

2009 SOUTHEAST ARIZONA TRANSMISSION SYSTEM STUDY REPORT

6th BTA Workshop
Carnegie Library, Phoenix, AZ

By TEP on behalf of SATS Participants
June 3-4, 2010

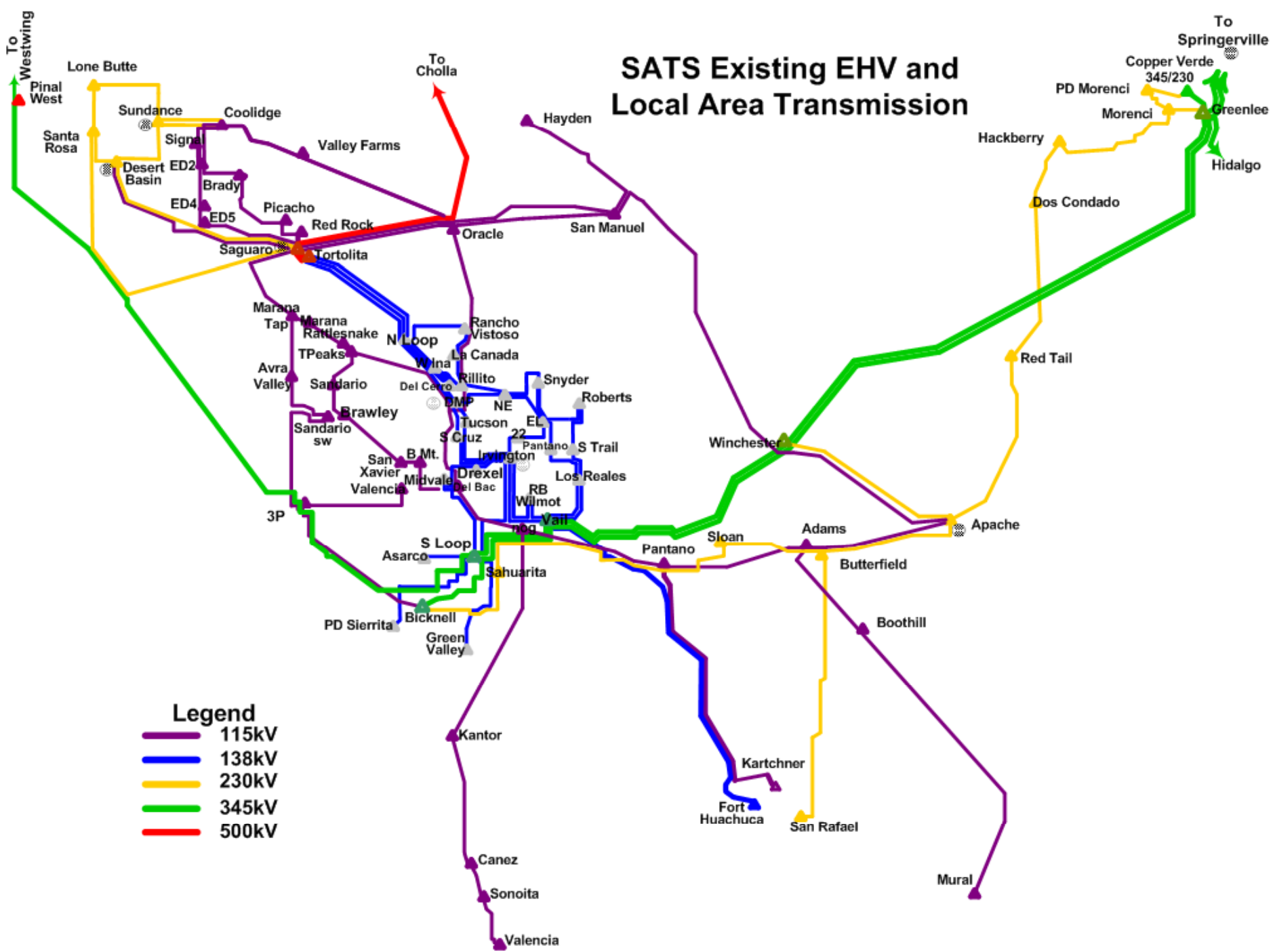
Entities with Generation, Transmission and Distribution Facilities within SATS

- Arizona Public Service (APS)
- Central Arizona Water Conservation District / Central Arizona Project (CAWCD/CAP)
- Duncan Valley Electric Cooperative (DVEC)
- Graham County Electric Cooperative (GCEC)
- Southwest Transmission Cooperative (SWTC)
- Sulphur Springs Valley Electric Cooperative (SSVEC)
- Trico Electric Cooperative (Trico)
- Tucson Electric Power Company (TEP)
- UniSource Energy Services (UNSE)
- Western Area Power Administration (Western)

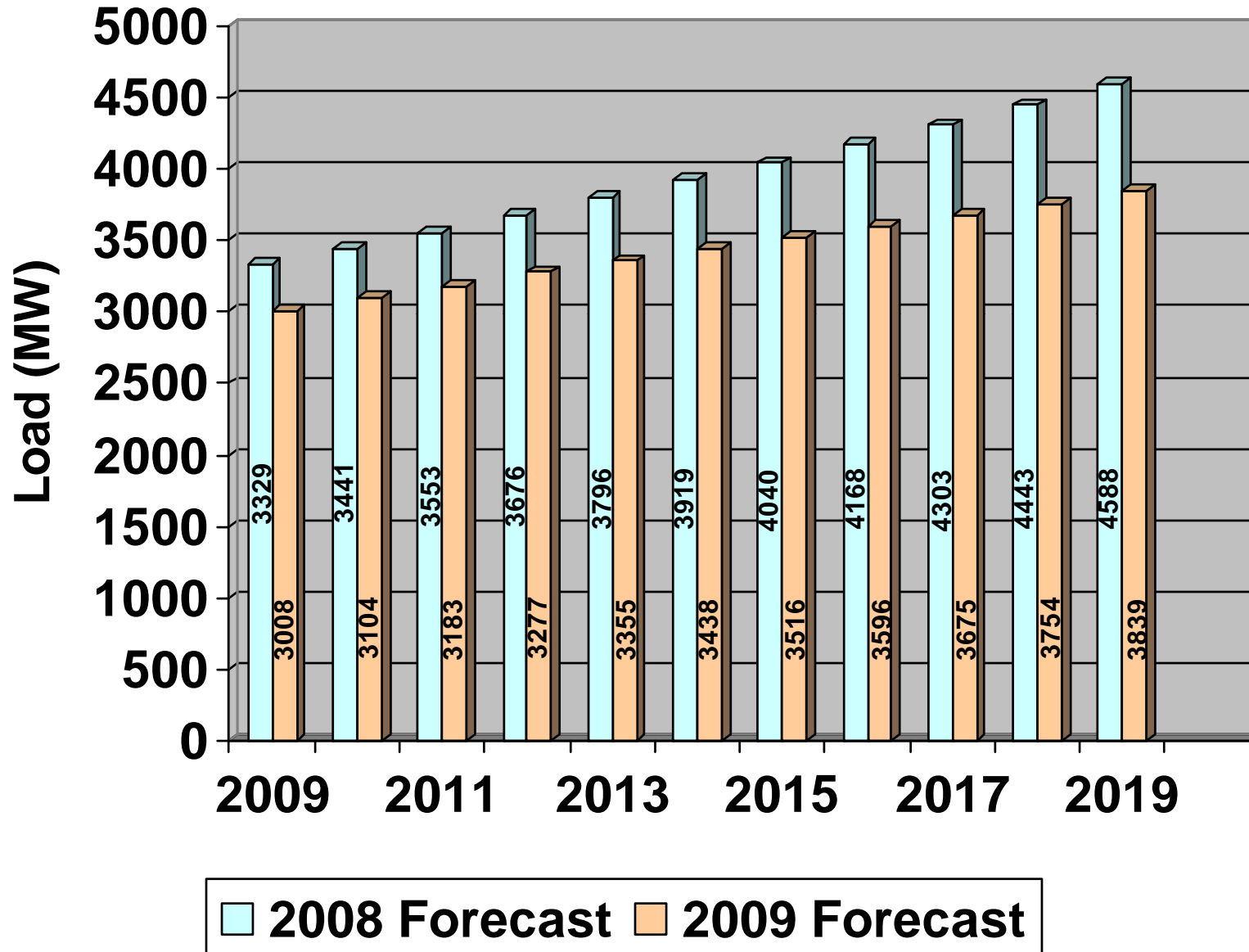
Other SATS Participants

- Acciona
- Arizona Corporation Commission (ACC) Staff
- Arizona Power Authority (APA)
- Arizona Independent Scheduling Administrator (AzISA)
- Black Forest Partners
- El Paso Electric (EPE)
- Environmental Planning Group (EPG)
- Federal Energy Regulatory Commission (FERC) Staff
- Freeport-McMoRan (FMI)
- Fort Huachuca
- Kleinfelder
- New Mexico Renewable Energy Transmission Authority (NM RETA)
- Public Service Company of New Mexico (PNM)
- Salt River Project (SRP)
- Southwestern Power Group
- SunZia, LLC
- Tessera Solar
- United States Bureau of Reclamation (USBR)
- WestConnect Planning Staff
- Western States Energy Solutions (WSES)

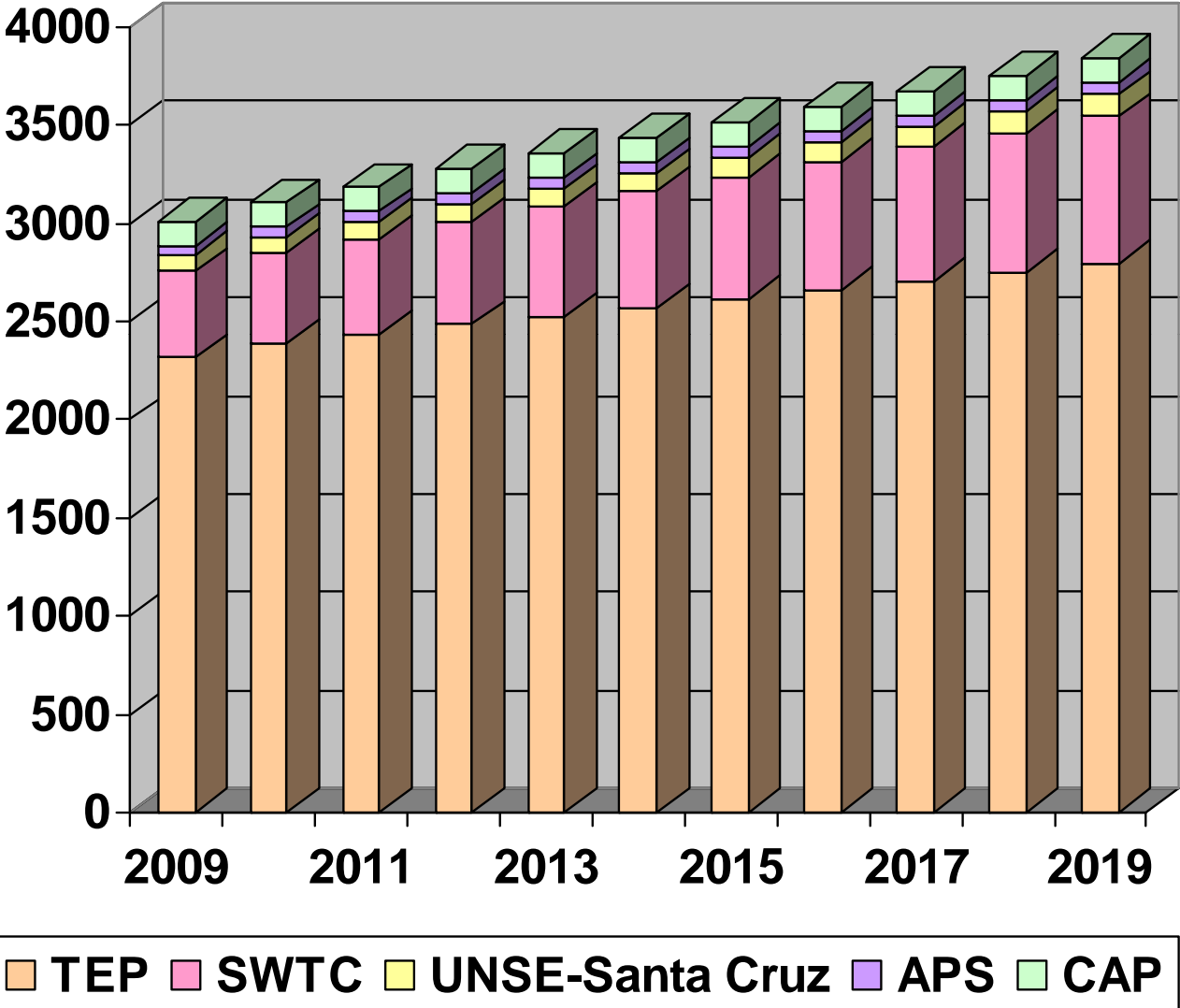
SATS Existing EHV and Local Area Transmission



SATS Area Load Forecast



Combined SATS Entities Load Forecast



Tasks Completed In SATS 2009 Study Plan

2010 through 2014 and 2019 Planning horizon

- Development of power flow cases
- Revision of load forecasts
 - Addressed expected increases in mining load
- Evaluation of the planned system
- Identification of planned and potential projects

Conclusions

- The transmission system in the SATS footprint can reliably meet the needs of Southeastern Arizona with the projects proposed by the SATS participants.
- Overloads will be mitigated with planned projects, operating procedures, or automated actions.

2010 SATS Study Plan

1. Present Plan and subsequent findings to SWAT, WestConnect, and local stakeholders;
2. Revise load forecasts;
3. Develop base cases for 2010 study;
4. Conduct study to determine impacts of deferring previously planned projects;
5. Investigate alternative configurations to mitigate high flows on the Winchester 345/230 kV transformer, Apache – Bicknell 230 kV line, and Bicknell 345/230 kV transformer caused by EHV system contingencies;
6. Develop and evaluate alternatives to the two joint Tortolita – North Loop 345 kV proposals based on the SPPR three Terminal proposal;
7. Develop and evaluate alternatives for joint SWTC/TEP substation(s) to supply TEP/Trico loads south of Tucson;
8. Identify potential projects in the SATS footprint;
9. VAR Margin Study – 230 kV and above buses.