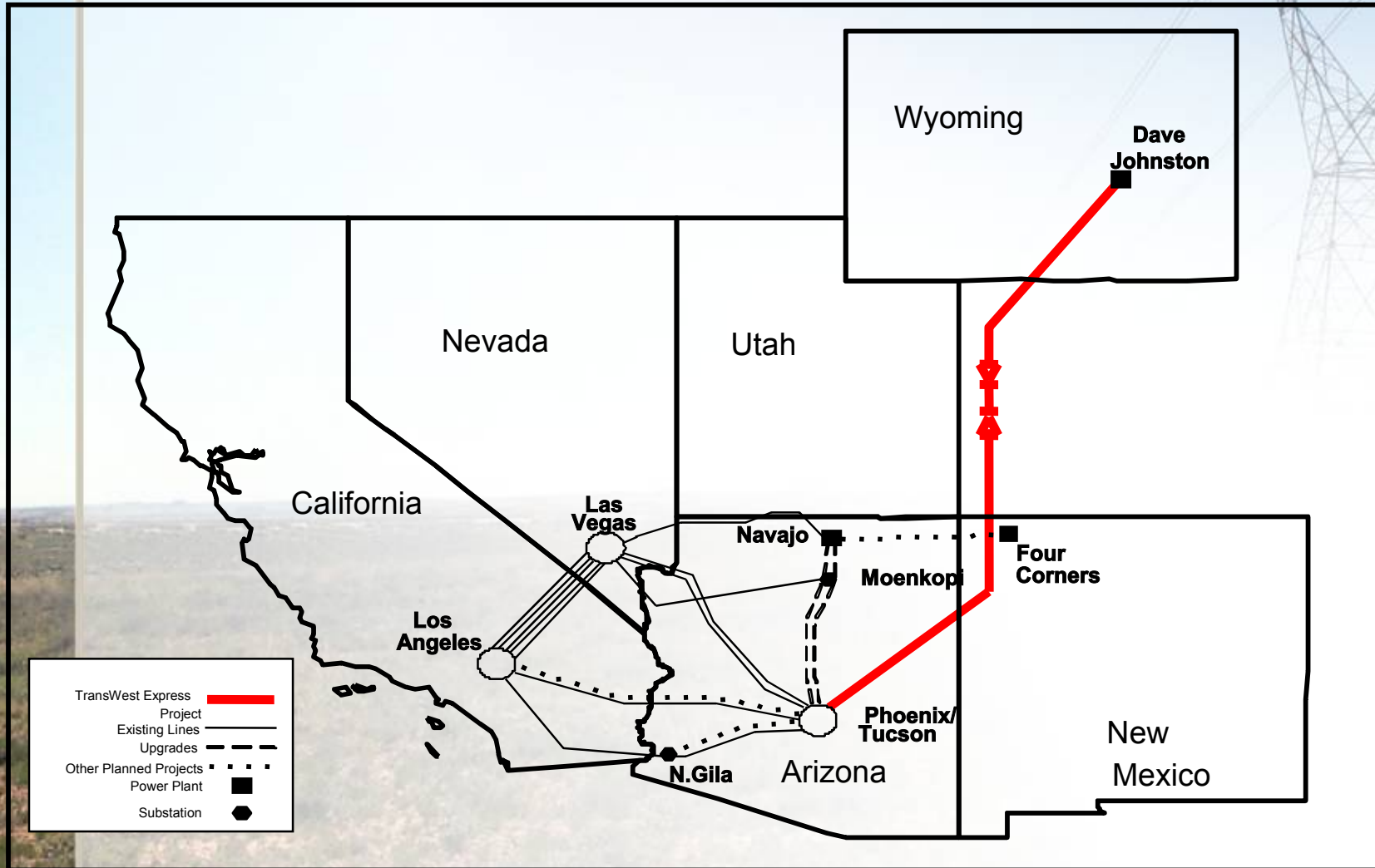
Transmission Alternative B



Transmission Alternative C



Transmission Alternative D



Permitting Analysis

- Jurisdictional inventory
- High level issues identified
- Process, timeline, and budget for Phase 2 being developed

Regional Planning Coordination

- Open stakeholder process
 - November 27 kick-off meeting Phoenix
 - March 17 project update meeting SLC
 - June 23 meeting scheduled in Jackson Hole
- Updates at RPGs, SSG-WI, WECC
- APS committed to coordinating with Frontier activities

Frontier Line



Other Coordination Activities

- State officials
- Federal and state regulators
- Independent transmission developers
- MOU between APS, Wyoming Infrastructure Authority, and National Grid
 - Project coordination
 - Information sharing

TransWest Express Project Summary

- Driven from LSE need
- Enables renewable wind and advanced clean coal technologies
- Open stakeholder process
- Committed to coordinating with Frontier activities

Questions?

Contact:

Bob Smith

TransWest Express Project Manger

602-250-1144

Robert.Smith@aps.com

or visit our OASIS website at

www.oatioasis.com/azps/index.html

APS TRANSWEST EXPRESS