

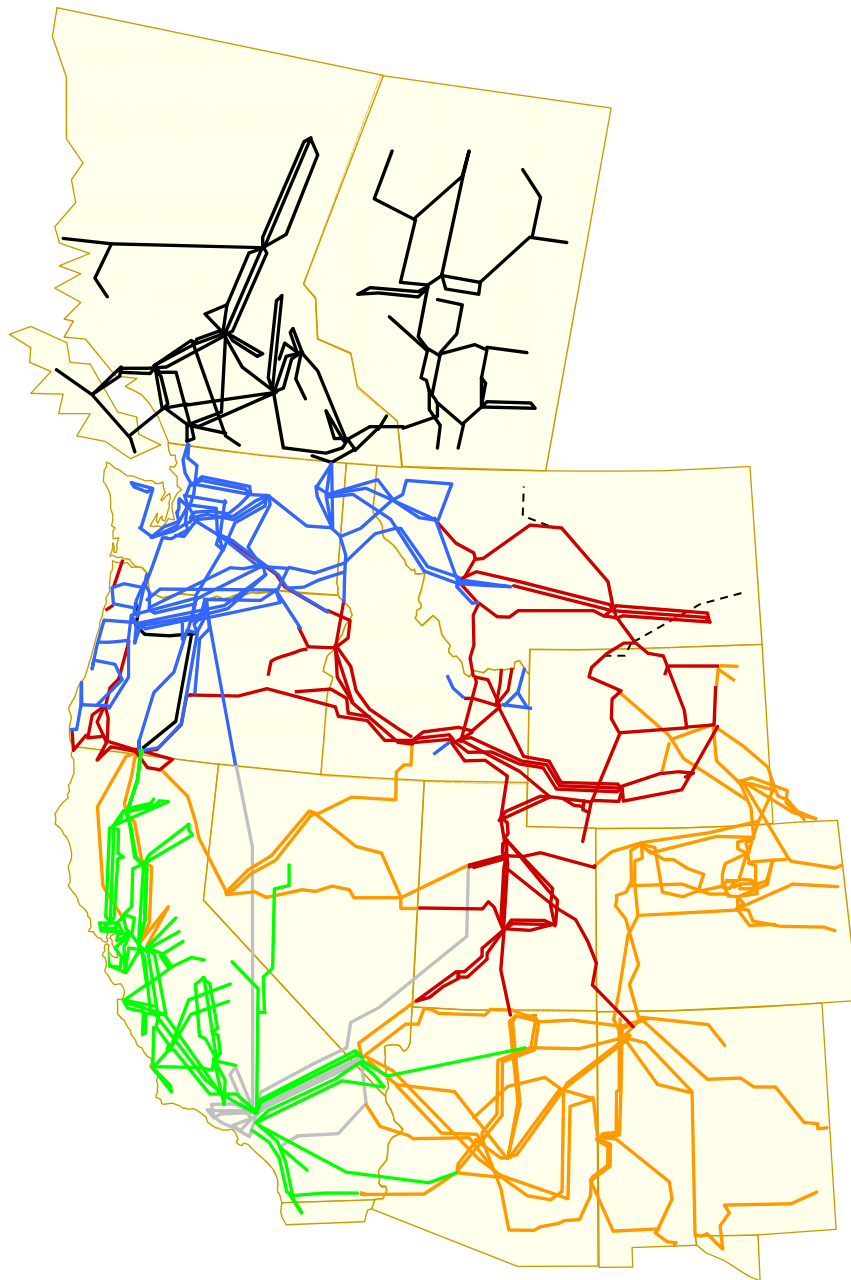
**Arizona Corporation Commission  
6<sup>th</sup> Biennial Transmission Assessment  
2010 Workshop 1**



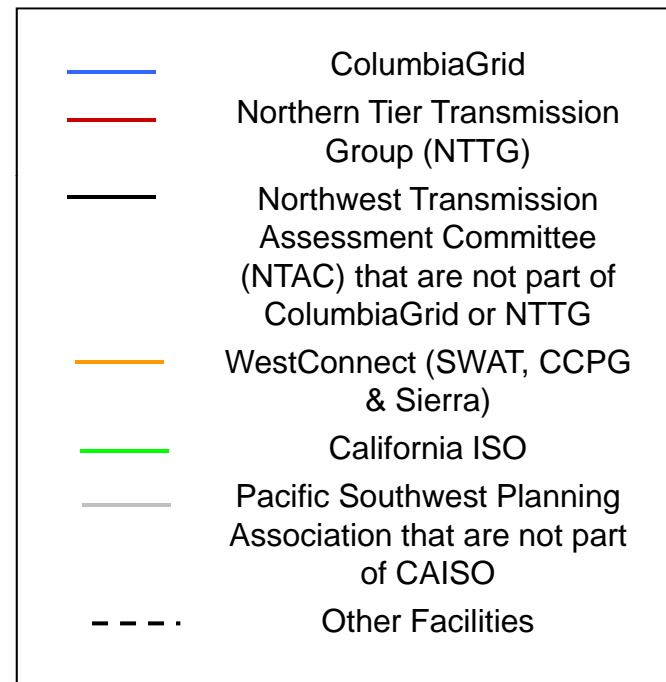
***SWAT Update***

***Robert Kondziolka, P.E.  
Salt River Project***

**June 3 & 4 , 2010  
Phoenix, Arizona**



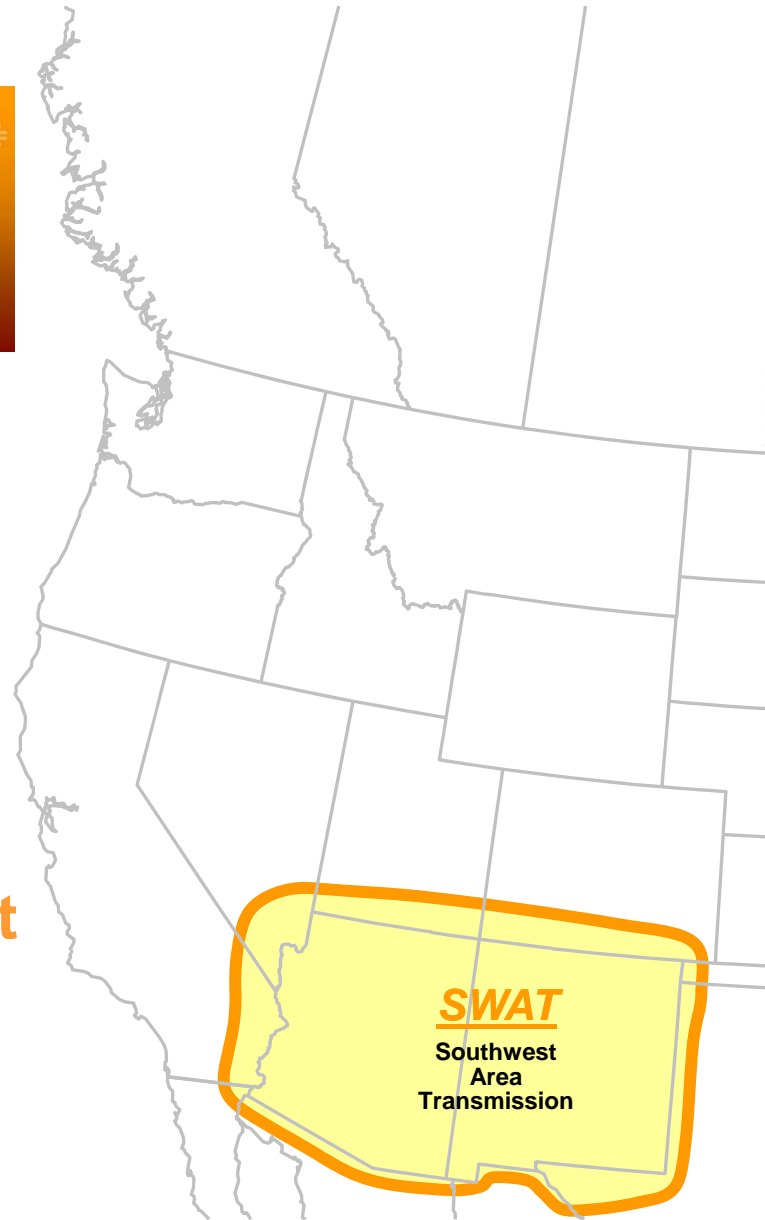
**WECC**  
**Subregional Planning Groups**  
**Major Transmission Facilities**





<http://www.westconnect.com>

**SWAT Footprint  
One of the WestConnect  
Sub-Regional Planning  
Groups**



# **SWAT Transmission Providers**

**Arizona Public Service Company**

**El Paso Electric Company**

**Imperial Irrigation District**

**Nevada Power Company**

**Public Service Company of New Mexico**

**Salt River Project**

**Southwest Transmission Cooperative**

**Tri-State Transmission & Generation Association**

**Tucson Electric Power Company**

**Western Area Power Administration**

# External Drivers to Transmission Expansion

## Federal

- DOE (U.S. Department of Energy)
- FERC (Federal Energy Regulatory Commission)
- NERC (North American Electric Reliability Corporation)

## Regional

- WGA (Western Governor's Association)
- WIEB (Western Interstate Energy Board)
- CREPC (Committee on Regional Electric Power Cooperation)
- WECC (Western Electricity Coordinating Council)
- Industry Groups
- Environmental Advocate Groups

## States

- State RPS (Renewable Portfolio Standards)
- State Initiatives



May 20, 2009

## **Southwest Area Transmission Subregional Planning Group CHARTER**

### I. Purpose

The Southwest Area Transmission (SWAT) subregional planning group is a voluntary study group that has been created to serve the following purpose:

*To provide an open and collaborative forum where interested parties are encouraged to participate in the planning, coordination, and implementation of a robust transmission system in Arizona, New Mexico, and parts of Colorado, west Texas, southern Nevada, and the Imperial Valley area of California. The open stakeholder participation envisioned in this process is intended to result in transmission expansion plans that meet a variety of needs and have a broad basis of support.*

# SWAT Organization Chairs

Oversight Committee – Robert Kondziolka

CRT Subcommittee – Josh Johnston

CATS Subcommittee – Joe Herrera\*

CATS-EHV Subcommittee – LeeAnn Torkelson (Consolidated to CATS)

CATS-HV Subcommittee – Joe Herrera\* (Consolidated to CATS)

SATS Subcommittee – Gary Trent

NM Subcommittee – Tom Duane

Short Circuit Working Group – Kevin Salsbury

Renewable Energy Transmission Task Force – Peter Krzykos

Arizona Renewable Resources & Transmission Identification Subcommittee\*\* -  
Amanda Ormond\* and Greg Bernosky

Finance Subcommittee\*\* - Tom Wray\*

Common Corridor Structure Separation Task Force\*\* – Brian Keel

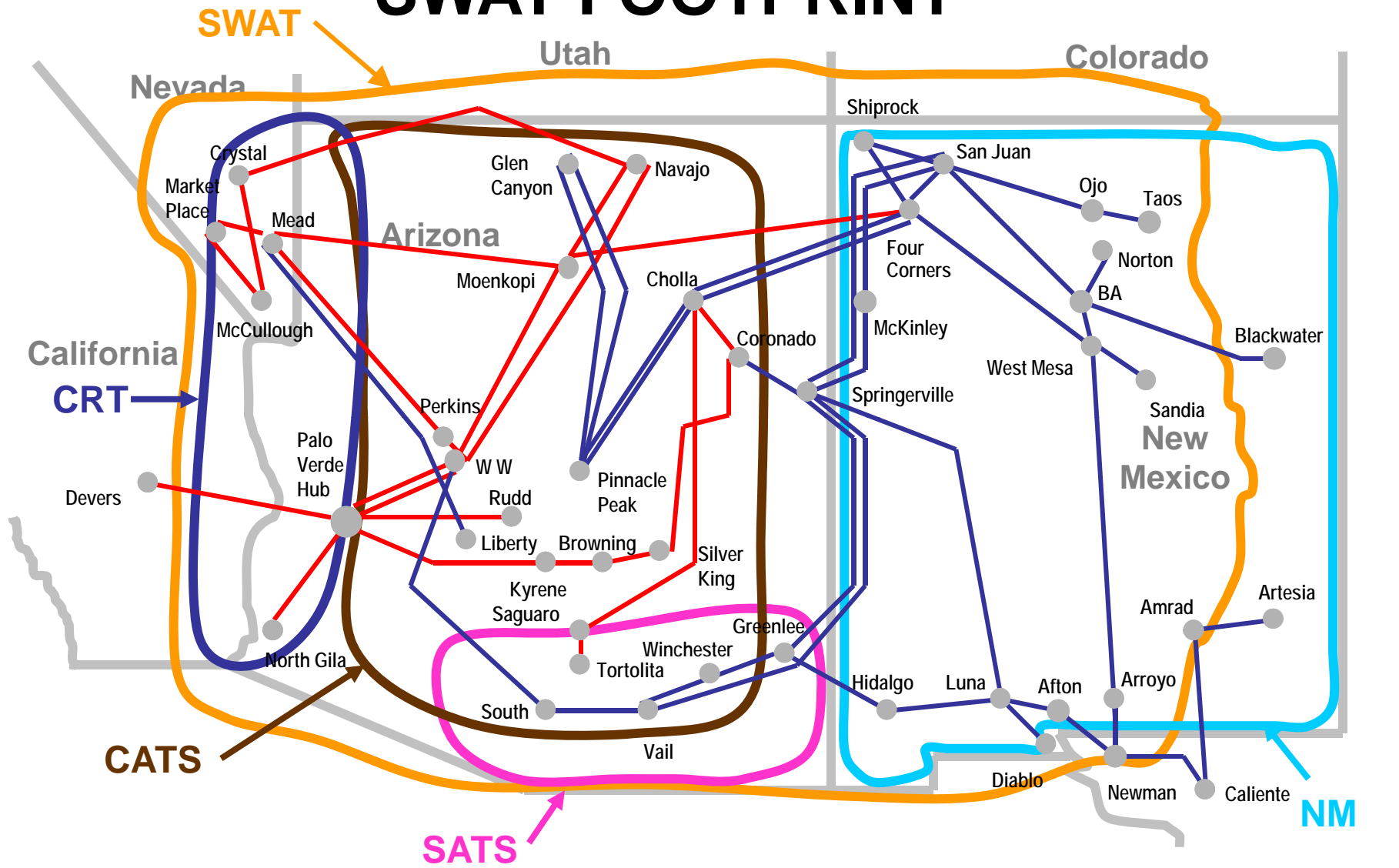
Transmission Corridor Planning Committee – Greg Bernosky

Eldorado Valley Area Study Group – Chuck Russell

\* Non Transmission Provider

\*\* Task Force Work Completed – No Longer Active

# SWAT FOOTPRINT



- SWAT Southwest Area Transmission
- CRT Colorado River Transmission
- CATS Central Arizona Transmission Study
- SATS Southeast Arizona Transmission Study
- NM New Mexico Transmission

500kV —  
 345kV —

# SWAT 2009 Progress

- **CRT Subcommittee**
  - DPV2, Harcuvar Project, El Dorado Valley
  - RMR Studies for Yuma and Mohave counties
- **SATS Subcommittee**
  - 2009 study work finalized
- **Short Circuit Work Group**
  - Perfecting database and implementing small areas
  - Expanding area to include southern California
- **NM Subcommittee**
  - Focusing efforts through Renewable Transmission Task Force
  - Wind collector and integration system
- **SWAT Renewable Transmission Task Force**
  - ARRTIS (Arizona Renewable Resource and Transmission Identification Subcommittee) – Report Approved
  - Finance Subcommittee – Report Approved
  - Definition of Renewable Transmission Project

# SWAT 2009 Progress

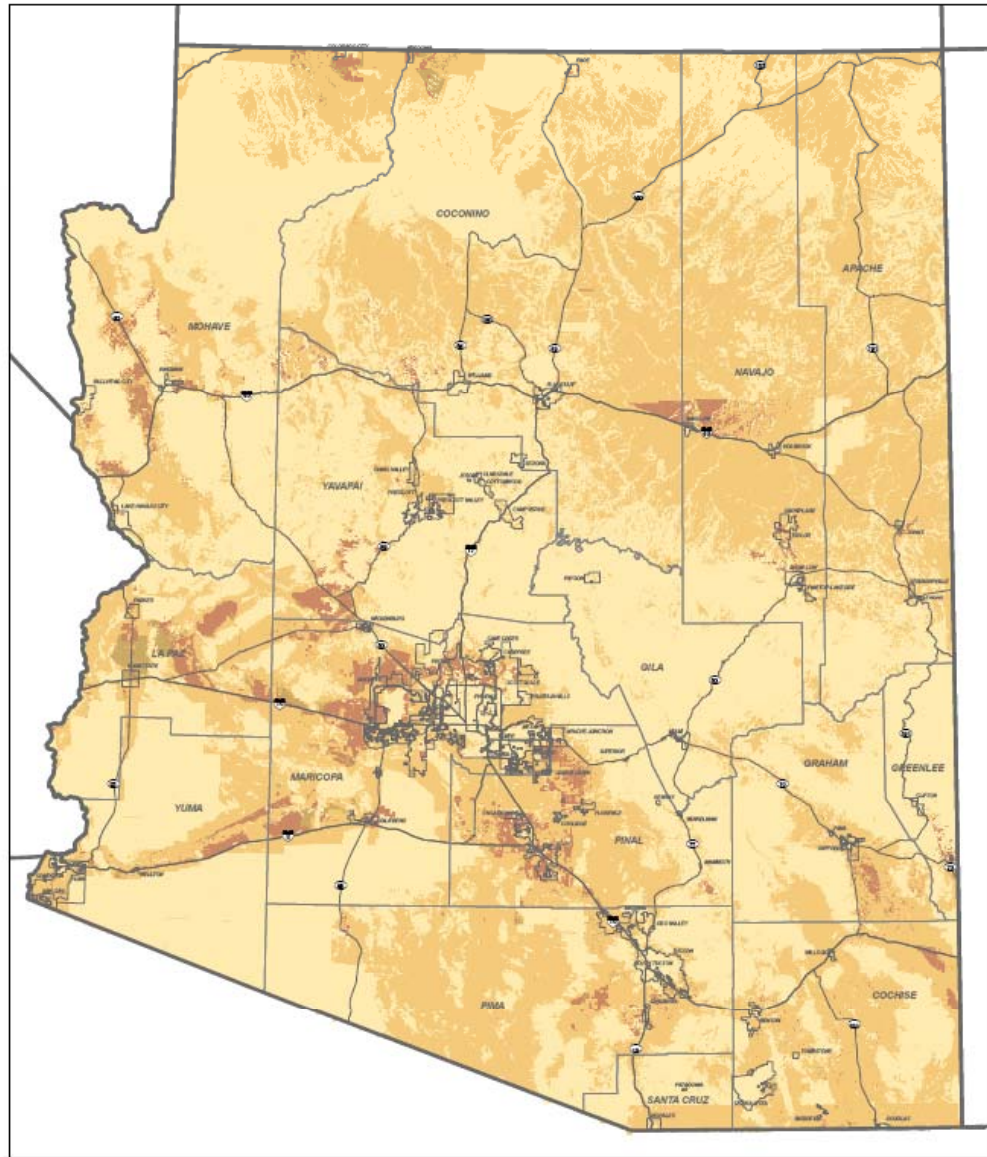
- **CATS HV Subcommittee**
  - 2009 Study Report Finalized and Approved
  - Development of corridors with cities and county
- **CATS EHV Subcommittee**
  - 2009 Study Report Finalized and Approved
  - Development of ACC BTA Studies
- **Transmission Corridor Planning Work Group**
- **Common Corridor Structure Separation Task Force**
  - Report Approved
- **BLM Arizona Restoration Design Energy Projects**
- **Western's Transmission Infrastructure Program (TIP & WARP)**
- **Arizona Corporation Commission Biennial Transmission Assessment**
  - April & June workshops on transmission lines to support renewables
  - Utilities filed reports identifying top 3 renewable transmission projects

# SWAT 2010 Progress

- **CRT Subcommittee**
  - RMR Studies for Yuma and Mohave counties
  - Yuma 230kV Ring and Western TIP SMRT
- **SATS Subcommittee**
  - 2009 study work approved and filed
  - Alternative evaluation and VAR Margin study
- **Short Circuit Work Group**
  - Expanding area to include southern California
  - Retained consultant for CAPE, ASPEN, PSS/E
- **NM Subcommittee**
  - Wind collector and integration system, include pass through
- **SWAT Renewable Transmission Task Force**
  - Coordination with TEPPC studies

# SWAT 2010 Progress

- **CATS Subcommittee**
  - Development of WestConnect Base Cases
  - Joint MOD-029 Studies & FERC Order 729A
- **Transmission Corridor Planning Committee**
  - WGA Roadmap/Primer for Transmission Development
  - Consultant retained by WGA to complete document
- **Eldorado Valley Area Study Group**
  - Held initial kick-off meeting
- **BLM Arizona Restoration Design Energy Projects**
- **Western's Transmission Infrastructure Program (SMRT)**
- **Arizona Corporation Commission Biennial Transmission Assessment**
  - 4<sup>th</sup> Qtr 2009 - Utilities filed reports identifying top 3 renewable transmission projects and workshop to address filings
  - Initiating 6<sup>th</sup> BTA



**ENVIRONMENTAL EXCLUSION AND SENSITIVITY AREAS**

- Exclusion - includes areas greater than 6% Slope
- High Sensitivity
- Moderate Sensitivity
- Low Sensitivity

**GENERAL REFERENCE**

- Interstate/Highway
- Major Road
- City Boundary
- County Boundary
- State Boundary

**SOURCES**

ASLD, AGFD, BLM, NREL, USFS, USFWS, USGS, WREZ, EP3, 2009

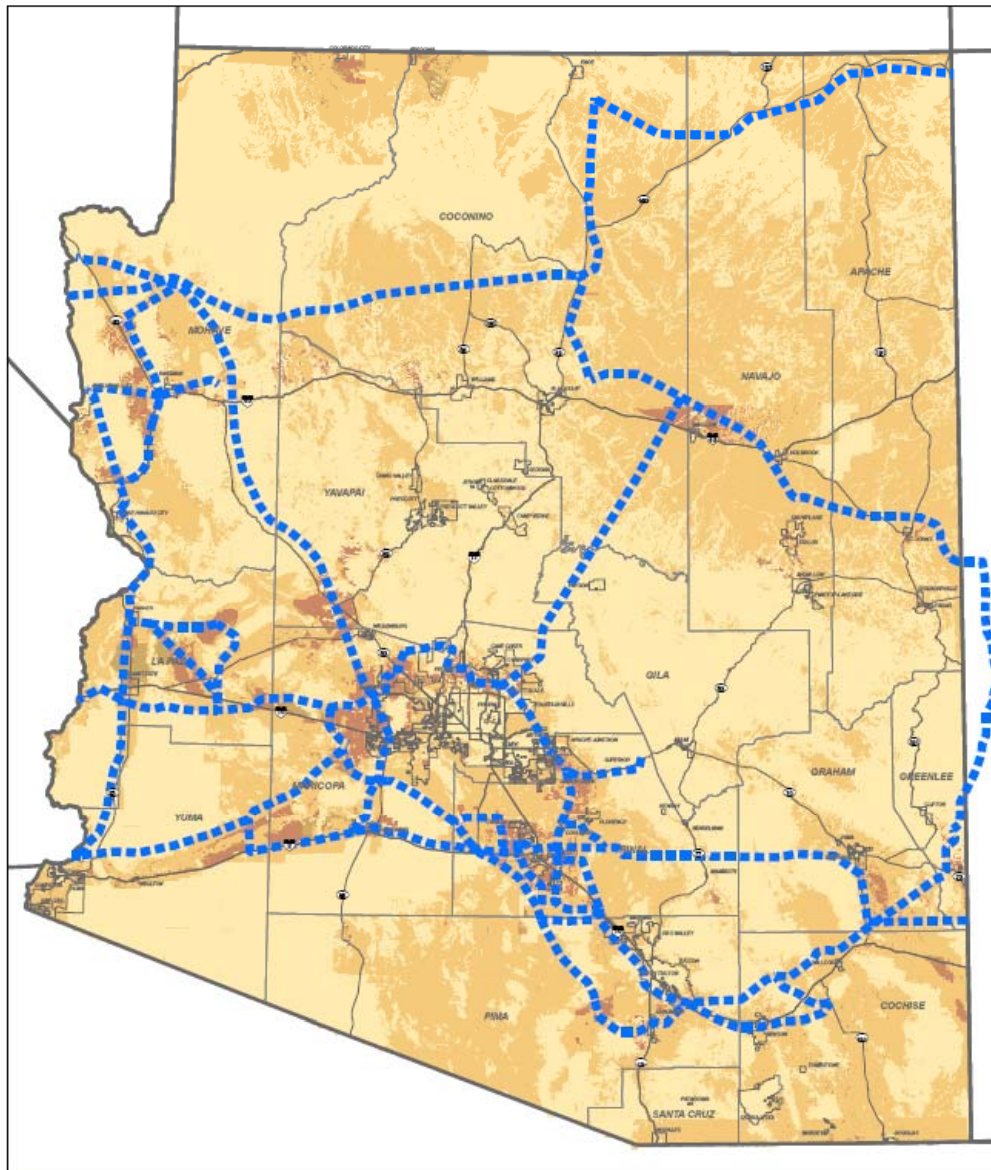
**ENVIRONMENTAL RESOURCE EXCLUSION AND SENSITIVITY AREAS**

ARRTIS - ARIZONA RENEWABLE RESOURCE AND TRANSMISSION IDENTIFICATION SUBCOMMITTEE

DRAFT: June 5, 2009



Map developed by PNO: 457757663/ARIZONA\_Agri.mxd



RTTF Proposed New Transmission/Upgrades

**ENVIRONMENTAL EXCLUSION AND SENSITIVITY AREAS**

- Exclusion - Includes areas greater than 6% Slope
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- Low Sensitivity

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**SOURCES**

ASLD, AGFD, ARRTIS, BLM, NREL, USFS, USFWS, USGS, WREZ, EPG, 2009

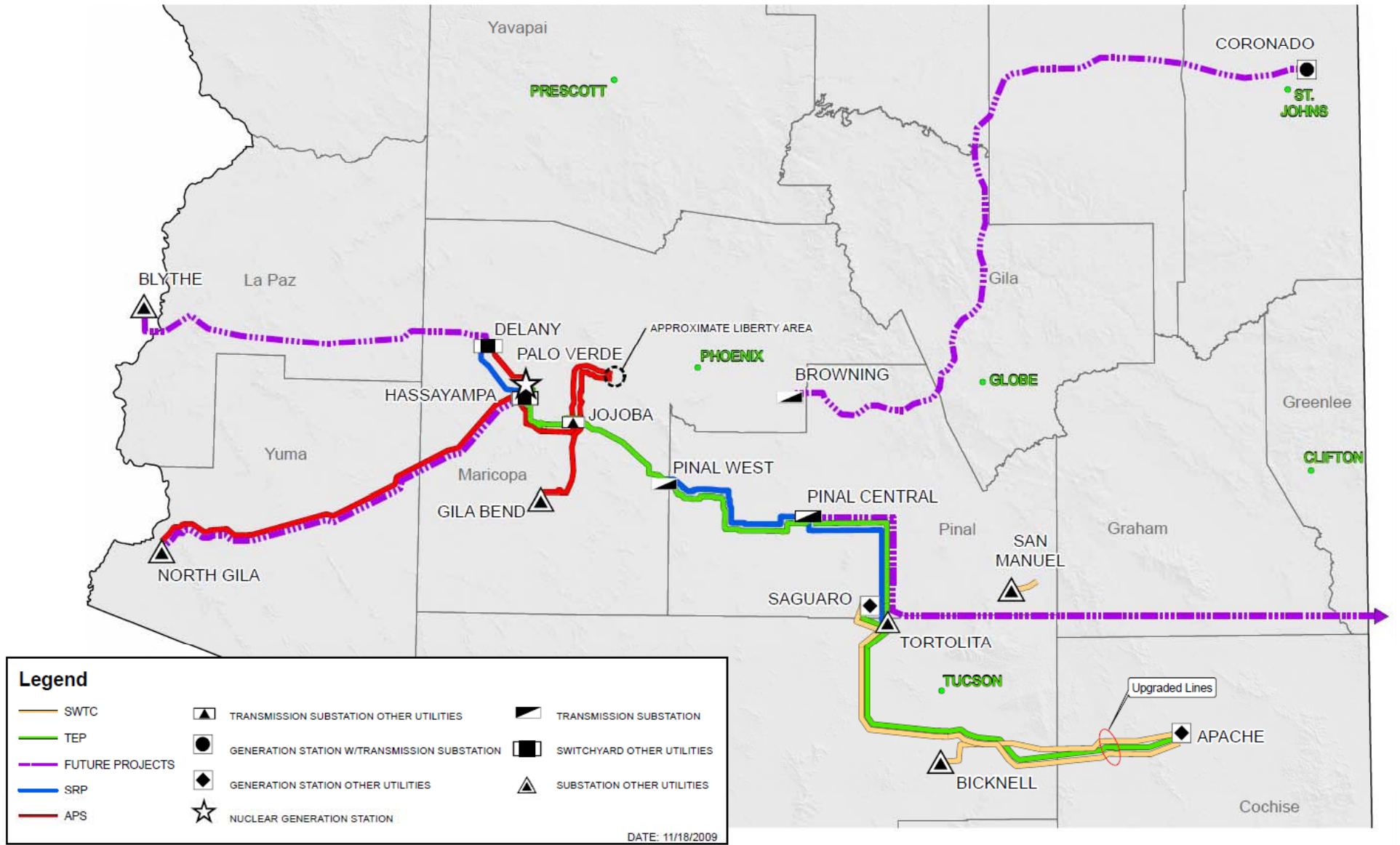
**PROPOSED RENEWABLE TRANSMISSION CORRIDORS**

SWAT RTTF- SOUTHWEST AREA TRANSMISSION RENEWABLE TRANSMISSION TASK FORCE

DRAFT: June 5, 2009



## ARIZONA UTILITIES TOP THREE RENEWABLE AND FUTURE TRANSMISSION PROJECTS



# Arizona Renewable Generation Interconnection Requests

## APS

Solar 8102MW  
Wind 3244MW

## SRP

Solar 2095MW  
Wind 1400MW

## TEP

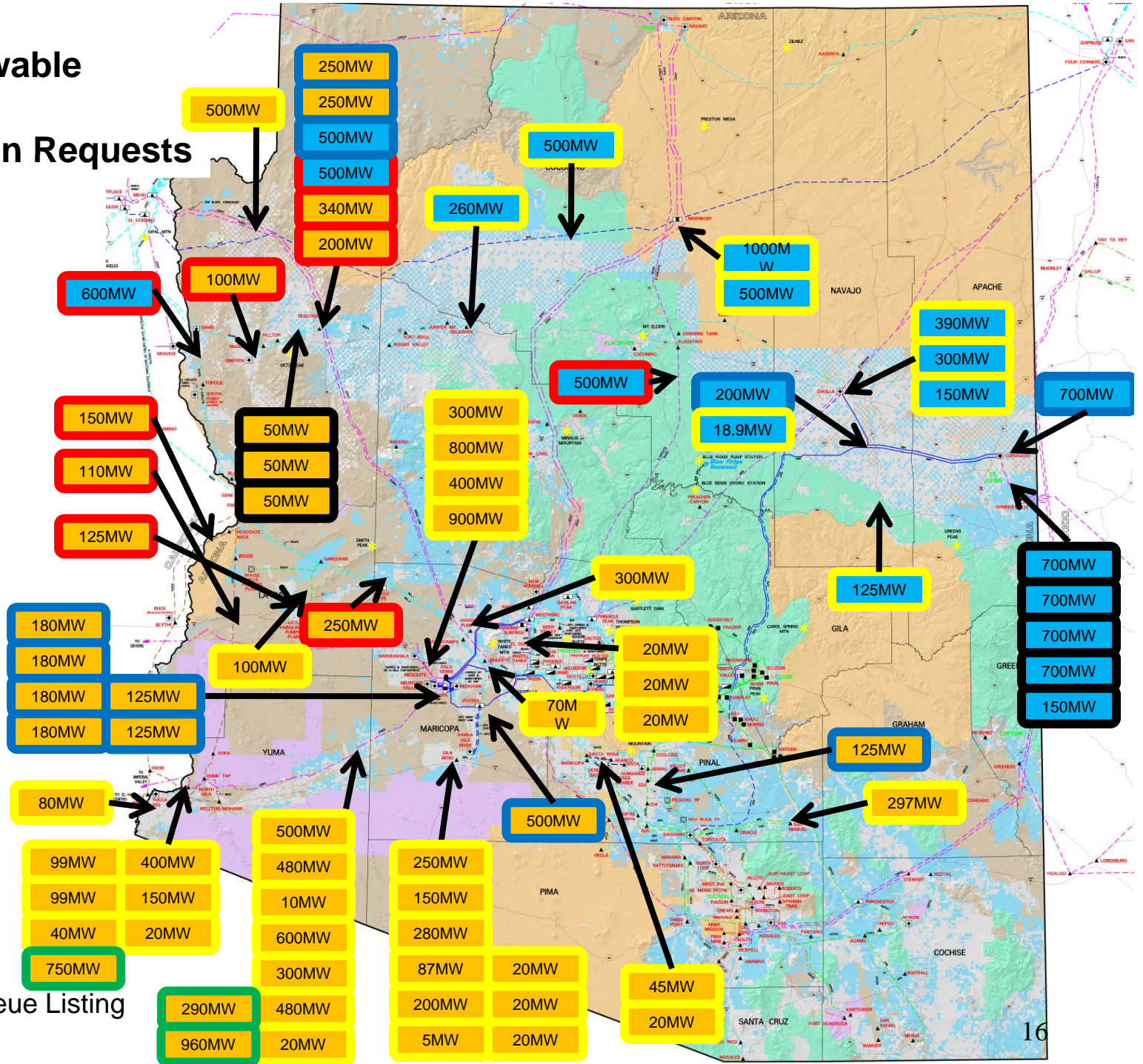
Solar 150MW  
Wind 2950MW

## WAPA

Solar 1275MW  
Wind 1600MW

## CAISO

Solar 2000MW



Interconnection Queue Listing  
As of 2/8/10

Arizona Corporation Commission  
**6<sup>th</sup> Biennial Transmission Assessment  
2010 Workshop 1**

# Questions?



## Contact Information

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**(602) 236-0971**