

## DOCKETED

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<b>Project Title:</b>	Renewable Energy Transmission Initiative 2.0
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<b>Description:</b>	By Doug Patterson - RETI 2.0 Western Outreach Project: Las Vegas Workshop 9-1-16
<b>Filer:</b>	Misa Milliron
<b>Organization:</b>	Southline Transmission Project
<b>Submitter Role:</b>	Public
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<b>Docketed Date:</b>	9/6/2016

# Southline Transmission Project

RETI 2.0

Western Outreach Workshop

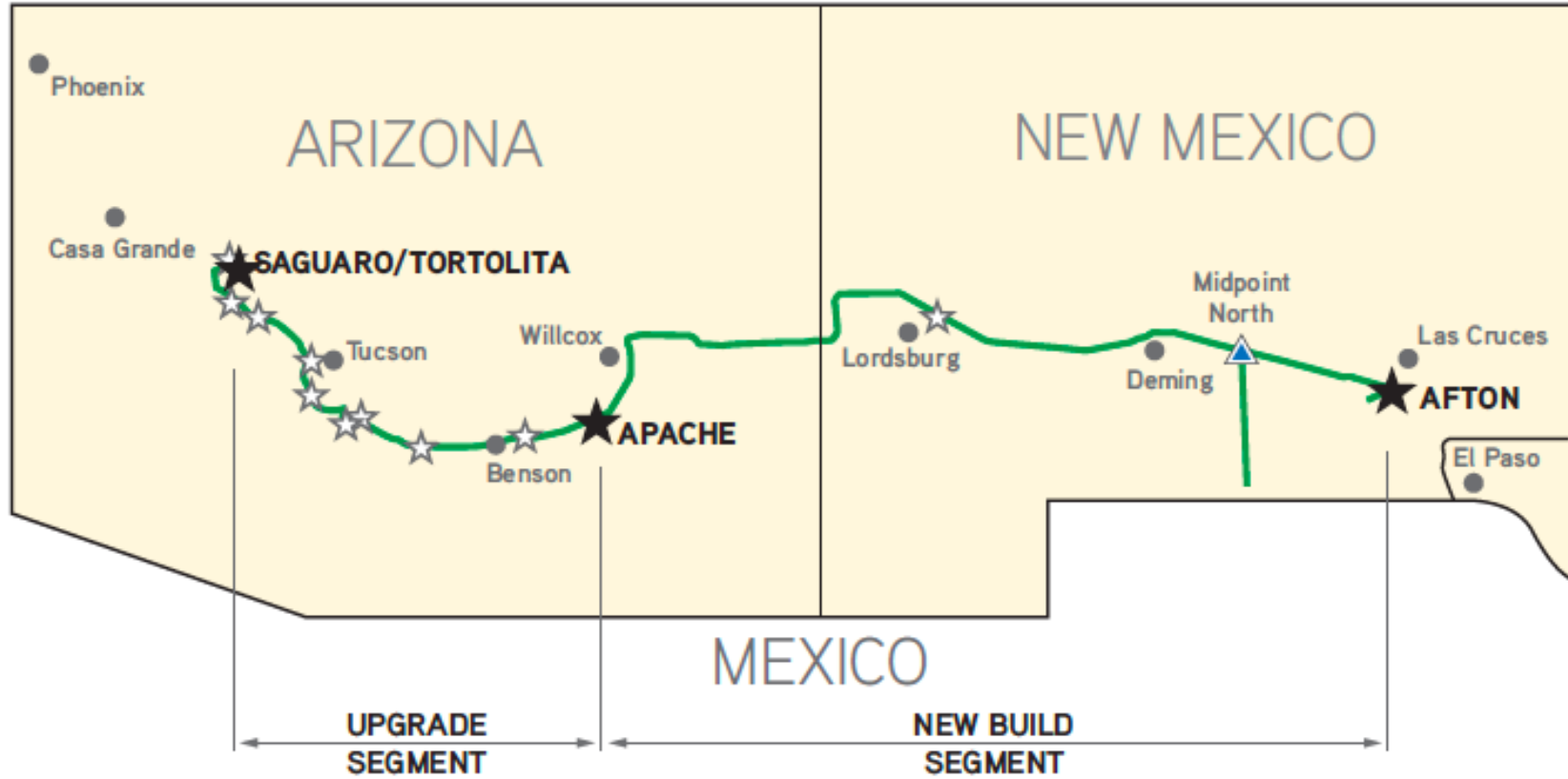
September 1, 2016

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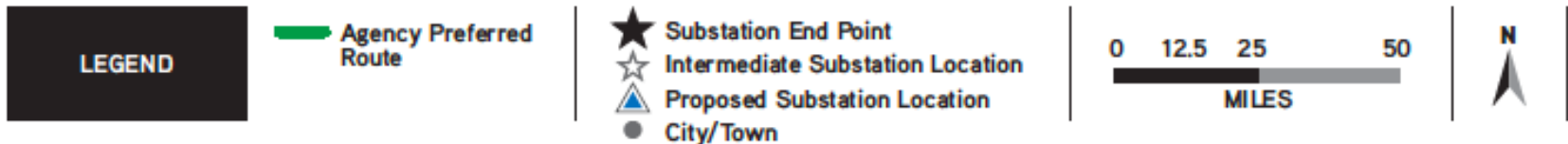
# Project Overview

- ❑ **Two Segments, approximately 370 Miles**
  - New Build — 345kV double-circuit Afton-Apache, 250 Miles
  - Upgrade — 230kV double-circuit Apache-Saguaro/Tortolita, 120 Miles
- ❑ **Meet Multiple Needs**
  - Improve Reliability
  - Relieve Congestion
  - Support Growth
  - Facilitate Access to Renewable Resources
- ❑ **Minimize Environmental Impacts**
  - Upgrade existing lines
  - Follow existing corridors
  - Minimize impacts to environmental and cultural resources
  - **More than 85% of Agency Preferred Route Parallels or Upgrades Existing Corridor**
- ❑ **Milestones**
  - WECC Accepted Bi-directional Path Rating
  - Records of Decision from BLM & WAPA
  - Executed ROW Grant with BLM
  - Executed ROE & accepted ROW terms with NMSLO
    - ROW with BLM & NMSLO = 75% of NM ROW
    - leaves only 47 miles of private lands in NM, 42 miles of which parallels existing infrastructure
  - SU FERC Open Solicitation Process Mar-Jun 2016
    - Expressions of Interest exceeded project capacity
    - Screened & Ranked by independent solicitation manager
    - SU FERC initiated bi-lateral negotiations Jul 2016
- ❑ **Option for Improved Regional Coordination**
  - Bi-directional capability
  - Multiple interconnections to existing & planned system
  - Interconnects four Balance Area Authorities and assets of six Transmission Owners

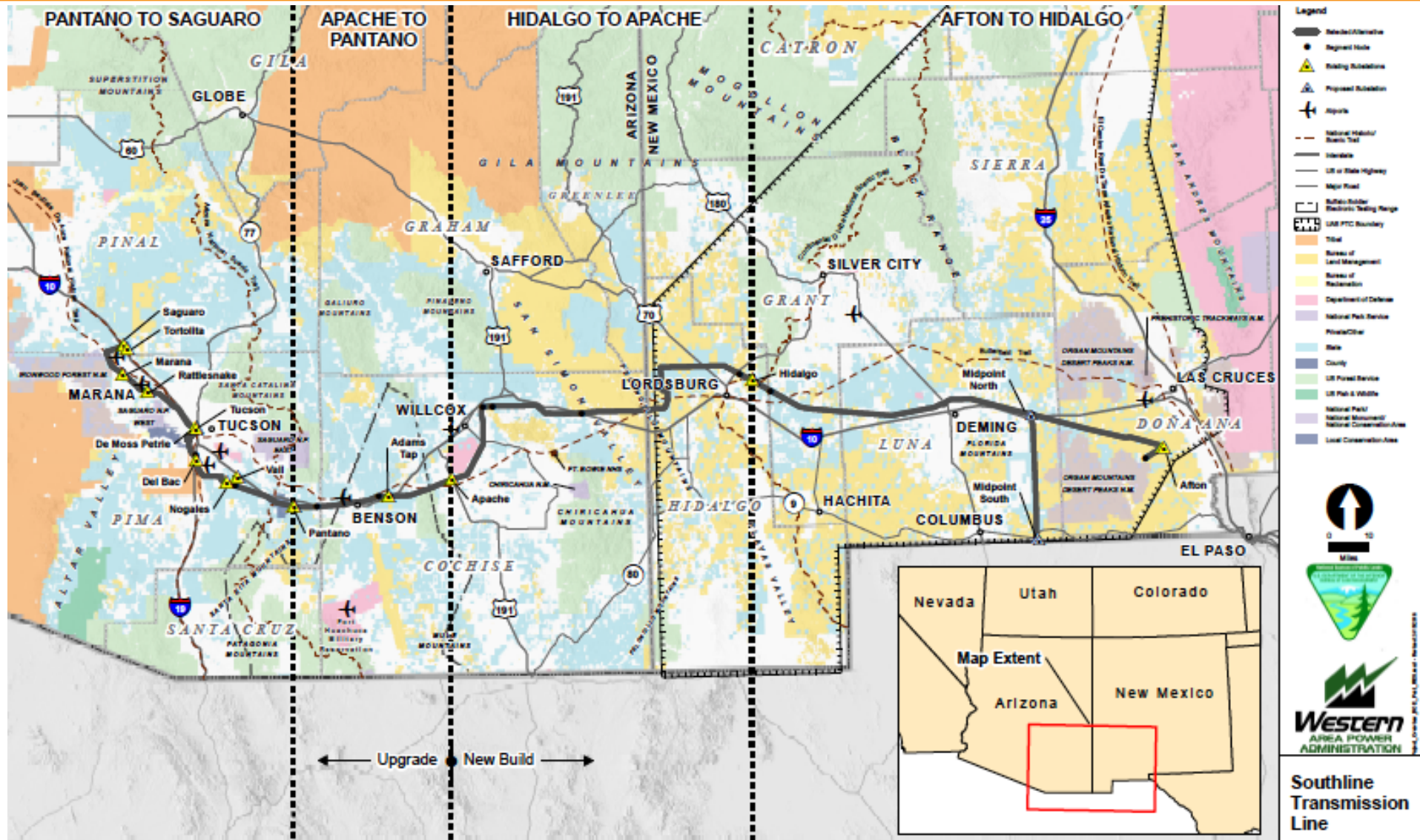
# Route Overview



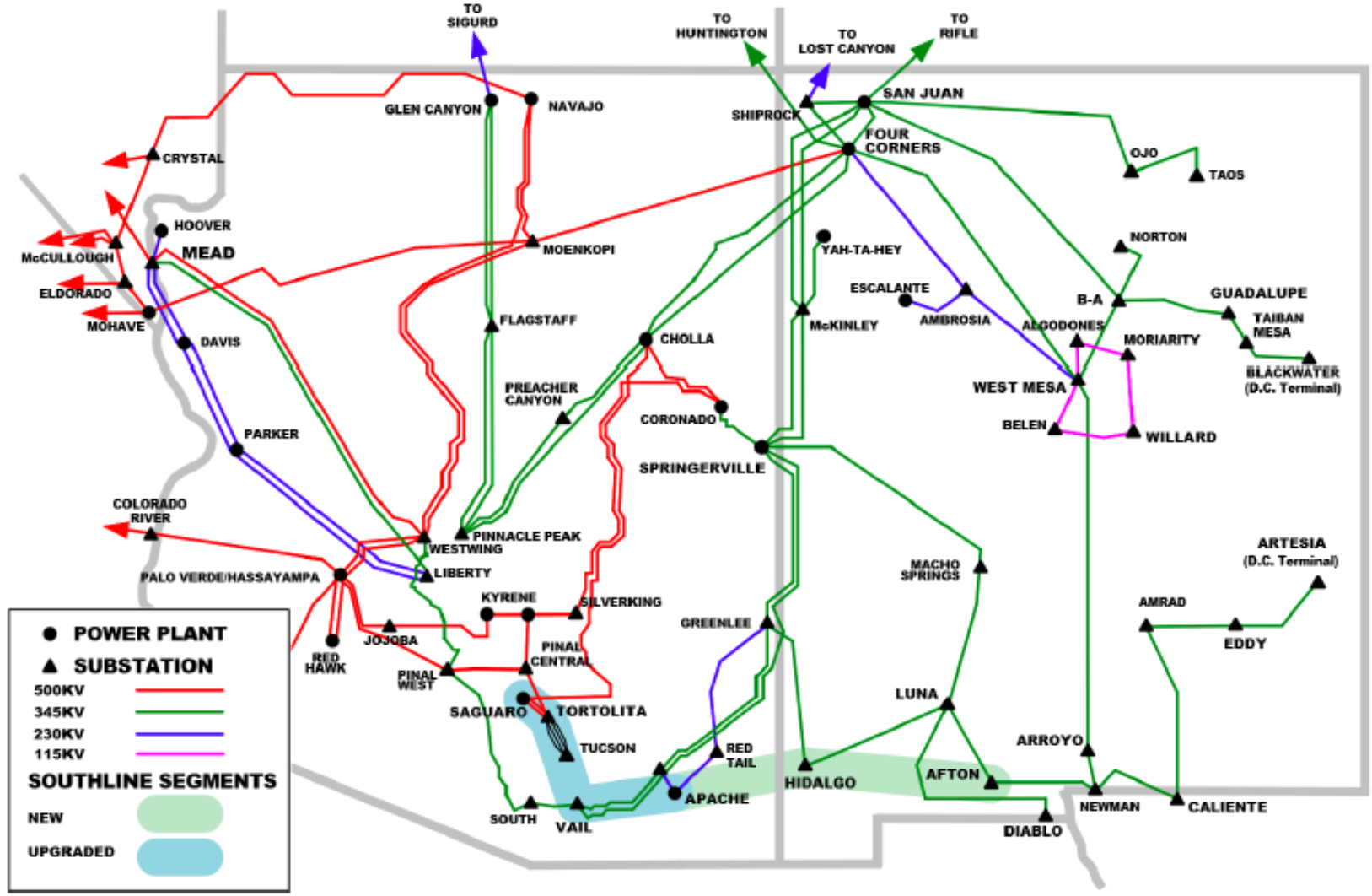
The Project will have a right-of-way up to 200 feet wide.



# ROD Agency Selected Alternative



# Existing System Map With Southline



Source: SWAT, Southline, LLC

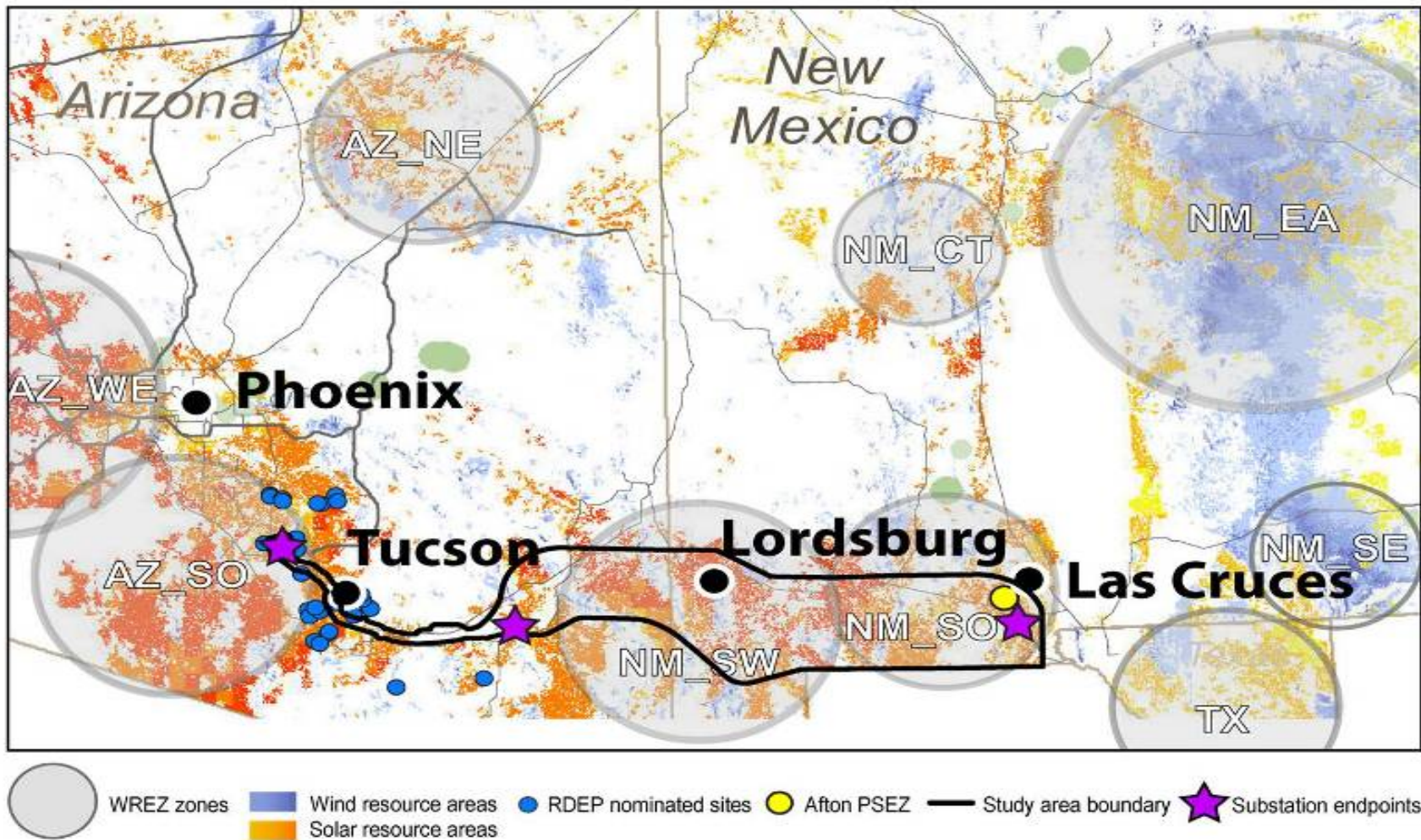
# Value Proposition to California

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- ❑ Access high quality and *geographically diverse* renewable resources
- ❑ Renewable integration opportunities
- ❑ Export over-generation and reduce renewable energy curtailment
- ❑ Facilitate regional coordination and participation in regional markets

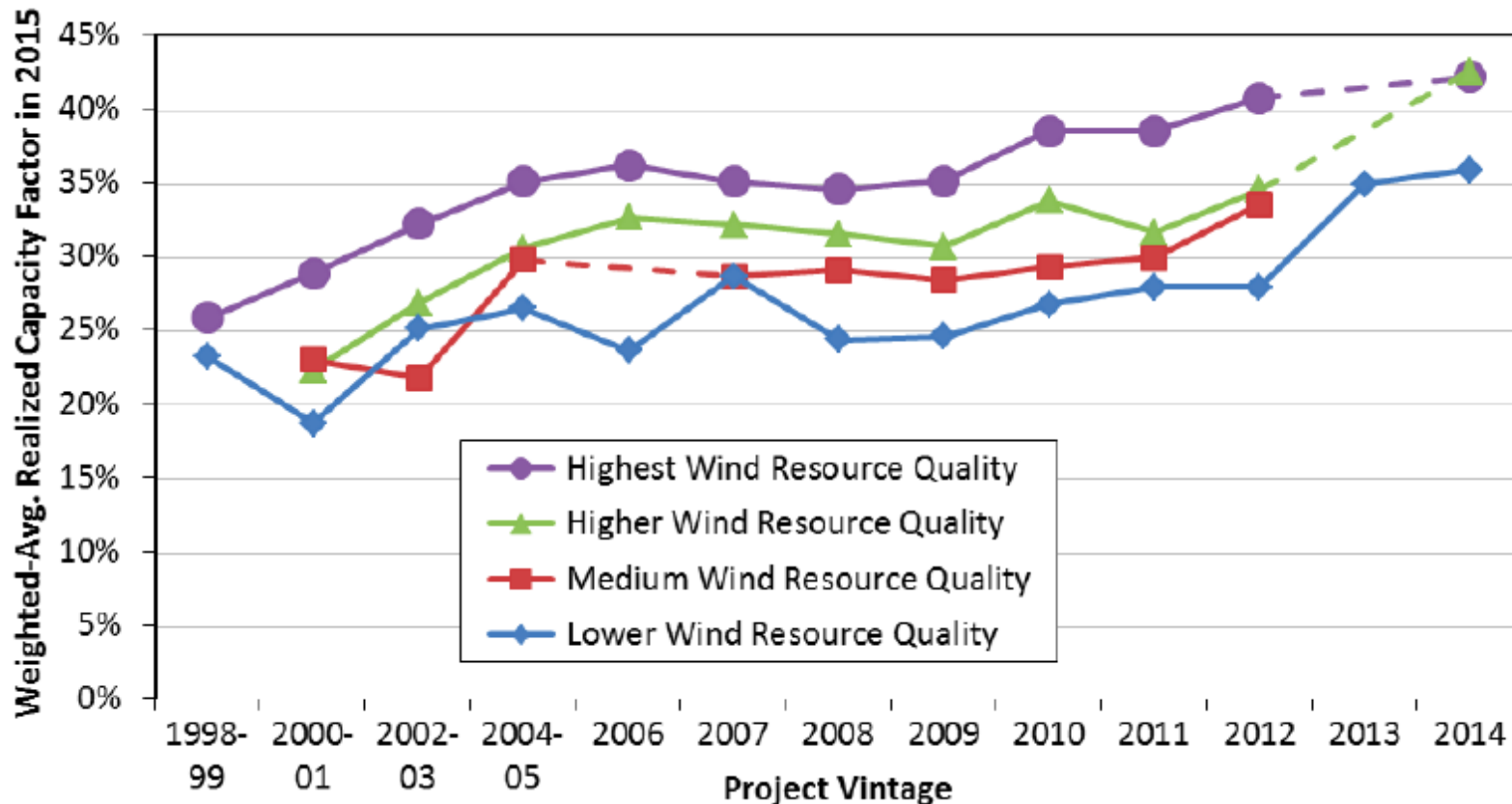
# Renewable Resources

### Wind & Solar Resources and Southline Transmission Project



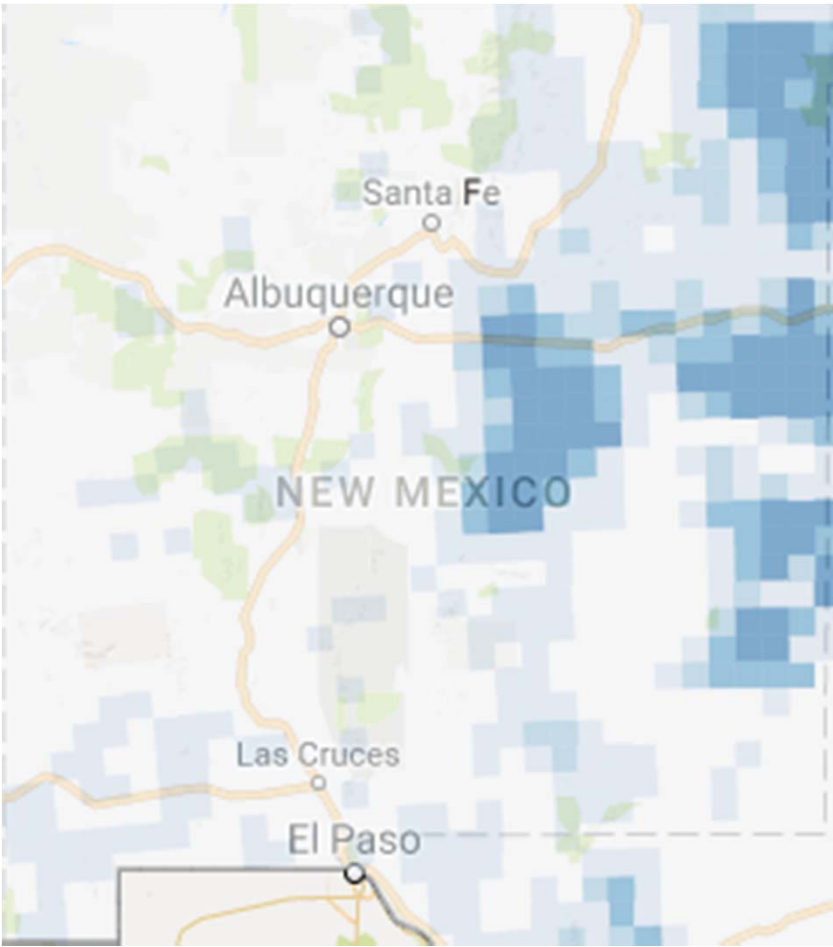


## Controlling for Wind Resource Quality and Commercial Operation Date Also Illustrates Impact of Turbine Evolution

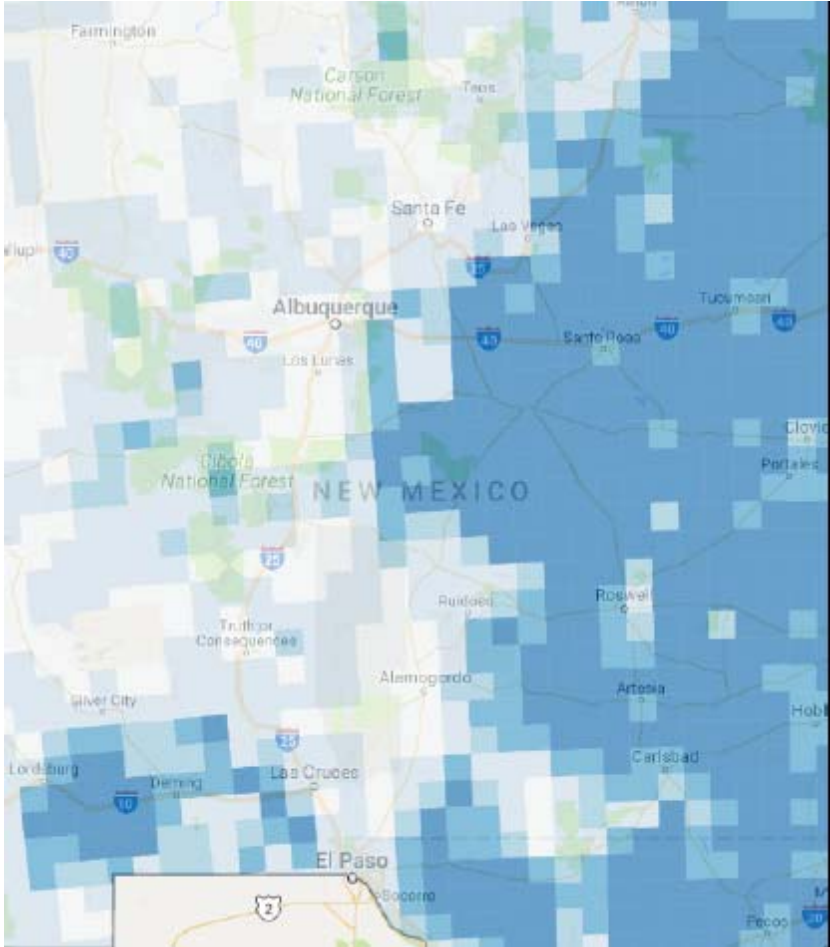


# Technology Expanding NM Resource Area

80 Meter Hub 2008 Technology



110 Meter Current Technology

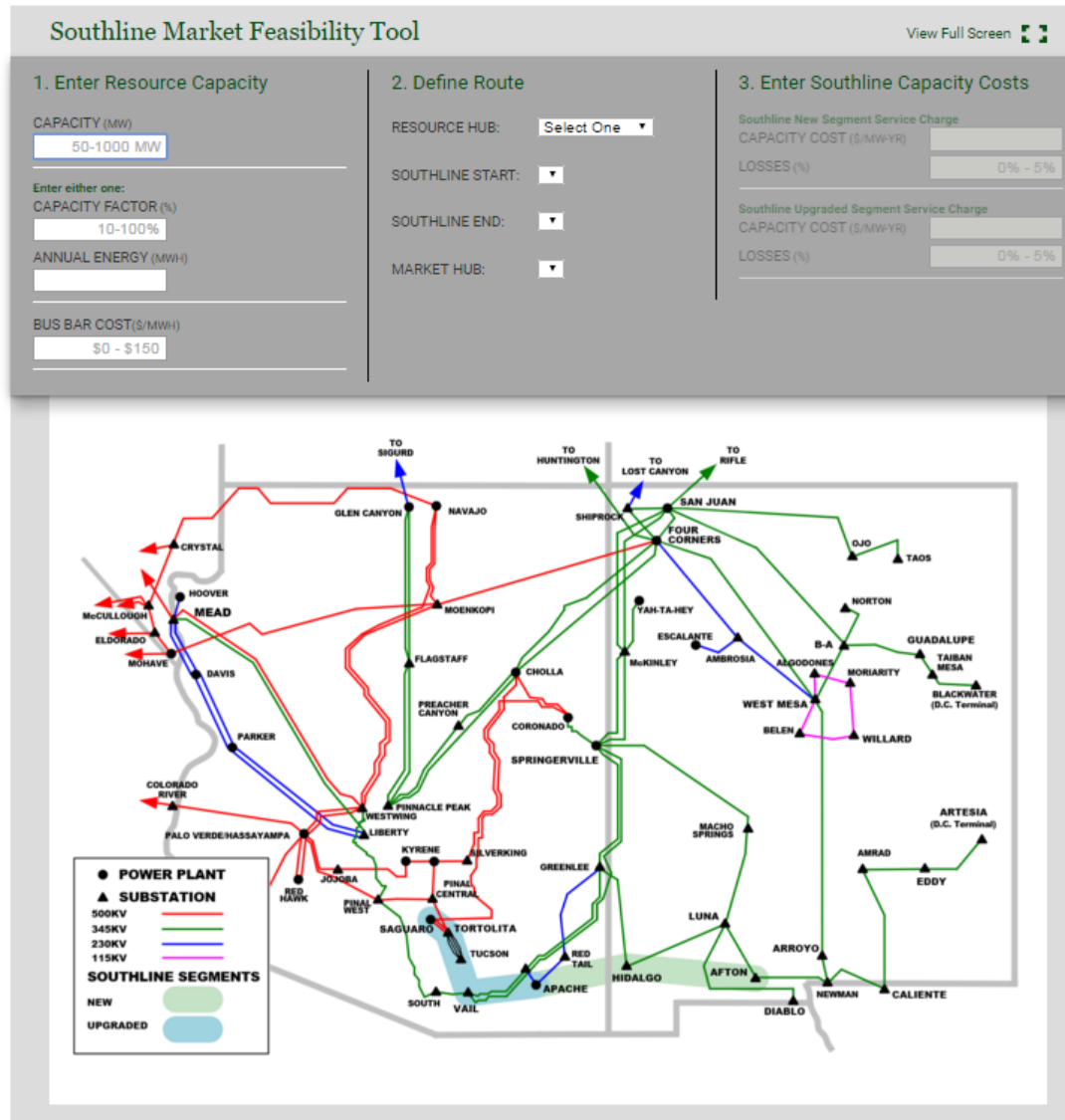


Land Area with 35%+ Wind Capacity Factor

Source: NREL Wind Prospector

# Southline Market Feasibility Tool

**Input Assumptions:**  
User defines generation location and cost attributes, selects transmission contract path to deliver to market



**Output:**  
Tool helps Examine Costs, of Various Gen & Tx scenarios.

Can weigh tradeoffs, eg Capacity Factor vs wheel

# Integration of Renewable Generation

- ❑ The project will help planned and existing gas generation in the Southwest integrate more renewable resources
- ❑ NERC 2015 Long-Term Reliability Assessment: The Southwest Reserve Sharing Group (SRSB) within WECC has an approximately 42% reserve margin for the 2016 summer peak season, versus the NERC reference level of 16%

**Regional utilities are planning to build at least 5,085 MW of new natural gas-fired resources in the next 10-years**

## **Planned Gas-fired Generation Additions (2016-2026)**

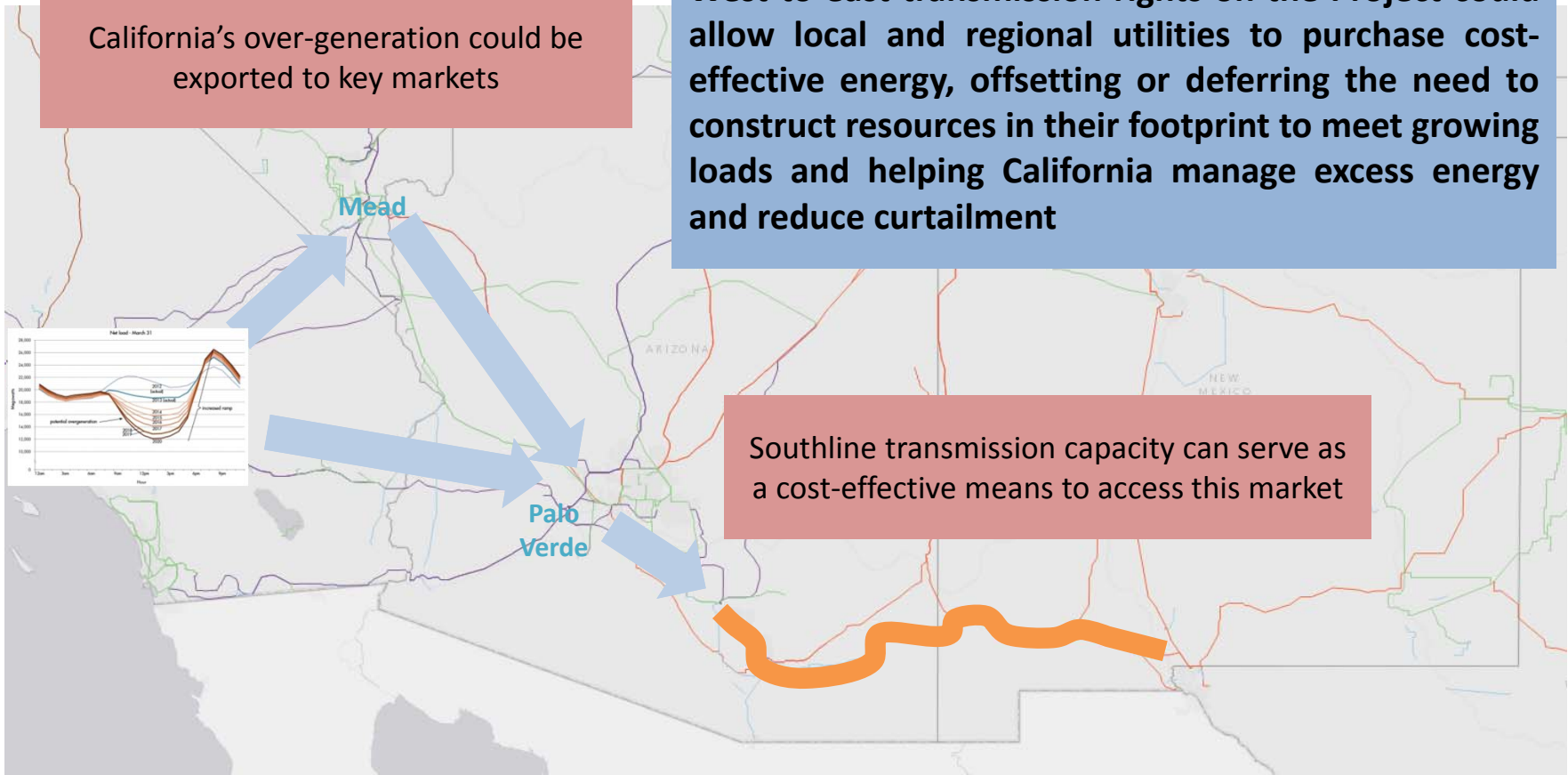
Public Service Company of New Mexico	394 MW
El Paso Electric	825 MW
Tucson Electric Power	836 MW
Arizona Public Service	3,030 MW

# California Export & Curtailment Reduction

California's over-generation could be exported to key markets

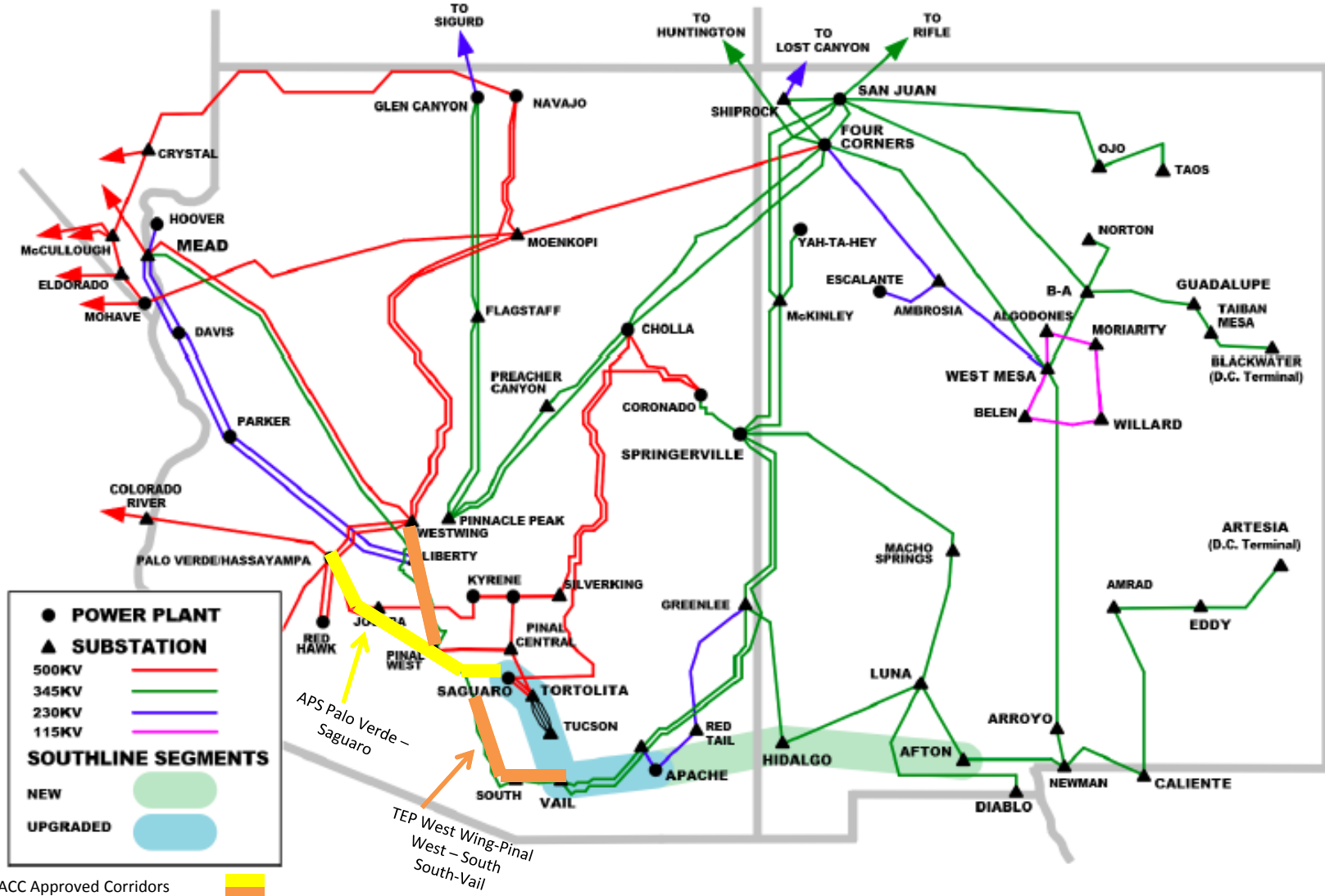
West-to-east transmission rights on the Project could allow local and regional utilities to purchase cost-effective energy, offsetting or deferring the need to construct resources in their footprint to meet growing loads and helping California manage excess energy and reduce curtailment

Southline transmission capacity can serve as a cost-effective means to access this market



# Regional Coordination Opportunities

Existing System Map With Southline & Selected Conceptual Certificated Utility Expansion Corridors



Source: SWAT, ACC 10 Year Plan Filings, Company research

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